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ENCYCLOPEDIA OF CAPITALISM

VOLUME I

A–G

SYED B. HUSSAIN, PH.D.

Encyclopedia of CAPITALISM

Volume I
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Foreword

The Rebirth of Capitalism

Robert J. Samuelson

ONE OF THE REMARKABLE STORIES of our time is the fall and rise of capitalism. If you go back 30 or 40 years, hardly anyone talked about "capitalism." The word existed in dictionaries and history books, but it had virtually disappeared from everyday conversation and political debate. It connoted a bygone era (it was thought) of cruel and crude business titans who abused their workers and presided over an inherently unstable economic system. It was bad news.

We had moved on. People thought the economic system had fundamentally changed. Government supervised markets; modern managers, not the old moguls, were more sensitive to workers and communities. They had more "social responsibility." A new vocabulary was needed to signify the progress. People talked of a "mixed economy" of shared power between government and business. Sometimes there was mention of "free enterprise" and "private enterprise." Hardly anyone advocated unadulterated "capitalism."

There were a few conspicuous exceptions. In 1962, a little-known economist named Milton Friedman published a book titled *Capitalism and Freedom*. The title was catchy precisely because it praised a system that was so unfashionable that it was hardly mentionable.

Four decades later, we have come a long way. Friedman became famous and won a Nobel Prize. His title no longer seems controversial, and the relationship it suggests—that capitalism promotes political freedom—is widely, if not universally, accepted. (Freidman cited many connections. By allowing consumers more choices, capitalism nurtures a taste for choice in many areas, including politics. Capitalism dilutes political power with "widely dispersed" economic power. And it enables people to criticize government because most workers do not depend on government for a job.)

What explains the reversal? Well, the answer isn't shrinking government. When Friedman wrote his book, government did less than it does now. It spent less as a percentage of national income (gross domestic product—GDP) and taxed less. It had fewer regulations. In 1965, Congress created Medicare and Medicaid, federal health-insurance programs for the elderly and poor. Programs to provide college aid, food assistance, and housing expanded. In 1960, governments at all levels—federal, state and local—spent 26 percent of GDP. In 2002, they spent 32 percent of a much larger GDP. Government regulation of the environment, workplace safety, and consumer products had increased dramatically.

Generally speaking, the story is similar in Europe. In the 1980s and 1990s, some nationalized industries (airlines, telecommunications, steel) were converted to private companies. But government spending has progressively grown, as has regulation. From 1960–2002, government spending rose from 30–45 percent of GDP in Germany, from 28–46 percent of GDP in Italy, and from 37–49 percent of GDP in France (1963–2002). Almost everywhere the "welfare state" has grown.

Still, capitalism has regained respectability for two reasons: fading memories and the end of the Cold War.

Nothing discredited capitalism more than the Great Depression, which seemed to be a climactic crisis. In the 1930s, the unemployment rate in the United States averaged 18 percent. High joblessness in Europe helped cause World War II by bringing Hitler to power. Raw capitalism, in the popular view, could no longer be trusted. At a minimum, it needed to be reformed and regulated. Other critics thought it should be abolished. Among some intellectuals, communism was fashionable.

So much suffering and political instability made capitalism a scourge. But as the Depression-era generation has died, so have the personal memories of the decade's horrors. The anti-capitalist stigma has faded.

Simultaneously, the collapse of communism in the 1980s and the early 1990s seemed to confirm capitalism's superiority as a wealth-generating machine, a system that could raise mass living standards. Governments everywhere were obsessed with improving the well-being of their citizens. For roughly four decades, communism (and its many variants) vied with "free enterprise" to see which could do better.

Under communism, government ruled the economy. There was collective ownership of industry and agriculture in communist states; in socialist countries, the government controlled critical industries (power, communications, railroads, airlines, oil). Central planners coordinated production, made investment decisions, and decided which industries would expand. On the other side was free enterprise. Private companies competed for customers and profits. Private "markets"—responding to consumers' preferences and corporate profitability—made the basic decisions of what would be produced, what prices would be charged, and what sectors would flourish or falter.

By the early 1980s, even before communism's political collapse, the economic competition was essentially over. People could see that the communist world (the old Soviet Union, most of Eastern Europe, China, and Cuba) was vastly poorer than Western Europe, the United States, and Japan. They could see that it wasn't just elites who benefited; average families enjoyed riches that, 50 years earlier, had been virtually unimaginable. The contrast was so obvious that even some communist states began abandoning the orthodoxy. In the late 1970s, China started to introduce personal ownership and private markets into its farming system. Once the Soviet Union and Eastern Europe discarded communism, it became commonplace to dramatize the outcome: "Capitalism" and "freedom" had conquered "communism" and "tyranny."

But if "capitalism" was no longer a dirty word, its triumph was also misleading. Lost in all the celebration and rhetoric was a simple reality: Capitalism itself is a vague concept. Its meaning is unclear. Capitalism requires more than the legality of private property or the ability to accumulate profits—wealth. After all, even feudal societies had private property and permitted some members (monarchs, lords, barons) to become rich. But feudal societies restricted property ownership and, through law and custom, decided what people could do. Serfs were tied to lords, who promised them protection. In turn, the serfs had to farm their lords' lands.

Capitalism is larger than property and profits. It's an economic system that depends on some common social and political arrangements that guide the behavior of people and enterprises. A capitalist society has at least three defining characteristics.

First, it settles most economic questions through decentralized markets and free prices. If people want more widgets, then widget prices rise and production increases. If there are too many widgets, prices will drop, profits will fall and, ultimately, production will decline. Decisions about which industries will grow (or shrink) and what occupations will increase (or decline) are mostly resolved by markets.

Second, it creates a motivational system because it allows people and companies to keep much of the reward from their own work. Capitalism presumes that people want to better themselves. The theory is that they will work harder, invest more, and take more risks if they benefit from their own ambition, inventiveness, or imagination. Incomes are generally not determined by law, custom, or politically set "needs."

Finally, capitalism establishes a permanent system of "trial and error." Without centralized control of what's produced—and because people and firms can profit from satisfying "the market"—everyone is free to experiment. The experimentation is a basic source of higher living standards, because it leads to new technologies, products, and services or better ways (including cheaper ways) of making and selling existing products and services.

What this means is that, as a social system, capitalism inevitably involves inequality. Some win more than others. The whole theory is that the possibility of exceptional reward inspires people to make exceptional effort. Similarly, capitalism virtually ensures constant change. The "market" is not wedded to the present. Its demands and desires can shift. The economist Joseph Schumpeter (1883–1950) called this process "creative destruction." At its best, it improves people's well-being. But sometimes the constant change leads to economic and social instability—financial panics, depressions, and industrial and agricultural displacement. Economic stability requires that supply and demand roughly match; that workers who want jobs can find them; that what's produced will be consumed; that what's saved will be invested. Though "the market" does well at making these matches, it doesn't succeed at all times and in all places.

Because all societies cope with these twin problems—inequality and instability—there is no ideal form of capitalism. Every country, including the United States, modifies capitalism's dictates to satisfy its own political preferences and cultural tastes. Few markets are totally free. Most involve some government regulation. Labor markets in the United States have, among other things, a minimum wage, limits on working hours, and rules for pensions. Some prices are regulated or controlled; in many countries, governments set power, water, and phone rates. People and companies typically can't keep everything they earn; there are taxes. Government regulation and social custom limit "trial and error." In Japan, government regulations protected small family-owned stores against larger chains. Almost all societies regulate scientific experimentation.

Capitalism is thus a term of art. All advanced economies remain "mixed economies" with power shared between private markets and government. It is a matter of degree. Similarly, capitalism is conditioned by culture. It is not the same in the United States as in, say, Japan, Brazil, Germany, or South Korea. If government suppresses the power of markets too much—through taxes, restrictions, regulations, subsidies, and politically inspired privileges—then capitalism is a misnomer. It is a label without meaning. Similarly, if culture checks markets too much—by, for example, awarding wealth and status on the basis of birth, custom, political connections, or corruption—then capitalism is also a misnomer.

Capitalism is always a work in progress, and at the dawn of the 21st century, this is especially true. In the past half century, it has grown more global in two senses.

First, more and more countries are trying the capitalist "model"—China, India, and Russia being the largest of recent converts—and hoping to fit it to their own values and social systems. Because Friedman was at least partially correct, this involves social and political transformations as well as economic change. Relying more on "markets" means giving people more freedom and allowing status and income to be settled more by economic competition rather than by birth, ethnic background, or political standing. Conflicts between the past and present are not only possible; they are inevitable.

Capitalism has also grown more "global" in a second sense: Reduced barriers to international trade and investment have resulted in more of both. Countries that decide to try capitalism need not decide simultaneously to join the world economy; they could keep their capitalism at home and restrict dealings with the outside world. But in practice, countries are doing both. Almost all countries have become more dependent on worldwide flows of trade and investment funds for their own prosperity. This creates new opportunities for gains—cross-border flows of products, technologies, and management techniques. Countries can specialize in what they do best; investors can seek out the highest returns. But the same interdependence also creates new opportunities for instability if there's a breakdown in global trade or investment flows.

There has been a rebirth of capitalism, but it is not the capitalism of 30, 50, or 100 years ago. It is a new version—or rather many new versions—of an old idea. How it evolves and fares is a fascinating story that is fateful for us all.

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Introduction

THE FACT THAT WE live in an era of capitalism is universally acknowledged by both the laity and the priesthood of social sciences. The dynamism in the production of wealth and the social progress associated with the historical development of capitalism are also generally conceded. However, passionately controversial debates ensue as soon as an effort is made to specify the defining elements—the essence—of the social system called capitalism.

What is capitalism? A dictionary definition, for example, is generally stated as an economic system characterized by freedom of the market, along with private ownership of the means of production and distribution. Simple enough at the outset. But, if one looks at the institution of markets, one finds them in primitive, slave, feudal, and even socialist societies. Perhaps, one could assign a teleological design to an ever-expanding market as an indicator of choice and freedom achieving its zenith in the full flowering of capitalism. The fully fledged actualization of a market system in this view, in a way, is a herald of the end of history: Capitalism *must* reign forever since it is coeval with human freedom.

Another view explains the pervasive and guiding role of markets under capitalism—the invisible hand metaphor of Adam Smith. While individual human beings pursue their own selfish interests, the market forces bring about not only a technical equalization of things bought and sold (i.e., produced and consumed) but also, as if behind the backs of the unsuspecting operators, a socially beneficent outcome is generated—an optimum optimorum—the best of all possible worlds. The implied belief system is to yield to the deity of the inherently virtuous invisible hand.

Yet another strand of thinking questions the wisdom of reposing such sovereignty in the market forces—expressing our productive potential as producing commodities for the market, satisfying our human needs through buying from the market—as it bypasses direct human interaction, thus leading to alienation from other human beings, and creating a profound malaise of the modern capitalist era. Does the freedom of the market take precedence over the freedom of human beings? The question remains.

A second defining element of capitalism has to do with the private ownership of the means of production, presumably to effect efficient utilization as well as efficacious stewardship of resources. Those who produce the smartest get to receive the most returns. And the expectation of future returns assures a rational interest in the proper maintenance of productive resources—the cliché of "nobody ever washes a rented car" is invoked to reinforce private ownership. True enough.

However, if one examines the actual state of the relationship between private (individual, corporate) and collective (government) ownership in the advanced capitalist economies, it becomes obvious that the collective control of national income (the gross national product) varies from a third in North America to about a half in Western Europe. This, of course, does not take account of the collective ownership of stocks and bonds through pension funds, etc. Also, despite repeated and frequent spates of privatizations, the average weight of collective ownership has been on the rise. This can be explained by examining the role of the state in a private market economy. A market economy is premised on the notion of private property, which in its essence requires the exclusion of potential claimants. The enforcement of this exclusion requires a potential, sometimes actual, use of coercive power. Individually centered protection of private property can be awfully expensive, hence irrational. Therefore, we have the historically concomitant rise of state power along with the development of capitalism, as well as its public acceptance even when grudging, as in the "necessary evil" conceptualization of government.

This formulation of the collective in service of, and subservient to, the private ownership concept tends to leave out a prior theoretical issue. How does private ownership of the means of production come about in the first place? The textbook economic literature essentially assumes the problem away. The problematic is defined to focus on efficient allocation of resources in the market setting where the economic agents appear with varying initial endowments. This truly is rephrasing the myth of the proverbial stork randomly granting the baby in the pouch with certain gifts—initial endowment. A more sophisticated explanation would rest on the obvious laws of inheritance, talent, industriousness, and a random factor of luck—not an entirely robust explanatory formulation, much less a morally defensible one.

The skeptic must look for a sharper angle to discover the deeper meaning of this emphasis on the private ownership (by some) of the means of production. By the same token, it implies that there are others (indeed many, the majority) who are deprived of their own independent means of survival under capitalism. This introduces the notion of social classes in the system—those who own the means of production (the capitalists) and those who do not (the workers) and must access them via the courtesy of the former—a relationship of dependence, inequality, and possibly exploitation.

The real significance of private property in the means of production is that a worker can be excluded from the use of tools necessary for productive activity unless the worker agrees to share the produce of labor with those who own capital, the tools of production. An obvious corollary of this is that as in feudalism, where the serf did the producing and the lord got most of the share of total product, under capitalism the actual production is undertaken by the workers, and the capitalist is assured of a lion's share of the produce. Not only that. The market mechanism, through competition, allows only a socially determined subsistence to the worker whereas the capitalists get the residual—the social surplus—as their reward. Thus, capitalists have a basis for enhancing their property of the means of production, and maintaining and consolidating their class privilege.

The creation of wealth. A stellar characteristic of capitalism is its fantastic capacity to produce goods and services: wealth. Much as it is celebrated, it is also mostly justifiable. By any measure, if one were to stack the millennia of production of all previous social formations—primitive, slave, feudal—it would pale into insignificance when compared to the production of this relatively young, in a historical sense, social system that, according to varying accounts, established itself during the so-called long century, 1350–1550. The transformation of feudalism into capitalism, initially in western Europe, is accompanied with an era of enlightenment, scientific discovery, industrialization of production, expanding trade, and dissolution of many social barriers. The transformation involves not just the application of scientific technique to production, but also the necessity of continuous innovation that is required by the inexorable forces of market competition.

It is in this context that one can appreciate the unique category of capital as being similar to wealth in the sense of accumulation of social objects of use, but also quintessentially distinct in the sense of its drive to dissolve into money capital, to buy physical commodities to produce more commodities that in turn had to be sold for more money for their realization as capital, and so on as a continuous circuit of production and circulation. This ceaseless and insatiable quality of investing for production and reinvesting for more production in the face of competition from market adversaries lends capitalism a special penchant for excellence in production. Mercifully, all schools of thought are in happy unison in praise of this aspect. But there is more.

Whereas the earlier social formations concentrated the wealth objects in the exclusive possession of the ruling classes, the dialectic of capitalist production requires that, as part of the efficiency of production, the commodities produced should be cheapened enough for the working classes to partake of this abundance, and experience a relatively higher standard of living. Money, the common denominator of all valuations in the system, requires that produced commodities be sold in the market to realize their money value. That is the secret of appropriating social surplus: the making of profits in the system.

Thus, the expanded production leads to a commensurately expanded market. For all of the products to be sold, the efficiency in production shows up as cheaper products, which in turn enables the working classes to participate in the market to raise their standard of living. The historically unprecedented high standards of living of advanced countries are a testimony to this dynamic. The partisan champions of the system emphasize this empirical reality as proof-positive that capitalism equals prosperity.

In this view, capitalism's frontiers are described by the geographical areas of Western Europe, North America, and Japan. But capitalism, from its very inception, is a global system—the long-distance trading, ocean-faring adventures, colonial capture of far-flung areas for resources and markets are essential features of its development. The social systems of Honduras, Guatemala, Bangladesh, Botswana (and most of the so-called Third World countries) are shaped by and in the image of western capitalism. A cursory look at these societies negates the equation of capitalism equaling prosperity. One way to look at the system is to suggest a differential system of distribution within countries (favoring the governing classes), and between countries (favoring the core countries). This hierarchy of privilege can explain, to some degree, the existence of scarcity and deprivation in some social classes and some geographical areas under the sway of capitalism. While capitalism helps dissolve and destroy the hierarchy of pre-capitalist eras, it establishes a new hierarchy of its own with consequent deleterious effects.

The politics of capitalism. Another major claim often asserted vociferously is that capitalism equals freedom and democracy. Again, the empirical evidence of advanced capitalist countries is cited to stunning effect. The logic of market is truly democratic: one dollar one vote, more dollars more votes. Indeed, the market recognition of any human need is in proportion to the money endowment one commands. This leads to the hierarchy of the elite. However, there is another side to it. If you have money, you can overcome the barriers of caste, creed, race, and social status—an amazingly leveling phenomenon. In addition, anyone can strive to earn, to accumulate money (at least in theory), thus overcoming shortcomings of birthrights, conferred honors, etc. Since the universe of capital runs on the measuring rod of money, anybody with money can express freedom commensurate with that valuable commodity.

As for democracy, the record is at best mixed. We need only cite the varyingly undemocratic governments of today's Third World countries, but can also look to the easy historical co-existence of capitalism with fascism, militarism, and allied totalitarianisms. It is for this reason that critics of capitalism can, with some effect, decry the extant modes of democracy as, in reality, dictatorships of the bourgeoisie. We have some ways to go to achieve true democracy in the field of the economy as we have done in the sphere of the polity: one person, one vote!

The mainstream expositions assiduously avoid the issue of fairness or equitability (perhaps exploitation) in the market setting as a value judgment beyond the domain of scientific analysis. Is market price of labor (wages) a fair compensation for work in some sense? The question is obviated if we accept a market determination of personal or social values as not only inevitable, but inherently desirable. This view is buttressed by the notion of the social contract between capital and labor. Since, in this view, workers voluntarily agree to a specific wage (presumably market determined, directly or indirectly), there is no sense of unfairness or exploitation in this relationship. Perhaps. But what, as some have pointed out, if the workers have no choice but to enter into an agreement with capital, since they do not have their own independent means of production or survival? Could this, then, be a contract between un-equals subject to nullification?

Generally, it is claimed that capitalists sacrifice through saving (not consuming) and workers do not, hence the extra share for the capitalists is justified. But, if one examines this closely—just as a thought experiment—one may arrive at a divergent conclusion. When investment goods (machines) production increases to expand investment, the consumption goods (bread) production declines, thus leading to relatively higher prices for consumption goods—the marketplace expression of belt-tightening. But who ends up consuming less bread as a result? The workers or capitalists? And when investment does expand the overall production, who controls the additional benefits of production? Workers or capitalists? The best we can say is that, through a trickle down, workers also gain at the end. They do, but in relation to each one's sacrifice? A corollary of this thought experiment is that the slave and the serf could clearly see the obvious exploitation by the overlord as expropriation of the produced value. The expropriation of surplus under capitalism is veiled through the mechanism of the market that, like many things in the system, renders it invisible.

A more formal presentation equates land, labor, and capital as factors of production—each factor in turn receiving its due desserts—the so-called theory of marginal productivity. Since all produce is exhausted as a result of compensating the three contributing factors, there remains no social surplus to fuss over, and hence no possibility of exploitation. The fact that it is the landlords and capitalists, not the inanimate objects—land and capital—who are receiving the share of the produce, without contributing their labor directly to the process, remains elusive. Here, there is no friction, conflict, or contradiction of subordination. Therefore, there is no reason for resistance to the system or appeal for reform.

Capitalism and human beings. Lastly, how is the logic of capitalism related, if at all, to the nature of social construction and the essence of human beings? Here, the mainstream view is crystal clear. Human beings are, and have always been, essentially homo-economicus—i.e., they are by nature self-interested (selfish?), individualistic (self-centered?), acquisitive (greedy?), and rational (calculating?). And if you do not agree, observe them in a market setting, we are told. Sure enough. How would anybody, with some modicum of common sense, react to the exacting conditions of survival in a market setting? Besides, the notion of labor as a commodity, something produced for and purchased from the market, is repeated incessantly in the same breath with land and capital. Labor is co-equal with land and capital, to be bought and sold and pressed into service for production at the beck and call of capitalism.

This, in a way, is an example of dehumanization *par excellence*. There are no human beings in this model, just commodities—commodities that acquire the social attributes of interacting with each other in exchange through the market. That the commodities for sale represent purposeful labor of a human being is lost in the shuffle. People do not interact with, or depend on, or express their sociality with other people—all this is mediated in the market through commodities' purchase and sale. There is no temporal transcendence, no reform, no resistance—the peaceful reproduction of the capitalist system continues. Of course, one still has to confront the daily world of capitalism full of roiling resentments, wars of conflicting interests, and general chaos of humanity under duress. But, still capitalism continues on.

No introduction can be concluded without some future prognosis of the system. This is the trickiest area in social sciences, hence left untouched for better or worse. However mystical this terrain, one can take a bit of a risky peek. The economic side of the system is prone to recurring ebbs and flows—expansion, contraction, recession, depression, and stagnation and resurgence yet again. Many theorists have suggested tentative remedies of reform and control of the system. Some have argued for a structural rearrangement. Others have argued for a romantic return to the earlier (more pristine) formulations. One thing is clear. Through the zigs and zags, trial and error were built into the ever-changing nature of the system, and an abiding drive of humanity has been to raise its level of humane consciousness. The system of capitalism, by the end of the 21st century, is likely to be a lot more democratic, with freer access to its productions, less rapacious of environment, and more receptive to the better instincts of human beings.

The Encyclopedia of Capitalism. Any work with pretensions of being encyclopedic is a daunting enterprise. To carry out this project on the topic of capitalism—itself a tricky subject—is doubly intimidating. Even so, the organizing principle of the work is to present topics and articles that describe the historical evolution of capitalism as a system of social relations in production and distribution. This evolution essentially relates to a transformation from feudalism into the meteoric rise of industrialism. At the same time, a system of ideas came into social acceptance after vigorous debate. We present this strand of ideas as a history of economic thought—a new lexicon, a different perspective, the capitalist paradigm. We also present the advance of capitalism through wars, colonization, and imperialism to the modern day: the ultimate triumph of unchallenged domination. This encyclopedia covers not only the spread of the system itself but its myriad benefits to humanity that make it so universally appealing: the "Why?" of capitalism, if you will.

Here, along with commentaries, debates, and points-of-view, we strive for objectivity and balanced perspective. Yet, we emphasize the nature of the system's vigor that compels and nourishes innovation of technique as well as organization—the real secret of capitalistic success. Lastly, we include reference to capitalism's effect on the overall condition of humanity both in the United States and internationally. To accomplish this task, more than 700 articles were prepared with the following features in mind:

- Descriptions of major world countries and their economic histories as they relate to capitalism.
- Biographies of winners of the Nobel Prize in Economics and how their theories and discoveries affected capitalism.
- Profiles of the top global companies and explanations of how each employed the tenets of capitalism in achieving their global status.
- Descriptions of all U.S. presidential administrations with a focus on how their policies affected the development of American capitalism.
- Historical biographies of American and international capitalistic entrepreneurs and how their ideas, inventions, or discoveries led to the creation of enterprise.
- More than 100 article entries on major historical events, social movements, technological advances, and personalities that affected the development of capitalism.
- Definitions of economic business terms and theories relating to capitalism.

More than 100 authors, affiliated with universities, research organizations, and business activities around the world were invited to write on the topic of their specialization. We hope the Encyclopedia will serve as a useful and outstanding reference work, as well as a resource for teaching courses in economics, political science, history, international relations, sociology and other related fields.

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List of Articles

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1200s	Emergence of regional trade in Europe under feudalism	1/289
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	Japan expands trade along Asian Pacific rim	2/438
1600s	Expansion of slave trade to the New World	2/540
	Permanent settlements established as colonies in Americas, Africa, and east Asia	2/540
	Mercantilism and colonialism develop as primary economic systems	1/146
	England increasingly exploits coalmining	3/869
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	American Declaration of Independence sets precedent against colonial rule and taxation	3/874
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	French Revolution expands populist rule	1/318
	First textile mills, cotton gins, and banks in operation in United States	3/874
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	Erie Canal construction is begun in United States	3/874
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SOURCES. “Commanding Heights: Timemap” www.pbs.org; “Top 100 Business Events” www.thestreet.com; Harry Landreth and David Colander, *History of Economic Thought* (Houghton Mifflin, 1993).

Encyclopedia of CAPITALISM

VOLUME I

A

accounting

IDENTIFYING, MEASURING, and communicating economic information is the process of accounting that permits informed judgments and decisions by the users of the information. Accordingly, accounting is not an end in itself but an information system that measures, processes, and communicates financial information about an identifiable economic entity. An economic entity is a unit that exists independently and includes both for-profit and not-for-profit organizations. Examples include a business, a hospital, a governmental body, a church, or a professional football team.

Accounting should not be confused with bookkeeping. Bookkeeping is the process of recording financial transactions and maintaining financial records. Accounting, on the other hand, includes the bookkeeping function, but goes well beyond that. While bookkeeping is an important part of accounting and is mechanical as well as often repetitive in nature, accounting includes design of accounting systems, interpretation and analysis of data, and communicating this information to its intended users.

Who benefits from accounting? As the definition of accounting indicated, after identifying the economic events having financial consequences, the accountant measures, records, and communicates this information. The accounting information may be communicated to two main groups: Insiders (people belonging to the organization) and outsiders, to help them make sound business decisions.

Inside users include: Management, which has the responsibility for operating a business and for meeting its profitability, liquidity, and investment goals; and other non-management employees who may need the information to help negotiate contracts with management, salary increases, and other benefits.

Outside users include: Existing and prospective owners (investors) who have the highest stake in the company. They would like to know if they are making enough money on their investment. If they donated money to a charitable organization, their interest would be to ensure the money was spent on the purpose it was meant for. Potential investors judge the prospects for a profitable investment using the information provided by the accountants in the financial statements.

Accounting information provides detailed pertinent data that help creditors assess the profitability of the debtor and hence the chances of the return of their capital together with the interest. Potential creditors are interested in making the assessment of whether the company will be able to pay back its debts when they become due. Creditors would also be interested in assessing the prospects of the continuity and the existence of the company in future. Accounting information provided in the financial statements, when used with other criteria, may be a very useful tool in making such determinations.

Accounting information also helps customers and clients get the answers to their concerns that may include questions such as: Will the company survive long enough to honor its product warranties or provide after-sales service provided in the sales agreement? Accountants have developed analytical procedures that provide answers to such concerns.

Government, at all levels, depends on the TAX revenues to finance its operations and business. Companies and individuals pay many types of taxes. These taxes are based on net sales (excise and sales tax), net income (income tax), or on some other basis. Whatever tax amount is computed, it is the accounting information that is used as the basis to compute the taxes.

Types of accounting. There are mainly two types of accounting: Managerial accounting that is geared to the needs of the internal users in the company and financial accounting, which is basically meant for the external users.

Managerial accounting provides internal decision makers working for the company at various levels information that is needed for making sound business decisions, relating to profitability and liquidity of the company. The reports produced by the management accountants are called management reports. The range of these reports may include production department cost reports, product cost reports, direct labor cost reports, sales force traveling expenses in a particular area, expense reports of various departments, budgets, variance analysis, and projections. These reports help management identify areas of relative strengths and weaknesses and focus on increasing the efficiency at various levels and measure the effectiveness of the past decisions. In essence, these reports relate more to the day-to-day operations of the business and do not follow the accounting principles known as GENERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP).

Financial accounting, on the other hand is primarily focused on the information needs of the outside users, including creditors, investors (owners), prospective investors, governmental and regulatory agencies, and the public in general. Accounting information is provided to the external users through reports called FINANCIAL STATEMENTS. These outside users make decisions pertaining to the company, such as whether to extend credit to a company or to invest in a company. Consequently, financial accounting information relates to the company as a whole, while managerial accounting focuses on a part or a segment of a company. It follows, therefore, that financial accounting is “macro” whereas managerial accounting is “micro” in nature.

Because of the diverse type of businesses companies may engage in, it is imperative to use uniform standards to record, process, accumulate and communicate the accounting information to outsiders. In the absence of such reporting standards or principles, accountants of a company or different companies may report their financial statements differently from year to year based on their personal goals or preferences. This would make the comparisons of financial statements very difficult from year to year and, at times, would be misguiding.

At the very early stage of its development, the accounting profession recognized the need to address this issue of adopting uniform standards for the preparation and reporting of financial statements. These standards or guidelines developed over a period of time, collectively, are called GAAP. All the external financial reports should be prepared in accordance with the GAAP. GAAP also requires providing adequate disclosures in the notes to the financial statements. By doing so, chances are that different readers or users of the financial statements will interpret the data in the same way and the leeway for subjectivity is minimized. The five organizations most influential in the establishment of GAAP for business and non-business organizations are the American Institute of Certified Public Accountants (AICPA), the Financial Accounting Standard Board (FASB), the Governmental Accounting Standard Board (GASB), the SECURITIES AND EXCHANGE COMMISSION (SEC), and the American Accounting Association.

With the increase in cross-border financial activities, there has been an increased focus on international accounting diversity. The International Federation of Accountants (IFAC) established the International Accounting Standards Committee (ISAC) in 1973 (now replaced by International Accounting Standards Board) in order to address this emerging issue. The ISAC has 142 accounting organizations from 103 countries as its members. More and more countries are recognizing International Accounting Standards (IAS) as acceptable standards for reporting their financial statements.

As a further measure to protect the interests of the financial statement users, SEC requires all the public companies whose stocks are listed on stock exchange to include “audited” financial statements in their annual reports. An audited financial statement means that a Certified Public Accountant (CPA) has to examine the financial statements of the company to give the reader an assurance that GAAP was followed in recording and processing the financial transactions as well as reporting standards required by GAAP have consistently been followed by the company. CPAs conduct their audits in accordance with Generally Accepted Auditing Standards (GAAS). The essential role of CPAs is to provide attestation and assurance services.

Basic financial statements. GAAP requires businesses to prepare and include four types of financial reports and include them in the annual report of the business. These reports, when used collectively, provide external users enough information about the financial position of a company and the results of its operations.

A balance sheet, also called the statement of financial position, shows the total economic resources at the disposal of a company on the date of the report and the sources of those resources. These economic resources, used to generate revenues for the company, are also called assets. By definition, assets are the economic resources owned by a business that are expected to benefit future operations. Examples are cash, amounts receivable from customers, inventory to be sold in the future, machinery and equipment used in production, furniture used in the office, land and building, etc. Assets can also be intangible (non-physical) such as patents, trademark, goodwill, software, etc. Assets have value to the company because it uses them to run its business.

The accounting system is based on a double entry system. Thus, for every resource, there has to be a source. The sources of these resources (assets) or claims on the resources are called equities. These sources can be either from the owners (owners' equity) or from the creditors (creditors' equity) or from both the sources. The relationship between the two may be expressed in any of the following ways:

Resources = Sources
Assets = Equities
Assets = Creditors' Equity + Owners' Equity
Assets = Liabilities + Owners' Equity

The last equation above is called the accounting equation and a balance sheet merely further provides details of the two sides of this equation.

Liabilities are present obligations of a business to pay cash, transfer assets or provide services to other entities in the future. Among these obligations are the debts of the business, amounts owed to suppliers for goods or services bought on credit (called accounts payable), borrowed money (for example money on loans payable to banks), taxes owed to the government, and services to be performed.

The equity of owners, shareholders, or stockholders represents the amount invested by the investors as CAPITAL. It is the claim of the owners to the assets of the business.

A company's assets are financed either by creditors, investors (owners or shareholders), or by both. Stockholders' equity, thus, is the portion of the assets financed by (owned by) the investors. Owners' equity is therefore also called the residual interest or the residual equity in the assets of the company. Owners' equity comes from two sources: a) contributed capital, which is the cash or other investments in the business by the owners; and b) earned capital, which is the earnings of the business kept in the business. It follows that owners' equity is increased by capital contributions and earnings of the business and decreased by the dividends paid out to shareholders and losses incurred by the business. Earned capital is also called retained earnings. Since the amount of the assets of a business changes continuously as a result of its operations, the balance sheet is ever-changing and therefore, at a point in time the financial position of a business will be different from other points in time.

In summary, by looking at the balance sheet of an entity, and comparing it with the balance sheet of the previous period, its user can ascertain what economic resources are at the disposal of the company, how they are financed, and what changes took place over a period of time.

The income statement, also called the statement of income, statement of earnings, or statement of operations, reports the revenues and expenses for a period. The excess of revenues over expenses is called net income. An accounting principle, called the matching concept, is applied in recognizing the revenues and expenses for the period. The term, PROFIT, is also widely used for this measure of performance but accountants prefer to use the technical terms net income or net earnings. If the expenses used in generating the revenue exceed the revenue, the excess is the net loss for the period.

GAAP requires that financial statements should be prepared in accordance with the accrual basis accounting principles. The matching concept is the essence of accrual basis accounting. Therefore, an understanding of the matching concept is important to grasp the concept of the accrual basis accounting. In its simplest form, the matching concept requires that all the expenses incurred to generate a period's revenue should be recorded (matched) in the same period regardless of when paid. Conversely, if the expenses of the next accounting period are paid in the current period, they cannot be deducted in the current year; they need to be deducted (matched) with the revenues of the next year.

Accrual basis accounting also requires that revenues should be recorded when earned, regardless of the timing of the cash receipts. There is another form of accounting, called cash basis accounting, which is usually used by very small businesses. It is based on the actual cash receipt and payment system. Therefore, under this system, revenue would not be recognized (included) in the income statement until actually collected. Similarly, only those expenses which have actually been paid, are recorded as expenses. Because, by choosing the timing of the payment of expenses or collection of revenues, income of the business can be manipulated, GAAP does not recognize the cash method of accounting as an acceptable method of reporting income.

The statement of retained earnings is also sometimes called the statement of owners' equity. This statement explains the changes in retained earnings during the accounting period. Such changes are usually due to the net income of the business, which increases the retained earnings, and dividend payments to shareholders which decreases the retained earnings.

While the income statement focuses on a company's profitability goal, the statement of cash flows is directed toward a company's liquidity goals. CASH FLOWS are the inflows of cash in the business (from customers, loans from banks and individuals, sale of assets, capital contributions, and investment income, etc.) as well as outflows from the business (payments to suppliers, employees, purchase of new equipment, etc.). The statement of cash flows summarizes the net cash flow in each of the three types of activities: Operating activities of business, investing activities, and financing activities. A user of this financial report, after carefully reading this statement can see how much cash from different sources was collected, and how much and in which areas it was spent.

GAAP and organizations influencing GAAP. It is important for the user of a financial statement to understand the measurement rules that were used in developing the information provided in the financial statements. These GAAP rules recognize the importance of adopting uniform rules for treating financial transactions and issues and presenting them in the financial statements. In the absence of these rules, the management of a company could record and report financial transactions as it sees fit and comparisons among companies would be difficult. GAAP takes away this liberty from the individual entities to use their own methods of reporting the financial information and brings uniformity in the accounting practices of different companies.

Historically, it was the SEC that took the initiative to work out detailed rules relating the recognition and measurement of accounting transactions and reporting them in the financial statements. However, the SEC very soon recognized that the development of accounting standards should be in the hands of the professional accountants. Since the late 1930s, the American Institute of Certified Public Accountants (AICPA) gradually took over the major work of standard development through its sub-organizations. From 1939 through 1959, the AICPA Committee on Accounting Procedures issued 51 Accounting Research Bulletins relating to various accounting issues. In 1959, AICPA created the Accounting Principles Board (APB), which was charged with the responsibility of guiding on matters of accounting principles. From 1959 until 1973 when it was replaced by another body of AICPA, Financial Accounting Standards Board (FASB), APB issued 31 "opinions" that accountants are required to follow while preparing the financial statements.

APB was replaced in 1973 by an independent, full-time, seven-member Financial Accounting Standard Board (FASB). The FASB issues Statements of Financial Accounting Standards and there are currently 148 such statements. A few more statements on some new emerging issues were in the development stage at the time of the writing of this article in 2003.

Governmental Accounting Standard Board (GASB) established in 1984 is responsible for issuing accounting and financial accounting standards in the government area.

The SEC, created under the Securities and Exchange Act of 1934, works very closely with the accounting profession to influence its work. The SEC indicates to the FASB the accounting topics it believes should be addressed. The American Accounting Association, consisting largely of accounting educators, influences GAAP by conducting research and studies.

Certified Public Accountants. Financial reports should be prepared in accordance with GAAP. But what is the assurance that GAAP has been followed consistently and if a departure from GAAP was necessitated, what was the support or justification for such a departure? Certified Public Accountants (CPAs) are charged to answer this question by providing assurance and attestation services. In their role as the auditor, CPAs are independent of the company's management. An audit is an examination of the company's financial statements as well as an evaluation of the accounting system, accounting controls used by the company, and records maintained by the company. CPAs state their opinion of the fairness of the financial statements and evidence gathered to support them in the Independent Auditor's Report, which is included in the annual report of a public company. The CPA, in this role as an auditor, conducts the audit of the financial statements in accordance with Generally Accepted Auditing Standards (GAAS).

The SEC requires that all the public companies should include their audited financial statements in their annual reports. The accountants' report does not preclude minor or unintentional errors and omissions in the financial statements. However, it does provide an assurance to the users of the financial statements that, on the whole, the financial statements are reliable.

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SYED MOIZ, PH.D.
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Adams, John (1735–1826)

AMERICA'S FIRST vice president and second president seemed a bundle of contradictions. He was a leading advocate for American independence who admired British institutions; a fiery radical who became a pillar of order and conservatism; a revolutionary who defended British soldiers in court; an accomplished diplomat who was all but impossible to deal with; a champion of the rights of man who squelched freedom of speech; an architect of democracy who distrusted the people; and a politician who hated politics. Yet with all the contradictions of his long life and complex personality, John Adams was one of his nation's greatest statesmen.

Born on a small farm in Braintree (now Quincy), Massachusetts, outside Boston, Adams proved to be a voracious reader and an outstanding scholar. At the age of 16 he entered Harvard University and graduated in 1755. His parents hoped he would enter the ministry but he studied law in the evenings while teaching school in Worcester, Massachusetts in the day. After admission to the bar, he started a law practice in Braintree. In 1764, he married Abigail Smith, together sharing a love of books. They would eventually have five children. Although Adams would be known for his honesty, courage, and patriotism, and recognized as a legal and political thinker, he would also be known for his stubbornness, irritability, egotism, and suspicion of others.

The events leading to the AMERICAN REVOLUTION gave Adam's life new purpose and showcased his abilities as a lawyer, politician, and revolutionary. Displaying courage, in 1770, he successfully represented a British officer and six soldiers accused of murder during the Boston Massacre, but rejoiced when tea was dumped in Boston Harbor during the Boston Tea Party, and wrote masterful attacks on British tax policies in the Boston *Gazette*.

After election to the First Continental Congress, which convened in 1774, and the Second Continental Congress, which first met in 1775, he became an early and ardent advocate for American independence and proposed the appointment of George WASHINGTON as commander of the American Army assembled outside Boston. Even though written by Thomas JEFFERSON, Adams served on the committee assigned the task of drafting the Declaration of Independence and led the effort on the floor of Congress to secure its adoption in July, 1776. As Chairman of the Continental Board of War and Ordinance, he was in effect a single-man department of war. In 1779, he served as the chief drafter of the Massachusetts Constitution.

Adams believed that all men were created equal, but in a limited way. He argued that men are born equal in certain natural rights and desires, but unequal in characteristics like talent, wisdom, and temperament. This inequality of ability results in inequality of property and thus inequality of social status. He thought those favored by nature form an aristocracy of merit, an elite destined to rule for the good of society. These rulers are best able to fulfill the chief function of government: control man's passions. Adams also believed man had an inclination toward forming governments and without a ruling aristocracy of the "wise and good," anarchy results.

Therefore, Adams opposed the concept of democracy granting political equality to all. He believed in a republican government of aristocratic representatives. Because his ideal aristocracy was based on merit, he disfavored the hereditary aristocracy prevalent in Europe. His views also led him to support independence, for although he admired British institutions of governance in the abstract, including parliament and constitutional monarchy, he saw Britain as having slipped into corruption and ruled by a degenerate, unmeritorious aristocracy. He also believed in the protections of separation of powers within government to prevent concentration of power, even in the hands of aristocracy, but because of continual fear of mob rule, he found the American Constitution too liberal because of the popular elections it sanctioned.

Adams was sent to France to assist with the negotiation of a treaty of alliance. By 1780, he was back in Europe on a mission to obtain trade agreements and loans with the Netherlands and France, and, along with Benjamin Franklin and John Jay, negotiated a peace treaty known as "The Treaty of Paris," which was signed on September 3, 1783, formally ending the war. He was named the United States' first ambassador to Great Britain in 1785.

In 1789 and 1792, Adams was elected vice president serving under Washington, but found his eight years in the largely ceremonial position frustrating. When opposing political factions began to form around Secretary of the Treasury Alexander HAMILTON and Secretary of State Thomas Jefferson, Adams became a principal leader of the Hamiltonian forces that coalesced into the Federalist Party. As the Federalist nominee for president in 1796, Adams defeated Jefferson, and, under the terms of the Constitution at the time, Jefferson became vice president. Despite the victory, Adams' presidency soon became one of turmoil and disappointment.

When in 1797 American diplomats were asked to pay a bribe to three French agents (referred to by Adams as X, Y, and Z) to obtain a treaty with France, Americans were enraged and an undeclared war developed between the United States and France. Despite demands that a formal declaration of war be adopted, Adams bravely resisted the pressure feeling that the country was unprepared for such an engagement, and he eventually reached an understanding with France in 1800. Although a full-scale war was prevented, Adam's popularity was damaged and the Federalists were split.

Believing that foreign agents and spies were fomenting trouble, the Federalist Congress passed, and Adams signed, the Alien and Sedition Act in 1798. This measure made it harder to become a citizen and empowered the president to deport aliens deemed troublemakers. More importantly, it sought to silence domestic opposition by permitting the criminal prosecution of those falsely or maliciously criticizing the Congress or the president. The law was then used against Jeffersonian Republican newspapermen. Due to these unpopular policies, Jefferson defeated Adams in the bitter election of 1800.

After leaving the White House, Adams returned to Braintree and his books, and he and Jefferson rekindled their friendship in a remarkable series of letters. Both died on the same day, July 4, 1826, the 50th anniversary of the Declaration of Independence.

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Adams, John Quincy (1767–1848)

THE SIXTH PRESIDENT of the UNITED STATES, John Quincy Adams was born in Braintree, Massachusetts, the oldest son of John ADAMS. At age 10, during the AMERICAN REVOLUTION, he began to accompany his father on diplomatic trips to Europe and attended schools in Paris, FRANCE, and Leiden, the NETHERLANDS. Adams returned to attend Harvard University and, after graduating in 1787, he studied law and began a legal practice in 1790.

Adams' public support for President WASHINGTON's neutrality policy won him an appointment as minister to the Netherlands in 1794. After three years he was appointed minister to Berlin. In 1801, his father, President John Adams, recalled him immediately following the election of Thomas JEFFERSON.

After several years in private practice, Adams was elected to the U.S. Senate. His support for President Jefferson's embargo, however, enraged his Massachusetts constituents who forced him to resign his seat.

In 1809, Adams once again left private practice and a professorship at Harvard to become President James MADISON's minister to Russia. In 1814, he served as chief negotiator to end the WAR OF 1812, and became minister to Great Britain the following year.

President James MONROE recalled Adams in 1817 to appoint him secretary of state. Adams had developed many relationships in Europe and remained on good terms with the heads of state and the diplomatic corps. However, he continued to believe in the U.S. policy of neutrality towards European affairs. He also negotiated several agreements, including getting SPAIN to give up its claims on Florida, and with Britain over the boundaries of the Oregon Territory and for trade with the British West Indies. Yet his most significant contribution to foreign policy was drafting the Monroe Doctrine, which proclaimed that the United States would oppose any European intervention in the Americas.

Adams was one of four candidates running to succeed President Monroe in 1824. Andrew JACKSON received the most popular and electoral votes, but failed to carry a majority. That threw the election to the House of Representatives for the first time in U.S. history.

Henry Clay had great influence in the House, but had finished fourth. Only the top three candidates could be considered. Both Adams and Clay believed that Jackson would be a dangerous president. After meeting with Adams, Clay had his supporters vote for Adams, allowing Adams to win the presidency. Shortly thereafter, Adams announced that Clay would be his secretary of state, causing Jackson supporters to declare a "corrupt bargain" had been struck.

As president, Adams supported the Bank of the United States, a national tariff to protect domestic industries, greater infrastructure improvements such as canals and railroads, and government involvement in education and the sciences. A hostile Congress, however, kept him from enacting most of his proposals.

Congress did send him a Tariff Act in 1828 that raised tariffs on many manufactured goods to 50 percent of their value. The Act protected domestic industries in New England and the western states, but harmed southerners who bought most of their goods abroad. It also reduced British demand for southern cotton. Some Jackson supporters who normally opposed such tariffs supported the increases, with the hope such outrageous increases would either kill the bill altogether, or would kill Adams' chances of re-election if passed. Adams signed the bill, termed the "Tariff of Abominations," into law, virtually ending his chances for re-election.

Strong southern opposition to the bill led to a new movement for nullification, similar to the Virginia and Kentucky Resolutions of 1798. Southern leaders such as Vice President John Calhoun took the view that the states could nullify actions of the federal government. They also began to discuss more seriously the right of states to secede from the Union.

At the end of four years, Jackson swept Adams from power in 1828, and Adams returned to Massachusetts, content to finish his life in private practice.

Despite the fact that Adams did not seek office nor campaign for it, his friends and neighbors elected him to the House of Representatives in 1830. Adams found himself returning to Washington.

Congressman Adams remained prominent as an anti-slavery advocate. He spent more then a decade fighting to end the gag rule that prevented Congressional debate over the slavery issue. He repeatedly submitted petitions calling for the end of SLAVERY, in violation of House rules. Eventually the House voted to overturn the gag rule. Less successful was his attempt to amend the Constitution in 1839 to declare that no one born after 1845 could be kept in slavery.

Adams also donated his legal services to a group of Africans who had mutinied on the slave ship *Amistad*. Adams argued that these men who had been bound for slavery were free men, kidnapped from Africa, and should be allowed to return. The U.S. Supreme Court agreed and allowed the men to return to Africa.

Adams continued to be a vocal advocate for internal improvements as well as investment in scientific research. His work focused on founding the Smithsonian Institute and a failed attempt to establish a federal astronomical observatory.

Adams was also a vocal opponent of the MEXICAN-AMERICAN WAR. For 10 years, he had thwarted attempts to annex Texas before the annexation passed in 1845. In 1848, as he was standing on the floor of the House, protesting a Congressional grant of honorary swords to the men who won the war, he suffered a cerebral stroke and collapsed. He died two days later.

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Afghanistan

A LAND-LOCKED COUNTRY bordered by IRAN, Turkmenistan, Uzbekistan, Tajikistan, CHINA, and PAKISTAN, Afghanistan has an area of 251,739 square miles (a bit larger than France), and has a population of 27 million people. Four ethnic groups inhabit the majority of Afghanistan, making up 88 percent of the population. The Pashtun people comprise 38 percent, the Tajiks 25 percent, the Hazara 19 percent, the Uzbeks 6 percent, and the remaining 12 percent are categorized as "other."

Afghanistan has never experienced an industrial revolution, mostly due to the near constant state of war in the country and partly because of the extremely rugged terrain. Without an industrial revolution, the major industries in Afghanistan have remained nearly unchanged in the past 200 years since its lawful foundation in 1774. The major industries are textiles and rugs, fruits and nuts, wool, cotton, fertilizer, soap, fossil fuels and gemstones. Afghanistan's GROSS DOMESTIC PRODUCT (GDP) in 2000 was $21 billion and the exchange rate of an Afghanis to a U.S. dollar in January, 2000, was 4,700:1.

Export commodities include opium, fruits and nuts, hand-woven carpets, wool, cotton, hides and pelts and precious and semi-precious gems. In 2001, exported commodities totaled $1.2 billion. Major import commodities include capital goods, food and petroleum products and most consumer goods. The import commodities totaled $1.3 billion in 2001. It is no surprise then, that in 1996 Afghanistan claimed $5.5 billion in external debt.

In January, 2002, $4.5 billion was collected at the Tokyo Donors Conference for Afghan Reconstruction following the United States–led removal of the Taliban regime. The money will be distributed by the World Bank to the Afghan Interim Authority, headed by Chairman Hamid Karzai, and is slated for rebuilding the country's infrastructure.

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Afrocentrism

AT THE SURFACE LEVEL, Afrocentrism is a variation on ethnocentrism in general and Eurocentrism in particular, designed to circumvent the inherent flaws of both, and yet to disclose and assert the self-reflective African consciousness. Based on a worldview that is derived from an ideologically constructed African perspective based on African ideals such as balance and harmony, Afrocentrism calls for "literally, placing African ideals at the center of any analysis that involves African culture and behavior." Though, simply put, it means looking at world with African eyes whose gaze is inspired by African experiences, its exponents are careful to qualify that "To be an African is not necessarily to be Afrocentric."

Its constitutive elements include, but are not limited to, Egyptcentrism, Negritude, Black Nationalism, and Pan-Africanism. Articulated by a number of competing schools of thought, the Afrocentric project alternately seeks: authenticity; recognition for its uniqueness; parity with every culture including European; and centrality as torch bearers of the first human civilization, as well as the progenitors of uniquely American music and other cultural forms. Moreover, it is defined by its zeal to contribute to the world civilization from a non-European visionary perspective. To that end, broadly speaking, it seeks influence in five main areas: 1) axiology, 2) education, 3) culture, 4) literature, and 5) politics.

The pursuit of authenticity is executed in two realms: Afrocentricity, that is, acquisition of agency and action and Africanity, or means to broadcast identity and being. In those realms, Afrocentric assertions can be summarized in terms of Edward Said's contrapuntal method, Malcolm X's retrieval method, and Frantz Fanon's critical self-evaluation method. The contrapuntal method is supposed to provide missing links in the collective memory and insert a multi-perspective corrective connection into historical narratives; the retrieval method is designed to recover forcefully alienated aspects of the self, (name, language, culture, art, religion, dress, cuisine, ritual, etc.) and restore them to their existential significance; and, finally, the critical method grew out of the need to for internal reform and improvement. Afrology, yet another related construct, denotes a particular method of knowledge production that is characterized by "the Afrocentric study of African concepts, issues and behavior."

Rooted in the politics of recognition, Afrocentrism seeks to rectify problems of both non-recognition and mis-recognition of the African identity. Typified by Ralph Ellison's novel, *Invisible Man*, it is based on the underlying conception that, to a large extent, our identity is shaped by recognition or mis-recognition of others, and to use Taylor's words, "a person or group of people can suffer real damage, real distortion, if the people or society around them mirror back to them a confining or demeaning or contemptible picture of themselves." The exponents of Afrocentrism seek recognition on their own terms by way of substantive affirmation of African ideals, values, symbols, heroes, and visions.

Its visionary goals, and here one could refer to Frantz Fanon for a clear example, are to not to create a third Europe but to "try to create the whole man, whom Europe has been incapable of bringing to triumphant birth."

Concerning axiology, or conceptualization of values, Afrocentrism at its philosophical center involves a revaluation of values in matters pertaining to morality, the arts, science, religion, economics, politics, laws, and customs, etc., and it seeks to disentangle them from hegemonic and self-perpetuating cultural claims of the West. Its approach to education involves a critique of Eurocentric claims of universalism and permanence. It is in the writing and teaching of history, and history of civilizations above all, that (the non-essentialist and non-Manichean) Afrocentrism calls for a multicultural and multi-perspective approach.

If art "expresses the transformation of the spirit in the pursuit of value," and if culture can be seen, as Mathew Arnold has put it, as the pursuit of perfection, then Afrocentrism offers a definition of perfection significantly different than that of the West. But invested in the concrete historical context of the UNITED STATES, this definition gains added significance as a liberation aesthetic: "It has long been a commonplace that the achievements of the black music have far outstripped those of black literature," observes Henry Louis Gates, Jr., and, therefore, black intellectuals such as Albert Murray have "sought to process the blues into a self-conscious aesthetic, to translate the deep structure of the black vernacular into prose." This literature is to be a "statement about perseverance and about resilience and thus also about the maintenance of equilibrium despite precarious circumstances and about achieving elegance in the very process of coping with the rudiments of subsistence."

Derived from its institutional memory of slavery and colonialism, its politics is crystallized through various readings of the civil rights and human rights movements and, centrally focused on human liberation.

What underlies all five areas—at least from the perspective of non-Manichean and non-universalist Afrocentrism—is a conception of history, culture, and society that is open to and characterized by numerous perspectives, voices, and methodologies. It seeks, to use Mikhail Baktin's terms, a public space capable of inspiring and accommodating polyphony—an orchestra-like social interaction with each voice having its place and significance—and heteroglossia, that is to say, a wide variety of speaking consciousnesses, each with its own agency and autonomy.

Like many other ideological formulations, Afrocentrism, too, has its moderate and radical as well as essentialist and non-essentialist versions. The non-essentialist formulation invokes a common historico-cultural experience of subjugation, and bases itself, to use Aimé Césaire's words, not on "a cephalic index, or a plasma, or a soma, but . . . the compass of suffering." This school limits the claims of its applicability only to Africans or even more narrowly, as W.E.B. Du Bois postulates it, to soul-searching and self-reconciliation by African-Americans.

The non-essentialists exhort that Afrocentricity is not ethnocentric in two senses: "It does not valorize the African view while downgrading others," and, "It is a systematic approach to presenting the African as a subject rather than object."

The essentialist school, however, sees much broader application based on the achievements and contributions of the Egyptian civilization, on the one hand, and by the universal significance of black music, art and politics—civil rights movement, in particular—on the other. The essentialist and non-essentialist schools also, roughly, overlap with Manichean, a point of view that divides the world into two morally irreconcilable opposites, and non-Manichean tendencies within the Afrocentric project.

Third, apparently antithetical, school symbolized by Albert Murrary and seen as integrationist is also, paradoxically, Afrocentric at its core: "In its bluntest form, their assertion was that the truest Americans were the black Americans." . . . [In their] discourse, American, roughly speaking, means black." This school, however, does not anchor its claims in African culture and history but in the black experience in the United States.

The Afrocentrism debate. The idea and theory of Afrocentrism has had its share of criticism and controversy. Some critics have accused Afrocentrists of promoting "bad" history in order to invent a glorious past and to "provide themselves with an ancient history with links to that of the high civilization of ancient Egypt." This, the critics claim, is a "myth based on the flimsiest kind of evidence. The Egyptians were a mixed people, as all Mediterranean people are mixed." The charges leveled against Afrocentrists include: poor scholarship, reverse racism, sectarianism, and pursuit of therapeutic education which amounts to projecting ideological self-glorification into the academy, through the trap door of agitation and militancy.

Critics of Afrocentrism raise many of the same objections that others have raised against Eurocentrism. The debate, both sides agree is, in part, a debate about the future of the United States and how this future will be impacted by the emergent forms, types and hierarchies of knowledge.

Most of the critics, writing from a mainstream U.S. perspective, allege that Afrocentrism will lead to multicentrism that will weaken the United States by promoting "fragmentation and ethnocentrism," in effect resulting in rejection of multiculturalism. The critics fear the Afrocentric project is propelling the United States towards *E Pluribus Pluribus* instead of *E Pluribus Unum*. It is also perceived as implicitly anti-capitalistic as it seeks to overthrow Eurocentrism, capitalism's overarching and unifying ideology.

A sublime Afrocentric response in the American context, however, was given by Du Bois, even before the current debate had formally started: "The history of the American Negro is the history of this strife, this longing to attain self-conscious manhood, to merge his double self into a better and truer self. In this merging he wished neither of the older selves to be lost. He would not Africanize America, for America has too much to teach the world and Africa. He would not bleach his Negro soul in a flood of white Americanism, for he knows that the Negro blood has a message for the world."

Afrocentrism as a method of critiquing Eurocentrism. The exponents of Afrocentrism argue that a colonizing system is premised on the demand that the history of a state should also become the history of its varied peoples. One task of Afrocentrism, they contend, is to furnish a diversity-enhancing critique of all-homogenizing Eurocentrism that aims at inculcating the same values and aspirations in all peoples. Unless they are subjected to severe criticism, the preponderant Eurocentric myth of universalism, objectivity, and classical traditions retain a provincial European cast. And therefore Afrocentrism challenges European hegemony in the realms of:

1. production and dissemination of information
2. naming of things
3. propagation of concepts
4. dissemination of interpretations.

The final aim is abolishing the dominance and hegemony of the Eurocentric view of reality on a multicultural society.

The future significance of Afrocentrism can be contemplated in the dual cultural context characterized by Americanization of globalization and ethno-diversification of America. African-American intelligentsia has played a pivotal role in the cultural life of the United States with the aim of diversifying it from within. Afrocentrism can, among other things, serve as a convenient short hand for comprehending and discussing the role of black intellectuals and artists in the ethno-diversification of the globalization process.

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agriculture

SIMPLY DEFINED, agriculture is the production of crops, but there is nothing simple about the importance of agriculture to human evolution. Agriculture has been and continues to be the foundation of the economies of many societies. Agriculture is not an unchanging system of production, but has been in a continual state of transformation throughout human history, interacting with and often acting as the catalyst for changing technological, social, and environmental conditions.

Early agriculture. Agriculture first developed within settled human communities in Africa. Specifically, there is the region of the Sahara that, at one time, was wetter than it is now. Little is known about the early farming communities of the Sahara, except that they did not rely on farming alone, but engaged in fishing and hunting and gathering activities as well. These communities seem to have cultivated grain crops. Due to environmental and climatic change they were pushed out of the steadily growing arid desert region of the Sahara to the Nile Valley and surrounding areas.

The Nile River Valley experienced seasonal flooding that produced rich silt deposits of minerals and highly fertile soil. The early settlers to this region lived communally in small kinship units. Inhabitants engaged in the cultivation and harvest of a wide range of seeds, fruits, tubers, and the wild nut-grass that is still grown today. In the beginning, subsistence farming was practiced, but as cultivation practices improved with invention and innovation of new farming practices and materials, including pottery, storage facilities, grindstones, sickles, wheels, ploughs, hoes, mattocks, ox-driven waterwheels, and cantilevered water-buckets to irrigate fields, SURPLUS production became possible and with it trade between kinship groups and eventually between communities throughout the region. The extension of land under cultivation and the increasing surplus made it possible for greater specialization in labor. Artisans, merchants, and administrators became possible occupations with the advance of surplus production within agriculture.

Surplus production in agriculture also made it possible and necessary to have more advanced means for organizing production. A system of crop management was developed. In addition, a system for meeting spiritual needs was also developed. Over time, the changes in agricultural techniques helped to create the basis for a highly centralized, theocratic society in the Nile River Valley that would eventually evolve into a monarchical society grounded in feudal, rather than communal, labor.

Another side effect of the successes in expanding agricultural output and generating a surplus was that it made possible what Thorstein VEBLEN called "conspicuous consumption" of the ruling elite. Farmers not only had to give up their surplus in kind to the elite but were also forced to perform surplus labor on public works projects. These projects were sometimes beneficial to the larger public, such as the production of irrigation networks. However, this surplus labor was often expended in the creation of monuments to the ruling elite, including the construction of the Pyramids, tombs to house the mummified corpses and some of the precious possessions of the elite (conspicuous consumption in death).

On the east coast of Africa, in what is now called Ethiopia, the Aksum Kingdom rose to prominence based on its agricultural prowess. Aksum was situated in the highlands that receive an ample amount of rainfall and has a relatively temperate climate. These conditions made it possible for the Aksum farmers to produce and harvest a diversity of plant life. A number of the world's major food crops originated from this one area in Africa, including coffee. This area was so rich in genetic plant material that, in the 1920s, Russian plant geneticist Nikolai Vavilov claimed that Ethiopia was one of just eight centers in which the entire world's stock of cultivated plants originated. Although this claim was later refuted, Ethiopia is, nevertheless, the origin of a number of species of wheat, barley, sorghum, millet, lentils, legumes, and other staple crops. The ancient kingdom of Aksum took advantage of its geographical and climatic advantages and a flourishing agricultural society was established. Being on the coast also gave it trading advantages. Trade with Mesopotamia and the Mediterranean states introduced terracing in the area, helping to increase land cultivation.

About the time of Christ, climatic change increased rainfall in Aksum so that crops could be increased to two harvests a year, even on poor soil. This allowed for the production of an agricultural surplus and led to specialization in trades, the rise of merchants, and the gradual formation of a ruling elite of Aksum kings. Aksum was so prosperous that it became a metropolis with satellite urban centers sprawling across the northern plateau of Ethiopia. Aksum became a trading center, controlling most of the trade on the east coast of Africa and the hinterland. It established long-distance trading relationships with INDIA, CHINA, the Black Sea area, and SPAIN.

The widening market for Aksum's agricultural goods resulted in continued expansion in production and more intensive use of existing farm areas. The result was environmental degradation. The rapid growth of Aksum generated not only an increased need for agricultural lands but also increased demand for fuels and construction materials. These factors combined to result in deforestation, as trees were felled to supply fuel, used in metallurgy, and for construction. Overuse of the soil and deforestation led to soil erosion. Aksum suffered a sharp drop in agricultural output that triggered a commercial and political crisis. These problems were exacerbated by another change in climate. This time average rainfall went down just as dramatically as it had earlier risen. The crisis in Aksum led to the collapse in the centralized power of the monarchy. Around 800 C.E. what was left of the royal elite moved, along with their retainers, to settle in current-day central Ethiopia.

But while Africa may represent the earliest agricultural communities, it had no monopoly on this development. Other agricultural communities formed independently in other parts of the world, mostly notably in CHINA in the Hwang Ho Valley, in Mesopotamia or the Fertile Crescent, the Indus River Valley in present-day Pakistan, and in MEXICO in Central America.

Colonialism and the beginning of an international food system. Settlements in western Europe are relatively recent, particularly in comparison to Africa, Asia, and Mesoamerica. From 500 to 1150 C.E., agriculture was largely based on a feudal system for organizing the production and distribution of agricultural goods. During this period there was a rise in a merchant class that traded agricultural goods produced on the feudal manors to the growing towns, which were dominated by self-employed artisans. The lords found that they could gain significant additional wealth by selling agricultural goods to these merchants. From 1200 to 1400 there were numerous revolts of the feudal direct-producers (peasants) in response to increased demands from lay and ecclesiastical feudal lords. However, most feudal direct-producers could not increase production sufficiently to meet these new demands on their output, forcing them to give up part of their family's subsistence, causing an increase in malnutrition and, in extreme cases, famines. The weakened state of the peasantry contributed to an increase in disease, including epidemics. The ensuing wars of resistance, famines, and epidemics led to many feudal serfs running away from the areas where the lords had authority, even if this meant abandoning relatively fertile for less fertile soil. Whole villages disappeared. The lords responded, eventually, by reducing their demands on the peasantry. In many cases, the crisis led to a complete abandonment of feudal relations in agriculture as lords sold or rented the land to farmers, who became self-employed like the artisans in the relatively prosperous towns.

In the 14th and 15th centuries western Europeans colonized Mediterranean and Atlantic islands, then north and west Africa and the Americas. Trade relations were expanded with eastern Europe, the Russian Steppes, and eventually central Asia in the search for food and fuel. Wheat was a central focus of new production and commerce. Exploration, colonization, and trade not only provided new sources of existing foods, but also introduced new foodstuffs into the European diet. Sugar cane, introduced from Asia, became one of the most important additions to the European diet, a major impetus for island expansion and colonization. The introduction of slave labor to sugar cultivation began in the eastern Mediterranean in the 12th century and then moved westward. Sugar was lucrative and demanding. Its production surpassed that of wheat. However, sugar production exhausted the soil requiring ever new lands and people to harvest it. Other crops that were, like sugar, not indigenous to Europe rose to prominence during this period, such as bananas, tea, coffee, and indigo. This was a period of sustained and widespread diffusion of plant genetic material around the world.

European agriculture benefited considerably from the transfer of such plant genetic material from the so-called New World. Two crops from the New World that became a staple for factory workers during the industrialization of Europe were corn and potatoes. These two crops offered lots of calories and made it possible to cheaply feed the worker population of Europe. European countries organized botanic gardens in the 10th century to collect plant specimens from around the world. Botanists would sometimes illegally remove plants from other countries in order to secure specimens for their research. Intellectual property rights were largely nonexistent, particularly in an international context, and the source countries would sometimes suffer serious economic harm as a result of

The spread of once-indigenous plants fueled the growth of population and trade in the 14th and 15th centuries.

losing control of plants that were the basis of lucrative foreign trade. Many of these plants would eventually become important commercial crops in the colonies and hybrids developed from such plants would improve yields on the slave plantations of the New World. Fortunes were made on these plants for British, mainland European and American companies. By the late 1800s, British and mainland European food supplies were coming from all over the world. The food and other agricultural resources flooding in from colonial possessions helped to fuel, sustain, and expand the European INDUSTRIAL REVOLUTIONs.

The agricultural basis of American hegemony. Originally, the European settlers to the American colonies brought European seed crops to establish a subsistence food supply. Many of these crops were unsuited to the environmental conditions in the Americas, and the settlers were forced to rely on indigenous crops, such as maize, squash, and beans. Many expeditions to America carried seeds to the new settlers for experimentation, and eventually many new plant species were added to the food supply and to plant species used for non-food purposes. Following the tradition of the botanical gardens of Europe, elites in the colonies had experimental stations built that would focus on the growing of cash crops in the New World. After American independence, this practice continued and plant experimentation took place on many plantations, including those of George WASHINGTON and Thomas JEFFERSON. Imported crop varieties would provide the basis for new hybrids, some of which proved useful, and the variety of subsistence and cash crops continued to grow.

The U.S. government played an important role in increasing American seed and plant diversity. The U.S. Naval fleets and U.S. embassies would often collect plant material from around the world and ship it back to the United States. But this approach was disorganized and in 1862 the United States Department of Agriculture (USDA) was formed and given powers to oversee plant collection and selective breeding. The USDA was able to speed up the development of new crop species by using extension agents and government-funded research sites for agricultural experimentation. The primary objective of the USDA was to significantly increase crop yields and, by any estimate, this new government institution was a success.

In 1926, Henry A. Wallace, who would later become first secretary of agriculture and then vice president of the United States, founded the first company devoted specifically to the commercialization of hybrid corn. This initiated patents for plant seed varieties. Before this innovation, seed was open-pollinated and farmers were able to reproduce seed needed for next year's crop. Under the new system of patented seed, farmers were forced to buy seed from capitalist firms specializing in the production of patented hybrid seeds before they could plant the next year's crop. This spurred private investment in plant research. Because hybrid corn increased yields and lowered the cost to farmers, it was widely adopted and by 1965 over 95 percent of U.S. corn acreage was planted with this variety. Because hybrid corn yields were so much greater than the original yields, the use of mechanization and hired labor increased.

At the end of WORLD WAR II, the military had accumulated a large store of nitrogen. The USDA, working with the military, created a special program to sell, at very low prices, this nitrogen to farmers as a substitute for organic fertilizers. Unfortunately, the highly concentrated form of nitrogen sold by the USDA damaged some plants. So, in the 1950s and 1960s breeders came out with new plant varieties that were bred to grow in nitrogen-rich soil. The richer soil made it possible to grow more plants in the same space, but the richer soil also allowed for the proliferation of weeds. The concentration of plants, and monoculture, also attracted more insects and plant disease. USDA provided a solution to the problem it had, in fact, helped to create by encouraging farmers to use insecticides, fungicides, and herbicides. This led to the growth of the agrichemical industry in the United States.

Green revolution. American hybrid corn breeding programs extended to the rest of the world through governmental and nongovernmental organizations. Primarily, this began in Mexico and extended out to other Latin American countries. It was the design of the U.S. government to create stronger economic ties between U.S. agribusiness firms and growers in these other nations. U.S. agrichemical companies, seed companies, and other agribusinesses set up divisions in Latin America for the sale of seeds, fertilizers, and other inputs to the Latin American market. As hybrid seeds were adopted, agriculture in Mexico and many other Latin American countries shifted from smaller scale farms to large mechanized farms using imported equipment, seeds, fertilizers, and other inputs. Since these inputs had to be paid for in U.S. dollars, the most successful farmers were those who could generate U.S. dollars to pay for these inputs. In other words, agriculture became more export-oriented (to the United States) than before the green revolution. Self-employed farmers were replaced by capitalist farms employing wage laborers. The total number of people who could make a living from agriculture declined, forcing many who had been farmers to migrate to the cities seeking wage employment. On the other hand, U.S. companies gained a lucrative new market for their goods and services.

Since the 1960s, there has been a growing recognition of the loss of plant species because of the smaller number of open-pollinated varieties in cultivation, and the patenting of some of these varieties so that it is illegal to grow them without permission from and royalties paid to the patent-holding corporations. The growth in capitalist agriculture, displacing self-employment in many places, has raised awareness of unfair labor practices in agriculture and the unsafe working conditions that many farm workers endure.

And, finally, there has been greater concern for the impact of agriculture on the environment. In particular, concern has been expressed about the poisons contained in herbicides and pesticides used in crop production. And there is a strong movement in opposition to genetically modified crops. One result of these concerns has been an increase in sales of organically grown foods and many states have passed organic-food laws that regulate the organic food industry.

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airlines

WHEN THOMAS BENOIST introduced air service between Tampa and St. Petersburg, Florida, on January 1, 1914, his airline lasted through the tourist season but shut down in the spring. For several years thereafter, there was no American passenger service. The UNITED STATES had a quarter of a million miles of railroad track and railroad service from convenient downtown locations. Airplanes could not compete. Woodrow WILSON's government allowed airline pioneers to carry the U.S. mail for a living.

Between WORLD WAR I and WORLD WAR II, transportation technology improved markedly, not just in aircraft but also in trains, ships, and automobiles. Still, flying was dangerous, uncomfortable, and potentially fatal in the primitive aircraft of the early postwar years. Noise, vibration, cold at higher altitudes, airsickness, claustrophobia—air travel was definitely uncomfortable. With government assistance, commercial aviation began in the 1920s and slowly blossomed in the 1930s once the competition from airships ended with the *Hindenburg* disaster of 1937. The flying boats peaked in the late 1930s, fading when runway technology evolved from grass or dirt to paved and grooved surfaces. Modern airports such as in New York City and Los Angeles, initially close to water for the convenience of flying boats, adapted to faster and larger commercial land planes, including jets. Airlines and airports alike developed aircraft service capabilities and passenger amenities. But late in the 20th century, airlines, especially American carriers, struggled to survive.

Early technology. With the onset of World War I, in 1915 the United States instituted the National Advisory Committee for Aircraft (NACA), that established a research facility at Langley Field, Virginia, to compete with the English Royal Aircraft Factory, Farnborough. By the 1930s Langley was home to the largest aircraft research facility in the world. Scientists used wind tunnels and advanced photography to study potential problems of high performance aircraft, commonly years before the manufacturers had the capability to apply the research.

Langley research explored airflows and allowed rapid development of aircraft with such innovations as wing flaps and slats, cowling that streamlined the area around the engine, and engines incorporated into the wing structure. These innovations reduced drag, allowed for better control on landing and takeoff. The Lockheed Vega was first to use the cowl. Engines on the wings were standard on the Douglas DC-3 and Boeing 247 and eventually all commercial aircraft. Between 1917 and its conversion to NASA in 1958, NACA made American aircraft science the leader in the world. By 1935, the United States had technology that far surpassed the Europeans who had started earlier.

The first modern commercial airplane was the Boeing 247-B, introduced in 1933 as an all-metal, low wing, twin-engine aircraft with retractable landing gear. With autopilot, de-icing equipment, and cabin air conditioning, it served as the standard configuration as well as the standard for crew and service for two decades. It was larger than earlier commercial aircraft. The 247 required 20 hours for the trip between New York to Los Angeles, with seven refueling stops and an air speed of 189 miles per hour. Carriers that used it included Boeing Air Transport, United Aircraft Corporation (United Airlines), Deutsche Lufthansa and a private owner in China. After World War II, some 247s were converted to C-73 transports and trainers, with some still flying into the late 1960s.

But air travel was still not the norm. Although world passenger miles nearly reached 1.9 billion in 1934, a marked increase over the 66 million passenger miles of 1929, this was less than 2 percent of all intercity travel. In 1934, the novelty was gone; those who would willingly fly had already done so, and the rest of

From humble beginnings in the early 20th century, airlines carried millions of passengers by 2000.

the traveling public required enticement. The industry recognized the need for a safer and more comfortable airplane that could fly above turbulence, that had a sealed and air-conditioned passenger compartment that could take off and land safely. They needed government assistance.

Government aid. The barnstormers of the postwar era went the way of the innovative risk-takers of the prewar era. The age of commercial aviation would be a time for cautious capitalists and sympathetic governments. Legislation, which had favored the RAILROADS in the 19th century, and the AUTOMOBILE industry early in the century, shifted to airlines in the 1930s. Clearly it would take time for the airlines to become profitable, so governments began providing contracts for army transport or mail delivery. Outright purchase of aircraft was another form of subsidy to the industry. Government research at the NACA or the Institute Aerotechnique, justified for military or pure scientific reasons, moved quickly to Lockheed or Breguet as governments thought open publication would deter military competition.

Interwar Germany, denied secret research of its own, quickly managed to develop civilian aircraft convertible to military use. And Japan also used NACA and other government research information to develop its military aircraft.

Initially, the mail service contracts were limited. Trains competed for local routes, so the airlines bid for transcontinental routes in 1921, routes finally marked with beacon lights in 1924. Scheduled service began in 1924, leading the railroads to protest. Congress cooperated by passing the Kelly Act of 1925, privatizing the airlines. The government became responsible for aircraft safety in 1926. When it was all done, the United States had commercial air transport regulated and subsidized by the government. When Charles Lindbergh flew nonstop from New York to Paris in 1927, interest in aviation soared. Passengers for all of 1926 totaled only 5,800; four years later the total was 417,000.

The Postmaster General of the United States provided a final ingredient. Walter Folger Brown, in the Herbert HOOVER administration, pressed Congress to enact the McNary Waters Act of 1930, which gave Brown almost total control of awarding postal contracts. By paying for carrying capacity instead of volume of mail, Brown encouraged the use of larger aircraft. This harmed the small companies with small aircraft, forcing them to merge with the larger companies that had the mail routes. By the time Brown was through, 24 of the 27 contracts belonged to four carriers. The Big Four were United, American Airways, Transcontinental and Western air, and Eastern Air Transport. Gone into the merger were Boeing Air Transport, Varney, National, Stout, Pacific, Robertson, Embry-Riddle, Colonial, Thompson, Texas Air, Western air Express, and others.

When the Democrats came to power in 1933, they investigated Brown's dealings with the airlines. After a Congressional investigation, in 1934 the Big Four lost their mail contracts. The army would carry the mail. It was a disaster. The army was unprepared. In six months, 11 people died in 16 crashes. Nearly half of the 26 mail routes, 12, were not flown regularly.

Postmaster General James Farley returned the contracts to the commercial lines at much reduced rates. To avoid Farley's prohibition of awards to the Big Four because of their participation in Brown's division of the routes, three of the airlines altered their names. Transcontinental and Western air became Trans-World Airlines (TWA), and American Airways became American Airlines. United Airlines retained its name. Bill Boeing of United had other problems.

Boeing had developed a vertically integrated corporation. His company built the engines, built the planes that used the engines, built the airline that used the planes that used the engines. New Deal ANTITRUST legislation outlawed this configuration, and Boeing had to split his manufacturing companies from his airline. Boeing retired as his company dissolved.

European governments also involved themselves with private operators. France split Aeropostale from a manufacturing company in 1927, forced its sale to another owner, who managed to run a deficit for four years before the airline dissolved in1931. France nationalized Aeropostale and four smaller airlines in 1933, naming the new carrier Air France.

Germany established a state airline in 1926, Deutsche LuftHansa, renamed Lufthansa in 1934. LuftHansa flew Junkers aircraft and took passenger service seriously, so it competed strongly throughout Europe. Its South American subsidiary, VARIG, replaced Aeropostale as the major provider between Europe and South America. By encouraging local management, contrasted to Aeropostale's central control, LuftHansa gave Germany a diplomatic edge in South America.

Commerce and diplomacy: Pan Am. Competing with the Germans in South America was Juan Trippe. Using Charles Lindbergh as technical advisor and his connections to the Washington, D.C., elites, Trippe made his airline, Pan Am, into the largest and best run long-distance airline in the world. He lasted four decades, too. Trippe began with a small line that used navy war surplus planes to ferry passengers from Long Island, New York, to resorts. In 1922, his Colonial Air Transport won the mail contract for the New York-Boston route. In 1927, he won the contract for a route from Florida to Havana, Cuba. Competing with the likes of Henry "Hap" Arnold and Eddie Rickenbacker, Trippe convinced the Cuban dictator, Garado Machad, to give his airline monopoly landing rights in Havana. He forced Arnold's company out of business, adding insult to injury by taking over the name Pan American. In 1930, Pan Am had 20,308 miles of airway in 20 Latin American countries. Through the 1930s, Pan Am expanded into the Pacific and more deeply into Latin America. Trippe was a large purchaser of aircraft, and he favored no manufacturer, keeping all suppliers competitive. He also used Pan Am as a surrogate of the U.S. State Department against LuftHansa and Germany in Latin America. Trippe's Pan Am also had the advantage that its chief pilot, Eddie Musick, built the best training, weather-forecasting, and communications systems in the industry, holding the edge for decades.

Trippe also worked with others to create the S-40 "Clipper" flying boat, first introduced to service in 1931. Slow and luxurious, as was the S-42 of 1934, the Clippers were also safe. Trippe and W.R. Grace Company joined to form Panagra, the subsidiary that serviced the west coasts of North and South America. In 1935, Pan Am entered the Pacific as Trippe worried about Japanese expansion. His new Clipper for this route was built by Glenn Martin, and had a range of 3,000 miles. The ultimate Clipper, 1939's Boeing B-3 14, had room for 70 passengers, a crew of 16, sleeping quarters, dining rooms, bars, and powder rooms and deluxe suites.

Europe could not compete with the Clippers. The Short Company of England built the Empire flying boat to carry mail and passengers across the Atlantic. When Pan Am decided to compete in Europe and the Atlantic in the late 1930s, the Empire was no match for the Clipper.

The German flying boat effort culminated in the Dornier Do X, a plane with twelve engines and capacity for 169 passengers. Its maiden voyage in 1931 was unsuccessful, and the plane became a museum piece. The Russians built the largest plane of the era, the Maxim Gorky with eight engines and a 210-foot wingspan, which crashed in 1935, killing all forty aboard and raising the question of the value of such large aircraft.

In the late 1930s Donald Douglas' DC-3 was the dominant aircraft. But the airlines on the eve of the war wanted larger planes that could carry more passengers faster and over longer distances. Douglas and Howard Hughes competed to build the new plane. Hughes controlled TWA, and he worked with Lockheed to create the Constellation, with range to fly across the United States nonstop. Douglas responded with the DC-6 and DC- 7. This technology served until the jet age.

War and its legacies. While Douglas and Hughes competed, the world went to war. WORLD WAR II was pivotal for the development of aviation because it compressed decades of technological improvement into a matter of years. When it was done, the flying boat was obsolete, even though the British built the Saunders-Roe "Saro" Princess as late as 1952. And cities began recognizing the status and economic benefits of attractive and convenient international airports.

After the war, many airlines used converted warplanes such as the Douglas DC-3 and DC-4 or the Lockheed Constellation. And with the rise of the military-industrial complex during the Cold War, military technology translated to commercial planes. When Boeing built the Stratocruiser from its B-29, Lockheed upgraded to a Super Constellation in 1950. Douglas, Lockheed, and Boeing made the United States the predominant builder of civilian aircraft. With three large and comfortable passenger aircraft, the United States was ready to dominate the market for long-distance travel.

The British wartime Brabazon Committee planned the postwar future, determining that jet power was the future of commercial aviation. First into the fray was the Vickers Viscount, a turboprop good for short distance flights. The Saro Princess was also a product of this plan, as was the oversized Bristol Brabazon turbojet that died after eight empty years of development.

The British were planners, trying to anticipate the market of a decade out. The Americans responded more quickly to the market. While the Americans were flourishing, filling seats, the British were building planes they couldn't sell. But the British did create the de Havilland Comet, a four-engine jet that went through four models from 1949. When two planes crashed in 1954, even though the cause was quickly identified and corrected, confidence in the plane was destroyed. Eighty percent of the commercial market belonged to the Americans, with Douglas holding more than half. But while Douglas waited to read the fallout of the Comet disaster, in

1954 Boeing introduced the 707, based on the B-52. Pan Am bought large numbers of 707s, giving Boeing market dominance even though Douglas and Convair offered jets as well. Boeing also had more willingness than the others to customize its planes to the customer's taste.

Jet age. The war generated jet engines. Boeing led the way with the B-47 and B-52, fuel guzzlers unacceptable to airline executives who did not want to lose money just for greater speed. Juan Trippe disagreed as usual. Pan Am's lead forced the other lines to order jets to remain competitive. But 1950s jets were too fast, as proved by the 1956 collision over the Grand Canyon that killed 128 people. The government stepped in, funding radar and navigational aids that made air travel much safer, even at jet speed.

During the 1960s, jets, fast and comfortable, began to dominate the market. Passenger miles soared. Between 1960 and 1970 passengers increased from 62 million to 169 million. The soaring demand encouraged Trippe and Boeing's William Allen to commit to building the 747. Boeing took on massive debt. Then delivery was delayed because the engines were not ready. Then a recession hit and orders dried up. Boeing avoided bankruptcy by offering still more variations of the 707. Pan Am struggled too, having taken on high-interest debt to buy the 747s. It struggled through the 1970s thanks mostly to the International Air Transport Association, the cartel that held worldwide fares high.

The Europeans didn't quit, joining forces in 1962 to develop a supersonic transport, the Concorde. The Americans assumed this would be another Brabazon fiasco, a plane built even though the market would not support it. Government support was not enough to counter lack of market support and the likely environmentalist protest over air and noise pollution. Nevertheless, the Concorde came into being and never made a profit. For the British and French governments, prestige was at stake. In the late 1970s, the Russians built the Tupolev Tu-144, the "Concordski" for service between Moscow and Vladivostok. After a crash at the 1973 Paris Air Show, this plane too was mothballed.

The Europeans did have more success when they formed Airbus, whose wide-body A340 was competitive with Boeing's finest, forcing Boeing to develop the 777, luxurious but as with all contemporary liners, but a pale shadow of the luxury planes of the 1930s.

Deregulation and dire straits. By century's end the airlines were struggling with labor problems, mismanagement, congested airports, and rising costs of fuel. Government intrusion and questions of safety after various aircraft losses were also of concern. And there were alarms over air pollution and possible health hazards within the aircraft. Terrorism was a problem from the 1970s on as well.

For half a century the American airline industry was highly regulated. The airline deregulation act of 1978 lowered fares overall while maintaining service to larger cities, and initially it brought increased competition by start-ups. But travelers found their choices limited as smaller cities lost service. The major airlines quickly developed hub cities, restricted competition by dividing the territory, and froze out the smaller lines as well as decreased service to the smaller airports. Many of the smaller lines went bankrupt in the face of inability to get slots at hub airports, and the major airlines, with cut-rate prices squeezing their profits as they squeezed the competition, experienced difficulty in surviving without major government assistance.

In 25 years after deregulation, 11 American airlines went bankrupt. Old carriers such as Pan Am and TWA and Braniff were no more.

American and United were among those that found even more difficulty after the trauma of hijacked planes in 2001, that produced airport delays for security and shrinking numbers of passengers. Airlines, at least in America, had not recovered previous levels of passenger miles by early 2003. Costs continued to rise as virtually every American line operated at a deficit. The survival of the industry involved massive layoffs, bankruptcy restructurings, and additional fees for what before had been amenities.

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Akerlof, George A. (1940–)

GEORGE AKERLOF HAS BUILT a career on his quirky, unconventional insights: his papers are titled with redolent words such as "Lemons," "The Rat Race," "Gift Exchanges," "Fair Wage," "Gang Behavior," and "Looting." Underneath the casualness has been a serious research program: to provide underlying behavioral models to Keynesian theory, importing knowledge from other social sciences. He was awarded the 2001 Nobel Prize with A. Michael SPENCE and Joseph E. STIGLITZ for work that the three men did (separately) on markets with asymmetric information, in Akerlof's case, on "lemon" markets. Other papers on the importance of fairness and other sociological norms have been incorporated into efficiency wage theories in labor economics. Akerlof's works form a comprehensive "behavioral" paradigm, which he explicitly contrasts with the Neoclassical explanations.

It is worth carefully examining the "lemons" model. Akerlof analyzed a market where a certain fraction of the goods sold were "lemons"—poor quality items that were indistinguishable from the higher-quality ones. Suppose these are used cars, where some cars are of high quality and some of low. Buyers are willing to pay up to $8000 for a high-quality car but only up to $2000 for a low-quality car. Sellers are willing to sell their high-quality cars if they can get at least $6000, but will sell low-quality cars (lemons) for as little as $1000. Clearly, then, if buyers can differentiate between high and low quality cars, there will be two separate markets. But what happens if buyers can't tell high-quality from low-quality cars? Then their willingness to pay will be based on the probability that they will get a high or low quality car.

Suppose that buyers initially believe that half the cars are high quality and half are bad. In this case, they would be willing to pay (50 percent)(8000) + (50 percent)(2000) = $5000, if they believe that the outcome is purely random. But there's the problem: no seller is willing to supply a high-quality car at a price of just $5000! So fewer than 50 percent of the cars will be high quality, so consumers will be willing to pay even less, and so on in a downward spiral. All of the high-quality cars will be driven out of the market by the lemons.

If there is a continuum of grades of quality, the market may not even exist. This market is characterized by asymmetric information: buyers can't tell if they're getting a high or low quality car, but sellers know. So the market must be somehow fixed, by government action or by the traders themselves, to get sellers to reveal their knowledge. A seller might offer a warranty, offering to fix any problems that are revealed. Or certain sellers might gain a reputation for selling high-quality products, a brand name. The good traded need not be cars, it could be insurance, or products in developing countries, or new hires, or myriad other goods, which Akerlof only began to explore.

For macroeconomics the most important market is the LABOR market, and here Akerlof has devoted much of his theoretical and empirical work. Classical economic theory wonders why wages don't fall enough in recessions to eliminate unemployment. In various papers Akerlof (with others, notably Janet Yellen) has imported from other social sciences reasons why firms might choose to pay higher wages: from psychology, equity theory highlights considerations of fairness; from anthropology, gift exchange notes the importance of reciprocity; and from sociology come notions of the importance of group norms. Additionally, in work with Dickens and Perry, he has shown that near-rational decision rules may explain the "money illusion" of wage setting.

These are just a few of the many ways in which Akerlof has posited that people's behaviors differ from that of the standard rational actor model. A richer understanding of human behavior, grounded in experimental evidence rather than faith in rationality, can solve many of the puzzles of economics.

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Alger, Horatio Jr. (1832–99)

HORATIO ALGER GAINED FAME as a writer of children's fiction during the late 19th century. His "rags-to-riches" tales of young orphans and scrappy street kids who managed to triumph over their humble beginnings struck a chord with generations of young Americans. A highly prolific author, he produced well over one hundred novels and numerous short stories, that remained in print well into the 20th century.

Alger was born in Massachusetts. His father was a Unitarian minister who was paid a meager salary, and the family lived in relative poverty. Alger entered the freshman class of Harvard College at the age of 16 and graduated in 1852. He experimented with work as a freelance writer before entering Harvard Divinity School, eventually taking a position in a parish in Brewster, Massachusetts. His career in the church was cut short when parishioners accused him of engaging in improper behavior with young boys in his charge. To avoid scandal, Alger agreed to resign from the ministry and left Brewster, eventually settling in New York City, where he began to work full time as a writer.

His first literary attempts were not notable, but when Alger sent a series of stories entitled, "Ragged Dick, or, The Streets of New York," to a magazine aimed at young people, he found his calling. He was hired as a regular contributor, and the stories were eventually collected and published in book form. This work contained many elements that would recur in later Alger novels. The protagonist was a poor boy who lived on the streets of New York, polishing boots. The novel recounts many of Ragged Dick's adventures in the city, including incidents where he saves a child from drowning and catches a thief. The boy's honesty and strength of character impress a wealthy man, who takes Dick into his charge. By the end of the story, the hero has acquired an education and is starting a new job as a clerk, destined for great things.

Although Alger's critics charged that his stories were highly formulaic, young readers did not tire of reading about the rise of poor boys to success, the kind of success envisioned by eager young capitalists. Novels with titles like *Strive and Succeed* (1872), *Risen from the Ranks* (1874), and *Julius, the Street Boy* (1874) were snapped up by the public. It is estimated that over 250 million copies of his works have been sold around the world. In addition to his fiction, he wrote biographies of important historical figures who could also serve as inspiration for young boys. In Alger's hands, the life of President James GARFIELD became *From Canal Boy to President* (1881).

Alger's work is often cited as a celebration of the possibilities of capitalism. He chose the modern city as the setting for his tales, and followed young newsboys and peddlers as they rose to achieve the "American Dream." It is worth noting, however, that Alger's heroes succeed not only due to their own perseverance but also because of the kindness of a wealthy benefactor. Many of the novels feature chance meetings that change the lives of the characters forever. Nevertheless, Alger's name has entered the popular lexicon as typifying the values of individualism and self-reliance. More than a century after his death, Alger is still cited as an influence and is honored by the Horatio Alger Association, a scholarship program.

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Algeria

THE MODERN ALGERIAN STATE came into being in 1962, but this is not to say that Algeria did not have a significant economic history before that date. In the period between the 8th and the 19th centuries, Algeria had been a part of different Islamic states and empires, some of which (such as the Almoravid and Almohad empires) had been centered on the Maghreb.

Considerable trade existed across the Mediterranean and Islamic worlds at this time, while high levels of education, literacy and scientific development were actively promoted by the state. Between 1830 and 1962 Algeria was a French colony, incorporated into metropolitan FRANCE in a manner unique in the French Empire. The legacy of French imperialism, especially in the political and economic spheres, is still evident today. In the post-independence period the leading resistor of the French, the FLN (Front de Libération Nationale), instituted a one-party state with the task of restructuring an economy that had been designed for the benefit of the colonial power, rather than the Algerian people.

The FLN's program of bureaucratic state capitalism and technocratic modernization was strongly influenced by French models (although its political ideology, which combined Marxism with nationalism and Islamism, was distinctly Algerian). Early leaders such as Ben Bella, Boumedienne and Chadli achieved some economic growth, but economic development was almost secondary to the tasks of nation-building and forging a viable political consensus. From the late 1970s there was a concurrent growth in political pluralism and the private economic sector, under the auspices of the one-party state.

Economic liberalization has been arguably more successful than its political counterpart (which suffered greatly during the Algerian civil war of 1992–98), though an increasing acceptance of neo-liberal economic principles and an integration into world markets have done little to conceal the structural flaws of the Algerian economy. These include massive unemployment (and concomitant social unrest), an over-reliance on oil (which made up 96 percent of exports in 2000) and the limited profits Algerians themselves make from oil production which is part-contracted to foreign corporations, the vulnerability of the economy to exogenous shocks (such as the 1986 oil price collapse), low levels of competition and diversification, large debts owed to western banks, and the stifling effects of the one-party state and its military backers.

It remains unclear whether Algeria's recent integration into international networks such as the INTERNATIONAL MONETARY FUND (IMF) and the EUROPEAN UNION (EU) will have long-term gains for an economy that has not fully realized an independent identity since the French withdrawal.

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alienation

THE CONCEPT OF ALIENATION is generally employed to describe feelings of isolation and powerlessness, and is common to many teleological theories of societies, rooted as it is in the idea that in the past people lived in harmony, which was then broken causing people to feel like foreigners in the world. In the future, according to the theories, this alienation would be overcome and humanity would again live in harmony.

The most famous theorist of alienation related to capitalism was Karl MARX, who developed the concept particularly in his early writings. Marx specifically focused on the experience of alienation in modern bourgeois society and he developed his understanding of the process through his critique of Georg W.F. HEGEL. According to Hegel, people create a culture by means of their actions, which were the expression of the Spirit. Such culture eventually becomes an entity alien from the people who produce it. Giving a materialist base to Hegel's mystical conception, Marx insists that it is human labor which creates culture and history: "Precisely because Hegel starts from the predicates of universal determination instead of from the real subject, and because there must be a bearer of this determination, the mystical idea becomes this bearer." What Hegel calls the Spirit is, according to Marx, a human product. Thus, the history of mankind is marked by a paradox: man increasingly controls nature yet he becomes alienated from and dominated by forces of his own creation.

According to Marx, the labor process is an objectification of human powers. Yet workers are unable to relate to their product as an expression of their own essence and thus fail to recognize themselves in their product. This lack of recognition is the basis for alienation. The specific form of LABOR characteristic of bourgeois society, wage labor, corresponds to the most profound form of alienation. Since wage workers sell their labor power to earn a living, and the capitalist *owns* the labor process, the product of the workers' labor is in a very real sense *alien* to the worker as it becomes property of the capitalist and not of its maker. The workers' alienation worsens during the regime of industrial capitalism where workers are attached to a machine and are themselves a mere unit along an assembly line, performing a meaningless task which is only part of a larger process.

Marx describes the concept of alienation as fourfold: workers are alienated from work, from the objects they make, from their fellow workers, and from their potential for creative production. This is because labor is a commodity that can be bought and sold under capitalist economic relations. Employers also control the means of production and the cooperation between workers is destroyed as is their creativity in the name of a higher and more effective production.

In Marx's later writings, the concept of alienation is subsumed under the idea of "fetishism of commodities." In *Capital*, Marx argues that social relations between human beings becomes relations between things:

> In order, therefore, to find an analogy, we must have recourse to the mist-enveloped regions of the religious world. In that world the productions of the human brain appear as independent beings endowed with life, and entering into relation both with one another and the human race. So it is in the world of commodities with the products of men's hands. This I call the fetishism which attaches itself to the products of labor, so soon as they are produced as commodities, and which is therefore inseparable from the production of commodities. This fetishism of commodities has its origin, as the foregoing analysis has already shown, in the peculiar social character of the labor that produces them.

Marx's prescription to overcome alienation is of course the transformation of the economic system from capitalist to socialist. In socialist economies, work and products are no longer commodities and the rigid distinction between mental and physical work breaks down thus allowing the full development of every worker's potential.

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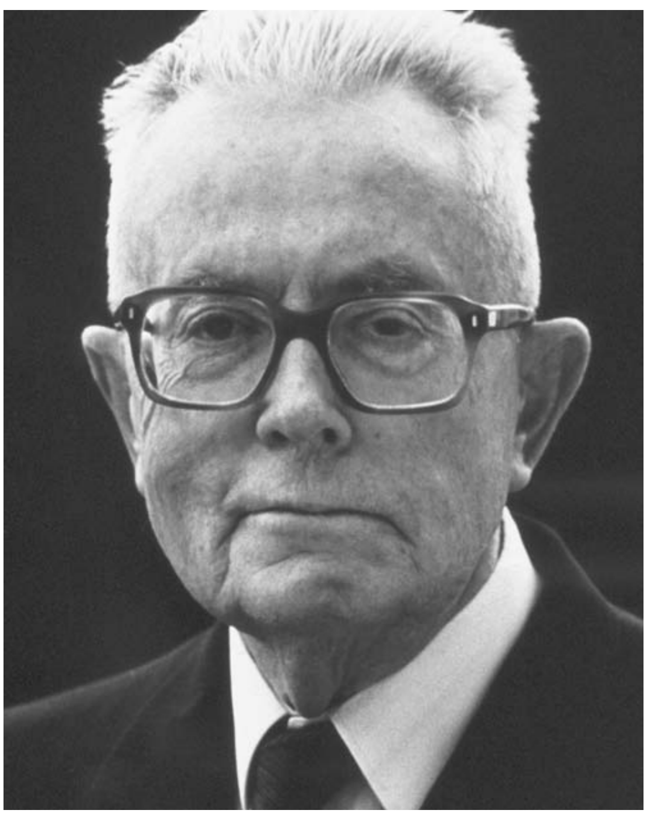
Allais, Maurice (1911–)

WINNER OF THE 1988 Nobel Prize in Economics, Maurice Allais is perhaps best known for the Allais Paradox and his important contributions in the fields of economics and physics. Born in Paris, FRANCE, to a working class family, Allais intended to study history, but at the insistence of a mathematics teacher, entered a special mathematics class to prepare for the Ecole Polytéchnique. Allais himself reports that he was "generally first in my year in almost all subjects," and in 1933, he graduated first in his class.

After a year of military service and two years at the Ecole Nationale Supérieure des Mines in Paris, Allais became the head of the Nantes Mines and Quarries Service. With the outbreak of WORLD WAR II in 1939, Allais was sent to the Italian front and given command of a heavy artillery battery near Briancon. Following the French surrender on June 25, 1940, Allais returned to his position in Nantes, which was then in the German occupation zone, and remained there until he became director of the Bureau of Mines Documentation and Statistics in Paris in 1943.

During this tumultuous period, Allais wrote the first of his major works, *In Quest of an Economic Discipline, Part I, Pure Economics*, published in 1943. He turned to economics as a means to prepare for the aftermath of the war with the intent of solving what he regarded as the fundamental problem of any economy: "How to promote the greatest feasible economic efficiency while ensuring a distribution of income that would be generally acceptable." The book focused on the proofs of two fundamental propositions regarding efficiency. First, any state of EQUILIBRIUM of a market economy is efficient in the sense that no one can become better off without someone else becoming worse off. Second, any state of maximum efficiency can be achieved through the redistribution of initial resources and a system of equilibrium prices.



Maurice Allais, best-known for the Allais Paradox, has emerged as a sharp critic of globalization.

In 1947, Allais published *Economy and Interest*, which focused on efficiency in an intertemporal setting. He found that accounting for future generations altered his analysis considerably, and concluded that a policy of compulsory saving for old age is perfectly compatible with economic efficiency. In two papers published in 1954 and 1955, Allais developed the foundations of his general theory of monetary dynamics. He tested the model with empirical data and concluded that the "observed reality is represented in an almost perfect manner" by his theory. He called the empirical verifications of his work on monetary policy "the most extraordinary ones that have ever been found in the Social Sciences."

Today, Allais is best known for the Allais Paradox, which demonstrated that standard expected utility theory does not apply to many empirically realistic decisions under risk and uncertainty. Given the paradox, some economists have concluded that individuals are irrational in that they are unable to calculate the probabilities necessary to conform to expected utility theory. Allais himself, however, believed that this result was a paradox in appearance only and represented instead "the preference for security in the neighborhood of certainty."

Throughout his life, Allais was concerned with political and economic policies. He believed that "a man of science cannot fail to take an interest in the fundamental problems of his time." In the 1950s and 1960s, he participated in many of the international conferences aimed at establishing the EUROPEAN UNION (EU). In recent years, Allais has continued his interest in public policy, emerging as a sharp critic of globalization. The publisher of his 1999 book, *Globalization: The Destruction of Growth and Employment*, described the work as "the passionate battle of a man of science against globalization." In the book, Allais argues for free trade within the European Community, but a system of quotas designed to ensure that an average of about 80 percent of the goods consumed within Europe Community are produced by member countries.

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Allianz

ALLIANZ VERSICHERUNGS was founded in Berlin, GERMANY, in 1890. Now headquartered in Munich, it is one of the leading global service providers in insurance, banking, and asset management. Allianz has approximately 182,000 employees worldwide, and customers in more than 70 countries, significantly expanding its international market presence in the 1990s and early 21st century. Examples of key international acquisitions include Cornhill Insurance (UK) in 1986; the Fireman's Fund Insurance Company (U.S.) in 1991; the ELVIA Group (Switzerland) in 1995; Assurances Générales de France in 1997; and Pimco (U.S.) in 2000. Allianz first moved into the banking industry with the acquisition of Dresdner Bank (Germany) in 2001.

In 2002, premiums in property and casualty insurance amounted to €43.3 billion (9.8 billion from Germany), with a claims ratio of 78.2 percent. Total revenue in life and health insurance amounted to €40.1 billion (12.6 billion from Germany). In both insurance markets, Allianz is the market leader in Germany, and is one of the strongest firms in Europe.

In banking and asset management, Allianz faced a difficult year in 2002. The banking sector (essentially Dresdner Bank) had a loss of €1.4 billion, and Turnaround 2003 was launched (a program aimed at restructuring the banking sector to cut costs and improve efficiency, as well as minimizing the impact of "impaired loans"). In asset management, given falling stock prices and the depreciation of the dollar, Allianz made an (expected) loss of €405 million, but currently manages approximately €1 billion, and is one of the five leading asset managers in the world.

Given its decentralized organization and strong local presence, Allianz believes it is well placed to meet the needs of regional and national markets. Ranked as the 18th largest company in the world in 2002, Allianz's strategic objective is to further strengthen its global positions in INSURANCE and asset management, as the world recovers from loss of investor confidence in the early 21st century.

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Altria (Philip Morris)

PHILIP MORRIS COMPANIES, INC., or Altria, is a multinational corporation, producing and distributing consumer products worldwide. It divides its products and services into four categories: tobacco, food, beer, and financial. With over 200 manufacturing facilities in 50 countries, Philip Morris ranks as the largest producer and marketer of consumer packaged goods in the world. The Philip Morris "family" consists of PM USA, Philip Morris International Inc., and the Philip Morris Capital Corporation. As of April 25, 2002, shareholders approved a name change of the parent corporation to Altria Group, Inc.

Philip Morris was founded by Philip Morris, Esquire, in London during the mid-19th century. What began as a self-proprietorship in London became a leviathan of an organization. In 2001, the company reported approximately $80 billion in underlying net revenues. Altria owns 83.9 percent of the outstanding shares of Kraft Foods Inc. and holds 36 percent of the economic interest in the newly created SABMiller, the result of a 2002 merger between Miller Brewing Company and South African Breweries.

Tobacco is the company's primary revenue maker; the cigarette division controls 51 percent of the U.S. market and ranks as the largest tobacco company in the country. The company produces the best-selling brand Marlboro. Four out of every 10 cigarettes sold is a Marlboro, granting the company more market share than the next seven largest brands combined. Likewise, in the international cigarette market, Marlboro is the top-selling brand and has been since 1972.

In 1988, Philip Morris acquired Kraft at a price of $12.9 billion—the largest non-oil acquisition in the history of the United States. The largest branded food company in North America, Kraft brands include: Kool-Aid, Maxwell House, Cool Whip, Jell-O, 20 or so brands of cereal, Oreo, Ritz, Chips Ahoy, Planters, Grey Poupon, Miracle Whip, DiGiorno, and many more.

As shown by the company's vast holdings throughout the world, Philip Morris or Altria is one of the world's largest and most powerful corporations. Through billion-dollar acquisitions and continual restructuring, it has remained the dominant player in the market and outlasted many of its competitors.

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American Civil War

EVEN BEFORE THE United States came into being, the economic interests, and hence to some degree the political interests, of the northern and the southern states had begun to diverge. The South developed on the basis of large plantations run by a few families; the North tended to have smaller farms and began to focus more on manufacturing, fishing, and foreign trade. Although all colonies permitted SLAVERY at one time or another, the system was much more critical to the maintenance of the South's large plantation system.

After the AMERICAN REVOLUTION, slavery had been largely banned in the North, which became more focused on trade and industry. The South continued to concentrate on agriculture. After the introduction of the cotton gin by Eli WHITNEY, the South turned primarily to a single crop, cotton.

Thus, at the eve of the Civil War (1861–65), in the 1850s, the degree of the urbanization and the level of the industrial labor force in the South was less than half of that of the North, and even the more industrial southern states were producing at less than half the per-capita rates of northern states.

As a consequence of these differences there were frequent political clashes between North and South centered on economic policy. Thus, a perennial source of conflict was federal tariff policy. The northern states regularly pushed for high tariffs on manufactured products in order to protect their industries from foreign competition. While this was perceived to be beneficial to the economic interests of the North, it raised the prices of many goods that the South consumed, and was thus in direct opposition to the interests of the South.

Events leading up to the war. Although the sectional differences between the North and South pre-date the Revolution, the debate leading to the Civil War was framed in 1820 with the admission of Missouri to the union. By 1820, there were 11 free and 11 slave states. Northerners, concerned over the expansion of slavery northward, sought to admit Missouri only if it outlawed slavery. Southerners opposed a precedent that allowed the federal government to dictate to states whether or not they could have slaves. If slavery could not expand, it would eventually become a minority interest that could be ended by the majority. The Missouri Compromise permitted Missouri to enter as a slave state while Maine was admitted as a free state, thus keeping the balance. It also forbade slavery in any other state that was formed on the northern portions of the Louisiana Purchase.

The Compromise held for the next 30 years. However, following the MEXICAN-AMERICAN WAR, ceded lands sought entry as free states with no slave state to counterbalance it. The Compromise of 1850, among other things, permitted California to be admitted as a free state, but gave Southerners more powerful fugitive slave laws to capture runaway slaves. It also introduced the idea of "popular sovereignty," which permitted the residents of each territory to decide for themselves whether to be admitted as slave or free.

While the purpose of the Compromise was to quiet the debate, it swelled the abolitionist movement in the North. No longer did Northerners merely have to tolerate slavery; now they were forced to assist in arresting their runaway slave neighbors and returning them to slavery.

In 1854, the Kansas-Nebraska Act permitted those territories to decide for themselves whether to be admitted as slave or free. The "debate" soon turned into a bloody war as abolitionists and slaveholders, primarily from Missouri, used violence, intimidation, and murder to take control of the territory.

Southerners, who were already on the defensive now that they were outnumbered in Congress, relied on the Supreme Court to assert their demands for expanding slavery. In 1857, the U.S. Supreme Court further inflamed the sectional dispute by issuing its opinion in *Dred Scott v. Sanford*. It held in part that the Missouri Compromise was unconstitutional and that slave owners could take their slaves wherever they liked.

In 1859, John Brown attacked the federal arsenal at Harper's Ferry, Virginia. His hope was to foment a slave rebellion that would spread throughout the South. He captured the arsenal but failed to spark the uprising he had hoped for. He was quickly captured and hanged, but the Southern fear of slave revolt had been resurrected and Southerners now saw Northern abolitionists as a potential cause of such an insurrection.

With the election of the Republican Abraham LINCOLN in 1860, Southerners decided the federal government had become too hostile to their interests. After the election, but before Lincoln's inauguration, 11 southern states seceded from the Union and formed the Confederate States of America.

Economic significance of slavery. The institution of slavery was an outgrowth of economic and socio-cultural differences, with an obvious moral dimension to it as well. It had been argued that slavery was doomed as a form of economic organization; had compromise between the northern and the southern states succeeded a bit longer, then slavery would have naturally perished.

Recent research indicates that the rate of return on investing in slaves in the ante-bellum South was close to 10 percent—well above the return that was available to southern planters in other ventures, such as railroads. And indeed, a higher return than most textile mills were able to achieve in New England in the 1840s and 1850s. Further, indications are that slavery was becoming even more profitable leading up to the Civil War. In an amoral, objective view, if one uses market prices for slaves as a proxy for what returns were expected to be obtainable from exploiting slave labor, then there is a clear upward trend in the profitability of slavery, subsequent to the widespread introduction of the cotton gin around the turn of the century.

Charting the course of slavery absent the Civil War is clearly speculative. The answer, perhaps, follows upon one primary supposition: Would slavery have been permitted to expand beyond the South, in particular might it have expanded to the west and northwest? Given that the North seemed to be gaining more political power and that most unsettled western lands were not useful for cotton farming, it seems unlikely. Further, the fact that Britain, the main market for southern cotton, was developing a strong anti-slavery movement and was finding alternatives to cotton for its clothing industry; means that Britain likely would have begun to exert economic pressure to end slavery.

Brief summary of the war. The war began when South Carolina troops fired on federal troops who refused to surrender Fort Sumter in Charleston Harbor. Northerners were outraged by this act and rallied around the war cause. Both sides thought the war would be over in a matter of weeks or months. Volunteers signed up for 90-day enlistments.

Northerners emphasized that they had a larger population and industrial base, and hence, more arms and the capacity to manufacture arms. Southerners had a superior officer corps and potential allies in Europe.

Federal troops marched from Washington, D.C., into Virginia where they engaged the Confederates in the Battle of Bull Run/Manassas. Confederate troops routed the Union soldiers who fled back to Washington. For the next three years, a series of Union generals would attempt to invade Virginia with the hope of capturing the Confederate capital of Richmond. Each time, they would be outmaneuvered, out-generaled, and ultimately defeated by the Army of Northern Virginia, commanded by General Robert E. Lee.

The Southerners attempted twice to take the war to the North. The first attempt was an invasion of Maryland in the fall of 1862. On September 17th, the armies met at the battle of Antietam/Sharpsburg. After a day of bloody fighting, the Confederates withdrew to Virginia. Lincoln seized on the Confederate's withdrawal as the opportunity to announce the Emancipation Proclamation, which declared all slaves in rebel territory to be free.

The following year, the Confederates made another attempt to move northward as they entered Pennsylvania. The two armies clashed for three days in July, in and around the town of Gettysburg. In a final charge on July 3rd, the Confederate Army was decimated in what became known as Pickett's Charge (General George Pickett led the charge). Despite the loss, Lee successfully retreated back to Virginia and retained his forces. The stalemate in the eastern theater continued.

The only real Union progress came in the west. Generals Ulysses GRANT and William Tecumseh Sherman captured Tennessee and had begun moving down the Mississippi River. On July 4, 1863, Union troops broke the siege of Vicksburg, giving them full control of the river. These western generals defied military convention by ignoring their own supply lines. Their armies moved hard and fast, capturing whatever food and supplies they needed from the enemy.

In March 1864, Lincoln put Grant in charge of all Union armies. As with all the other generals who tried to march on Richmond, Grant was outmaneuvered and suffered heavy losses. However, unlike previous generals who retreated after a loss, Grant continued to send in more reinforcements, relying on the fact that the North had far greater reserves than the South and could afford to sustain much heavier losses.

At the same time, Grant had Sherman push in from the west, eventually capturing and burning Atlanta and beginning his well-known march to the sea. The purpose of this move was not only to demoralize the South, but also to cut the Confederacy in half, which it did. Sherman also wanted to ensure that the war experience would be so horrible that the South would never rise in arms again. Consequently, Sherman destroyed almost anything that could be of value to the Confederacy. The Confederate Army, and Southern people generally, were cut off from all food and supplies.

Despite massive casualties, Grant's relentless assault resulted in the capture of Richmond within a year. Within days, Lee surrendered his army, effectively ending the war on April 9, 1865.

Economic and war policies in the North. The Union recognized its clear naval advantage over the Confederacy, as well as the South's complete dependence on foreign trade for most of its necessities. Consequently, it employed a naval blockade on all trade to or from the Confederacy. At first, the blockade was unable to prevent the bulk of merchant vessels, known as blockade runners, from engaging in trade. Over the course of the war, however, the blockade became more effective in starving the South of weapons, ammunition, food, and other necessities.

In the final years of the war, the Union embarked on a scorched-earth policy further designed to break the Confederate economy. Northern armies confiscated or destroyed farm animals, crops, and anything else of value to the South.

The Union also introduced a military draft for the first time. Prior to this, the federal government had always depended on volunteers. But as a protracted war became evident, the government could not keep up enlistments, even with generous bounties. In order to help raise needed funds, draftees were permitted to hire a replacement or pay the government $300—causing considerable resentment among those who could not buy their way out.

With tariff revenues down because the war prevented much trade, the government also instituted a tax on incomes as a temporary war measure.

Finally, the emancipation of slaves had strategic significance as well. When Lincoln declared the slaves free in 1863, it made the war about more than saving the Union. While this provoked mixed feelings among Northerners, it convinced the British, many of whom had strong antislavery sentiments, to forgo allying themselves with the Confederacy.

Economic and war policies in the South. The South had a more difficult strategy. Because of its lack of a manufacturing base, it relied on Europe. The Confederacy hoped that it could draw Britain into the conflict as an ally. Britain was heavily dependant on the South's cotton, and could have viewed the war as an opportunity to regain influence in America. However, once the Union successfully made slavery the main issue of the War, Britain decided to stay out of it.

Later, the Confederacy hoped to drag out the war, making it costly enough on the North that a friendlier president would be elected who would grant them peaceful separation. However, a string of Union victories helped Lincoln's re-election in 1864 and the Confederacy surrendered a few months later.

The cost of the Civil War. The total costs of the Civil War to the U.S. economy are immeasurable. Even a rough estimate would require that one determine how the economy might have developed without the enormous amount of destruction, in terms of both physical capital as well as human lives. There were well over 1 million military casualties, including over a half-million lost lives. Given a total population of a little over 31 million according to the 1860 census, war casualties amounted to over 3.5 percent of the entire population. If one attempts to estimate the lost lifetime earnings of these casualties, and adds to them the military expenditures, and the value of the property destroyed in the course of the conflict, one estimate of the total direct costs of the war is $3.4 billion for the North and $3.3 billion for the South—together more than the total annual production of the U.S. economy preceding the war. In fact, a much higher figure than what it would have cost to purchase all slaves into freedom at the prevailing prices just before the War.

Of course, these are only monetary losses to the economy, and these figures cannot capture the total costs to American society, which would have to include costs in terms of the immense suffering. By the same token, however, it is not possible to measure accurately what American society has gained through the liberation of the nearly four million slaves. Not only is their mere freedom invaluable, but one also cannot even begin to estimate the contributions to American society and the American economy made by African-Americans, despite organized and inadvertent setbacks that reverberate to this day.

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American Electric Power

RANKED AS THE 36TH LARGEST company in the world by *Fortune* magazine in 2002, American Electric Power (AEP) is the largest electricity generator in the UNITED STATES.

The company is marked indelibly by its geographic location, which provides both its most important strength and deepest future worry: It is in the middle of the Ohio coal-mining region, which provides cheap but high-sulphur, high-ash coal. At the beginning of the 1990s, as deregulation began, approximately 90 percent of its power was generated in coal-fired plants; by the end of the decade coal still made up a three-quarter share.

The specter of environmental regulation hangs darkly. When the Clean Air Act introduced sulphur-dioxide tradable permits in 1995, the utility was allocated sufficient allowances to burn coal of up to approximately 2 percent to 2.5 percent sulphur. Any amount of sulphur in the coal over that level means that AEP must either increase its cleanup efforts or buy permits. Although some of its subsidiaries get low-sulphur western coal, its Columbus Southern and Ohio Power operations use eastern coal that averages 3 percent.

Changing to low-sulphur coal is complicated by local political pressure to continue mining employment in Midwest fields. New efforts to curtail emission of nitrogen-oxide, regulate haze, or even tax carbon output will continue to obscure the company's financial future.

As the company expands to overseas markets, its exposure to foreign regulation also grows. From this multinational standpoint, AEP admitted that government regulations on greenhouse gases were inevitable. However, AEP has some confidence in its ability to dance with regulators, since it was one of the few U.S. utilities to survive NEW DEAL regulations (the Public Utility Holding Company Act, PUHCA, in 1935) virtually unscathed.

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American International Group

AN INSURANCE COMPANY that began in Shanghai, CHINA—American International Group (AIG)—was founded by Cornelius Vander Starr in 1919 as American Asiatic Underwriters, which later became affiliated with American International Underwriters (AIU). Starr later expanded his business with the founding of the Asia Life Insurance Company. He moved forward with this enterprise despite the fact that there were no available statistics on Chinese life expectancy.

In 1931, Starr formed the International Assurance Company as a partnership with British and Chinese investors. In 1932, American International Underwriters expanded into Central America. By the end of the 1930s, impending war forced Starr to close his Shanghai office and move his headquarters to New York City. Though WORLD WAR II interfered with AIU's European and Asian interests, the company continued to rapidly expand into Central America during the early 1940s.

After the war, the Shanghai office reopened, but communist domination of mainland China shut down the Shanghai office once again, in 1950. AIU's post-war entry into West GERMANY and JAPAN proved more lasting, with U.S. occupation troops serving as primary customers. In 1948, Starr reorganized the International Assurance Company as the American International Assurance Company, and became involved in MALAYSIA, THAILAND, and SINGAPORE. He then formed the American International Reinsurance (AIRCO) and American International Underwriters Overseas Companies, and the American International Underwriters Association.

In 1952, AIRCO acquired Globe and Rutgers Insurance, along with American Home Assurance. American International interests continued to grow during the 1950s and 1960s, with expansion into the Caribbean, the Middle East, and some African nations. The communist takeover in CUBA represented a serious loss, as private enterprise in the small country was nationalized. However, the New Hampshire Insurance Company, Commerce and Industry Insurance Company, and the National Union Fire Insurance Company of Pittsburgh were added during this period to American International's portfolio.

During the 1970s, the American International Credit Corporation and North American Managers Inc. were formed as new divisions. NAM sold insurance to foreign companies operating in the United States. AIG Oil Rig Inc. was also formed at this time to sell insurance to offshore drilling operations. AIG profits grew rapidly during the 1970s, and by the end of the decade, AIG had entered Eastern Europe, re-entered mainland China, and increased its size tenfold.

During the 1980s, AIG expanded further into health-care services and real estate. Profits declined in 1984, but improved in 1985. 1988 was also a difficult year, because AIG lost an arbitration case that cost the company more than $100 million. In the late 1980s, AIG consolidated many of its operations, but continued to expand in other areas, including divisions that lease commercial jet airliners, and that provide financial services.

In 1999, AIG merged with Sun America and acquired licenses to operate in Azerbaijan, Bulgaria, and Sri Lanka. In 2003, AIG operated in more than 130 countries, with more than 80,000 employees, and reported $67.5 billion in sales, making it the 25th largest company in the world. With hundreds of billions of dollars in assets, AIG is as massive as it is innovative and complex; it is one of the most remarkable business enterprises of modern times.

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American Revolution

THROUGHOUT MUCH of the 17th and 18th centuries, the UNITED KINGDOM and FRANCE struggled for domination of North America. Britain took control of most of the east coast, while France controlled CANADA and the Mississippi Valley. By the mid-18th century British colonists moving westward began encroaching on territories claimed by France. Both powers tried to strengthen their positions and harass the other. Eventually this touched off what became known in America as the French and Indian War, otherwise also known as the Seven Years' War, 1756–63. When the war ended, Britain retained undisputed control as far west as the Mississippi river. France gave up all claims on the continent.

Until that time, Britain had strongly encouraged colonization by allowing the colonists certain liberties (particularly religious freedom) not available in Britain. Britain also left the colonists virtually untaxed, and failed to enforce effectively many of the tariffs in place. Prior to 1767 it cost Britain £9,000 annually in order to collect £2,000 in customs duties from the colonies. The mass colonization of British subjects who took advantage of these incentives helped Britain to take control of the continent. With control over the continent secured, however, Britain hoped to recoup the costs of the war and make the colonies profitable. A series of laws from Parliament created a rift between Britain and its colonies.

The growing rift. Thus, the Proclamation of 1763 banned further expansion westward. The Crown hoped to reserve that land for Native Americans and to make them loyal subjects of the empire. Colonists, however, viewed this ban as a dangerous limitation on the expansion of their growth.

The Currency Act of 1764 limited the issuance of paper money through colonial governments. This limited colonial power to shape fiscal policy. It also made trade more difficult given a shortage of specie (gold and silver) in the colonies.

The Sugar Act of 1764 imposed taxes on sugar and molasses not imported from the West Indies, raising prices and limiting supplies of sugar in the colonies. This was supported by increased enforcement against smuggling.

In 1765, the Stamp Act introduced taxes on legal documents, newspapers, and virtually all other printed materials. This was the first direct tax levied by Britain on the colonists. Since these duties were to be collected by the local colonial governments and then transferred to England, the effect was to pit colonial governments against their own citizens who resented this form of "taxation without representation." Britain further inflamed the issue by passing the Quartering Act, requiring the colonies to house and feed British soldiers, sent to enforce the laws.

While there had been displeasure over the earlier taxes, the Stamp Act caused the first true resistance. The Sons of Liberty organized in Boston to fight the tax and collectors were threatened or beaten to prevent collection. Colonial leaders throughout the continent urged resistance. Parliament quickly repealed the Stamp Act (having been largely ineffectual for not having been enforced), but reasserted its prerogative by passing the Declaratory Act, establishing the right of the Crown to impose direct taxes on the colonists without their consent.

In 1767, Parliament passed the Townsend Acts, which introduced customs duties on tea, glass, and paper. Though they were not direct taxes, the colonists responded with boycotts on imports and violence against tax collectors. Britain repealed these duties, leaving only a small tax on tea in order to assert the principle of its right to impose such taxes. It also sent British troops to Boston to stop the acts of violence and resistance to British laws.

Opposition to British occupation led to frequent riots, and eventually the Boston Massacre, in which British troops shot at an unarmed albeit threatening mob, shooting six colonists in 1770. In 1773 the Sons of Liberty boarded a ship that had been waiting to unload its fares and dumped British tea into Boston Harbor. In response to the "Boston Tea Party," Britain closed the port of Boston until the colonists paid for the destroyed property.

In the wake of this rupture, the First Continental Congress met in Philadelphia in 1774, passing resolutions that, in effect, demanded nullification of all British policies taken toward the colonies since the end of the French and Indian War. Britain refused to recognize the Congress and even disbanded a number of Colonial Legislatures that had been hostile to British policies.

The American sentiment. Many have asked, on the eve of the Revolution, why a relatively prosperous and free people would risk armed conflict with the world's undisputed superpower over a few taxes. Indeed, American colonists of the 1770s may very well have enjoyed the highest per capita income levels of anyone in the world at the time, and were surely among the least taxed people in Europe and America.

In fact, most people did not oppose the Crown. On the eve of independence, one of its most powerful advocates, John ADAMS, estimated that only one-third of the country supported the patriot cause, with another third supporting the Crown, and the rest remaining neutral, hoping only to avoid harm.

The great concern among those supporting the patriot cause was precedent. Colonists had seen how Britain had treated other colonies, culling their wealth for the benefit of the mother country, and drafting their men for fighting in seemingly continuous wars with the other European powers. By accepting the principle of direct taxation without representation, the American colonies would begin down this road. They would become subservient to Britain, never full partners.

Modern day re-enactments celebrate the Revolution and its unleashing of American economic ascent.

Brief chronology of the Revolution. Most historians consider the real beginning of the war to be the battles of Lexington and Concord. Boston patriots had stored a large stash of arms and ammunition in Concord, and in April 1775, the military governor directed 700 British troops to destroy the cache. Patriots were tipped off and assembled to block the British. At Lexington, the troops met about 70 armed Patriots and demanded they disperse. No one is sure who fired first, but the British shot 18 militiamen. The remainder scattered. The British continued on to Concord where they met further resistance. By this time, local farmers had turned out and began shooting at the British, who then retreated back to Boston. By the time they had returned, 250 British had been killed or wounded.

The Second Continental Congress convened a month later and declared war. George WASHINGTON was appointed commander of the Continental Army. Although Congress attempted to resolve the matter diplomatically, Britain refused to negotiate while violence continued. A year later, in July 1776, Congress declared the colonies to be "free and independent states."

At the time Washington took command, the British troops were concentrated in Boston, with American troops in the surrounding hills. The British had captured the nearby hills at great cost in the Battle of Bunker Hill. The two sides had reached a standoff. Washington needed artillery to take on the British effectively.

Fortunately for Washington, a small contingent of patriots under Ethan Allen and Benedict Arnold had captured Fort Ticonderoga in northern New York. Even more impressively, these men dragged one hundred cannons through the wilderness to Boston. When the Americans put the cannon in place, the British retreated to Canada without a shot fired.

The British next decided to take New York as a base of operations. Washington's Army took up the defenses of New York, but his militia were quickly scattered by the professional soldiers employed by the British. It was a humiliating defeat from which Washington was lucky to retreat with his army mostly intact. By the winter of 1776, the Continental Army had retreated through New Jersey to Philadelphia. Continental soldiers were demoralized and planned to leave when their enlistments ended at the end of the year. A desperate Washington planned a surprise Christmas Day attack on the British and their Hessian mercenary soldiers in Trenton and Princeton, New Jersey. The resulting victory increased morale and saved the Army from disbanding.

The British, however, pressed on, capturing Philadelphia. Nevertheless, a subsequent American victory at Saratoga impressed the French sufficiently so that they began to provide support to the American cause. The French were still smarting from their losses to the British a decade earlier, and saw an opportunity to regain influence over the continent by providing covert aid. By 1778, France made its support public and went to war against Britain.

That same year, Washington's victory at Monmouth, New Jersey forced the British to retreat to New York City. The British sent peace commissioners, promising to end all taxation, but the Americans refused to end hostilities unless the British were to recognize their independence.

In 1780, the British attempted to reclaim control of the southern colonies by capturing Charleston. They met with initial success, capturing thousands of American troops. However, American counter-attacks pushed the British northward into Virginia. Finally, in 1781, the British forces became trapped at Yorktown, Virginia, surrounded by French and American troops and cut off from the sea by the French Navy. General Cornwallis surrendered his army, effectively ending hostilities. The following year, peace negotiations began in Paris, which lead to agreements that were ratified in 1783.

The financing of the Revolution. With the battle cry "no taxation without representation" and the colonies being a disparate lot, levying taxes in order to finance the war effort was neither technically nor politically possible. Instead, the American government used four methods to finance the war: printing money, borrowing money, promising lands, and confiscating property, including reneging (at least temporarily) on some obligations.

The Continental Congress issued approximately $226 million in paper money, with the states issuing roughly another $200 million. When, in 1780, Congress devalued its currency at the rate of $40 of paper money to $1 of specie, it still continued to print more virtually worthless Continental dollars, giving rise to the expression "not worth a Continental." Price limits set by Congress caused people to refuse to sell or produce goods, leading to even greater shortages.

To support its worthless paper money and to continue the cause, Congress sought loans from abroad. France provided several loans and grants. Merchants in the NETHERLANDS also provided loans. John ADAMS and Benjamin FRANKLIN spent most of their time in Europe either seeking loans or trying to defer repayment of past loans. Such loans were very risky since the lender would incur the wrath of Britain, the loans would not be repaid if the Americans lost, and might not be repaid for some time even if the Americans won. In the end, foreign loans paid for only about eight percent of the war's expenses.

Without anything of value to pay its troops, Congress kept an army in the field with a series of promises. Many soldiers enlisted with promises of hundreds of acres of western land after the war. Toward the end of the war, officers and men were promised generous pensions for those who stayed with the army until the end.

Finally, Congress confiscated lands and other property from Tories (British loyalists) who had fled the country. All debts to British merchants prior to the war were not paid, as well as debts incurred with others during the war were deferred. Although private debts and confiscated property was to be repaid as part of the peace treaty, much of it was never recovered.

Despite all these measures, the Americans were regularly at the point of desperation. Just before the Battle of Trenton, Washington had to promise a $10 bounty, paid in sterling, to keep many men from leaving when their enlistments ended. This money came from the personal fortune of Robert Morris, a Philadelphia merchant and financier, who became the head of the Continental Congress' finance committee. Morris used his personal credit on numerous occasions to help bail out the cause. His contacts and good reputation in the Netherlands were also critical to receiving loans from neutral merchants.

The Continental Army almost never had sufficient food or clothing, let alone arms and ammunition. On several occasions, Washington had to put down mutinies of soldiers who had faced too many deprivations.

Economic consequences of the Revolution. The colonies had been net benefactors of the Crown, even just prior to the Revolution. Consequently, early U.S. governments had to impose much higher taxes and became much more restrictive than the Crown had ever been. Indeed, the monetary situation had become precarious. Financing the war by printing money had lead to a severe depreciation of the Continental dollar, ultimately to below one percent of its face value. Moreover, outflows of specie (gold) to finance the war had lead to a strong deflation (decrease in prices) that increased the burden on all who owed money.

New England farmers, being heavily indebted, revolted in Shay's rebellion. The rebellion gave added impetus to create a stronger national government, which ultimately led to the drafting of a new Constitution of the United States. The new Constitution, which allowed for direct taxation of imports, finally gave Congress the ability to begin regular and reliable repayment on its debts.

American trade remained limited in part because continuing wars between Britain and France prevented unimpaired trade, even of neutral merchant vessels. Despite obstacles, however, over the next few decades, U.S. merchant vessels expanded trade all over the world, taking a major role in world business.

With the stability created by the new Constitution and westward expansion possible, these trade patterns laid the foundation of significant economic growth and, ultimately, the economic ascent of the United States.

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American Stock Exchange

THE AMERICAN STOCK EXCHANGE (Amex) is the second largest stock exchange in the UNITED STATES, the first being the NEW YORK STOCK EXCHANGE (NYSE). The

Amex is often defined in terms of its relationship with, and distinction from, the NYSE.

The Amex was originally called the New York Curb Market (or simply, the Curb). The term originated from the fact that the brokers once conducted their auctions in the open air. Yet, in fact, the NYSE (then called the New York Stock and Exchange Board) also originated as an outdoor marketplace. However, the NYSE quickly moved inside in 1792 after formalizing their organization with the Buttonwood Agreement. The Amex traces its roots to the curbstone brokers who did not sign that agreement and who chose to remain outside to trade, among themselves, stocks that were not traded on the formal exchange. The practice of convening outside the New York Stock Exchange to trade securities alongside the curbs of Wall Street remained intact for more than a century. Commenting on this long tradition of a lack of a central marketplace, Wall Street historian Charles Geisst credits the New York Curb Market as being the forerunner of not just the Amex, but also the over-the-counter market.

At first, the Curb and the NYSE competed for business. Gradually, however, the two exchanges reached an informal arrangement whereby the Curb established a niche that did not directly encroach the NYSE's territory. The Curb traded in securities that tended to be smaller and less established than those traded on the NYSE. The listing requirements for Curb stocks were less stringent as well.

Besides dealing with a different type of clientele, the curbstone brokers historically had a less aristocratic culture than that which prevailed at the private club-like atmosphere pervading the NYSE. Fewer members hailed from prestigious families; in fact, many were immigrants or children of immigrants who had come to the United States with little money. In addition to this socioeconomic difference, the curbstone broker group was more religiously diverse than the mostly Protestant NYSE. The Curb attracted a significant number of Jews and Catholics, some of whom were able to rise to leadership positions there.

Due to the above reasons, a certain bias existed that the Curb was second in status to the NYSE. In the 1920s, Curb president Edward R. McCormick was determined to elevate the reputation of the institution. In 1921, upon his urging, the Curb finally moved indoors (more than a century after the NYSE). The move from the street curbs to formal offices was a symbol of the Curb's newfound respectability.

At the same time, the Board members of the Curb, inspired by McCormick's leadership, tightened standards for member firm conduct. They also enforced stricter listing standards. While these reforms were successful in building the Curb's image, the exchange remained predominantly a place where smaller stocks could be traded until they gained sufficient stature to advance to the more illustrious NYSE. As financial journalist Martin Mayer described it, the Curb functioned as a "seasoning exchange," which "took the stock of corporations not large enough or national enough to qualify for listing on the New York Stock Exchange."

This pattern of firms listed on the Curb eventually migrating to the NYSE diminished in the 1950s. This time period, at least in the early years of the decade, may be perceived as a Golden Age for the Curb.

Confident in President Dwight EISENHOWER's administration, American investors displayed heightened interest in new industries, seeking unusual growth opportunities. This was a boom for the Curb due to its specialization in trading securities of mid-size companies. Many of its listed firms now excited investor attention because they seemed to be on the verge of major success, propelled by technological advancements in such fields as computers and television. During this time, the Curb changed its name to the American Stock Exchange, another effort to give the institution a more solid and more national image. The newly amended constitution of the American Stock Exchange, in 1953, declared that "the purposes of this Association shall be to provide a securities marketplace where high standards of honor and integrity shall prevail to promote and maintain just and equitable principles of trade and business."

While the 1950s began as a time of hope and expansion for the Amex, the decade ended in crisis, as the SECURITIES AND EXCHANGE COMMISSION (SEC) exposed the illegal dealings of brokers Jerry Re and James Patrick Gilligan. Bringing more disgrace to the Amex, Edward T. McCormick, its president, was implicated in this scandal and was forced to resign in 1961.

In the wake of the scandal, the Amex underwent a series of reforms, led by Ralph Saul, Edwin Posher, David Jacobs, among others. The exchange also underwent modernization, as the Amex adapted new technological innovations to its trading procedures. This paralleled a similar movement at the NYSE, which was forced to prioritize computerization after the famous "back office crisis" of the late 1960s, when the NYSE became mired in paperwork resulting from increased trading volume.

In the late 1960s and 1970s, Amex and NYSE officials often discussed the possibility of merging the two exchanges. A merger, however, never took place because it was clear to Amex officials that it would not be a merger of equals, but rather, would be the submerging of the junior Amex into the more senior NYSE.

In 1998, a combination did occur, but it was not between Amex and the NYSE. Rather, the parent company of the NASDAQ purchased Amex and combined their markets. Amex, though, continues to operate separately.

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Andorra

A TINY COUNTRY LOCATED in the Pyrenées mountains between FRANCE and SPAIN, Andorra was originally created by Charlemagne in the 8th century to serve as a buffer between Christian Europe and Muslim Spain.

The traditional economy was based on subsistence agriculture, especially sheep-raising. In the 20th century, many Andorran farmers switched to growing tobacco which proved to be more profitable. In the 1990s, the economy of Andorra greatly benefited from a customs-union agreement with the EUROPEAN UNION (EU) that permitted it to sell duty-free items that it combined with minimal sales taxes. Because of the appeal of shopping (prices are as much as 40 percent lower than in neighboring countries) and natural scenery, the primary basis of Andorra's economy is tourism, accounting for 80 percent of employment and GROSS DOMESTIC PRODUCT (GDP). Andorra also has had a strong banking sector. Investors have been attracted by its strict privacy laws, but these practices have come under criticism from foreign agencies seeking to crack down on under-regulated tax havens.

The country is so small (468 square miles) that economist Simon KUZNETS once held it up as an example of why scholars should not use nation states as the primary units of economic research.

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Angell, Sir Norman (1872–1967)

RALPH NORMAN ANGELL LANE, journalist and pacifist, used the pen-name Norman Angell. Author of the most widely read anti-war manifesto of the early 20th century, Angell became the leading spokesman of the "New Pacifist" movement and was awarded the Nobel Peace Prize in 1933.

Born in Holbeach in northeastern England to a prosperous commercial family and educated in FRANCE and SWITZERLAND as well as his native country, Angell spent nine years working in a variety of menial occupations in the UNITED STATES before drifting into journalism. Returning to Europe in 1898, he settled in Paris and rose to become editor of the continental edition of the *London Daily Mail*. From this vantage point he observed the dramatic escalation of international tensions between GERMANY and its neighbors and the growth of a seemingly uncontrollable arms race.

In 1909, Angell published an analysis of these developments, *Europe's Optical Illusion*, that after revision was reissued the following year under the title, *The Great Illusion*.

The central argument of *The Great Illusion* was an inversion of the Marxist proposition that the root causes of war lay in competition between rival capitalist groups seeking to enrich themselves by monopolizing foreign markets and natural resources. Angell sought to show that, to the contrary, modern warfare had become so expensive and economically disruptive that, even if successful, the costs of a war of conquest would vastly exceed the expected benefits. In a rapidly integrating and interdependent world economy, territorial expansion could offer no tangible or lasting commercial advantage to the victors.

War was therefore futile and obsolete, as was the possession of colonies and the creation of exclusive trading blocs. Upon the broadest possible recognition of these truths depended the only possibility of averting a conflict that threatened to wreck the continent of Europe. Angell's ideas were far from original, having been anticipated in substance by the French essayist Jacques Novikow and the Polish industrialist Ivan S. Bloch, among others. Nonetheless, *The Great Illusion* enjoyed an immense success, selling two million copies in 25 languages in the years before the WORLD WAR I. An extensive network of clubs and societies dedicated to the spread of its doctrines sprang up throughout Europe and North America, and Angell himself, abandoning journalism, embarked upon a new career as a peace activist.

The rise of "New Pacifism" or "Norman Angellism" met with mixed reactions from established pacifist organizations. Some decried his appeal to material self-interest rather than morality as the principal reason for opposing war, condemning in particular his acceptance of the legitimacy of military establishments as a safeguard against aggression. Many others interpreted his work to mean that armed conflict, being unprofitable, had become economically impossible as opposed to self-defeating, a misapprehension which Angell would spend much of his life attempting to dispel.

A more serious criticism leveled against his work, however, was that *The Great Illusion* spoke only to those liberal Western elites who shared Angell's assumptions about the desirability of preserving modern industrial society in its existing form, and ignored the very different priorities of extremists on both the Left and Right who posed the chief threat to peace.

After the Great War (that Angell regarded as a vindication of his warnings), he joined the British Labor Party, serving as Member of Parliament for North Bradford in the short-lived MacDonald administration of 1929-31. Although he quickly became disillusioned both with politics and with the Labor party, a knighthood in 1931 maintained him in the public eye, as did the award of the Nobel Prize two years later. During the 1930s, Angell campaigned energetically in support of the League of Nations, advocating the creation of a more effective system of collective security to check fascist expansionism. This stance further alienated him from traditional pacifists, while the outbreak of the WORLD WAR II seemed to contradict his faith in the ability of rational self-interest to counteract the forces militating in favor of armed conflict. Nevertheless, Angell remained active in publication and pacifist activism almost to the end of his long life, by which time he had produced no fewer than 42 books and an immense volume of lesser writings on various aspects of international affairs.

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annual report

ALL PUBLICLY TRADED COMPANIES, holdings, mutual funds, public services, agencies, ministries, and many private and public institutions have to publish every year an annual report. In most cases, the annual report is an institutional portrait, a means of communication, a synthesis of activities during the past 12 months, explaining in words, numbers and figures the reasons behind the successes and failures of an organization or a company.

In order to be listed on a stock exchange, publicly traded companies have to include in their annual reports some specific elements: statistics and detailed financial results according to specific rules edited by the government, national trade commission, or commerce department. This data includes sales, revenues, profits (or losses in parentheses), earnings per share, cash flow, capital spending, and balance sheet with assets. The company has to explain where their stores (branches or laboratories) are located, if new acquisitions were made (or branches sold). The annual report has to state as well the company's dividend policy. There also has to be the report of an independent auditor that confirms the company's financial statements are accurate.

For a stock shareholder, an annual report will explain why the company he or she owns has grown or not, succeeded or failed. It is therefore a way to check if the company is well managed or not. For example, if members of the BOARD OF DIRECTORS get bonuses even during bad years, it will be indicated in the annual report and a shareholder could possibly react or even complain about that situation at the annual meeting, that is usually held a few weeks after the annual report's release.

The message from the president, chair or CHIEF EXECUTIVE OFFICER (CEO) is a key element, almost a telltale story, in every annual report. In fact, these opening lines are sometimes written by communication consultants or marketing specialists, because they have to reassure and even improve confidence for the stockholders (and the public in general). This is the place where vague terms such as "challenging year," and "difficult environment" are used in place of "bad results and problems" to describe the less-favorable economic context. Other, frequent excuses for bad performance include unfavorable currency conversion, weak demand, and an unstable economic context. Optimism and confidence in the future are unavoidable mottoes in the conclusion. This means: "Please, stay with us!"

An annual report is an important part of a company's image. It has to be well-written, elegant, appealing, impressing; it must inspire confidence, honesty, wealth, prosperity. Employees and shareholders, as well as members of the Board, have to look proud of their institution. The annual report not only includes information about the company's aims, balance sheet, financial data; it features graphs, sometimes color photographs of products, employees, members of the board of directors and executive officers.

In the first pages of pharmaceutical manufacturer MERCK's annual report, we can see clear, regular graphs of the continuously rising sales, earnings, and dividend payments over 10 years. Coca-Cola Enterprises' annual reports have become collectibles through the years because they feature classic photographs of Coke logos, marketing products, and publicity. Berkshire Hathaway's annual report always includes a sage sermon from the famous billionaire Warren Buffet. Luxurious annual reports are not always done by the biggest or most flamboyant companies. AOL's annual reports (prior to its merger with Time Warner) in 2000 and 2001 were plain documents on thin paper, without any photographs or embellishments.

As an annual report must explain what the company does, their brands, projects, goals, and guidance, this information is especially useful when the company does business dealing with scientific research, or any uncommon field difficult to explain to the general public.

If the company is traded on a stock market, its annual report has to indicate many specific elements such as where it is traded (name of the stock exchanges and respective stock symbols), the number of shares outstanding, and what were the highest and lowest levels of the shares for each quarter in the last two years. It also has to state the age and compensation for every member of the board of directors, including their amount of stock options earned for the company's shares during the year.

For many stockholders, the annual report is the source to check if the company is profitable, if its value improves, if its shares deliver a higher dividend compared to recent years. Then, according to these results, the shareholder will or will not reconsider holding the stock and might abandon it, either to cash out the capital gains that were made or to reinvest the remaining invested amount in another stock.

Usually, an annual report can be obtained for free from most companies; it is more and more possible to find them on the internet and on the company's own web site. In order to receive a copy of a company's annual report, one has just to own one share; therefore, the shareholder is considered as a co-owner of the company and is thus entitled to get legitimate information about his or her company's directors. An annual report that is delayed, postponed, or re-stated automatically raises suspicion among shareholders, the media, and the public.

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anti-globalization

ANTI-GLOBALIZATION IS A TERM that refers to a grassroots movement in opposition to the concentration of economic and political power in transnational corporations and supranational institutions, such as the WORLD TRADE ORGANIZATION (WTO) and the INTERNATIONAL MONETARY FUND (IMF). These institutions are seen as usurping some of the democratic decision-making powers of ordinary citizens in more developed nations, and taking actions that lower the quality of life in all parts of the world, but particularly in the less developed nations. It would be simplistic to argue that the anti-globalization movement is against the idea of a global economy. Many of those involved in the movement promote closer economic, political, and cultural ties between self-employed artisans, collectives, and non-governmental organizations across the globe. Some have worked for the development of global grassroots markets for crafts, open pollination seeds, and other goods. Thus, rather than broadly opposing global economic relationships, the movement is against what its participants and supporters perceive as a drift away from a more democratic economy.

The anti-globalization movement is comprised of a diverse collection of organizations and individuals. The movement is not guided by a coherent theoretical framework or paradigm, nor is there general agreement on strategies for either democratizing the globalization process or reversing the trend toward the concentration of political and economic power in transnational corporations and multilateral organizations. It is, instead, a populist movement united as much by what it opposes as by what it hopes to build. This is the reason it is possible for anarchists, environmentalists, socialists, and a wide range of other marginalized political groups to cooperate, despite significant differences in their underlying philosophies.

In some very fundamental sense, the anti-globalization movement is anti-capitalist. WTO, the IMF, and transnational corporations are, in many ways, complementary institutions. The transnational corporations are mostly industrial capitalist firms, dependent on wage laborers, or non-industrial firms with close relationships to such industrial capitalist firms. It is the drive by such firms to lower costs and to find new markets that drives the globalization process that the anti-globalization movement opposes. And WTO and the IMF help to break down institutional barriers to such growth.

Transnational expansion. Capitalist firms expand geographically for a wide range of reasons. For example, such firms may build facilities in a foreign country in order to tap into low-cost inputs. The exploitation of labor in poor countries has been of particular concern to anti-globalization activists because it is understood that these firms may use existing authoritarian political arrangements as a tool for guaranteeing cheap and compliant labor. In many countries workers are not allowed to organize into independent labor unions. Further, they risk physical harm for speaking out against unfair labor practices, and may be forced to work under feudal bondage conditions. Thus, what may be in the labor-cost-minimizing interests of the transnational firm may not be consistent with widely supported ideals of human rights and equity. Labor unions based in the UNITED STATES, and other more industrialized nations, have complained about these problems, in part, because firms often shift existing production and wage-labor jobs out of higher-cost areas to lower-cost areas. This trend is not simply a transnational issue. In the United Sates, thousands of jobs were shifted from the higher-cost northern states to lower-cost southern states. Now the southern states are losing jobs to the so-called Third World countries.

In addition to reducing labor costs, other reasons for the transnational firms to expand overseas operations include:

1. accessing subsidies or other special benefits provided by a foreign government
2. improving access to the market in a specific foreign country or related trading bloc partner countries
3. reducing foreign exchange rate risks
4. reducing total tax costs
5. reducing risk of disruption to operations due to country specific political risks, including labor disputes.

The globalization of the production process (creating a "factory" that is geographically de-centered) weakens the power of labor to organize itself, and the power of sovereign states to police production practices, including those relating to the health and safety of the workers, strengthening transnational management's control over the globalized production processes.

Transnational corporations have, to some extent, tried to shield themselves from criticism by investing indirectly in foreign companies. These firms generally have the option of either building their own facilities, that are operated as integral parts of the parent company, or entering into joint ventures or subcontracts with external firms, although often these subcontractors are nothing more than loosely affiliated subsidiaries of the parent company. Joint-venture agreements with external firms can include developing relationships with state-owned enterprises, as is often the case with foreign direct investment in China. Using subcontractors often shields the parent company from accusations of abuse of workers or other offenses related to the behavior of the subcontractor.

However, it is becoming increasingly difficult for transnationals to shield themselves in this way. The anti-globalization movement has targeted certain transnational firms, such as Nike, by exposing the links between parent transnationals and subcontractors who engage in unfair labor practices and pay wages that are considered to be barely above subsistence. The negative publicity can be harmful to the targeted company. This has pushed many firms to alter their business practices.

Cultural imperialism. The anti-globalization movement also includes critics of cultural imperialism, which follows globalization. By cultural imperialism they mean that the United States, in particular, but also other Western nations are imposing their cultural icons, language, and way of life upon other peoples, leading to erosion in the cultural diversity on the planet. These critics tend to look at the cultural impact of globalization in only one direction: the way the transnational corporation brings "Western" culture into the environment where its foreign facilities are located.

However, when transnational firms expand to new environments, the choice of location influences the future culture of the transnational. Ex-pat, or foreign-based managers will be changed by their experiences in the country where facilities are located. The culture of the company will be influenced by the interaction of management with officials and others in the countries where such facilities are located. Foreign managers and workers will bring their own ideas into the corporation. Indeed, this is a powerful intangible benefit to transnational corporations (and potentially to their home countries). These effects are likely to be all the stronger if the transnational acquires an existing firm in another country. Cross-border mergers and acquisitions are becoming more frequent. This is another outcome of the speed-up of globalization: creating more cultural diversity expands the range of ideas possible within the firm, making it more likely the firm can compete effectively in a global market. Research by the American Management Association found a strong correlation between diversity (different demographic characteristics) of top management at corporations and corporate performance (as measured by profitability, productivity, and shareholder value creation). The study of 1,000 firms provides support for the concept that cultural diversity among top management can improve corporate results and give genuinely multinational firms an edge in competition with more culturally homogeneous firms. If this is, indeed, the case then the anti-globalization view of the transnational corporation as a carrier of Western hegemonic culture may cease to be relevant.

Some of the other arguments against globalization have included arguments that transnationals:

1. typically wield greater political power than the governments of the countries where they locate facilities, reducing the degree to which such governments can act independently of the wishes of the transnational
2. use their extraordinary economic and political power to super-exploit local environmental resources and the labor of local people, resulting in environmental destruction and a decline in the quality of life for the local population
3. come to dominate the local economies where they locate facilities, resulting in greater vulnerability of the local economy to shifts in transnational investment strategies.

The ability of transnationals to pull out their investment (or, alternatively, to expand such investments) can have a decisive impact on policy decisions by foreign political leaders. It is clearly in the interest of transnationals to wield as much influence as possible on the policies of governments in nations and localities where they build facilities or carry out operations. Such influence satisfies both the desire to maximize the net present value of corporate investments and the desire of corporate managers to wield greater social and political power for status acquisition or other personal gain.

The hegemony of transnationals over many national governments is facilitated, and perhaps dramatically expanded, by international trade agreements, such as WTO, which severely constrain national sovereignty and guarantee a more favorable environment for trade and foreign direct investment. It is, in fact, the rapid expansion of the scope and reach of these international agreements that has sparked both an explosion in international trade and economic relationships, as well as in the anti-globalization movement. This is the reason the anti-globalization coalition has organized demonstrations targeted at cities where the WTO negotiations or meetings were held in an effort to slow down, if not stop, the process of extending these agreements into new areas of local and national sovereignty.

The grassroots opposition to globalization is a David against Goliath battle and the anti-globalization activists are forced to rely primarily upon street demonstrations and rhetoric. They argue that globalization is having severe negative consequences in both the more industrialized and less industrialized world, from damage to the environment to lost jobs in the northern hemisphere, and substandard wages and working conditions in the southern hemisphere.

The globalization debate. However, supporters of globalization counter with the argument that the increased integration of national economies through investment activities of transnational corporations and the increased flow of global portfolio investments to domestic firms is a key catalyst for more rapid economic growth in the less industrialized world, as well as in the more developed economies. Indeed, it is argued that globalization improves global equity because, in an open economic environment, more investment will flow to the less industrialized economies (due to diminishing returns to investment) sparking rapid rates of economic growth. And the accelerated growth in less industrialized economies creates expanded markets for the output of the more industrialized nations. Everyone is better off, the argument goes, if global trading, manufacturing, and financial relationships expand.

The problem with the above argument is that the evidence does not support it. Growth in the less-industrialized world has been rather spotty and largely concentrated in a few countries. The supposed wonderful opportunities for high rates of return in the poorest countries are either nonexistent or largely unexploited, despite increasingly favorable rules for foreign direct investment in many of these countries. Some of the supporters of globalization have given up and thrown in the towel on the idea that open economies are sufficient to generate the necessary growth in less developed nations. They have come to recognize that more developed nations may, indeed, have advantages that are reproduced over time.

Richer countries have better infrastructure (roads, airports, seaports, telecommunications, etc.), more educated and healthy citizens, and a generally more favorable living environment than the poorer countries, attracting the lion's share of foreign direct investment, particularly the most sophisticated forms of such investment (and the talents of many of the best educated citizens born in the less industrialized world—the brain drain). Is Intel likely to build its new manufacturing plant in Mali or in Malaysia? Perhaps labor would be cheaper in Mali, but Malaysia already has the necessary infrastructure to support Intel's plant. On the other hand, it would be incorrect to assume that more advanced existing infrastructure is *the* determinant of location choices for new investments. These decisions, even when predominantly based on a net present value decision, are functions of a wide range of economic, political, cultural, and environmental factors.

Other supporters of globalization (including Jeffrey Sachs, arguably the leading intellectual voice in favor of globalization) have argued that the evidence in favor of more rapid growth rates in the poorer countries ("convergence") is much stronger than has been recognized. They argue that the less industrialized economies with poor growth records are those with the greatest impediments to open trade. In other words, globalization works when it is allowed to work.

The anti-globalization movement is critical, both implicitly and explicitly, of the tendency of social analysts, whether neoliberals, Marxian theorists, or institutionalists, to focus so much attention on government as the sole subject of the economic growth story. Nevertheless, the anti-globalization movement is particularly hostile to the neoliberal/neoclassical point of view that capitalist firms are, in the best of all possible worlds, benign forces for economic growth and development. The anti-globalization leaders argue that transnational firms, financial and industrial, grow in political, economic, and cultural influence and power every day. And they also argue that supranational (multilateral) institutions, like the IMF and WTO, play an increasing role in directing public policy, both through direct interventions and through "jaw boning" at the expense of democracy. The ability of local governments to act independently is seriously constrained within this environment. Thus, many participants in the anti-globalization movement believe that their struggle is ultimately a pro-democracy movement.

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antitrust

COMBATING BUSINESS MONOPOLIES and unfair commercial practices, antitrust laws are designed to restrict business activities that constitute a threat to free-market competition. Antitrust laws prohibit price fixing, outlaw mergers that will interfere with competition, and prohibit companies from using their economic power to create or maintain a monopoly. While the UNITED STATES was the first country to pioneer such laws, many countries have followed suit in adopting similar laws.

The years after the AMERICAN CIVIL WAR saw a dramatic increase in competition among businesses due in large part to geographic expansion of business markets and to technological innovations that boosted productivity. In order to successfully compete, American business leaders, such as John D. ROCKEFELLER, began to create larger firms by combining smaller firms. At first, these larger businesses were in the form of CARTELS, but as the years went on the businesses became more fully integrated, and by the 1880s were taking the forms of trusts, holding companies, and outright mergers. The effect of these trusts was to increase prices and limit production. By the late 1880s, public outcry against the abuses by these trusts led to the passage of the Sherman Antitrust Act in 1890.

Sherman Antitrust Act. Named for Senator John Sherman, an expert on the regulation of commerce, the Sherman Antitrust Act has two sections. Section 1 states: "Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is hereby declared to be illegal." Section 2 states: "Every person who shall monopolize, or attempt to monopolize . . . any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a misdemeanor." The act is enforced by the Department of Justice through litigation in federal court. Companies found in violation of the act can be enjoined from continuing illegal practices. And if the court determines that violations warrant it, the courts can even dissolve the company. Violations are punishable by fines and imprisonment. The act also provides for private parties injured by violations to seek civil remedies, which can be upwards of triple the amount of damages done to them.

The first case in which the U.S. Supreme Court interpreted the Sherman Antitrust Act was *United States v. E.C. Knight Co.* (1895). This case stemmed from the E.C. Knight Company gaining control of the American Sugar Refining Company and thus enjoying a virtual monopoly of sugar refining in America. In its decision, the Court ruled against the government, finding that manufacturing was a local activity not subject to regulation of interstate commerce. Given the Court's restrictive reading of antitrust law, there was very little enforcement of the Sherman Antitrust Act in the decade or so after its passage.

As the turn of the century approached, the Supreme Court began to apply the act in a variety of contexts—first with regard to railroad cartels and then to a rash of new mergers. This increase in application culminated with the 1911 Supreme Court's decisions in *Standard Oil Co. v. United States* and *United States v. American Tobacco Co.* In both these decisions, the Court found that the Sherman Antitrust Act was violated and ordered the dissolution of the companies. However, these decisions did not establish the proper general standard to be applied. Rather, the court was divided over applying Justice Rufus W. Peckham's versus Justice Edward D. White's reasoning. Justice Peckham's reasoning, which rejected any defense of "reasonableness," condemned "per se" any agreement that directly and immediately restricted competition and therefore trade in interstate or foreign commerce. While Justice White's reasoning, which was the standard applied in the *Standard Oil* and *American Tobacco* opinions, called for applying a "rule of reason." Under the "rule of reason" analysis only unreasonable restraint of trade is a violation of the Sherman Act.

The application of the "rule of reason" approach to the Sherman Act allowed companies far more latitude in their behavior and revitalized political debate over antitrust law. During the 1912 presidential race between Theodore ROOSEVELT, William Howard TAFT, and Woodrow WILSON the "rule of reason" approach was a major issue. After Wilson's election, efforts were made to strengthen the Sherman Act, which in 1914 resulted in the passage of the Clayton Antitrust Act and the Federal Trade Commission Act.

Clayton Antitrust Act. Named after its sponsor, Alabama congressman Henry De Lamar Clayton, the Clayton Antitrust Act was specifically designed to address the competitive dangers arising from price discrimination, tying and exclusive-dealing contracts, mergers, and interlocking boards of directors, where the effect may be to substantially lessen competition or tend to create a MONOPOLY in any line of commerce. The act also forbade intercorporate stock holdings allowing one company to gain control over another and affirmed the right of unions to boycott, picket, and strike.

The provisions of the act specifically dealing with labor issues limited the use of federal injunctions in labor disputes and excluded unions from the restrictions of antitrust regulations. The act permitted individual suits for damages from discrimination or exclusive selling or leasing; and made corporation directors or officers responsible for infractions of antitrust laws. In 1936, the Robinson-Pateman Act strengthened Section 2 of the Clayton Antitrust Act. Both the Department of Justice and the Federal Trade Commission enforce the Clayton Act.

Federal Trade Commission Act. The Federal Trade Commission Act of 1914 created the Federal Trade Commission (FTC), whose basic objective is to promote free and fair trade competition in the American economy. The FEDERAL TRADE COMMISSION was given power to investigate suspected violations of law, hear evidence, and issue cease-and-desist orders when illegal activities have been proven. Under the Clayton Antitrust Act the FTC also hears appeals. Section 5 of the Federal Trade Commission Act declares that "unfair methods of competition in commerce are hereby declared unlawful." A 1938 amendment extended the prohibition to include "unfair or deceptive acts or practices in commerce," whether or not in competition. Only the FTC can enforce Section 5 of the Act.

The FTC also provides guidance to business and industry on what is allowable under the law; and gathers and makes available to Congress, the president, and the public information on economic and business conditions. The FTC consists of five commissioners, one of whom serves as Chair, appointed for seven-year terms by the president, with the advice and consent of the U.S. Senate. No more than three commissioners may be members of the same political party.

As America's economy prospered in the years after the passage of the Clayton Antitrust and the Federal Trade Commission Acts, and through the 1920s, Americans were less concerned with anti-competitive behavior, and, in fact, had begun to accept the Progressive Era's increased level of economic concentration. With the stock market crash of 1929, though, American confidence in business and in the health of the American markets collapsed. Initially, the government's reaction was to expand business cooperative efforts under the National Industrial Recovery Act, however the Supreme Court in *Schechter Poultry Corporation v. United States* (1935) ruled this act to be unconstitutional.

Due in part to an economic downturn in 1937 and concerns regarding the growth of European cartels, as well as to recent economic scholarship arguing that concentrated markets were a contributing factor in troubling economic performance, the late 1930s began to see a significant increase in federal antitrust activity. These increased efforts did not reduce the levels of economic concentration that occurred in the early 20th century, but they did establish a bipartisan commitment to a greater level of antitrust activity than had been seen in the years before the NEW DEAL.

Rule of reason reversal. In 1945, the Supreme Court in *United States v. Aluminum Company of America* reversed its stance regarding the "rule of reason" analysis and found that the size and structure of a corporation were sufficient grounds for antitrust action. In his landmark opinion, Justice Billings Learned Hand found that evidence of greed or lust for power was inessential; monopolies were unlawful, even if they resulted from otherwise unobjectionable business practices.

As Hand wrote, "Congress did not condone 'good trusts' and condemn 'bad ones;' it forbade all." While the ruling established that both dominant market power, and its acquisition or maintenance through wrongful conduct, were distinguishable from competition on the merits, both were needed to establish a monopoly under the Sherman Antitrust Act, the decision limited the range of conduct deemed to be mere skill, foresight, and industry. Through this decision, the Court established a two-element test that would be followed for years to come, but otherwise left the concept of monopolization open to question.

After its decision in *United States v. Aluminum Company of America*, the Supreme Court greatly increased its application of per se rules to condemn certain collective agreements, such as price-fixing and output limitation, as well as to condemn vertical restrictions, such as resale price maintenance restrictions and manufacturer imposed restrictions on dealers' geographic territories and customers. The Court also established a "partial" per se test that condemned most tying arrangements that conditioned the purchase of a desired good on the simultaneous purchase of a second, different good. Though sympathetic toward dealing agreements that required a purchaser to deal exclusively in a particular manufacturer's brand, the Court declared that such agreements were illegal whenever they threatened to "foreclose" a substantial share of market sales.

Partly because the Clayton Antitrust Act's anticompetitive merger clause only applied to stock and not market acquisitions, as well as only to horizontal mergers and not vertical or conglomerate mergers, the Supreme Court's merger decisions in the years after the New Deal were in favor of large acquisitions. This, along with concerns regarding renewed economic concentration, led to the Celler-Kefauver Act of 1950.

This act strengthened the Clayton Antitrust Act, specifically Section 7, by prohibiting one company from securing either stocks or physical assets of another firm when the acquisition would reduce competition. The Act also extended coverage of antitrust laws to all forms of mergers whenever the effect would substantially lessen competition and tend to create a monopoly. By the 1960s, the Supreme Court had reversed its approach to mergers and was even ruling against mergers that might lead to cost savings and lower consumer prices.

In the mid 1970s, due to, among other things, a decline in support for government regulation, new economic analysis that argued for the efficiency-enhancing potential of horizontal and vertical agreements, and increased foreign imports that were heightening the competitiveness of American markets, the Supreme Court's approach to antitrust enforcement began to evolve. In *Continental T.V., Inc. v. GTE Sylvania, Inc.* (1977), the Supreme Court overturned its per se condemnation of nonprice vertical restrictions on dealers and found that such restraints often generated greater increases and benefits than competition among brands. The Court also began to reapply the "rule of reason" approach to the evaluation of horizontal agreements and to look to whether gains in efficiency offset the specific anti-competitive behavior in question.

Less restriction. The Supreme Court's approach to mergers also began to become less restrictive. In *United States v. General Dynamics Corp.* (1974), the Supreme Court determined that a deeper economic assessment of the likely competitive impact of an acquisition was needed before a merger could be declared illegal. In the years since, the Justice Department has revised its merger guidelines to emphasize the possible economic benefits a merger might have and has established much higher thresholds for antitrust challenges to mergers than were previously required. One example of the changing approach to mergers is the telecommunications industry.

In 1984 the government determined that the American Telephone & Telegraph Company (AT&T) was in violation of the Sherman Antitrust Act and broke the company up into several smaller, regional telecommunication companies ("baby bells"). In the years since many of these "baby bells" have merged back together with the government's approval.

The approach to monopolization issues has continued to remain unsettled. In *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.* (1985) the Supreme Court held that in the absence of any plausible efficiency justification a dominant firm could not severely hamper a smaller competitor by discontinuing a long-established cooperative marketing arrangement. With the government's 1982 dismissal of its longstanding suit against the International Business Machines (IBM) and the 1984 divestiture of AT&T, the federal government did not initiate any major monopolization cases for many years. This changed in 1998 when the Justice Department, along with 20 state attorney generals, filed an antitrust suit against the MICROSOFT Corporation.

The Microsoft suit. The Microsoft suit alleged that Microsoft had used monopoly power to restrict competition and maintain its strong market position. Microsoft countered by insisting that its policies had benefited consumers. Initially focused on the contention that Microsoft had improperly attempted to gain control of the internet browser market to the disadvantage of Netscape, the case grew to include broader allegations of anti-competitive behavior on the part of Microsoft. In 2000, United States District Court Judge Thomas P. Jackson determined that Microsoft "enjoys monopoly power" and that "some innovations that would truly benefit consumers never occur for the sole reason that they do not coincide with Microsoft's self-interest." In his final ruling Judge Jackson decreed that Microsoft should be split into two companies. Microsoft appealed the decision, and in 2001 a federal appeals court overturned the breakup order but agreed that Microsoft had abused its monopoly power.

Several full or partial exemptions are permitted under the provisions of antitrust law, including agriculture marketing cooperatives, export associations, labor unions, and major league baseball. In 1970, Curt Flood with the backing of the Major League Players Association sued Major League Baseball, challenging the reserve clause, which gave the St. Louis Cardinals the right to trade him without his permission. Flood lost his case, but his suit paved the way for the abolishment of the reserve clause and the institution of free agency. Other than baseball, no professional sports league is exempt from antitrust law. In the early 1980s, Al Davis owner of the Oakland Raiders wanted to move the football team to Los Angeles, but was blocked from doing so by league owners. Davis sued the National Football League on antitrust grounds and won, thus paving the way for numerous moves of sports teams from city to city.

International antitrust laws. Internationally, it was not until after WORLD WAR II that other countries began to embrace antitrust regulation. In 1948, Britain created a Monopolies and Restrictive Practices Commission and in 1956 it passed a Restrictive Trade Practices Act. Other countries to pass antitrust regulations since 1945 include AUSTRIA, DENMARK, FRANCE, GERMANY, IRELAND, and SWEDEN. After the collapse of communism, both POLAND and RUSSIA passed similar regulations. However, for much of the second half of the century JAPAN did not have any antitrust regulations. Only after the mid-1990s financial crisis in Asia did Japan adopt some antitrust reforms.

With the spread of globalization there has been a significant lowering of international trade barriers and with it an increase in corporate mergers. Debate continues over the level of need and effectiveness of antitrust protection, with some arguing that businesses can best respond to their customer's needs if left alone and others arguing that vigilant application of antitrust law is essential to protect competition. In the years to come, antitrust law and theory will continue to evolve and adapt to the changing economic and global trends of the 21st century.

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AOL Time Warner

RANKED NUMBER 37 in 2002 on the *Fortune* magazine Global 500 list of the largest companies in the world, AOL Time Warner is the leading entertainment company in the world. The company is the result of several layers of mergers, and its holdings extend throughout the entertainment industry.

The earliest components of AOL Time Warner, Warner Bros. (a motion picture company founded 1918), and Time Inc. (publisher of *Time* magazine, incorporated in 1923), stuck to their respective fields through the 1980s: Time Inc. diversifying only into print holdings, while Warner Bros. expanded mainly into film companies. The two companies merged and became Warner Communications in 1986, the same year that America Online, an internet service provider began operations. Warner Communications merged in 1996 with Turner Broadcasting System, a company of cable television networks (such as CNN and TBS) owned by Ted Turner. America Online, meanwhile, became the dominant internet provider and continued to acquire internet companies, most notably the web browser company Netscape in 1999. In 2001, America Online (which had grown to 27 million customers) merged with Warner Communications, and the new company was titled AOL Time Warner.

AOL Time Warner's operations extend across the entertainment industry. All told, AOL Time Warner holdings include (in addition to those listed above) book publishing companies (most notably Little, Brown and Company and Warner Books), over 35 magazines (including *Sports Illustrated* and *Entertainment Weekly*), several film studios (New Line Cinema among them), over a dozen cable television networks (including HBO, BET, and the myriad of Turner networks), several music labels (including Atlantic and Electra), DC Comics, and several sports teams. The conglomerate also owns a number of television network affiliates, a large cable television company, and its own television network.

One impetus for the merger from AOL's point of view was to provide potential programming for its internet service; of particular interest was AOL's ability to stream Time Warner properties over its high-speed (broadband) internet service in the future. As is, the vast holdings of AOL Time Warner allow for marketing to apply synergy (a product being marketed simultaneously on several media) on a vast scale. For instance, any future movie in the Batman franchise could be cross promoted with a corresponding DC comic, a show on the Cartoon Network, a book adaptation published by Little, Brown & Company, a soundtrack released on Atlantic Records, and a film rebroadcast on HBO, promoted in Time Warner Cable advertisements. All products in such a scheme would be produced by AOL Time Warner–owned companies.

AOL Time Warner has not, however, performed according to financial expectations, and the company posted a $5 billion deficit for 2002. AOL Time Warner stocks have similarly dropped by a significant amount. Industry analysts argue that AOL's stock prior to the merger was severely overvalued, and indeed AOL has been accused of artificially inflating its value as early as 1996 by spreading out member acquisition costs over several years rather than when the expenses actually occurred. As of 2003, AOL's accounting practices are under investigation by the SECURITIES & EXCHANGE COMMISSION (SEC). These financial uncertainties led to AOL Time Warner chairman Steve Case (who was AOL chairman before the merger) to resign in 2002.

AOL Time Warner's economic strategy as of 2003 is based around increased cross-promotion on their internet service. *Time* magazine is advertising on AOL, as are Warner movies and the pay cable HBO service; this cross-selling is expected to benefit from AOL's dominance of the internet market. However, the original grand synergistic plans envisioned by the merger of AOL and Time Warner still elude the company, and some observers wonder whether convergence is ever possible. Indeed, the company ended up in 2003 dropping the AOL part of its name, thus reverting to one of its original names, Time Warner.

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Aquila

HEADQUARTERED IN Kansas City, Missouri, Aquila, Inc., owns electricity and natural gas distribution systems in the UNITED STATES, CANADA, UNITED KINGDOM, and AUSTRALIA. Aquila also owns and operates power plants in the United States.

The company began in 1917 as Green Light and Power Company. For the next half century, the renamed Missouri Public Service (MPS) operated as a state-regulated public utility distributing gas and power in the state.

In 1985, Aquila (then UtiliCorp United) purchased Peoples Natural Gas, a gas distribution company with operations in five states. PSI, a small wholesale natural gas marketing company within Peoples, was renamed Aquila Energy. Aquila's profitable gas trading in the short-term "spot" market led to the creation of risk-management products to serve the long-term market. Aquila was following the lead of ENRON and other companies anxious to diversify away from regulated rates of return, and into lucrative new areas.

Aquila added electricity to its portfolio in the mid-1990s, making a market between regulated utilities and volatile energy markets. Aquila soon became, in industry parlance, a "total gas and power risk merchant and energy solution provider." UtiliCorp changed its name to the better known Aquila in 2002.

In the late 1990s Aquila began building power plants in response to rising electricity prices. Aquila's leveraged "merchant" plants were not backed by long-term purchase contracts but short-term power prices.

When power prices began to fall in mid-2001, Aquila was hurt in three ways. First, trading margins were squeezed by reduced volatility. Second, the cash flow and capital value of merchant power plants plummeted. Third, the company's credit worthiness fell below the grade needed to support its trading books.

Bad investments were also part of the overall problem. Aquila, like other high-flying energy marketers, structured deals that accelerated revenue that was then invested as VENTURE CAPITAL. As Aquila's telecommunications investments soured, the company was left with its energy contract obligations but less cash flow to cover them.

Aquila embarked on asset sales and closed its U.S. and European trading operations in 2002. The market value of Aquila, which peaked at $4.3 billion in May 2001, had fallen 95 percent to under $300 million as of first quarter 2003. With much learned, Aquila has returned to its roots as a gas and electric utility.

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Arab nationalism

A SOCIO-HISTORIC FRAMEWORK to define a collective identity, Arab nationalism enunciates a shared ethos and imagines a pan-ethnic moral, intellectual, cultural and political unity among the 22 Arab countries. Gamal Abdel Nasser, one of its principal exponents saw it as a "dawn after a terribly long night," a "genuine spiritual unity," and "a solidarity emanating from the heart." It was designed to repulse imperialist aggression but also to "shun extremism" from the political or religious left and the right.

Scholars differentiate between four overlapping labels: Arabism, Arab nationalism, Arab unity, and Arab world. The first refers to a unique cultural personality born of Arab language, memory, and imagination and privileged by Islamic and pre-Islamic Arab values, symbols, and ideals; the second refers to a group solidarity, national solidarity, and regional solidarity; the third refers to a timeless affinity expressed through corporate forms and concrete manifestations of solidarity aimed at region-wide interest aggregation and interest maximization "within," to use Ahmed Ben Bella's words, "a unified framework of unified tendencies;" and the fourth refers to a self-contained universe of discourse and action complete with its own cosmology, ontology, and epistemology, on the one hand, and its own architecture, language, literature, myth, poetry, food, dress, music, and more, on the other.

All four concepts are underpinned by a common belief that as a culturally homogeneous people, Arabs could realize their potential only by turning themselves into a single political entity. And such a transformation could be achieved through self-conscious adoption of Arab-Islamic values, symbols, heroes, texts, and norms which furnish a framework to conceptualize both Arab unity and Arab nationalism, and by making Arabs aware of their own creative capacities and the spiritual and intellectual essence of their own existence.

Social, political, and intellectual antecedents. In a large measure, Arab nationalism was a product of the age of COLONIALISM. However, the rise of Arab nationalism was not just a label for struggles against Ottomans, Europeans, or the Zionists; it resulted from the convergence of many socio-historic factors and efforts of numerous institutions, movements, and intellectuals working for cultural, social, political, and ideological revival of the "Arab soul."

It was actually a unique blend of nationalism, anti-imperialism, SOCIALISM, modernism, and internationalism. Rooted in multifarious responses to colonization and foreign domination, social backwardness, and economic stagnation; and further motivated by need for modernization, internal reform, strategic depth and international esteem, Arab nationalism was accentuated by convergence of religious and cultural revivalists, on the one hand, and by Israeli occupation of Arab lands, on the other. It arose and was widely accepted as an ideology of self-empowerment with the promise of rejuvenating the Arab mind, heart, and soul. In sum, it resulted from the convergence of efforts aimed at overthrowing colonialism, resisting imperialism, and seeking religious reform, modernization, self-empowerment, intellectual renaissance, and material development.

In the final analysis, it was an ideology of a region and not of a single nation-state. The history of Arab nationalism is a history of building regional unity and then seeking inter-regional cooperation; the non-aligned movement being a monumental example of that spirit of reaching out to other groups and peoples. Ali Mazrui has perceptively pointed out: "European Nationalism generally has had a pervasive influence on much of the Third World, including the Arab world. . . . It was not the Arabs, however, but the Jews who rejected the idea of Arabs and Jews living together in a united Palestine."

Arab wa Ajam. On one of its many contours, Arab nationalism seeks to recover and restore the original "purity" of Arab identity, culture, and religion along with the authenticity of its freedom and independence. To that end, the concept of *Arab wa Ajam*, Arab and non-Arab, is applied to sift and separate un-Islamic ideas, beliefs, values and practices from the genuinely Islamic ideas, beliefs, values, and practices. The historical fact that Prophet Muhammad was an Arab, that Islam was revealed first to Arabs, and that the Qu'ran was revealed in the Arabic language, created a high degree of co-extensiveness, indistinguishability and inseparability, between Islam and Arabism. And thus recovery of pristine and unadulterated Islam became synonymous with shedding of all *Ajami*, non-Arab, ideas and influences. Thus the religious purists became inadvertent allies of Arabism.

While religious theorists were seeking to separate Arab thought and belief from non-Arab thought and belief, the political thinkers and theorists were seeking to unify, first, Muslim and Christian Arabs, and, then, through the non-aligned movement, Arabs with other newly independent nations. As, inspired by Elijah Muhammad, many African-Americans saw Islam as one more, albeit historic, dimension of black nationalism, Arab nationalists saw it as a key dimension of Arab nationalism, identity and ideology. It is in this context, that a number of Christian Arabs, ranging from Michel Aflak to Edward Said to Clovis Muksoud, have talked of being "Muslim by culture."

Understandably, Arab unity was the main theme around which the Arab nationalist narrative was organized. But, for sure, that was not the only theme. Other themes included de-colonization, liberation, independence, freedom, equality, and individual and collective dignity. In sum, this ideological edifice was built on the five pillars of unity, democracy, socialism, industrialization, and progress.

Each of these public values and goals, it was argued, necessitates specific groundwork. Unity presupposes mutual understanding, respect and trust, as democracy presupposes elimination of FEUDALISM and sectarianism. It was obvious to the exponents that democracy will not succeed, as long as voters are controlled by landlords or are themselves motivated by tribal, religious, or regional considerations. The task of Arab nationalism was to help the Arab nation overcome these impediments.

Since the material conditions in the Middle East were significantly different than Europe, the task of building a real and consequential socialist movement also had to be different. Here, the term "socialism" was used to invoke socially sanctioned conceptions and norms of social justice in the Arab-Islamic context. However, it required transforming ideological affinities from tribes and communities to classes and institutions and movements. This had the inherent difficulty of calling for an overall Arab unity and then asking the Arab masses to struggle against some of those with whom they had just been asked to form a fraternal bond.

Progress was perceived in both material and intellectual terms. Promoted as a positive and a forward-looking approach to life, this public value was to inculcate a spirit of self-reliance based on a rational outlook on life and a scientific approach to socio-economic problems. Industrialization was to be the engine of this progress but not at the cost of Arab identity, so one had to strive for industrialization without westernization.

Nasserism. The more prominent among those who had articulated and popularized the cause of Arab nationalism included Sharif Husayn (1859–1931), Zaki al-Arsuzi (1899–1968), Abd al-Rahman Shahbandar (1879–1940), Michel Aflak (1910–89), Salah al-Din al-Baytar (1912–80), and Gamal Abdel Nasser (1918–70).

For many, Nasserism, named after Nasser, one of the foremost theoreticians and practitioners of Arab nationalism, was simply another name for Arab nationalism. Nasser, described by one biographer as "a man of ice and fire," believed that EGYPT's historical destiny was defined by three concentric circles: Arab, African, and Islamic. "There is no doubt," Nasser had emphasized, "that the Arab circle is the most important and the most closely connected with us." The fourth circle of NON-ALIGNMENT and THIRD WORLD INTERNATIONALISM was to emerge in Nasser's thought and Egypt's foreign policy at a later date.

In his speech on "Rise of Arab Nationalism" in the Indian Parliament on August 14, 1958, Jawaharlal Nehru, the prime minister of INDIA, and one of the most astute participant-observers of 20th-century national liberation movements, expressed his support for Arab nationalism by arguing that it represents "the urge of the people" who are "trying to push out this foreign domination." Complimenting Nasser for his able leadership and for having become "the most prominent symbol of Arab nationalism," Nehru observed that Arab nationalism had become a "dominant force" in the region and must be treated with respect and dignity by Europeans.

Though Nasser had paid lofty tributes to Shukry Al-Kuwatly and called him "the first protagonist and herald of Arab nationalism after the Great Egyptian Revolution," it is he, Nasser, who became the most widely known leader, symbol, and spokesperson of this cause. In reflecting on the meaning and significance of Arab unity, Nasser told the Egyptian National Assembly on February 5, 1958: "The Arab unity goes back to time immemorial. For this unity existed from the very beginning of the Arab nation's existence, grew on the same soil, lived through the same events, and moved toward the achievement of the same aims, so when our nation was able to lay down the base of its existence in the area, and to affirm them, it was certain that unity was rapidly approaching."

It was only though Nasser and his colleagues among the Free Officers (an organization formed to defeat neo-colonialism, end feudalism, liquidate monopolies, institute strong defense, establish social justice, and introduce democracy) that the various streams of Arabism became the mighty river of Arab nationalism.

Nasser argued that this unity was built upon many layers of history: first it was achieved through the "force of arms at the time when arms were the means by which humanity in its infancy made itself understood," then it was confirmed by holy prophecies; third, it was reinforced by the "power of faith" under the banner of Islam, and fourth, it was further cemented by "the interaction of various elements in a singly Arab nation."

For Nasser the true nature of Arab nationalism was clearly demonstrated "when the Christianity of the Arab Orient joined the ranks of Islam to battle the Crusaders until victory." While Arab nationalism became the dominant ideology of the region, Nasserism became its dominant form during the second half of the 20th century. For Nasser the primary unit of thought was region and not an individual country. He saw Middle Eastern countries as so many ingredients for the unified Arab nation and his goals were internal unity, reform, revival, empowerment, and prosperity.

Arab nationalism and Islam. Arab nationalism had a complex, intricate, mutually enhancing, and mutually delimiting relationship with Islam. Interestingly, Christian Arabs played a prominent role in articulating Islam as the defining essence of the high Arab culture and a factor common to all Arabs. Michel Aflak, a Christian Arab, believed that once the Arab Christians "were awakened to their true identity, Islam would become for them 'a national culture' and an expression of their living heritage."

Though at one level, Arab nationalism was an attempt to link Islamic culture with pre-Islamic Arab heritage, ranging from Mesopotamia to Babylon and Nineveh, and from legal codes of Hammurabi to the poetic vision of the Saba Mualaqat (the seven great poets), and though many scholars have discussed the dialectical link between Islamic reform—a cultural revolution of sorts to rid Islam of various distortions and contaminations—and Arab nationalism, yet the movement for pan-Arabism was not a movement for pan-Islamism. Actually, the two became rival movements in the Middle East. In the 1960s, Egypt and SAUDI ARABIA were competing for the leadership of the Arab world, first through the civil war in Yemen, and later through the rival ideologies of pan-Arabism and pan-Islamism.

In fact, the popularity of pan-Islamism in the Muslim world during the 1980s and 1990s, accelerated by the Islamic revolution in IRAN and the war against Soviet invasion and occupation of AFGHANISTAN, had coincided with the decline if not demise of Arab nationalism in the Middle East. Arab nationalists see Islam as a culture, more than as a religion, and thus feel intellectually and morally consistent in asserting their profound admiration and even celebration of Islam while professing a secular creed.

One task for Arab nationalist was to renegotiate political geography by shifting centers of hope and inspiration from foreign lands to the heart of Arabia. Al-Husri has suggested that in being a project of unifying all—Muslim and Christian—Arabs, the exponents of Arab nationalism, had to steer Muslims away from the Ottomans and Christians and their European power.

Arab nationalism and capitalism. Despite the generalized focus of many Arab states on economic development through heavy investment in the public sector and despite the avowed sympathy of Arab nationalists for different varieties of non-Marxian socialism (including Michel Aflak's Arab socialism, and Habib Bourghiba's constitutional socialism) and non-capitalist paths to development, Arab states always remained open to capitalism, and followed capitalist principles in banking, TRADE, investment, MARKETING, and management. An important consequence, flowing from both Arab nationalism and non-alignment, was the public attitude toward foreign aid. Though it is impossible to generalize the economic and fiscal policies of 22 Arab countries, which exhibited significant differences among themselves, the public attitude toward foreign aid, particularly from previous colonizers, such as the UNITED KINGDOM and FRANCE, as well as other capitalist countries such as the UNITED STATES, was one of caution and careful negotiation. Other significant policy implications included land reforms, (subsequent enfranchisement of peasants), preferential trade relations with Arab and African countries, and knowledge and technology transfer from the socialist bloc.

Critical evaluation. Arab nationalism has been criticized from three perspectives: Western, Religious, and Nationalist.

Some Western powers saw it as an attempt to replace the Ottoman Empire with a nascent Arab empire. Responding to the western critics of Arab nationalism, Nehru said: "It was said that some kind of an Arab empire was being built up, which was dangerous. I do not know about the future, but I see no empire, much less an Arab empire."

While Muslim religious leaders equated it with secularization of the Islamic creed, critical secular thinkers saw it saddled with the under-development and incompetence of Arab ruling elites, a nascent bourgeoisie, and a sprawling petty-bourgeoisie. In addition, it was seen as handicapped by both internal and external factors including tribalism, despotism, illiteracy, single-commodity economies, emergence of rentier states, and crafty manipulations of western oil companies and multinational corporations.

Future prospects: Neo-Arabism. At the dawn of the 21st century, PALESTINE has become the central focus of Arab nationalism and has brought a sense of urgency and global visibility to its cause, yet the future of Arab nationalism remains uncertain. It remains uncertain in terms of its direction, goals and strategies, and moral-philosophical orientations. Those matters, it may be safe to say, will be decided in part by the ability of the Arab nations to respond to the long-standing challenges of modernity and post-modernity, particularly challenges in the areas of social reform, democracy, gender equality, rule of law, human rights, and social justice. It will also depend on increased rates of literacy, knowledge acquisition, technology transfer, infrastructural development, conflict management and conflict resolution.

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arbitrage

THE PURCHASE AND immediate sale of an asset or a commodity to reap a guaranteed instant profit from the difference in their respective prices is known as arbitrage. People who engage in arbitrage are called arbitrageurs. The concept of arbitrage is very closely related to the law of one price, which states that in competitive markets identical assets or commodities should have the same price. If prices are different, then there is an opportunity for arbitrage and arbitrageurs will trade, equalizing the prices.

Consider the following example. Let us look at the price of gold, usually measured as the price of a standard quality of one ounce of gold. Assume that the price of gold in New York is $250 per ounce and the price of the same quality of gold in Los Angeles is $300 per ounce. This implies that there exists a price differential and someone can potentially gain profit by buying gold in New York and selling it in Los Angeles. If the transportation cost is $3 per ounce, each time you buy gold in New York and sell in Los Angeles, you make a profit of $47 per ounce. In this example there is no risk associated with this trade as long as the prices do not change while you are transporting gold. However, in some cases you can even avoid this risk by signing a contract with someone in Los Angeles that you will sell gold in the future at a specific price which is agreed upon today. Additionally if you can delay payment when you buy gold from New York, you will gain a guaranteed profit without taking any risk at all. This is called pure risk-less arbitrage.

As more traders buy gold from New York, the increased demand for gold will drive up gold prices in New York. Similarly, an increase in supply will put a downward pressure on gold prices in Los Angeles. Prices in both markets will continue to move as long as the price in New York is lower than the price in Los Angeles by more than $3. The process will stop when the price differential is only $3, as there is no opportunity for arbitrage and thus no pressure on prices to move. Note that in the real world opportunities like these do not exist for long as arbitrageurs are constantly on the lookout for them. In the above example, if you further assume that there is no cost of undertaking this trade, and there are no other trade barriers, then you should expect the same price to prevail in both markets. This is the law of one price: prices move in markets based on supply and demand conditions until there is no opportunity for arbitrage and one price prevails.

The law of one price and the concept of arbitrage carry over to financial markets as well. If you look at price of a share of stock of GENERAL MOTORS on the NEW YORK STOCK EXCHANGE and London Stock Exchange, you will see almost the same price in both markets because the share of stock is identical, and trading costs are very low in financial markets. Because a substantial price differential would result in arbitrage, so it will result in price equality. The law of one price and arbitrage are very important in valuation of assets in finance.

However, in the real world, financial-asset prices sometimes differ by more than the trading costs. Does that mean that law of one price sometimes does not apply to real life? Actually, it simply means that the underlying assets could be different or the markets are not competitive. In competitive markets, arriving information is processed very quickly, and if markets are not competitive, price differentials will prevail as traders will not know about these differentials and, thus, will not engage in arbitrage.

Interest rates on financial assets are also related to arbitrage and the law of one price. For example consider the bond market, where BONDS are debt securities issued by a government or a corporation to finance borrowing needs. When you buy a bond you are essentially lending your money to the bond issuer, and you get compensation through earned interest. If two bonds in the economy are very similar in their characteristics, such as risk, then you should expect almost the same interest rate on both of them. The reason is that no company will pay a higher interest rate since it does not want to increase its borrowing cost; likewise, it will not pay a lower interest rate because the public will then buy bonds from another company. If interest rate differentials exist, then an entity can possibly borrow where interest rates are low and lend where interest rates are high. This is the concept of interest-rate arbitrage. Corporations use the concept of interest-rate arbitrage to calculate how much interest they should pay on bonds when they need to borrow money. They just look at what the market is paying on a similar bond to the one they plan to issue.

There are numerous applications of arbitrage in the foreign-exchange market. Perhaps the most important one is in determining currency exchange rates. An EXCHANGE RATE is the rate at which one country's currency can be traded for another country's currency. Exchange rates are very important since they directly impact the exports and imports of a country and thus affect its economy.

Various theories have emerged in the literature for exchange-rate determination in the foreign-exchange market. However, the Purchasing Power Parity (PPP) theory is used extensively to explain the determination of exchange rate between two currencies. The absolute version of the theory states that the exchange rate between two currencies is equal to the ratio of their respective price levels. For example, if the price of one bushel of wheat is $2 in the UNITED STATES and £1 in the UNITED KINGDOM, then the exchange rate should be $2 for £1. In other words, according to law of one price, a given commodity should have the same price across countries so purchasing power is at parity. If that is not the case, then traders can buy a commodity from a country where it is cheap and sell in a country where it is expensive and gain an instant profit. This commodity arbitrage will result in equal commodity prices across countries so purchasing power parity is established.

Of course this theory assumes no trade barriers, no transportation cost, and only looks at commodities and ignores capital flows. In real life, the relative version of PPP is followed which states that changes in exchange rates are proportional to relative changes in price levels in two nations. In the real world, PPP is only valid over long periods of time and is more relevant for individual traded goods, and does not work well for non-traded goods.

Due to arbitrage you will not find differences in exchange rates across countries. Also arbitrageurs ensure that if you know the exchange rate between two currencies you can calculate the third one. For example, let us say that the Japanese YEN price of a U.S. DOLLAR is ¥100 and the yen price of the UK pound is ¥200. It follows from the law of one price that the cross rate, which is the dollar price of one pound, is $2. This is due to triangular arbitrage, the concept of arbitrage extended to three commodities or assets. In today's world of computers and high speed of information flow, arbitrage opportunities exist only for very brief time periods.

Modern FINANCE theory has spent a considerable amount of time studying the relationship between interest rates and returns on stocks. The Nobel Prize in Economics for 1991 was awarded to Harry MARKOWITZ, Merton MILLER and William SHARPE for development of a theory that relates interest rates to stock returns. They developed the Capital Asset Pricing Model (CAPM), which is still widely used by academia and practitioners on Wall Street. CAPM, like most other modern finance theories, relies on the concept of arbitrage. CAPM assumes absence of arbitrage profits to arrive at the formulae for predicting stock prices.

Sometimes, without even knowing it, people use the law of one price in their daily lives. Suppose you want to know, what is the value of your house? An easy way is to find out what a similar house on your street was sold for recently. You are basically using law of one price here. Arbitrage is a very simple process but its applications in real life are endless.

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Argentina

COMPRISING MORE THAN a million square miles in South America, Argentina is a vast country with a relatively small population of 37 million, a third of which concentrates in the Buenos Aires metropolitan area. Argentina's territory provides great geographic diversity including high peaks in the Andes along the western border with CHILE, flat expanses of fertile soil in the central Pampas, high arid plateaus bordering Bolivia to the northwest, marshlands and tropical forests in the northeastern border with Paraguay and BRAZIL, and the remote and scarcely populated regions of Patagonia to the south. The rich agricultural lands of the central plains, source of vast amounts of grains and cattle, have been determinant in shaping of the nation's economic and political institutions since the early Spanish settlement.

Under Spanish colonial rule, the territory that currently includes Argentina was a neglected province, part of the *Virreinato del Peru* and administered from Lima. The territory did not have precious metals, and generally lacked concentrations of indigenous people readily available as labor. Northwestern regions adjacent to Potosi enjoyed some prosperity as suppliers of beasts of burden for the silver mines, food for the miners, and a few manufactures. The port of Buenos Aires began to acquire salience with the establishment of the *Virreinato del Rio de la Plata* in 1776. It acted primarily as a center for the smuggling of manufactures from PORTUGAL and Britain, and the export of hides and dried meat to slave plantations in the West Indies and the southern UNITED STATES.

In 1806, and again in 1807, British troops attempted to take Buenos Aires from the Spanish, but were defeated by local militias with little support from Spain. Napoleon's occupation of Spain (1808–13) provided the local elites an opportunity to declare autonomy from the Spanish government in 1810, leading to full independence on July 9, 1816. The territory split into rival factions with diverse visions of nationhood, but a liberal constitution was finally adopted in 1853, which, having undergone significant amendments through the years, is still in force today.

On a course of economic LIBERALISM, Argentina experienced rapid export expansion during the second half of the 1800s. Technological innovations significantly cut the costs of transportation of grains and meat to European markets. The economic boom was primarily financed by British investment in railways connecting Buenos Aires with the Pampas, and the labor provided by massive immigration from Europe, primarily Spaniards and Italians, but also Welsh, Germans, Eastern European Jews, and Syrian-Lebanese.

By the early 1900s, the export bonanza had placed Argentina among the richest nations in GROSS DOMESTIC PRODUCT (GDP) per capita. However, this wealth had weak foundations as it was highly dependent on agricultural exports to Britain and supported by large income inequalities among the population and between regions. Immigrants were accused of bringing with them socialist and anarchist ideologies, contrary to the interests of the ruling oligarchy. The demands of syndicalist labor unions placed strains on the established order, and were generally met with repression, persecution, and deportation of its leaders. The middle class, represented by the *Unión Cívica Radical* (UCR), also pressed for reforms. A new electoral law in 1912 guaranteed universal male suffrage and the secret ballot, resulting in the 1916 election of the UCR leader, Hipólito Yrigoyen, to the presidency.

The disruption of world trade caused by World War I opened opportunities for the manufacture of import substitutes. The vulnerability of the country to events beyond its borders also awoke nationalist sentiments and a desire for greater self-reliance. The inter-war years did not bring the expected return to normalcy. Britain never fully recovered its dominant position in world affairs and the UCR dominated domestic politics to the dismay of conservative opposition parties. The onset of the Great DEPRESSION provided an opportunity for the old oligarchy to return to power through a coup d'etat in 1930. The Depression had catastrophic effects on the Argentine economy, but it served to reinforce fledging industrial development and strengthen nationalist resolve and political ambitions in the military.

The country lacked political stability until the election to the presidency of Colonel Juan D. Perón in 1946. His pro-labor stance during a brief tenure at the Ministry of Labor a few years earlier had won him the support of labor unions. Armed with a significant reserve of foreign exchange accumulated through World War II, and enjoying high commodity prices in the post-war years, Perón set out to implement a state-centered policy of import substitution, industrialization, and nationalization of key sectors of the economy such as the railways and oil production. He also enacted legislation favorable to labor unions and industrialist development, often at the expense of landed elites and the agricultural sector.

A military coup in 1955 sent Perón into exile in Spain, and the military establishment banned him from politics for nearly two decades. Civilian governments were replaced by military administrations at a dizzying rate until Perón was allowed to return to politics, winning elections in 1973. Perón's untimely death in 1974 led to the escalation of political violence between leftist urban guerrillas and paramilitary forces, resulting in a military coup in 1976.

The military junta that followed (1976–83) engaged in the brutal repression of leftist groups resulting in the disappearance of 9,000 to 30,000 people. Countless others were tortured or fled into exile. The military also implemented economic liberalization policies with disastrous consequences including the ballooning of the foreign debt from $8 billion to $50 billion in the seven years they were in power. By 1982, the junta faced economic collapse and was devoid of political support. Seeking instant popularity through a burst of nationalism it embarked on a military adventure in the *Islas Malvinas* (Falkland Islands), trying to enact their claim of the British-ruled islands in the south Atlantic. After a quick conflict, the Argentine junta's incompetence was confirmed on the battlefield, and the military had no choice but to return the nation to democratic rule.

In 1983, Raúl Alfonsín, candidate of the UCR, became president. His administration struggled with the enormous burden of the foreign debt during what has come to be known as the "lost decade" in Latin America. In 1989, toward the end of his administration, renewed bouts of hyperinflation forced an early transfer of power to president-elect Carlos S. Menem of Perón's *Partido Justicialista*.

Menem implemented a staunchly neo-liberal program of economic reforms that included rapid trade and capital account liberalization, and the widespread privatization of state enterprises. Menem's success in eliminating inflation and accelerated rates of growth caused his popularity to soar, resulting in his re-election in 1995. Privatization and the curtailment of the role of the state in the economy resulted in the rapid concentration of wealth, the erosion of the middle class and the weakening of labor unions. Another important accomplishment of his administration was the creation of Mercosur, a regional customs union, by Argentina, Brazil, Uruguay and Paraguay.

The cornerstone of the economic model was the Convertibility Plan; essentially monetary policy based on a fixed exchange rate of the Argentine peso to the

U.S. dollar. Its viability relied on heavy inflows of foreign capital, but the Mexican peso crisis of 1995 and the ASIAN FINANCIAL CRISIS of 1997 caused international capital flows to emerging markets to dry up. The peso also became severely overvalued with respect to the currency of Argentina's top trade partners, particularly after the devaluation of the Brazilian real in 1999 and the decline in value of the euro in 2000. The possibility of a balance of payments crisis emerged and the INTERNATIONAL MONETARY FUND demanded the implementation of austerity measures. In 1998, the economy entered a recession that would last until 2002. Menem's second term, started in euphoria, closed in disappointment as the unemployment rate reached 15 percent in 2000, up from 7 percent in 1989.

Fernando de la Rúa, Menem's successor, was unable to re-establish growth. In December 2001, food riots turned into massive protests demanding his resignation. After de la Rúa's resignation and a political compromise in Congress, Eduardo Duhalde emerged as president in January, 2002. He immediately declared an end to the fixed exchange rate and the largest default of sovereign debt in history. By late 2002, more than a decade of reforms to the Argentine economy had resulted in unemployment at 19 percent, population below the poverty line at 54 percent, a decline in GDP of 12 percent, and a public foreign debt of $160 billion. It should come as no surprise that Argentines have lost faith both in statist and neoliberal models. In the midst of social, political, and economic crisis, civil society has been strengthened in neighborhood assemblies, workers' takeover of shut-down factories, and organizations of the unemployed.

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Armenia

THE SECOND MOST densely populated of the former Soviet Republics, Armenia is landlocked between the Black and Caspian Seas, with the capital at Yerevan.

The first Armenian state was founded in 190 B.C.E., and for a time, Armenia was the strongest state in the Roman East. In 301 C.E., it became the first nation to adopt Christianity. It was incorporated into RUSSIA in 1828, and the SOVIET UNION in 1920.

Armenian citizens voted overwhelmingly for independence in 1991, at the dissolution of the Soviet Union, and held their first presidential election that year. Armenia has had periods of political instability since then, struggling with the transformation from a communist country to a stable, Western-style parliamentary democracy. Armenia has registered steady economic growth since 1995.

As a member of the UNITED NATIONS, INTERNATIONAL MONETARY FUND, WORLD BANK, and other international institutions, Armenia had a population of 3.3 million people in 2001 and a GROSS DOMESTIC PRODUCT (GDP) of $11.2 billion.

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Arrow, Kenneth J. (1921–)

AWARDED THE 1972 Nobel Prize in Economics (with John R. HICKS), Kenneth Arrow was cited by the Nobel Committee for "pioneering contributions to general economic equilibrium theory and welfare theory."

Arrow made significant contributions to the development of more refined analytical techniques in economics, and helped introduce the economics of uncertainty and monetary economics. He also made a major contribution in the field of public choice, proposing the concept of the social welfare function.

Born and raised a true New Yorker, Arrow obtained his B.S. in social science from the City College of New York, and his M.A. in mathematics and Ph.D. in economics from Columbia University.

Arrow's graduate study was interrupted by WORLD WAR II, when he served as a weather officer in the U.S. Army Air Corps, rising to the rank of captain. Returning to Columbia after the war, Arrow also conducted research at the Cowles Commission for Research in Economics at the University of Chicago. The years at Cowles (1946–49) were important for the young economist. Arrow writes in his Nobel autobiography: "The brilliant intellectual atmosphere of the Cowles Commission, with eager young econometricians and mathematically inclined economists under the guidance of Tjalling KOOPMANS and Jacob Marschak, was a basic formative influence for me, as was also the summers of 1948 and subsequent years at the RAND Corporation in the heady days of emerging game theory and mathematical programming. My work on social choice and on Pareto efficiency dated from this period."

Arrow is probably best known for his book *Social Choice and Individual Values* (1951), based on his Ph.D. dissertation, in which he proved his famous "Impossibility Theorem." As described by author David R. Henderson, Arrow showed that under certain assumptions about peoples' preferences between options, it is impossible to find a voting rule under which one person emerges as the most preferred. Arrow went on to show that a competitive economy in equilibrium is efficient and that any efficient allocation could be reached by having the government use lump-sum taxes to redistribute, and then letting the markets work.

Arrow's research led to the economic proposition that the government should not control prices to redistribute income, but rather if it must redistribute at all, do so directly.

Another example of Arrow's contribution includes being one of the first economists to deal with the existence of a learning curve in production. In simple terms, Arrow showed that as producers increase output of a product, they gain experience and become more efficient. "The role of experience in increasing productivity has not gone unobserved, though the relation has yet to be absorbed into the main corpus of economic theory," Arrow wrote in a 1962 article. Some economists argue that even today, Arrow's insight into the learning curve has not been fully integrated into mainstream economic analysis.

Arrow has taught at several universities in the United States and Europe and in early 2003, he was Joan Kenney Professor of Economics and Operations at Stanford University. His professional affiliations include the U.S. National Academy of Sciences, the American Academy of Arts and Sciences, the American Philosophical Society, the British Academy, and the Finnish Academy of Sciences. Arrow has received 16 honorary degrees from American and European universities, and has served as president of Econometric Society, the American and the International Economic Associations, and the Western Economic Association.

In addition to *Social Choice and Individual Values*, Arrows other important works include *General Competitive Analysis* (with F. Han, 1971) and the *Collected Papers of Kenneth J. Arrow* (1984).

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Arthur, Chester A. (1829–86)

THE 21ST PRESIDENT of the UNITED STATES, Chester Alan Arthur was born in Fairfield, Vermont. When he was five, his family moved to upstate New York. Arthur graduated from Union College in 1848, then studied law and joined a New York City law firm.

Arthur's strongly held anti-slavery views motivated him to join the new Republican Party. In 1857, he became a judge advocate in the state militia and was called to active duty during the AMERICAN CIVIL WAR. After leaving the Army in 1863, Arthur resumed his legal practice as well as his involvement in local politics.

In 1871, President Ulysses GRANT appointed Arthur collector of customs for the Port of New York. This was considered a plum position because of the many patronage jobs it controlled, and Arthur satisfied the patronage demands of the city's political machine, hiring many more people than were needed for the work. In response to demands by reformers, President Rutherford HAYES removed Arthur in 1878.

In 1880, the Republican Convention deadlocked in a fight between reformer and machine politicians, known as Stalwarts. Eventually, they settled on moderate reformer James GARFIELD for president and nominated Arthur as vice president to satisfy the Stalwarts. Although Arthur's political boss ordered him to reject the nomination, Arthur accepted.

Given Garfield's youth and vigor, reformers saw the vice presidency as a relatively harmless place for a machine politician like Arthur. They were horrified the following summer when Garfield was assassinated.

Despite his background, President Arthur became a powerful advocate of political reform. Garfield's death resulted in a public outcry for civil service reform, and in 1883, Arthur signed the Pendleton Act into law, banning political kickbacks from public employees. The Act also began to protect many government jobs from political litmus tests and established a bipartisan Civil Service Commission to administer it.

Arthur championed attempts to reduce the amount of federal funds wasted on patronage and pork-barrel (special-interest) spending. He attempted to reduce tariffs to prevent large surpluses of money that the government wasted, though this met with limited success. He was more successful in moving surplus away from patronage and toward paying off debt. He reduced the national debt from $2.1 billion in 1881 to just over $1.8 billion when he left office in 1885.

Many applauded Arthur's reforms, but it also made him many enemies in the political establishment. In 1884, he lost his party's nomination, and also failed in an attempt to be nominated for a New York senate seat. He died two years later.

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Asian developmental state

ASIAN DEVELOPMENTAL STATES emerged during the Cold War in JAPAN, SOUTH KOREA, TAIWAN, and SINGAPORE as a controversial hybrid of Soviet Union-style central planning and American free market capitalism. Governments promoted industries judged to be "strategic" in enhancing overall economic growth, while non-strategic sectors were left to market forces.

The industries chosen for promotion reflected the developmental states' nationalist orientation to economic activity. In contrast to neo-classical economists' internationalist ideas of comparative advantage and mutual gains from trade across national boundaries, developmental states viewed trade as a national struggle with clear winners and losers. Producers of technologically sophisticated products became rich while countries that concentrated on light manufactures and commodities remained poor. Developmental states, therefore, raised their country's standard of living by promoting industries with high paying jobs such as automobiles, computers, shipbuilding, and petrochemicals.

Government pilot institutions emerged to plan and coordinate the systematic development of these industries. The Japanese Ministry of International Trade and Industry (MITI), for example, drafted the Petrochemical Nurturing Plan in 1955 and provided initial capital investment through the government's Japan Development Bank. MITI also assisted the industry with technology import licenses, tax exemptions, and facilities constructed at government expense. Once the industry was underway, MITI organized the petrochemical companies into an "administrative guidance cartel" to facilitate government coordination. During Japan's rapid economic growth in the 1950s and 1960s, MITI also played a pivotal role in the growth of the automobile, computer, and steel industries.

Close business-government relations clearly favored large business conglomerates over smaller firms. Japanese *keiretsu* and Korean *chaebol*, for example, were large corporate groups uniting manufacturers, suppliers, and distributors. These groups developed a symbiotic relationship with their governments. Governments needed trustworthy companies to carry out development plans and the firms were happy to receive government subsidies and windfall profits from these new businesses.

The Korean government's cooperation with the gigantic Hyundai Group to promote shipbuilding in the 1970s and 1980s is a good example. The government subsidized Hyundai with lucrative contracts for ships, infrastructure at Hyundai facilities, and financial guarantees to foreign investors and Hyundai's first customers. With this support from the government, Hyundai grew into one of the world's largest shipbuilders by the late 1980s.

Government subsidy of new industries required a redistribution of resources within society. Big companies and their urban employees generally prospered. Farmers, small businesses, and laborers were less fortunate. To maintain political stability, Asian developmental states developed authoritarian political systems dominated by a single party like the Liberal Democratic Party in Japan, the Kuomintang in Taiwan, and the People's Action Party in Singapore. These regimes suppressed independent labor unions to keep wages low for the sake of international competitiveness. Governments often tempered this repression with paternalistic policies assisting workers with housing, healthcare, and recreational facilities.

With their systematic intervention in markets, close relations with big business, and authoritarian politics, developmental states have drawn substantial criticism. Some economists believe that developmental states' importance in promoting economic development has been exaggerated. Growth rates, they argue, might have been even higher if entrepreneurs had devoted all of their resources to innovation rather than soliciting political favors. The SONY Corporation spent months in the 1950s lobbying government officials for a permit to license American semiconductor technology. In the early 1960s, motorcycle manufacturer Honda Soichiro had to overcome stiff government resistance to his company's diversification into passenger automobiles.

International trading partners have criticized the developmental states' predatory "neo-mercantilist" promotion of exports and "crony capitalist" exclusion of outsiders from their domestic markets. These accusations peaked in the late 1980s and early 1990s as Japanese automobiles, semiconductors, and consumer electronics became popular in American markets. American firms complained that the Japanese developmental state's policies gave Japanese companies an unfair competitive advantage. After protracted negotiations and threats of U.S. government retaliation, the Japanese deregulated several of their industries.

Finally, critics suggest that Asian developmental states owe much of their success to favorable Cold War international conditions. The United States gave its Cold War allies unusually open access to American military assistance, capital, technology, and markets. After the Cold War ended in 1989, Americans demanded reciprocal access to Asian markets. Developmental states also faced growing pressure for political reform as international opinion sided with local democratic movements seeking an end to authoritarian repression. Nevertheless, governments in Thailand, VIETNAM, CHINA and elsewhere continue to follow the developmental state model to promote economic growth.

The developmental states in Japan, Korea, Taiwan, and Singapore took advantage of Cold War opportunities and pursued policies contributing to rapid economic development. This development came at the price of political repression at home and strained relations abroad. Although controversial, the Asian developmental state remains an important form of capitalism.

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Asian Financial Crisis

FINANCIAL CRISES REFER TO currency crises (also called balance of payments crises) during which a country's CENTRAL BANK loses international reserves and is eventually forced to allow the depreciation of the domestic currency. Countries with pegged (managed) EXCHANGE RATE regimes are particularly prone to currency crises. While first-generation (canonical) currency crises models support the view that deteriorating country fundamentals are at the core of such crises, second-generation (self-fulfilling) currency crises models suggest that currency crises may occur despite strong fundamentals. Self-fulfilling currency crises may take place because of the possibility of multiple equilibria, which means that, despite strong fundamentals, currency crisis may be one of the possible outcomes.

Since THAILAND, INDONESIA, and South KOREA experienced currency crises in August, October, and November, 1997, respectively, researchers have been discussing the causes of the Asian Financial Crisis. Although there is disagreement as to the causes of this crisis, some characteristics of capital inflows into Asian countries have remained undisputed. Following the fall in world interest rates in 1989, Asian countries attracted large capital inflows because of their high and solid GROSS DOMESTIC PRODUCT (GDP) growth rate. By the mid-1990s, the capital inflows as a percentage of the GDP were almost in the mid-teens in some Asian countries, whereas the same ratio was less than 1 percent in G8 countries. As capital flows increased through the mid-1990s, countries such as Thailand and South Korea had total external debt/GDP ratios of almost 200 percent.

As to the reason for the Asian currency crisis, the basic first-generation currency crisis model explains the cause of currency crises based on the coexistence of a pegged exchange rate regime and expansionary fiscal and monetary policies. However, before the financial crisis struck, Asian countries successfully stabilized inflation by maintaining fiscal and monetary discipline under pegged exchange rate regimes. Therefore, researchers working with first-generation currency crisis models have used a different set of fundamentals to discuss the cause of the Asian Financial Crisis. Increasing foreign liabilities of the commercial banking system, maturity mismatches, and asset price bubbles are assumed to have made the financial systems in some Asian countries vulnerable to capital inflows of substantial magnitudes.

Some economists argue that financial liberalization precedes banking and currency crises. As financial liberalization allows a country to enjoy the inflow of foreign investors, the outflow may be substantial and speedy, which leads to a boom-bust cycle. This particular point has been made with respect to the Asian crisis. Financial liberalization may have led to the maturity mismatch between assets and liabilities of the banking system because of over-lending and excessive risk, especially in short-term external debt. International investors may have become wary and expected financial problems in the future. Therefore, based on the first-generation currency crisis model, systemic banking problems lay at the roots of the substantial devaluation of the Thai baht, Korean won, and Indonesian rupiah in 1997.

Researchers who focus on the self-fulfilling nature of the Asian Financial Crisis argue that markets' reaction to news demonstrates the possibility of currency crisis despite strong fundamentals. Some argue that the largest daily swings in financial markets in Asia during the crisis period cannot be explained by any apparently relevant economic or political news. Empirical studies indicate that news releases that contribute to significant movements in financial markets are releases that are about agreements with the international community, and about announcements by credit-rating agencies. Some also suggest that news releases about monetary and fiscal policies do not affect financial markets in a predictable fashion.

In some instances, tight policies may contribute to financial market rallies or lead to a slowdown in financial markets. There is also evidence that investors react more strongly to bad news than to good news. Generally speaking, investors' reactions to information have been used to argue that bad news in crisis episodes may increase uncertainty, which may lead to herding behavior.

In addition to first- and second-generation currency crisis models, some researchers suggest the possibility that a country may experience a currency crisis, even though the crisis cannot be explained based on either currency crisis model. There is empirical evidence that CONTAGION, regional spread of currency crises, may occur through trade linkage among countries.

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Assicurazioni Generali

THE LARGEST ITALIAN INSURER was established at the beginning of the 19th century in the city of Trieste, which was then a natural outlet to the sea for the international commerce of the Austro-Hungarian Empire. Because of its unique position, the city enjoyed a remarkable economic growth. Several local businessmen felt the need for the creation of an insurance company and on December 26th, 1831, they established Assicurazioni Generali.

The company's initial capital was quite a large sum for the period (2 million florins), revealing the company's ambitious programs. A few months after its foundation, Generali began to spread within the Hapsburg Empire and branches were established in Vienna, Budapest, and Prague. In July, 1832, the important Venetian branch was founded by Samuele della Vida to develop the insurance sector in the many states of the fragmented Italian peninsula. The Venetian office has played a particularly important part in the development of the insurance company and, tellingly, its symbol is also the symbol of the city of Venice: a winged lion protecting a copy of the Gospel. Generali soon expanded in other European countries such as FRANCE, GERMANY and SWITZERLAND. It then stretched into the Balkans and Eastern Europe and reached separate continents such as Africa and Latin America.

The end of WORLD WAR I and the new political scene created several problems for the group. The Hapsburg Empire dissolved and Trieste was absorbed into the Italian Kingdom, thus losing its privileged position. Yet Generali confronted this difficult period with a program of structural reforms designed to consolidate and expand its organization in ITALY. New companies were set up, and the group acquired significant stakes in existing insurance companies. In the 1920s and 1930s, the Generali Group played a crucial role in the development of the Italian economy through investments in the industrial and agricultural sectors.

The Generali Group was faced with another crisis at the end of the WORLD WAR II and the outbreak of the Cold War. The establishment of the Iron Curtain meant the loss of 14 insurance companies operating in eastern European countries. However, the Generali did not relinquish its worldwide presence and successfully focused on the development of important markets in the following decades outside Europe in Latin America, Asia, and Africa. In 2002, Generali ranked as the 50th largest company in the world with sales of more than $52 billion.

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Astor, John Jacob (1763–1848)

BORN IN WALDORF, GERMANY, a butcher's son, John Jacob Astor arrived in Baltimore by way of London at the end of the AMERICAN REVOLUTION. Nearly penniless, his assets included \$50, seven flutes from his brother's musical instrument shop, experience in trade, and determination.

By 1786, he was able to open his own fur shop in New York City. In 1790, he married Sarah Todd, gaining entrée into New York's old line Dutch society. His wife was highly knowledgeable about furs too, and the marriage was either a successful partnership in all respects or a stormy affair, depending on the source. Astor wasted no time, developing a fleet of clipper ships to capitalize on the demand for China tea. Soon he was a leader in the China trade, shipping furs out, bringing tea in. But tea, while lucrative, was not his path to fame. His fortune came from the fur trade.

After the Lewis and Clark expedition revealed the potential of newly acquired territory, he sent out expeditions of his own to explore the fur country. In 1808, he capitalized the American Fur Company at \$500,000, a very sizeable amount in that time. He planned to compete with the British Hudson's Bay Company in the American northwest. He later established the Pacific Fur Companies and the Southwest Fur Company, establishing trading posts everywhere the trappers might congregate. One major failure was Astoria, Oregon, that Astor established in 1811 with the aim of penetrating the Far East market. The WAR OF 1812 intervened, and the naval blockade was a factor in Astor's decision to sell the post to the British.

For Astor, the fur trade was worldwide. It was a business that brought beaver, otter, muskrat, and mink furs from the native or company trapper to the trader to the exporter to the maker of hats for fashion conscious women and men—and, in return, it gave the natives and other trappers muskets, blankets, tools, and utensils. The trade had a long history, from the early French couriers *du bois* and their colonial British rivals. In the early years of the UNITED STATES government-supported factories carried on the trade. From the presidency of George WASHINGTON, the trade had received federal subsidies because it was thought to be in the national interest to compete with the British companies in CANADA. Astor challenged the government system by establishing a new style of fur company.

Astor's fur companies were modern with a division of labor, specialists, and vertical integration. Astor ran the business from his headquarters in New York City, but the actual trading took place on Mackinac Island, out where the business was, in present-day Michigan. There, Astor's men bought furs, packed boats, and sent them to the East Coast for further distribution to the world markets. Astor also sent his employees throughout the trapping regions, going where the business was. From log cabins, they supplied the fur traders with the goods they needed. Credit was available as well.

Astor sent his men out to where the trappers were, traded fairly and in quality goods of the sort the Native Americans wanted, with low prices. He gave them the muskets and kettles they wanted, not the plows and other sometimes inferior and overpriced goods the government tried to trade. Astor also traded in liquor, albeit reluctantly. He understood that drunken trappers were worthless to his business, but he recognized that the British were dealing in liquor and he had to match the competition. Astor also established a merit system and paid his managers good salaries and shares of the profits. And he took his trade worldwide, refusing to sell when and where the price didn't suit him. The government factories had fixed-salary employees and no market control, selling at auction each year regardless of price.

By 1808, Astor was the leading exporter in the United States, and his edge grew after the War of 1812. By the 1820s he had 750 men in his employ, and connections to untold numbers of fur sources. Annual harvests reached \$500,000. Government efforts to ban private companies complicated his life, but eventually his ability to profit while the government was losing money consistently killed that effort.

But the trade began to wane in the 1820s and 1830s as fashion changed, pelts became scarce, and silk and cheap cloth took market share. Astor held a monopoly on the fur trade until he retired in 1834, turning his attention to New York real estate and making himself the first millionaire in the United States.

By 1810, Astor had a fortune of at least \$2 million. Shrewdly, he bought lots in desolate north Manhattan, calculating that the city would eventually grow and make his investments valuable. He also did his part to fund the War of 1812; typically, when he bought \$2 million worth of government bonds; he paid 88 cents on the dollar. Other than the Manhattan properties, he also invested in the Park Theater, the Mohawk and Hudson Railroad, and the Astor House Hotel.

Astor became America's first world-class entrepreneur and, at his death, its richest man. He could be ruthless, he could be tight with a dollar, but he understood how to organize a business, how to deal with his employees and his customers. His empire was worldwide due to his skills and, to an extent to his knack for getting out of a venture at the top, as when he sold his fleet of China clipper ships just before Chinese tea faded in the face of competition from India and Japan. He also anticipated the end of the fur trade, selling his interests before the fur business fell to increased scarcity, fashion shifts, and the boom in ready-made, cheap clothing.

At his death Astor left a fortune variously estimated at $10–20 million. Astor did leave $400,000 in his will for the establishment of a library in New York City. The Astor Library opened in 1849.

A measurement of the magnitude of Astor's wealth is that $20 million from the 1840s equates to late-20th century fortunes in the billions. One estimate is that his modern day net worth would be $78 billion, ranking him behind only John D. ROCKEFELLER, Andrew CARNEGIE, and Cornelius VANDERBILT. Bill GATES of Microsoft ranked just behind Astor in 1999.

Rising from the penniless immigrant to by far the richest man of his time, John Jacob Astor epitomized rags-to-riches American dream, and he was one of the prototypes for the rise of big business in America.

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AT&T

ALEXANDER GRAHAM BELL, Gardiner Hubbard, and Thomas Sanders founded the Bell Telephone Company, later known as the American Telephone and Telegraph Corporation, in 1877. Bell was the telephone inventor, Hubbard and Sanders were the men who financed his work. The first telephone exchange was opened in New Haven, Connecticut, in 1878; within three years, telephone exchanges existed in most major cities in the UNITED STATES.

In more than 100 years of business AT&T has gone through multiple competitive phases, from monopoly to breakup.

The American Telephone and Telegraph Company was created with the charter to provide long-distance telephone service. The first lines were built between New York and Chicago and were completed in 1892. AT&T's long distance telephone system was extended from coast to coast when San Francisco was added in 1915. In 1927, AT&T inaugurated commercial transatlantic telephone service to London using two-way radio. Radiotelephone service to Hawaii began in 1931 and to Tokyo in 1934. In 1956, service to Europe moved to the first transatlantic submarine telephone cable. Transpacific cable service began in 1964. AT&T opened its first microwave relay system between the cities of New York and Boston in 1948. In 1962, AT&T placed the first commercial communications satellite in orbit, offering an additional alternative especially suited to international communications.

During its life, AT&T Bell Laboratories has been the home of more than 22,000 patents and seven Nobel-Prize winners. Its most significant, single invention is probably the transistor, which replaced large, less efficient vacuum tubes. Other inventions include gas and semiconductor lasers, the UNIX operating system, the C computer programming language, the touch-tone telephone, the first artificial larynx, and the first fax machine. Bell scientists A.A. Penzias and R.W. Wilson discovered the universe's "background radiation" posited by cosmologists who favored the Big Bang theory of creation and were awarded a Nobel Prize in Physics in 1978 for their discovery.

During its life, AT&T has gone through multiple MONOPOLY and competitive phases. Before 1894, Bell Telephone's patents protected it from competition. After Bell's patents expired in 1894 many telephone companies began to provide telephone service particularly in the rural areas and Bell's profits dropped drastically. The number of telephones exploded from approximately 266,000 in 1893 to 6.1 million in 1907, and about half of all new telephone installations were controlled by Bell's competitors.

In 1907, AT&T's president wrote in the annual report that the telephone, by the nature of its technology, would operate most efficiently as a monopoly. While independent companies provided the first service available to many customers, the multiple telephone systems were not interconnected until after the 1913 Kingsbury Commitment. As a result of the agreement, the government of each local community would allow only one telephone company to operate and this local company would be connected to the Bell long-distance system. Since Bell was the largest single company, it was in the best position to lobby the state utility commissions and was generally chosen over its competitors to provide local phone service. Bell soon became a monopoly again.

The U.S. government, in 1974 filed the antitrust suit that finally led to a competitive market in long distance. In 1982, AT&T agreed to sell those parts (the local exchanges) where the natural monopoly argument was still considered valid from those parts (long distance, manufacturing, research and development), where competition was thought appropriate. Divestiture took place in 1984. Many new long distance companies soon entered the market and long distance rates dropped 30 percent over the next five years. Local phone service, still a monopoly, went up 50 percent in price during the same period.

Since its breakup, AT&T has been restructured numerous times. On September 20, 1995, AT&T announced that it would split into three separate publicly traded companies: a systems and equipment company (Lucent Technologies,) a computer company (NCR) and a communications services company (AT&T). It was the largest voluntary break-up in the history of American business. In October, 2000, AT&T announced another restructuring. AT&T would be split into three companies: AT&T Wireless, AT&T Broadband, and AT&T. On December 9, 2001, AT&T and the cable-operator Comcast reached agreement to combine AT&T Broadband with Comcast in a new company to be known as AT&T Comcast.

Fortune magazine ranked AT&T as the world's 40th largest company in 2002 with revenues of $59 billion.

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audit

A SYSTEMATIC PROCESS, an audit involves the examination of accounting information by a third party other than the preparer or user, and the verification of data to determine the reliability and accuracy of accounting statements and reports. Audits are used to evaluate all kinds of information and data, and can be divided into three main categories.

An audit can be a compliance audit, which is performed to determine whether certain activities of an entity conform to specified rules, conditions, or regulations. An audit can also be an operational audit, wherein the efficiency and effectiveness of specified operating objectives can be assessed. For instance, the functionality and reliability of information systems are often audited, as are elections and various lottery functions. Additionally, the annual Academy Award voting process is audited by a top accounting firm.

Nonetheless, the financial statement audit is by far the most common and valued form of audit. This audit procedure involves obtaining and evaluating evidence about an entity's financial statements, which are based on assertions made by the entity's management. The overall goal of the auditor in a financial statement audit is to increase the usefulness of the compiled accounting information to interested users such as creditors, investors, labor unions, investment bankers, and government.

The final product of an audit is the auditor's report. The audit report consists of an entity's financial statements and any applicable disclosures. It is a means of communicating the overall conclusions about the audited financial statements in a way that users can understand.

The audit opinion, which is included in the auditor's report, is the backbone of the report because it tells the user of an entity's financial statements whether or not they were presented fairly according to GENERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP). When the financial statements are judged to be in conformity with GAAP, the auditor issues an unqualified opinion. Other opinions may be issued by the auditor if the financial statements contain a material departure from GAAP, or if the auditor is unable to obtain sufficient evidence regarding one or more management assertions, and therefore cannot reasonably issue an unqualified opinion. Bear in mind that an audit opinion applies to the financial statements as a whole. The other opinions that can be issued are:

1. *Qualified opinion.* The auditor expresses certain reservations concerning the scope of the audit or the financial statements. Since the departure is not extremely material or significant, the auditor states that except for effects of the matter to which the qualification relates, the financial statements are in conformity with GAAP.

2. *Adverse opinion.* The auditor states that the financial statements are not presented fairly due to a material or significant departure from GAAP.

3. *Disclaimer of opinion.* Auditor does not give an opinion on the presentation of the financial statements.

The quality of performance and general objectives to be achieved in a financial-statement audit are identified by a set of Generally Accepted Auditing Standards (GAAS), the most recognized set of auditing standards in the industry. In essence, GAAS is comprised of 10 standards divided into three distinct categories that prescribe certain considerations for accepting and assigning an audit, performing the actual fieldwork, and issuing the audit report. Though GAAS are not statutory laws, they were originally put in place by the American Institute for Certified Public Accountants (AICPA) as valid standards of the profession, and thus they are used by government agencies, industry peers, and courts of law in evaluating the performance of financial statement audits.

The execution of an audit is a complicated and varied process. First, the auditor goes into an audit with a preliminary audit strategy that involves assessing materiality and risk, two important factors in the audit planning process. Materiality is the magnitude of an omission or misstatement of accounting information that makes it likely that the judgment of a person relying on the information would have been different or otherwise drastically influenced by the omission or misstatement. The auditor may encounter various omissions or misstatements that may or may not be material, depending upon the overall audit objective and strategy. Also, the auditor looks at audit risk, which relates to the risk that the auditor may unknowingly fail to properly modify an audit opinion in regard to financial statements that are in fact materially misstated. Understanding the nature of both of these components assists the auditor in deciding upon the scope of the audit and the testing approach to be used.

Essentially, the overall methodology of an audit involves identifying that which needs to be evidenced, for example, the existence or occurrence of an assertion or an account balance. The auditor collects relevant evidence for that which he needs to express his judgment on, and assesses the fairness of the data through the use of various testing procedures. In applying a range of tests, the auditor deals in probabilities through statistical sampling. Small sample units that represent larger populations are observed in order to evaluate relevant characteristics that the auditor needs to identify.

Auditing also involves less systematic means of evidence collection such as inquiring, observing, and the application of analytical procedures. The auditor may observe and inquire about procedures for recording transactions, or apply analytical procedures to compare current year assertions to the prior year, often helping him to pinpoint items that may need to be further investigated.

It is important to remember that the auditing of financial statements is an attest function, meaning that after conducting an audit of the accounting system of a business, the independent auditor issues an opinion on the fairness of the presentation of the financial statements and their conformity to GAAP. Essentially, an attestation is an evaluation of the quality of the information presented under GAAP rules. An attest function differs from the definitive substantiation of facts or truths because "attest" merely means to "bear witness" or, more specifically, to attest to the reliability of an entity's financial statements. The financial statement assertions of a company are the responsibility of its management. The auditor is merely expressing judgment—in a separate report—on the basis of being a trained observer performing a critical review of the data.

Auditing, in general, is about maintaining a healthy skepticism. In spite of the excellent credentials of most auditors, accounting scandals have put the audit profession in the limelight, and not in the laudable sense. Since the mid-1990s, there has been a parade of corporate wrongdoings wherein questionable accounting approaches are said to have led to bankruptcies and/or numerous financial statement restatements, in order to accurately quantify previous earnings reports.

The accounting industry, as a whole, faces vast restructuring. However, the new wave of regulatory oversight may be unwelcome if the governance of the audit sector shifts from the private realm to the bureaucratic government sector.

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Australia

LYING BETWEEN THE Pacific and Indian Oceans in the southern hemisphere, the continent of Australia is one of the world's largest and most isolated countries. A member of the British Commonwealth of Nations, Australia is a political federation with a central government and six member states that enjoy limited sovereignty, as well as two territories. Canberra is the capital.

The population of Australia is approximately 19.5 million, with approximately 90 percent white, seven percent Asian, and the balance Aborigines and Torres Strait Islanders. Approximately 85 percent of the population lives in urban areas. English is the official language, though Aboriginal and other native languages are also spoken. The coastal plains near the mainland capitals in the east, southeast, and southwest are Australia's fastest growing areas—about four-fifths of Australians live in these areas, which make up only about three percent of the total land area.

The Aborigines were the first to live in Australia and are believed to have migrated there about 40,000 years ago. Until the 17th century the continent was relatively unknown. In 1788, the first European settlement by British convicts was established at Botany Bay. During the 19th century, British colonies continued to be established, and in 1901, the colonies united to form an independent nation, and Australia became a member of a commonwealth of the British Empire.

Taking advantage of its natural resources, Australia quickly developed its agricultural and manufacturing industries, and was able to make a significant contribution to Britain's efforts in both WORLD WAR I and WORLD WAR II. After World War II, Australia entered a long period of political stability and built further upon the development foundations established during the war. In the early 1970s, the government attempted to institute plans for increased social services, but these came into conflict with Australia's declining economic prosperity and state rights. In the mid-1970s the government reinstated domestic and foreign policies previously followed and laid a foundation for land claims by Aboriginals. In the 1980s, the government attempted to promote labor-management cooperation and had a foreign policy that was emphatically pro-American. Mired in a recession, the government, in the early 1990s, began the process of changing Australia's status from a commonwealth headed by the British monarchy to a republic. Acknowledging the proximity of huge potential markets in Asia, the government continued its re-orientation toward Asia. But in 1999, a referendum to change Australia's status to a republic was defeated.

MINING has long been a major factor in Australia's economic growth, and in certain instances is among the world's leading producers. Minerals mined include gold, iron ore, diamonds, uranium, coal, titanium, nickel, and aluminum. Wheat is the main crop, but other crops include oats, fruit, and sugarcane. Australia is also a leading producer of wine and the leading producer and exporter of wool. Australia raises both beef and dairy cattle.

Due to Australia's large size and relatively small population, transportation has historically been expensive and has utilized a high proportion of the work force. The road network radiates from the ports and state capitals, and continues to be in need of upgrade. There are both private rail systems and a government owned system, however rail transport has declined due to competition with road and air services. Australians

Australia's Sydney Opera House has become an icon of the country's strong growth in tourism.

have become especially accustomed to flying, and an inclusive network of air service links the major cities as well as remote areas.

Industry accounts for about one-quarter of Australia's GROSS DOMESTIC PRODUCT (GDP), services about 72 percent, and agriculture the rest. Central components of the industrial sector are the manufacture of metals, food, transportation equipment, textiles, and printed materials. Australia's tourism industry has experienced strong growth, and has enabled each state to capitalize on its own attractions.

Australia's currency is the Australian dollar (AUD) and it is freely traded on global currency markets. The reserve bank of Australia manages the central banking system, including the issuance of notes. Australia's stock exchange is well connected to the global network. Local, state, and federal governments impose taxes.

Australia's exports are valued at approximately $68.8 billion annually and its imports at $70.2 billion; partners include the UNITED STATES, JAPAN, SOUTH KOREA, SINGAPORE, NEW ZEALAND, GERMANY, and the UNITED KINGDOM. Under Australian tariff policy, Australian industries are protected and imports from certain Commonwealth countries are given preference.

Soon after the year 2000, Australia's per capita GDP was level with the major West European economies, and a strong domestic economy enabled Australia to be resilient in dealing with an international economic downturn.

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Austria

THE REPUBLIC OF AUSTRIA borders SWITZERLAND and LIECHTENSTEIN to the west, GERMANY to the northwest, the CZECH REPUBLIC to the north, Slovakia to the northeast, HUNGARY to the east, ITALY to the southwest, and Slovenia to the south. Vienna is the capital.

Austria's population in 2002 was approximately 8.1 million, with the majority being Austrian, though increasingly immigrants, especially Croats, Hungarians, and Turks are contributing to the ethnic mix. About 60 percent of the population lives in urban areas, with 20 percent living in the Vienna capital area. A high life expectancy offsets a declining birth rate in the German-speaking nation.

At one time the center of power for the Austro-Hungarian Empire, Austria was downsized into a small republic after its defeat in WORLD WAR I. Subsequently, Austria experienced more than 25 years of economic and social upheaval, annexation by Nazi Germany, and subsequent occupation by the Allies. In 1955, the State Treaty ended Austria's occupation, recognized its independence, and prohibited unification with Germany. As a condition for the withdrawal of the SOVIET UNION, a constitutional law declared Austria's "perpetual neutrality."

Since 1955, Austria has developed into a stable nation characterized by a vibrant cultural life and a spirit of cooperation between its social and economic institutions. In the 1990s, Austria began to struggle with growing resentment towards ethnic minorities and the growing strength of the right-wing Freedom Party. Germany's unification and the subsequent takeover of major industries and newspapers by German companies have led to a questioning of Austria's role in the united Europe. In 1990, the government revoked several provisions of the 1955 State Treaty regarding neutrality. In 1995, Austria joined the EUROPEAN UNION (EU), and in 1999 it entered the European Monetary Union, adopting the EURO currency.

Austria is an essential link between central, northern, and western Europe, as well as Italy, Eastern Europe, and the Balkans. It has an intricate road system, which it continues to develop. Being a mountainous and landlocked country, Austria depends on rail passage for a large share of its foreign trade. The rail network is managed by the state owned OBB, or Austrian Federal Railways, which operates as an independent commercial enterprise.

Industry accounts for about 30 percent of Austria's GROSS DOMESTIC PRODUCT (GDP), services comprise almost 70 percent, and agriculture plays a minor role in the country's economy. Components of the industrial sector include machinery, metals, food products, and wood and paper products. Austria's manufacture industry is composed of a few large enterprises and many small- and medium-sized production facilities. Many of these smaller enterprises make traditional Austrian products including wood, glass, and ceramic handicrafts.

With its beautiful landscape, historic villages and cities, and highly developed hospitality industry, Austria is a major tourism destination. More than half of Austria's annual tourists come from Germany, with the remainder primarily from the NETHERLANDS, Italy, UNITED KINGDOM, Switzerland, FRANCE, and the UNITED STATES.

The Ministry of Finance and the Austrian National Bank determine Austrian monetary policy in conjunction with EU policy.

Austria's exports in 2002 were approximately $70 billion annually and its imports $73 billion. Exports included motor vehicles and parts, metal goods, textiles, chemicals, and iron and steel. Imports included oil and oil products, foodstuffs, and machinery and equipment. In the early 2000s, Austria's membership in the EU attracted foreign investors. However, slowing growth in Germany, and globally, also affected Austria's growth. In order to compete with both the EU and central Europe, economists suggest Austria needs to emphasize its knowledge-based sectors of the economy, while continuing to deregulate the service sector and lower tax burdens.

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Austrian School

THE AUSTRIAN SCHOOL, also called the Vienna School or Austrian School of Marginal Utility, describes a school of economic thought whose main contribution relies on the development of the theory of marginal UTILITY, and the related price and distribution theory. In comparison to classical (objective) ECONOMIC THEORY, the theory of marginal utility defends a subjectively based price, wage, and interest theory. Marginal utility is defined as the last disposable unit of a good that fulfils the least urgent need. Through several generations of economists, the Austrian School produced additional pioneer theories, which became, to a large extent, part of mainstream economics.

In the beginning the term "Austrian School" was derisively used by German economists, following a historic approach, to distinguish different schools of thought; later on the Austrian School became the prevailing economic school until WORLD WAR II. At the same time, Vienna was considered a center of theoretical economics in Europe. In the early 2000s, the Austrian School experienced a revival after having fallen into oblivion in the aftermath of World War II.

With the publication of *Principles of Economics* in 1871, by Carl MENGER (1840–1921) came the foundation of the Austrian School. Together with Leon WALRAS and William Stanley JEVONS, Menger "spelled out the subjective basis of economic value, and fully explained, for the first time, the theory of marginal utility (the greater the number of units of a good that an individual possesses, the less he will value any given unit). In addition, Menger showed how money originates in a free market when the most marketable commodity is desired, not for consumption, but for use in trading with other goods," explains the Mises Institute.

Menger, a professor of economics at the University of Innsbruck, Austria, was considered a classical liberal and methodological individualist. Contrary to the German Historical School understanding of economics as the accumulation of data in service of the state, Menger described economics as the science of individual choice and human action based on deductive logic. He thus prepared the ground for later writings against socialist thought.

Menger's students, Friedrich von Wieser (1851–1926) and Eugen von BÖHM-BAWERK (1851–1914) are the two main representatives of the First Generation of the Austrian School. Von Wieser formulated the most comprehensive economic theory based on the principle of marginal utility and influenced the older Swedish School, namely K. Wicksell and E. Lindhal. He further contributed with the landmark *Social Economics* (1914) and a revolutionary interpretation of cost showing that "the value of production factors does not only lie in the money spent, but on the opportunities missed by not spending that money on something else." This concept was later referred to as opportunity COST. Böhm-Bawerk applied the marginal utility principle to value, price, capital and interest theories. In his *History and Critique of Interest Theories*, Böhm-Bawerk showed that "the interest rate is not an artificial construct but an inherent part of the market" reflecting the universal fact of time preference (people tend to satisfy preferences sooner rather than later).

In *Positive Theory of Capital*, Böhm-Bawerk demonstrated that "the normal rate of business profit is the interest rate. Capitalists save money, pay laborers, and wait until the final product is sold to receive profit." He further wrote against the socialist doctrine of capital and wages and interventionism. During the period when Böhm-Bawerk served as finance minister (three times) for the Habsburg monarchy, he fought for "balanced budgets, sound money and the gold standard, free trade, and the repeal of export subsidies and other monopoly privileges."

The Second Generation of the Austrian School includes, in particular, Ludwig von MISES (1881–1973) and Joseph SCHUMPETER (1883–1950). Von Mises developed the theory of marginal utility further, applying it to money (*The Theory of Money and Credit*, 1912). In *Socialism* (1921) he predicted the end of SOCIALISM. While the debate between the Austrian School and the socialists continued, and many academics thought the debate resolved in favor of socialism, world socialism collapsed in 1989.

In the 1920s and 1930s, von Mises wrote a series of essays on the deductive method in economics, later called the logic of action. It should be noted that in 1934, the Austrian philosopher Sir Karl Popper published the first edition of his epochal book *The Logic of Scientific Discovery,* which includes a pleading for deductive methodology to be applied in science, and relates scientific progress to trial and error processes. Von Mises further worked, with his student Friedrich von HAYEK, on the Austrian theory of the BUSINESS CYCLE, at the same time warning of the danger of credit expansion and predicting the coming currency crises. Mises founded the Austrian Institute of Business Cycle Research and put Hayek in charge of it. In 1974, Hayek was awarded the Nobel Prize in Economics for this work. Since life for economists was difficult in Austria due to the economic crises and the Nazi regime, von Mises came to the UNITED STATES where his book, *Human Action*, appeared in 1949 and remains the economic treatise that defines the school.

Schumpeter's notoriety relates to his sensational book, *Theory of Economic Developmen*t, representing the first analysis of capitalism's inherent dynamism: The ENTREPRENEUR becomes the crucial part of the economic system, his or her innovations constantly revive the capitalist market system, naturally never in equilibrium. Schumpeter is considered the economist of the 1990s, since his theories contributed to a smoother transition from socialism to capitalism in post-communist economies. A Schumpeterian process does not start on its own. Framework conditions are necessary, including a functioning financial sector, a certain level of education and motivation of the population, as well as a certain pro-capitalist value system.

With von Mises, many other Austrian economists of the so-called Third Generation including von Hayek (1889–1992), Oskar Morgenstern (1902–76), Gottfried von Haberler (1900–) and Fritz Machlup (1902–83) went to the United States and taught at universities such as Princeton, Harvard, or Columbia. Von Hayek can be considered as the central leader of conservative economists, and later became a prime opponent of Keynesian economics, publishing books on exchange rates, capital theory, and monetary reform. His popular book, *Road to Serfdom*, helped revive the classical liberal movement in America after the NEW DEAL and World War II. In his writings, von Hayek particularly attacked mixed economies, "the muddle of the middle," defending at the same time a spontaneous order, the rule of law, the necessary cultural preconditions for a market economy, and social minimum standards.

In 1982, Machlup summarized six main tenets of the Austrian School encompassing methodological individualism; methodological subjectivism; marginalism; tastes and preferences; opportunity costs; and time structure of consumption and production that entered mainstream economics.

Israel M. Kirchner (1930–) together with Murray N. ROTHBARD (1926–) and James M. BUCHANAN (1919–) belong to the Fourth (American) Generation of the Austrian School. They define two tenets, namely markets as process and radical uncertainty that distinguish the Austrian School from mainstream thought. For this latter generation, as well as the Fifth and Sixth Generations of Austrian economists (including Rizzo, Lavoie, Garrison, White, Block and Salerno as well as Selgin, Boettke, Horwitz and Prychitko) the ideas spelled out particularly by Von Mises and Hayek became the framework for an alternative paradigm in economic science and have thus reborn the Austrian School as a distinct school of economic thought, further developing capital-based macroeconomics and trade cycle theory.

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autarky

A SITUATION WHERE A country does not TRADE with other nations is referred to as an autarky. The immediate implication is that an autarkic country can consume only what it produces.

Theoretically, exceptionally high transportation and communication costs could make a country autarkic. In practice, however, in at least the last few centuries these costs have not been high enough to fully prevent a country from trading. Therefore, in practice a country can become autarkic only as a result of extremely restrictive trade policies.

A government may, for instance, simply enforce direct restrictions to block trade. Alternatively, it may impose trade barriers high enough to fully discourage trade with outsiders. A country may become autarkic involuntarily as well, in the event all other countries, perhaps motivated by political and diplomatic strains, decide to stop trading with it.

Throughout history, and especially in recent years, the concept of autarky has become mainly theoretical. The last country that could have been characterized as an approximate autarky was Albania, which adopted an increasingly strict policy of self-reliance from 1945 until 1991, when it rejected its isolationist socialist regime. Albania's economic inward orientation reflected, essentially, its government's political orientation at that time.

Despite its practical irrelevance, the concept of autarky is analytically very helpful. It is by comparing autarky relative prices—that is, the relative prices countries would face in the absence of trade—that one can theoretically determine countries' comparative advantages (a key concept in international trade), and the resulting pattern of trade among them. The concept of autarky is useful as well to highlight the gains from its antipode, free trade. In fact, most international trade textbooks rely heavily on the contrast between autarky and free trade to draw attention to the effects of the latter. It can be used as a benchmark in sophisticated analyses as well. A recent example is Philip Levy (1997), who analyzes the impact of free trade areas on the political support for liberalization at the multilateral level.

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automobiles

THE KEY MANUFACTURING SECTOR for many nations in the 20th century, the automobile has transformed everyday life in most regions of the world, from transportation and travel to social customs and domestic life, even affecting national economic planning. Nowhere have the automobile's effects been more apparent than in North America, where car ownership consistently ranked as the highest in the world after 1900. Despite its mass popularity with consumers, however, the automobile has been blamed for some of the scourges of the 20th century: suburban sprawl, air pollution, and declining social cohesion.

From craft production to mass production. The modern automobile—typically a four-wheeled vehicle powered by a gasoline- or diesel-fueled, internal combustion engine—dates to the last decades of the 19th century. Germans Gottleib Daimler and Karl Benz were two of the first European inventors to conduct successful trial runs of automobiles in 1885 and 1886. Within five years, Benz earned the distinction of becoming the first automobile manufacturer in the world. In 1893, Charles and Frank Duryea staged a pioneering automobile run in the UNITED STATES in Springfield, Massachusetts. Two years later, the first auto race in the Americas took place to great public acclaim. The interest translated into strong consumer demand for the new "horseless carriages," and the Duryeas became the first American automobile manufacturers in 1897.

By the turn of the century more than 30 other companies joined them in selling over 2,500 cars annually. In 1900, about 8,000 automobiles were registered in the United States. Like their European counterparts, American models were expensive—essentially luxurious, motorized carriages—and considered a plaything of the rich.

In 1901, Ransom E. Olds produced the first cars aimed at the lower-priced market, the Oldsmobile, which retailed for about $650. Olds was joined in the mid-priced market by Henry FORD, who founded the FORD MOTOR COMPANY in 1903. The success of Ford's Model N, which sold for $700 in 1907, proved that automakers could succeed by selling to a broader range of consumers. Ford sold over 8,000 Model Ns in 1907-8 and amassed a million-dollar profit. By WORLD WAR I, the Ford Motor Company was the world's largest automobile maker due to the success of the Model T, which debuted in 1908–09. More than any other car of its era, the Model T revolutionized the automobile industry and transformed American society.

Ford's first plant, on Mack Avenue in Detroit, Michigan, was essentially an assembly site for components produced elsewhere. Ford's car bodies, for example, were built by the Dodge Brothers before being sent to the Mack Avenue assembly line. Ford streamlined many of the operations on the assembly line and began to produce many of the automobile components himself in order to guarantee their delivery and keep production flowing. It was not until Ford built his Highland Park, Michigan, plant in 1909 that mass production of automobiles began in earnest. Under the system that came to be known as "Fordism," each task on the assembly line was simplified and routinized, de-skilling each step and lessening Ford's dependence on more expensive, skilled labor. Wherever machines could be used in place of human labor, Ford made the technological investment. His managers also experimented endlessly with the pace of the production line, seeking the highest possible rate of production without jeopardizing the quality of the final product.

To contemporary observers, Ford's Highland Park plant seemed a technological and managerial marvel. To those who worked there, though, the place was dehumanizing, the work monotonous, and the pace brutalizing. By 1913, the daily absentee rate at Highland Park stood at 10 percent and the annual turnover rate reached 380 percent. Searching for solutions, Ford hit upon the idea of a major wage increase, that he publicized as an unprecedented "Five-Dollar Day" for Ford workers. Although the widely praised Five-Dollar Day was actually comprised of the same $2.34 base wage that had previously been in place, it contained a profit-sharing provision that indeed brought some workers' wages to the five-dollar-a-day level. Other automobile manufacturers were soon forced to match Ford's wages, but Ford reaped most of the publicity; his act seemed almost philanthropic and he was even accused of "spoiling" his workers. The high wages of the American automobile industry, however, which remained its hallmark for generations, came at the price for workers of ceding control of their labor on the assembly line. The issue was revisited after World War II, when Walter Reuther of the United Automobile Workers (UAW) union attempted to gain a voice for labor in production and management decisions, but latter-day Fordism prevailed.

Although Ford was no philanthropist in raising his workers' wages, his announcement of the Five-Dollar Day in January, 1914, brought thousands of workers and their families into the consumer class for mass-production items such as automobiles. In the 1920s, about 47 percent of Ford workers were car owners, a figure that dwarfed the rate of car ownership for other unskilled, working-class groups in the United States and seemed impossible to imagine in any other country.

Competition and the rise of General Motors. Between 1900 and 1910 the number of automobile registrations jumped from about 8,000 to 469,000 in the United

States. Despite the rapid and continuous growth in sales, the industry itself was characterized by volatility and uncertainty. At least three hundred of the five hundred automobile companies that set up shop between 1900 and 1908 in North America went out of business. The typical fledgling automaker during this period was undercapitalized and under constant—and unreasonable—demands for quick returns by its investors, most of who saw the new industry as a speculative venture. After Olds and Ford started drastically increasing production on their assembly lines, most other auto makers were unable to keep up the pace necessary to compete in the industry. With capital requirements for larger factories, more tools and machines, and—eventually—higher wages even for unskilled workers, the barriers to entering the auto market became prohibitive for all but the most determined—and well-funded—prospective manufacturer.

A cartel of 32 manufacturers further attempted to limit new entrants into the industry by enforcing the Selden Patent, which appeared to retain the rights to all gasoline-engine-powered automobiles, in the first decade of the 20th century. By the time the Selden Patent was voided by a court in 1911, largely on the efforts of Henry Ford, the Association of Licensed Automobile Manufacturers (ALAM) had driven or bought out several smaller auto companies. The lead advocate of the ALAM, William C. Durant, soon emerged as Ford's chief competitor in the industry as the founder of GENERAL MOTORS (GM), organized in 1908 after merging several automobile lines.

By the late 1990s, the automobile added $100 billion annually in gross domestic product to the American economy.

Although GM shared the basics of Fordism in its manufacturing, the company took a different approach to marketing. In contrast to Ford, who relied on lowering the price of the Model T in the 1920s to gain market share, GM presented an entire line of automobiles across the consumer market. The luxurious Cadillac, aimed at the high-end market, was followed by the Buick and Oldsmobile, also marketed to the established professional class, the Pontiac, for the upwardly mobile middle-class, and the Chevrolet, an economy car that competed most directly for Ford buyers. Annual style updates, usually mere cosmetic changes, also generated consumer interest in GM's new models each year. The biggest contrast between Ford and GM, however, was the installment-buying that GM offered through its General Motors Acceptance Corporation, which it established as its consumer-credit arm in 1919. By 1921, about half of American cars were purchased on installment and GM succeeded Ford as the country's largest auto maker in 1930; Ford later battled with the Chrysler Corporation for second place among American automobile manufacturers.

Along with Chrysler, Ford and GM comprised the "Big Three" American automakers. A few smaller, "independent" automakers continued to struggle along in North America, but the Big Three's market share was not seriously challenged from the 1930s through the 1970s. GM had 43 percent of the American auto market in 1936, with Chrysler holding 25 percent and Ford holding 22 percent. The remaining 10 percent of the market was held by a few independent companies—Hudson, Packard, Studebaker, and Willys among them—that would merge or disappear altogether by the 1960s.

Unionization in the American auto industry. Through installment-buying and a generally prosperous economy, most American automobile manufacturers enjoyed steady sales and profits through the 1920s. In contrast, the decade of the Great DEPRESSION brought an abrupt downturn to the industry. GM stock went from a high of $91 a share in 1929 to $13 per share in 1933. The industry was also rocked by the demands for union representation in its plants, which gathered in force after President Franklin D. ROOSEVELT's administration implemented such NEW DEAL measures as the National Recovery Act of June 1933 and the Wagner Labor Relations Act of 1935.

Seeking job security, higher wages, and improved working conditions, many auto workers attempted to form independent labor unions to engage in collective bargaining with the auto makers. Workers were met with a brutal, and sometimes patently illegal, response by almost every automaker. After trying to allay the unionization impulse by forming company-controlled employee relations programs (ERPs), the Big Three resorted to intimidation—sometimes including physical violence—legal maneuvering, and public-relations campaigns throughout the 1930s. A strike wave that began in 1934 culminated in a series of sit-down strikes in GM plants throughout the Midwest in the winter of 1936–37, in which workers occupied GM property and refused to move until their union gained recognition by management.

Although the sit-down strikes were illegal, federal and state governments refused to remove the strikers and GM capitulated, becoming the first of the Big Three to recognize the United Auto Workers (UAW) union as the collective bargaining agent of its work force. With the collective bargaining agreement between the Ford Motor Company and the UAW of June, 1941, the unionization of the Big Three was essentially complete.

In exchange for agreeing to a no-strike pledge during WORLD WAR II, the UAW completed the unionization of the entire auto industry by the end of the war. The postwar era in the auto industry focused, then, not on the issues of the right to collective bargaining, but rather on how far the process would go in terms of wages, benefits, and working conditions. The UAW attempted to modify the Ford arrangement of higher wages in exchange for ceding managerial control of the shop floor, which they had established even before the union came into existence. Although the union introduced the topic of managerial decision-making into collective bargaining throughout the 1940s, it failed to make headway on the issue. The legal climate, which had been more favorable to labor's agenda in the 1930s and during World War II, had again turned against labor again with the passage of the Taft-Hartley Act of 1947, which limited labor's ability to engage in general strikes and other collective actions.

It was the 1950 agreement between General Motors and the UAW, publicized as the "Treaty of Detroit," that formed the outlines of collective bargaining for the next generation in the American automobile industry. In exchange for improved wages and benefits—including cost-of-living adjustments, pensions, and health care provisions—automakers retained all managerial prerogatives, including production and investment decisions. The framework of the Treaty of Detroit allowed automakers to enjoy a measure of stability in their work force and autoworkers to expand their wage and benefits packages in succeeding years. Supplemental unemployment benefits were added to collective bargaining agreements between the UAW and the Big Three in 1955 and early retirement provisions came into effect in 1964.

The golden age of the automobile. The 1950s and 1960s were the golden age of the American automobile industry as it shared in the nearly continuous economic prosperity in North America. Foreign automakers, recovering from the devastation of World War II, had not yet geared up major exporting efforts, and instead concentrated on rebuilding their domestic markets. Although sales of the German Volkswagen Beetle were on the rise, there was little foreign competition in North America, particularly among the ranks of the most profitable, full-sized luxury cars that dominated the marketplace. Despite the publicity over consumer advocate Ralph Nader's *Unsafe at Any Speed* in 1965, automakers concentrated more on annual style updates on the larger, more profitable models, instead of technological and safety innovations or the introduction of smaller, more efficient cars in the 1960s.

Not that most North American consumers *wanted* smaller cars. One of the last of the independent automakers, Studebaker, tried to capture the small-car market with its Lark in the early 1960s and was out of business by 1965. Another independent, Nash Motors, had somewhat better success with its Rambler line; it managed to stave off bankruptcy by merging with some of the other independents to form the American Motors Corporation in 1959. The Big Three occasionally made forays into the small-car market, but its most notable effort, the Chevrolet Corvair, ended in an unqualified disaster.

After Nader exposed crucial design flaws in the car—with its rear-wheel drive and concentration of weight in the rear part of the vehicle, the Corvair had an increased chance of rolling over if a driver lost control while turning—General Motors eased the car out of production, even though it had corrected the problem in its later-model Corvairs. GM's heavy-handed tactics against Nader, including the use of private detectives to dig up dirt on the irrepressible crusader, backfired when the company was forced to pay a settlement to its adversary for its questionable actions.

Although some consumers turned away from the Big Three's products, foreign automakers held just 5 percent of the American market in 1963. By 1971, however, their share had increased to 16 percent, an ominous trend once gasoline prices skyrocketed after the ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES (OPEC) oil embargoes of the early 1970s. Although many of the imported autos were luxury makes such as the Mercedes-Benz or sports cars from Fiat or MG, increasingly they were fuel-efficient Japanese models from Honda and Toyota.

Consumerism and criticism. Critics of the automobile also accused the industry of fostering detrimental long-range social trends, including urban sprawl. The 1970 U.S. Census revealed that for the first time in American history, more people lived in suburban areas than in cities or on farms. It was a trend that began with the post-World War II building boom, when returning veterans and their growing families took advantage of high wages, low interest rates, and a booming economy to buy their piece of the American Dream: a new home. The federal government encouraged Americans to buy their own homes with low-interest loans through the Veterans Administration, and by investing billions of dollars in a new interstate highway system. As a result, 83 percent of America's population growth took place in the suburbs between 1950–70. Almost all of the new suburbanites required an automobile to take them from their homes to shopping centers, schools, and places of work.

Critics of suburbanization duly noted that the new developments took up huge amounts of land, much of it in prime agricultural areas, and made automobile ownership a necessity, as most cities did not expand their mass transit operations into suburban areas. As social critics castigated the typical suburbanite as an apolitical conformist, obsessed with status symbols and fitting in, the American luxury cruiser came to symbolize the materialism and superficiality of American life.

The energy crisis. On October 6, 1973, EGYPT and SYRIA launched a military offensive against ISRAEL in a conflict that came to be known as the Yom Kippur War, after the Jewish holy day that marked the conflict's first day. After the United States came to Israel's aid, the seven Arab nations in OPEC announced an oil embargo against Israel's supporters, including the United States, JAPAN, and most western European countries. The embargo, lasting from October 1973 to March 1974, created fundamental changes in the global economy and had an immediate impact on American society as well. In 1967, 2.2 million barrels of oil were imported each day that represented 19 percent of American oil consumption. On the eve of the energy crisis in late 1973, America imported six million barrels of oil a day—36 percent of its total oil consumption.

The most visible change induced by the oil embargo was the long lines at gas pumps around the country; only during World War II had gasoline been rationed, and gas prices had remained low in the United States by world standards since then. Suddenly, the average American had to contend with a peacetime gasoline shortage; when there was gas, its price had increased by 40 percent in just a few months. The American economy, which had been built in large part upon the availability of cheap oil, experienced a sharp recession. Along with the INFLATION triggered by higher energy prices, a period of "stagflation"—an economic downturn accompanied by persistent inflation and unemployment—shook the confidence of the American consumer in 1973 and 1974. After another price hike by OPEC near the end of the decade, energy prices rose an additional 60 percent, contributing to a 14 percent U.S. inflation rate in 1979.

It seemed that the American Dream—symbolized by a new home in a far-flung suburb with an ever-larger automobile in the driveway—had reached the end of the road. The energy crisis thus led to a fundamental reevaluation of the typical American's lifestyle. Conservation and fuel efficiency became the bywords of the new era, accompanied by an uncertainty about the country's economic prospects and its ability to influence the foreign policies of OPEC members.

Although domestic automobile manufacturers later blamed unfair trade regulations and a supposedly high wage rate for their slumping competitiveness in the 1970s, their own decisions had laid the groundwork for the decline. In the days of little foreign competition, cheap gasoline, and a ready consumer market, the Big Three had passed numerous opportunities to diversify their product lineup to include additional smaller models. Convinced that the American driver would never purchase an economy car, even the smaller-sized, less expensive domestic makes were sold as aspiring full-sized luxury cars.

Reorganization and internationalization. Scrambling to recapture their market share throughout the 1970s, American automakers responded with a series of cost-cutting measures that undermined their relationship with their work force. In addition to speeding up production lines in older factories, auto makers attempted to replace workers with robotic machines in their newer plants. The Big Three also relocated many of their parts and assembly plants in non-unionized, lower-wage locations outside of the United States. Although GM had operated factories outside the States since the 1920s to serve various domestic markets, it now made autos for the American market in its international plants. By 1980, GM operated 23 plants outside of the United States, a trend followed by the other members of the Big Three. Although some consumers responded with a "Buy American" campaign in the 1980s, the trend toward foreign assembly and components production continued unabated.

In contrast, foreign automakers such as Honda, Mercedes-Benz, Subaru-Isuzu, and Toyota invested billions of dollars to build assembly plants in the United States in the 1980s and 1990s, beginning with Honda's operation of a plant in Marysville, Ohio, in November 1982. Rejecting attempts by the UAW to unionize their work forces, the so-called "transplant" producers instead focused on quality circles and other employee-involvement programs to boost production and morale in their plants. As of 1998, over 990,000 full-time workers were employed in the automobile manufacturing sector; those in the Big Three largely remained unionized, while only those in joint-manufacturing operations among the transplant companies were unionized.

The 1990s were generally favorable to the North American auto industry, which remained a major contributor to the American economy with over $105 billion added to the GROSS DOMESTIC PRODUCT (GDP) in 1998 alone. While Ford and Chrysler seemed to adapt to the demands of lean manufacturing to remain competitive and offered numerous successful smaller models, however, GM was often criticized for organizational disarray and lackluster product development. In 1991 and 1992, the company was estimated to have lost $15 billion in North America alone. Even its attempts to diversify its core businesses by purchasing Hughes Aircraft and Electronic Data Systems kicked off a storm of controversy and criticism. Like their transplant counterparts, however, American automakers (still known as the Big Three, even after Chrysler's purchase by Daimler-Benz in 1997) continued to emphasize the principles of total quality management to achieve impressive results over the past two decades.

Indeed, by the late 1990s the automobile industry added $100 billion in GDP to the American economy. The automobile industry also fostered a rising standard of living for its workers by paying wages that ranked at the top of the industrial sector, a trend that had begun with Henry Ford's announcement of a Five-Dollar Day in 1914. The industry's almost complete unionization by 1941, however, was even more crucial in establishing the autoworker's reputation among the elite of industrial workers. In addition to its economic and technological accomplishments, so too did the industry transform the social and cultural life of the American nation.

With almost 208 million motor vehicles registered in the United States in 1997, the country ranked as the most automobile-dependent nation on earth, with almost 458 cars per 1,000 persons.

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Aviva

HEADQUARTERED IN LONDON, ENGLAND, Aviva places seventh in the list of the world's largest insurance groups, one of the top five insurance companies in Europe and the UNITED KINGDOM's top insurer (*Fortune* magazine estimates). While 50 percent of its business lies in the UK, Aviva also has strong markets in AUSTRALIA, CANADA, FRANCE, IRELAND, ITALY, the NETHERLANDS, POLAND and SPAIN. Besides offering general insurance, its two other main activities include the services of long-term savings and fund management. It has worldwide premium income and investment sales of £28 billion from ongoing operations, plus more than £200 billion in assets under management. According to July 2002 figures, it had 25 million customers with 68,000 employees.

Formerly called CGNU Insurance, Aviva created a new name that "represents part of the group's planned journey towards being recognized as a world-class financial services provider." As of July 1, 2002, the Aviva brand brought together 50 different trading units from around the world to generate further opportunities to harness the benefits of size and international advantage.

Envisioned change is significant, allowing Aviva to make more of the corporate brand, benefit its trading businesses, and fine-tune marketing, advertising, and sponsor relationships.

By the close of 2001, Aviva's operating profit (before tax) was up 41 percent and new business increased 10 percent. At mid-year 2002, these figures remained steady, and Aviva reported $52 billion in annual 2001 revenue.

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AXA

WHEN CLAUDE BÉBÉAR TOOK OVER at Anciennes Mutuelles, a regional French insurer, no one would have believed that it would one day be one of the world's major financial companies. Bébéar made a reputation for acquiring distressed companies, making a specialty of turning around businesses that others thought were hopeless.

His first large coup was taking over Drouot, one of FRANCE's largest insurers, in 1982 even as the newly elected government mulled nationalizing the industry. In 1985, he renamed the company, foreseeing a world financial role: AXA is not an abbreviation but a simple name that can be pronounced in many languages.

In 1991 AXA made its first large foray into the United States, securing the Equitable (hit by huge losses in real estate and junk bonds) with its Donaldson, Lufkin & Jenrette trading group. In 1996 AXA took over the larger Union des Assurances de Paris (UAP) in a merger that catapulted AXA into the world's top league of insurers.

Fortune magazine ranked AXA as the 31st largest company in the world in 2003, with revenues exceeding $62 billion.

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B

Bahamas

THE COMMONWEALTH of the Bahamas is located on the northwest edge of the West Indies, and is comprised of approximately 700 islands and cays and more than 2,000 rock formations. The capital is Nassau, located on New Providence Island. Other islands include Grand Bahama, with the cities of Freeport and West End, and Great Inagua Island.

In 2002, the population of the Bahamas was approximately 300,000 and concentrated in the urban centers of Nassau and Freeport. The population is largely of African descent, a result of the Bahamas' early days as a slave-trading center, with a minority descended from English settlers, as well as from Syrians, Greeks, Haitians, and other West Indians. English is the native language and Creole is spoken among Haitians. Due to immigration from the United States and other West Indian islands, the Bahamas' rate of population growth is substantially greater than the Caribbean average.

In 1492, Christopher Columbus landed in the Bahamas. However it was not until the mid-1600s that a permanent European settlement was established by the British. In 1964, the Bahamas was granted internal autonomy and in 1973 it was granted independence.

Until the mid-1900s, farming and fishing were the major economic activities. Since attaining independence, the Bahamas has become a stable, developing nation with an economy heavily dependent on tourism and offshore banking. Due to a wonderful climate and beautiful beaches, the Bahamas is one of the most popular year-round travel destinations in the western hemisphere. Tourism continues to grow and has led to a boom in construction of hotels, resorts, and residences, and to solid economic growth. Tourism accounts for more than 60 percent of the GROSS DOMESTIC PRODUCT (GDP) and directly or indirectly employs approximately half of the country's labor force.

Because of favorable tax laws, the Bahamas has become a growing international financial center, and banking has become its second most important industry. Manufacturing, agriculture, and industry, including the production of petroleum, salt, and rum, contribute about one-tenth of the GDP and show minimal growth. The Bahamas is also a major shipping point for illegal drugs and its territory is used for smuggling illegal immigrants into the UNITED STATES.

In the short run, overall economic growth prospects rest heavily on the tourism industry, which itself depends on growth in the United States, the major source of tourists who visit the Bahamas.

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Bahrain

THE KINGDOM OF BAHRAIN is an archipelago in the Persian Gulf consisting of 33 islands, only six of which are inhabited. Its capital is Manama, and it is a constitutional hereditary monarchy in the form of an emirate with an executive-cabinet form of government and a separate judiciary.

The emir, or head of state, is also supreme commander of the Bahrain Defense Force (BDF). Although the king has substantial executive powers, in practice he has delegated decision-making authority to a cabinet since 1956, when a decree created the Administrative Council, an 11-member body that advised the ruler on policy and supervised the growing bureaucracy.

In 1970, this was transformed into a 12-member Council of Ministers. The president of the Council of Ministers, the prime minister, serves as the head of government. The emir appoints the prime minister, who then forms a government by selecting members of the Council of Ministers, albeit in consultation with the emir. The ministers are directly responsible to the prime minister, who, like the emir, has authority to veto a decision by any member of the council. Bahrain formally gained its independence from the UNITED KINGDOM in 1971.

Unlike other Persian Gulf countries, Bahrain possesses minimal oil reserves, but has become an international banking center and is involved with petroleum processing and refining.

The constitution was suspended in 1975; amended and ratified again in 2001. Bahrain has a high rate of literacy of 88 percent. Both men and women over the age of 18 may vote. Islam is the official religion and its judicial system is based partly on Islamic law and English Common Law. Bahrain has a mixed economy with government control of many basic industries. However, the emir is slowly privatizing all industries and reforming the political system.

With a population of just over 650,000 in 2001, Bahrain had a GROSS DOMESTIC PRODUCT (GDP) of $8.4 billion.

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Bank of America

BANK OF AMERICA IS THE THIRD LARGEST bank in the United States with assets of $638 billion (2002). It derives 92 percent of its revenues from domestic operations in 21 states and the District of Columbia making it the nation's largest consumer bank—a fact that would have surely given its founder, A.P. Giannini, a great deal of pleasure.

A.P. (Amadeo Peter) Giannini (1870–1949), known as the father of retail banking and one of the industry's great innovators, led the Bank of America through its first five decades. He was born in San Jose, California, and by age 31, had already made his fortune as a produce wholesaler. While serving as a director for a local bank in San Francisco, Giannini realized that the financial needs of the burgeoning population of Italian immigrants located in city's North Beach neighborhood was being ignored and he urged the bank to extend its services to "the little people." The bank's leaders did not see any profit potential in small customers and refused to implement his ideas. Frustrated, Giannini organized his own bank and on October 15, 1904, Bank of Italy (eventually to become Bank of America) opened for business.

Bank of Italy was the first to cater to an immigrant population previously forced to go to loan sharks and hide their savings in their homes. Many of Bank of Italy's early patrons had never been inside a bank before and did not speak or write English. At a time when bankers toiled behind closed doors and ignored the working class, Giannini placed his desk on the lobby floor and took to the streets to convince the local residents to put their savings in his bank. He advertised his bank's willingness to make loans under $100 and employed Italian-speaking tellers. He also insisted that Bank of Italy's stock be widely distributed among local investors and he limited the bank's directors and executives to 100 shares each of the initial 3,000-share offering.

Bank of Italy's reputation in San Francisco was secured during the Great Earthquake and Fire of 1906, which destroyed the city, including the bank's offices as well as 3,700 of North Beach's 4,000 residences. Seeing opportunity in the disaster, Giannini made a great show of setting up a makeshift counter on the Washington Street wharf and proclaiming the bank open for business. He extended loans to ship captains to bring in loads of lumber and to local residents who were struggling to restore their homes and businesses. As a result, North Beach became the first area of the city to rebuild. Giannini became a local hero and customers flocked to the bank.

Once Giannini proved the efficacy of his business model, he quickly extended it to other underserved ethnic groups. Bank of Italy created departments to cater to Chinese, Greek, Portuguese, Slovenian, Spanish, Latin, and Russian immigrants.

Giannini's greatest ambition, and the challenge that would consume him until his death, was the establishment of branch banking. At that time, the industry was composed of many independent banks and the only branches that existed were local offices in the same city as the parent bank. A wider system of branches was illegal in many states and in others, such as California, was dependent on the permission of state regulators.

Nevertheless, Giannini envisioned Bank of Italy as a statewide system of branches that would serve all of California. He understood that the branch system would create a wide and ever-growing deposit base for Bank of Italy and enable it to offer a higher level of financial services to smaller towns and cities. Thus, in October 1909, Bank of Italy acquired the Commercial and Savings Bank of San Jose and established it as its first branch outside of San Francisco. Giannini had set in motion a strategy of acquisition and expansion that put the Bank of Italy at odds with its industry as well as state and federal governments.

Over the next two decades, Bank of Italy, under Giannini's generalship, used savvy strategies to create new branches. In order to gain branch approvals from state officials, it acquired many ailing independent banks, extending its reach while bolstering the condition of the state banking system. When state officials refused to approve further growth, the bank used legal loopholes to form new companies that were outside the scope of state authority and established the branches under federal authority. When neither state nor federal authorities would approve further growth, the bank took its case to the courts. Bank of Italy's competitors often complained bitterly about its expansion, but the bank's aggressive sales force and exceptional service made it a success with consumers throughout California.

In 1927, with the passage of the McFadden Act, Giannini was able to unite all of the companies he had formed in order to expand as one entity, Bank of Italy National Trust and Savings Association. It was the third largest bank in the United States with 276 branches in 199 communities. In the process, it became a primary lender for California's agriculture and movie industries.

Unsatisfied, Giannini turned his sights toward creating a national branch banking system. In 1929, he created a holding company named Transamerica Corporation and used it to begin buying banks across the country. Planning to retire, he turned over the leadership of Transamerica to two executives recruited from outside the bank, who promised to carry on his program of expansion. During the Great DEPRESSION, however, the new leaders announced plans to sell off many of the company's banks. Giannini returned with a vengeance to defend his vision. He waged a successful proxy battle and regained control of the bank in 1932.

By 1945, the year Giannini retired, his bank was the largest in the United States with just over $5 billion in assets. The bank's asset base and the strong corporate culture that Giannini had fostered put it in an excellent position to profit from the growth of California and emergence of the United States as a global superpower. By 1957, the bank boasted $10 billion in assets. In 1958, it introduced the BankAmericard credit card (now known as Visa). The 1960s and 1970s brought a growing wave of international expansion. In 1968, a new holding company named BankAmerica Corp. was formed and by 1979, it held $108 billion in assets.

BankAmerica remained the nation's largest bank until 1980. By then, international lending had become a minefield as countries, such as BRAZIL and MEXICO, began defaulting on their loans. Many major banks, including BankAmerica, incurred billions of dollars in losses as their loans were restructured. The 1980s also brought the deregulation of the banking industry, which radically altered the competitive environment. The bank's leadership had not foreseen these developments and it staggered through the decade. By 1989, its assets were $98 billion, $20 billion less than a decade before.

By 1990, the bank's downward trend stabilized and it began to grow once again. In 1992, BankAmerica set off a round of industry consolidation when it made the largest banking acquisition to that date, the purchase of California's Security Pacific. In 1993, it acquired Texas-based First Gibraltar. By 1997, its asset base had grown to $260 billion and it was the fourth largest bank in the United States.

In 1998, BankAmerica merged with the nation's third largest bank, Charlotte, North Carolina-based NationsBank. NationsBank dominated the merger. The headquarters of the combined banks was Charlotte and its new leader was NationsBank head Hugh McColl. The new bank was named Bank of America and held assets of $617 billion. A.P. Giannini's vision of a nationwide chain of branch banks operating under a single charter had finally been achieved.

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Bank of England

THE BANK OF ENGLAND was chartered as a joint-stock company in 1694 to provide financial assistance to the British government for war efforts on the European continent. Over the next three centuries the Bank would shift from a private, profit-making enterprise to a government-owned CENTRAL BANK, and expand its role to become one of the most important financial institutions in the world.

Though not the oldest (that honor belongs to the Sverige Riksbank of Sweden, established in 1668), the Bank of England is internationally recognized as one of the premier central banks. A central bank is a monetary authority that oversees the banking, financial, and monetary affairs of a nation. Central banks (161 existed as of 1990) are very important for contemporary capitalism because they issue currency, oversee banking systems, implement exchange-rate policy, and conduct monetary policy. Although these responsibilities give these institutions tremendous power in manipulating economic performance, such was not always the case. The long history of the Bank of England provides an opportunity for examining the evolving role of central banking over recent centuries.

In the early years of its existence the Bank functioned as a private bank with important obligations to the British government. Indeed, the primary function of the Bank of England throughout the 18th century was financing government debt through the sale of securities. This was an era when modern central banking did not exist and the concepts of monetary policy and "lender of last resort" had yet to be conceived.

During the years when the UNITED KINGDOM followed the GOLD STANDARD (1816–1914 and 1925–31), the Bank of England was expected to convert its bank notes to gold on demand. This restriction limited the Bank's discretionary power to issue CURRENCY, however, it provided a clear rule that fostered confidence in the Bank's autonomy. Nonetheless, monetary crises throughout the first half of the 19th century led to increased regulation of the Bank's actions.

By the middle of the 19th century, the Bank had been granted the exclusive right to issue bank notes. This power helped shift the Bank's responsibility away from commercial operations and in the direction of serving the government and other banks. Financial crises in 1866 and 1890 raised awareness that the Bank of England should serve as "lender of last resort." In this capacity the Bank was expected to provide emergency liquidity to other institutions to address bank runs and panics.

With the demise of the gold standard in the early 20th century, the rationale for the Bank's independence disappeared. This change, coupled with the emergence of Keynesian economics after WORLD WAR II, raised new awareness of monetary policy as a political tool. With a greater interest in government control of the economy, the Bank of England was nationalized in 1946. For the next four decades, the government conducted monetary policy with the Bank's support. Not surprisingly, there was relatively little interest in restoring the autonomy the Bank enjoyed under the gold standard.

Recent studies of central banking practices around the world suggest greater bank autonomy is correlated with greater success against INFLATION. These studies have renewed the question of whether the Bank of England should enjoy greater freedom from the Treasury.

In 1993 and 1994 the British government instituted a series of reforms in this direction including formalizing monthly meetings between the Bank governor and the Chancellor of the Exchequer and giving the bank greater discretion in the timing of interest rate changes.

In 1997, the Bank was given responsibility for setting interest rates. This power, previously held by the Chancellor, was transferred to a newly created Monetary Policy Committee consisting of members of the Bank Governors and Bank Directors. The Monetary Policy Committee meets each month and immediately announces their interest rate decisions. This move is yet another step in the direction of greater Bank autonomy.

In the first decade of its fourth century, the Bank of England has a very different set of responsibilities than it did in 1694. Today's Bank views its first task as fighting inflation through monetary policy. In addition to this responsibility, the Bank implements the British government's exchange-rate policy, maintains foreign-exchange reserves, and is responsible for ensuring a sound and stable financial system including serving as the "lender of last resort" to the British banking system. This last responsibility has been tempered somewhat by the transfer of supervisory and regulatory powers from the Bank to the Financial Services Authority.

The Treaty on Economic and Monetary Unification (also known as the Maastricht Treaty) was negotiated in the early 1990s to establish European Monetary Unification. Monetary unification began January 1, 1999, and included the creation of the EURO currency (first issued in 2002) and the EUROPEAN CENTRAL BANK. As a member of the European Community, the United Kingdom participated in the treaty process. Although Britain endorses the idea of the European Central Bank and has indicated a desire to eventually join the European Monetary Unification, in early 2003 it had not yet done so.

Given the terms of the Maastricht Treaty, such a decision will require granting the Bank of England additional autonomy from the British government. With a history of Bank subordination to the government throughout the 20th century, such a move would be a dramatic change. Nonetheless, recent reforms suggest this direction is possible.

Clearly the future role of the Bank is tied to the evolution of central banking practices around the globe. More importantly, however, the future of the Bank of England seems strongly linked to the continuing issue of Bank autonomy and to the fate of the newly created European Central Bank.

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Bank of France

FOUNDED JANUARY 18, 1800, by the administration of Napoleon Bonaparte, the Bank of France was part of a broader reorganization of the French state by Napoleon (including, for example, the establishment of a national legal code and departmental system), that aimed at creating a post-revolutionary nation state, combating the economic depression of the Revolutionary era, and invigorating the relatively weak French economy.

It had not escaped Napoleon's notice that dynamic European military and economic powers in the 18th century, such as England and the Netherlands, had benefited in many spheres from the creation of central banks. However, the first charter of the Bank of France did not accord it the status of a CENTRAL BANK, nor give it a monopoly on note issue, but instead limited its actions to the provision of credit and the issuing of notes in Paris. This charter established an administrative structure that placed great power in the hands of the two hundred largest shareholders, known as *Les deux cent familles*, who formed the General Assembly of the Bank. This term has since become synonymous in France with the idea that a powerful sociopolitical class controls the strings of the French economy, and this idea was given support by the fact that Napoleon, and many of his political associates, were among the first members of the General Assembly. In 1806–08 the Bank was reorganized, with the Governor and his deputies appointed directly by the Emperor. This move initiated a long-running debate, in common with other central banks, concerning the role of the state in the management of the Bank of France, and the extent to which it should be independent of government.

One might argue that this has been the central question in the history of the Bank of France, for the character of the Bank has certainly often changed according to the prevailing political orthodoxy on central bank independence at different moments in history.

The Bank gradually became a national, central bank in the period after 1848 when it began to expand its operations outside Paris. The Bank started to develop an extensive national branch network at this time, taking the place of many of the small regional banks that had collapsed in 1848. By 1900, the Bank had representation in 411 towns, including 120 full branches, and this regional spread also marked an extension of the bank's issuing powers. Economist Glyn Davies, among others, has suggested that "Owing to its very extensive network of branches and offices, [French] commercial banks have not developed as rigorously as their British or German counterparts." Margaret G. Myers notes that this period saw the origins of the entrenched rivalry between the larger, joint-stock commercial banks in France and the Bank of France, and observes that such competition was enhanced by the fact that larger commercial banks (unlike many private and provincial banks) had little influence on the governance of the Bank of France. Nevertheless, the scope and scale of operations of the Bank were limited compared with other central banks.

Before World War I, the Bank was relatively uninvolved in currency markets or in lending money abroad, and the chief task of the bank was the maintenance of a sense of macroeconomic stability, often through rediscounting for other banks, and through lending money to the French state in return for its issuing privileges. Suggestions have been made that the Bank was responsible for France's consistently low interest rates, though France's traditional position as a net exporter of capital offers another possible cause of those low rates.

The Popular Front government of 1936–38 began a process of democratization of the Bank that culminated in its nationalization in 1945. In 1936, more than 40,000 investors owned shares in the Bank, but this figure concealed the fact that most of its shares were held by a small number of institutions and individuals. The Popular Front government altered the administrative structure of the Bank, by increasing the number of regents appointed directly by government and by including one worker's representative.

In 1945, the Bank of France and the largest deposit banks were nationalized, along with other major economic entities such as Renault car company, the coal industry, and public utilities. Post-war French governments advocated a strong role for technocratic government in the rebuilding of the postwar economy, and in many respects they were successful in this aim, using the Bank of France in furthering such policies. In the postwar period the Bank continued its policy of limiting its role in managing the value of the franc, tracking the dollar for much of the period, before linking the value of the franc to that of the deutschmark. More recently, the franc has been incorporated into the EURO and the Bank of France forms one part of the European System of Central Banks that coordinates the management of monetary policy and common interest rates across the euro-zone. The Bank is also heavily involved in the management of the "zone franc" in 15 African states, and with other international networks such as the INTERNATIONAL MONETARY FUND (IMF) and the WORLD BANK.

The Bank retains its local functions, with an obligation to retain a branch in each French department (region), acting as an agent of the state in the receipt of taxes and the provision of detailed, economic data on the regions to central government. In theory, the Bank has been independent of government since 1993, but given its remit (which also includes the ensuring of price stability and the support of governmental economic policies such as the promotion of economic growth and job creation), it is hardly independent in any meaningful sense. One might, however, say that the Bank of France does have a clear sense of its mission and that it does function as a central bank, which was not true for much of its history.

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Bank of Japan

THE CENTRAL BANK OF JAPAN, entrusted with the task of maintaining the stability of the Japanese currency (the YEN) and the country's financial system, the Bank of Japan (BOJ) was set up in 1882. It is a corporation whose legal status is governed by a special law (the most recent version enacted in 1998), and although the government owns 55 percent of BOJ shareholders' capital, the law makes BOJ independent (in particular, there is no provision in the law for shareholders' meetings). The governing body of BOJ is its Policy Board. The BOJ Governor is appointed by the Cabinet for the term of five years and has to be approved by the Parliament. By law, the Governor cannot be dismissed during the term of tenure except in some well-defined cases.

Japan's economy and its financial sector were devastated after the defeat in WORLD WAR II. Although the 1949 version of the law on the Bank of Japan formally gave it a certain degree of independence from the Ministry of Finance and the government, in practice BOJ acted as part of the broad government. In particular, the main goal of its monetary policy throughout the 1950s and 1960s was not so much price level stability as providing the economy with "money for growth."

With the Japanese economy growing very rapidly, private investment demand was so high, compared to the amount of savings that the economy could generate, that BOJ had to step in aggressively to support the market for corporate loans. The financing of investment by Japanese firms relied heavily on the country's banking system, which, lacking the necessary liquid resources, was itself in the state of "overlending," meaning that reserves were often negative. Under these circumstances, BOJ acted as a lender of last resort to commercial banks, but it also used its position as the banking system's most important creditor to impose certain limits on the credit lines extended by commercial banks (the so-called window guidance). Compared to this administrative guidance, other, more conventional methods of monetary policy, such as open market operations played a much smaller role (in particular, because the bonds market itself was very undeveloped).

Things changed dramatically when the era of high growth came to an end in the 1970s. The real growth rate in the Japanese economy declined sharply and so did private investment demand. Two oil shocks created significant inflationary pressures and also led to big government budget deficits and the issuance of large quantities of government bonds. BOJ was forced to change both the goals and the means of its monetary policy. Since the second half of the 1970s it had decisively shifted its focus to combating inflation. In the wake of reduced corporate investment demand, commercial banks no longer needed access to the BOJ line of credit to secure enough reserves, so that "window guidance" was no longer an option as an instrument of monetary policy either. Instead, BOJ started relying more and more on standard means of monetary policy, such as changing its official DISCOUNT RATE and using open market operations by utilizing the growing market for government bonds.

The new MONETARY POLICY initiated in the late 1970s was initially successful. Inflation was brought under control and economic growth resumed. There were different problems, however, and BOJ was slow in realizing the risks associated with deregulation and globalization of the Japanese capital markets. With real investment demand still much below that which had existed prior to the 1970s, Japanese corporations and wealthy individuals had amassed huge financial assets that sought profitable investment opportunities everywhere, from real estate in Japan to U.S. government bonds and foreign currency assets. Money supply was growing fast but BOJ, seeing no signs of consumer price inflation, failed to implement tighter monetary policy and curb the build-up of a speculative bubble.

On the last day of trading in 1989, the stock price index (NIKKEI 225) at the Tokyo stock exchange reached its all-time peak of 38,916 yen (13 years after that, on the last day of trading in 2002, it was down 78 percent at 8,579 yen). In the next year, the bubble burst, leading to the most protracted depression in the history of the Japanese economy, with the real growth rate averaging 1.4 percent over the period of 1991–2000. In response, BOJ implemented the zero-interest rate policy, supplying the economy with enough liquidity to keep long-term interest rates at virtually zero. This, into early 2003, was not enough to revive the economy, however, and pressure built on BOJ to supply even more liquidity by buying government debt. The new law enacted in 1998 considerably strengthened the political independence of BOJ, however, and it continued to emphasize the stability of the national currency and the prevention of inflation as its primary goal while stressing the government's responsibility to implement structural reform and the reform of the banking sector needed to steer Japan out of its economic conditions.

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banking, commercial

COMMERCIAL BANKS ARE in the business of providing banking services to individuals, small businesses, and government organizations. They act as financial intermediaries by accepting deposited funds in a large variety of forms and lending the money to households, businesses, and government agencies. Examples of major American commercial banks include Citigroup Inc., Bank of America, J.P. Morgan Chase, Bank One Corp., Wells Fargo & Co. Inc, Fleet Financial Group, Sun Trust Banks Inc., and National City Corp.

Bank sources of funds. The major sources of commercial bank funds come in three forms: deposit accounts, borrowed funds, and long term funding. Deposit accounts are composed of transaction deposits, savings deposits, time deposits, and money market funds. Transaction deposits are funds kept in a bank for easy transfer to others and include checking accounts and NOW accounts. NOW accounts, or negotiable order of withdrawal accounts, are checking accounts that pay interest. This was legalized for banks in 1981 as a response to competition from money market funds offered by non-bank institutions. Traditional savings accounts or passbook accounts pay interest, but do not provide checking services. From the 1930s until 1986, under Regulation Q, the government restricted the interest rates banks and savings and loans could pay on savings accounts, 5.5 percent for savings and loans, and 5.25 percent for banks. The federal government believed that competition could cause bank failures. Regulation Q was repealed when inflation in the UNITED STATES and therefore INTEREST RATES on Treasury Bills and Commercial Paper exceeded 10 percent and people moved their funds from regulated savings accounts to non-regulated money market funds.

Borrowed funds are federal funds purchased, borrowing from the Federal Reserve banks, repurchase agreements, and eurodollar borrowing. The federal funds rate is the lending rate between banks that are members of the FEDERAL RESERVE system. It is the lending rate that the Federal Reserve targets to control the money supply. Federal funds purchased (borrowed) represent a liability to the borrowing bank and an asset to the lending bank. Loans in the federal funds market are typically for one to seven days. Another source of funds for banks is borrowing directly from the Federal Reserve (the United States central bank) at the discount window. Loans from the discount widow are short term, commonly from one day to a few weeks and are designed to resolve a temporary shortage of funds. The discount rate at which these loans takes place is set by the Federal Reserve Board and is generally below the federal funds rate.

Banks are, nonetheless, reluctant to borrow from the discount window since they need direct approval from the Federal Reserve to do so, and borrowing will result in more intense regulatory attention. A repurchase agreement (repo) represents the sale of securities by one party to another with an agreement to repurchase the securities at a specified date and price. The bank sells some of its government securities to another bank or corporation with a temporary excess of funds and agrees to buy them back at some short time in the future. The yield on repo agreements is slightly less than the federal funds rate since the loans are of about the same duration and repo loans are less risky—they are backed by the collateral of government securities.

Banks may also obtain dollar denominated loans, generally in transactions involving $1 million or more, outside the United States in the eurodollar market at the London Interbank Offer Rate (LIBOR). Eurobanks, banks that participate in this currency market, are located not only in Europe but also in the BAHAMAS, CANADA, JAPAN, HONG KONG, and several other countries. Because interest rate ceilings were historically imposed on dollar deposits in U.S. banks, corporations with large dollar balances moved much of their business overseas during the high inflation of the 1970s and 1980s. By the turn of the century, there were more U.S. dollars outside of the United States then in it; thus, the eurodollar market was the largest market for dollars in the world.

The remaining sources of funds for banks are long-term bonds and equity capital. Like other corporations, banks own some fixed assets such as land, buildings, and equipment. These assets are long term in nature, and are therefore funded with long-term sources of money such as equity and long-term debt. This debt is not guaranteed by the Federal Deposit Insurance Corporation (FDIC), and trades on the open market just like the debt issues of other corporations. Bank debt is followed by the rating agencies (S&P and Moody's) and its behavior is a good indication to government regulators of the financial strength of a bank. Equity capital is composed of stock purchased by investors and the retained earnings of the bank. Since capital can absorb bank losses so the FDIC does not have to, bank regulators control the level of capital banks must hold. In 1981 bank regulators imposed a minimum primary capital requirement of 5.5 percent of assets. Since 1992, regulators have imposed new risk-based capital requirements, so riskier banks are subject to higher capital requirements.

Commercial banks open their vaults for loans—business loans, consumer loans, and real-estate loans.

Bank uses of funds. The common uses of bank funds include cash, bank loans, investment in securities, federal funds sold, repurchase agreements, eurodollar loans, and fixed assets. Banks must hold cash to maintain liquidity and accommodate any withdrawal demands from depositors. The level of cash they maintain is controlled by reserve requirements imposed by the Federal Reserve. Altering the reserve requirement is one of the means the Fed uses to control the money supply.

The main use of bank funds is for loans. These include business loans, consumer loans, and real-estate loans. A common type of business loan is the working capital loan—these loans are short term, but may be renewed by businesses on a frequent basis. They are used to purchase short-term assets such as inventory. Another type of business loan is the term loan, which is primarily used to purchase fixed assets such as machinery. Term loans usually have a fixed interest rate and maturities ranging from 2 to 10 years. Term loans commonly have protective covenants attached to them that restrict what the borrower may do with the funds and are also commonly backed with the collateral of the asset they are used to purchase. A more flexible financing arrangement is the informal line of credit, which allows businesses to borrow up to a specified amount within a specific time period. This is useful for firms that may experience a sudden need for funds but do not know precisely when.

The interest rate charged by banks on loans to their most creditworthy customers is known as the prime rate. The prime rate goes up and down with market conditions and is generally adjusted with the fed funds rate. For large loans several banks generally pool their funds in what is referred to as loan participation. The most common form of loan participation involves a lead bank arranging for the documentation, disbursement, and payment structure of the loan and other banks supplying some of the funds to distribute the risk of the loan.

Commercial banks provide installment loans to individuals to finance the purchase of cars and household items. These loans require the borrowers to make periodic payments over time. Banks also provide credit cards to consumers enabling purchases of various goods without the customer reapplying for credit on each purchase. A maximum limit is assigned to credit-card holders, depending on their income and employment record—this service commonly involves an agreement with either VISA or MasterCard. State regulators may impose usury laws that control the maximum interest rate that banks may charge consumers.

Banks also provide real-estate loans. For residential real-estate loans, the maturity on a mortgage is typically 15 to 30 years, although shorter loans with a large one-time (balloon) payment are also common. Real-estate loans are backed by the residence that the borrower purchases. They are commonly securitized and sold in secondary markets.

History of bank regulation. The regulatory structure of the banking system in the United States is dramatically different from that of other countries. The United States has a dual banking system since either the state or the federal government may regulate banks. A bank that obtains a state charter is referred to as a state bank; a bank that obtains a federal charter is known as a national bank. National banks are regulated by the Comptroller of the Currency, and state banks are regulated by their respective state agencies. Banks that are members of the Federal Reserve system are also regulated by the Fed. Banks that are insured by FDIC are also regulated by the FDIC.

Members of the Monetarist and AUSTRIAN SCHOOL of economics believe that the Great DEPRESSION was largely caused by mismanagement at the Federal Reserve system, and abuses at the banks certainly did occur. The stock market crash of 1929 and the depression that followed inspired significant new banking regulation in the 1930s. Prior to 1933, most commercial banks offered investment-banking services. The Banking Act of 1933 also known as the Glass-Steagall Act required banks belonging to the Federal Reserve system to divorce themselves from their security affiliates. Commercial banks were still allowed to underwrite general obligation bonds of federal, state, and municipal bodies and of government corporations, but were prohibited from underwriting equities and corporate bonds. The act also prohibited partners and officials of security firms from serving as directors or officers of commercial banks that were members of the Federal Reserve system, and created the FDIC. As a result many banks were broken in two. The Morgan Bank, for example, was split into a commercial bank, the Morgan Guaranty Trust Company, known as J.P. MORGAN CHASE and an investment bank, Morgan Stanley, known as Morgan Stanley Dean Witter (2003).

While it took many years to recover from the Great Depression and adjust to all of the new banking regulations, banking was largely successful and stable from World War II until the 1970s. In the 1970s and 1980s excess inflation caused by government overprinting of money to finance the national debt resulted in significant bank losses and Savings and Loan (S&L) failures. The S&Ls ran into trouble when the interest they paid to depositors, which floated with market interest rates, exceeded the income they received from their long-term fixed-rate home mortgages. What followed was a multi-decade wave of regulatory restructuring.

The Deregulation and Monetary Control Act of 1980 (DIDMCA) gradually phased out deposit-rate ceilings (enforced by Regulation Q) between 1980 and 1986 and increased the maximum deposit insurance level from $40,000 to $100,000. It allowed the creation of checkable deposits (NOW accounts) for all depository institutions (previously it was illegal for banks to pay interest on checking accounts), and it allowed S&Ls to offer limited commercial and consumer loans in competition with commercial banks. It also created the explicit pricing of Fed services like check clearing, so the Fed would have to compete with private organizations for this business.

Banks and other depository institutions were further deregulated in 1982 as a result of the Garn-St. Germain Act. The Act allowed the merger of failing financial institutions across state lines; the McFadden Act of 1927 had previously prevented this sort of bank branching. In 1991, Congress passed the Federal Deposit Insurance Corporation Improvement Act (FDICIA), which was intended to penalize banks that engaged in high-risk activities. Its most important provision was to make FDIC insurance more resemble private insurance. Deposit insurance premiums were to be based on the risk of banks, rather than on a traditional fixed rate. Risk-based deposit insurance premiums are now based on a regulatory rating and the financial institution's capital levels.

In 1999, the Financial Services Modernization Act was passed, which allowed commercial banks, securities firms, and insurance companies to merge—essentially repealing the Glass-Steagall Act. The most prominent example of bank expansion into securities services is Citicorp's merger with Traveler's Insurance Company, which resulted in the financial conglomerate named Citigroup. Since Traveler's Insurance Group already owned the investment bank Salomon Smith Barney, the merger was a massive consolidation of banking, securities, and insurance services. This merger occurred in 1998, the year before the passage of the Financial Services Modernization Act. Yet, the Act was still critical, because it allowed Citigroup to retain its banking, securities, and insurance services.

Too big to fail. Some troubled banks have received preferential treatment from bank regulators. The most obvious example is Continental Illinois Bank, which was rescued by the federal government in 1984. Roughly 75 percent of the time-deposits at Continental were in accounts in excess of $100,000. Under FDIC insurance rules, only deposits up to $100,000 were guaranteed against default, nonetheless, the FDIC bailed out all depositors. During this time period, other banks were allowed to fail without any rescue attempt from the federal government. The reason for the Continental rescue plan was, as one of the largest banks in the country, Continental's failure could have resulted in a loss of public confidence in the U.S. banking system and a subsequent run on other U.S. banks.

While these concerns could be justified, the government rescue also caused a MORAL HAZARD problem. If the federal government rescues a large bank, it sends a message to the banking industry that large banks will not be allowed to fail. Consequently, large banks may take excessive risks without concern about failure. If risky ventures of a large bank (such as loans to very risky borrowers) pay off, then the return will be high, but if they do not pay off, the federal government will bail out a large bank.

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banking, consumer

ALSO KNOWN AS RETAIL BANKING or commercial banking, consumer banks provide checking, savings, credit, and other banking services to individuals and small businesses, typically handling very large numbers of relatively small transactions. They are distinguished from investment banks that raise capital for large businesses and operate in fundamentally different ways from consumer banks.

In the UNITED STATES and UNITED KINGDOM, consumer banking and investment banking are largely separate. In the United States, this separation is legally required by the Glass-Steagall Act of 1933, while in the United Kingdom it is a matter of customary business practice. Other countries allow banks to combine the two types of activity. Banks that offer both consumer and investment banking services are called "universal banks."

Consumer banks are a mainstay of individual and business savings. However, as other savings and investment vehicles became more widely available and popular, the percentage of household financial assets deposited in consumer banks declined in the United States from 39 percent in 1978 to below 17 percent at the end of the 20th century. This article refers primarily to U.S. consumer banks and the U.S. banking system, but it applies with minor differences to banks in other countries.

Types of consumer banks. In the United States, consumer banking institutions include commercial banks, savings institutions (Savings & Loan associations and mutual savings banks), and credit unions, with each type regulated by a different government agency and organized in a different way. Other countries have similar types of banking institutions, though legal requirements and business customs vary widely from country to country.

Commercial banks, the most common type of depository institution, accept deposits and use them to make loans for a wide range of uses, such as automobile purchases, business equipment, and lines of credit at interest rates that vary just as widely. Though they were once the main providers of both deposit accounts and loans, banks now face competition from other institutions such as money-market funds that allow smaller depositors to invest and write checks against their accounts. Free of some of the legal restrictions placed on banks, such non-bank funds can make more diversified investments and offer higher returns than banks. However, non-bank funds lack deposit protection provided by the U.S. Federal Deposit Insurance Corporation, which insures bank deposits up to $100,000. And banks are still the primary source of loans for individuals and smaller businesses.

Savings institutions include savings and loan associations and mutual savings banks. They started out as "Building & Loan societies" (immortalized in Frank Capra's 1939 film, "It's a Wonderful Life") whose members deposited their money to provide home loans to other members. In the 1930s, the U.S. national government began to subsidize home ownership. In 1934, it extended deposit insurance to savings institutions, putting them on a par with bank deposits.

Until deregulated in the late 1970s, savings institutions invested mainly in home loans. Deregulation allowed them to make riskier loans, but left in place the deposit insurance of $100,000 per depositor by the now-defunct Federal Savings and Loan Insurance Corporation. This led some institutions to offer higher interest rates and make risky loans, confident that government would cover any losses. The combination of deregulation with government protection against risk caused widespread savings institution bankruptcies in the 1980s as risky loans went sour and taxpayers had to foot the bill.

As banks and other financial institutions offer more options to depositors and borrowers, savings institutions seem to be merging into those other institutions and disappearing as a separate type of consumer bank.

Credit unions perform the same functions as banks and savings and loans, but only for members of specific groups, such as employees of the same company, members of the same union, or workers in the same industry who also belong to the credit union. This reduces their risk of making bad loans because borrowers are members and are already known to the credit union.

The two fundamental types of bank deposit are demand deposits and time deposits.

Demand deposits can be withdrawn on demand, as their name implies. Checking accounts and other checkable deposits are the most common type of demand-deposit accounts, and though savings accounts sometimes theoretically require advance notice to withdraw funds, banks usually allow depositors to withdraw their money on demand.

Checkable deposits are accounts against which a depositor can write checks, meaning that money on deposit can be demanded any time a check is presented for payment. Checkable deposits include traditional non-interest checking accounts, negotiable order of withdrawal (NOW) accounts, and super-NOW accounts. Checkable deposits have steadily decreased as a portion of bank funds. In 1960, they accounted for over 60 percent of bank funds, but by the year 2000 had decreased to only 13 percent of bank funds.

Time deposits are left with the bank for an agreed-upon period of time, such as six months, one year, or longer. A depositor who wishes to withdraw the money early must forfeit some of the interest that the money would have earned. Banks offer two main classes of time deposits. Time deposits under $100,000 are considered small-denomination time deposits, while those for $100,000 or more are considered large-denomination time deposits. However, because the Federal Deposit Insurance Corporation only insures deposits up to $100,000, a portion of the money in large-denomination time deposits is uninsured like any other investment.

Time deposits are often made by purchasing certificates of deposit (CDs). Large-denomination time deposits can be bought and sold in bond markets, so depositors can get their money out without penalty if a buyer is willing to pay enough. Large-denomination time deposits are typically made by corporations and financial institutions as one alternative to U.S. Treasury bonds. Such time deposits are an important source of funds for consumer banks.

Consumer banking often involves personal consultation to determine the best investment options.

How consumer banks operate. Consumer banks (including commercial banks, savings institutions, and credit unions) accept deposits from some individuals and businesses and loan out the money to other individuals and businesses. The difference between the interest they pay to their depositors and the interest they charge to lend out the money is called "the spread," and it is how banks make their money.

A typical passbook savings account, for example, might pay an interest rate of 2 percent. On the other hand, a bank might charge 6 percent for a home loan and 18 to 20 percent for an unsecured credit card loan. This spread is the banking equivalent of "buy low, sell high." Banks "buy" deposits at a relatively low rate of interest and "sell" loans and credit at relatively high rates.

Deposit funds (reserves) that are lent or invested can make a profit for the bank, but funds held by the bank do not. Therefore, consumer banks lend or invest all but a fraction of their deposits, which they keep on hand as vault cash or on deposit at a branch of the U.S. FEDERAL RESERVE, the U.S. central bank. Banks use this held-back fraction of reserves to pay depositors who wish to withdraw funds or who wish to write checks that draw on their accounts. This is called fractional-reserve banking.

The Federal Reserve requires banks to keep a minimum percentage of their demand-deposit funds available to satisfy withdrawals. This minimum is called the reserve requirement. In February, 2002, the reserve requirement was 10 percent of demand deposits. Because time deposits are left with the bank for a specified period, they are less likely to be withdrawn before maturity, so there is no reserve requirement for time deposits.

Fractional-reserve banking has been both a blessing and a curse to Western economies. It gives banks both the ability and incentive to expand a country's money supply, as economist Adam SMITH noted in 1776:

> A particular banker lends among his customers his own promissory notes, to the extent, we shall suppose, of a hundred thousand pounds. As those notes serve all the purposes of money, his debtors pay him the same interest as if he had lent them so much [gold or silver]. This interest is the source of his gain. Though some of the notes are continually coming back upon him for payment, part of them continue to circulate for months and years. Though he has generally in circulation [paper currency of] a hundred thousand pounds, twenty thousand pounds in gold and silver may, frequently, be a sufficient for answering occasional demands. By this operation, therefore, twenty thousand pounds in gold and silver perform all the functions which a hundred thousand could otherwise have performed.

Fractional-reserve banking gives government, through the banking system, the ability to make more money available to stimulate business activity in economic downturns. For example, the Federal Reserve can lower the reserve requirement, enabling banks to loan out a larger portion of funds from their demand deposits.

However, fractional-reserve banks are inherently at risk because they never have enough assets on hand to pay off all their depositors. This has led to numerous problems, including "bank runs" in which too many depositors try to withdraw their money from a shaky bank, thereby causing the bank to fail. Moreover, erratic fluctuations in the money supply are a major cause of the business cycle of boom and bust.

History of consumer banks. Consumer banks as we know them today began to evolve in medieval Europe. In the 12th century, deposit banks opened in Italian trading centers such as Venice and Genoa. These banks were not allowed to earn money by loaning deposits and keeping only fractional reserves, but they did facilitate business transactions by transferring money on order from buyers' to sellers' accounts. They also allowed some depositors to write overdrafts on their accounts, in effect loaning them money. Soon, similar banks operated in major cities such as London, Barcelona, and Geneva.

Banks also facilitated long-range trade by buying and selling bills of exchange. Because shipping gold was time-consuming, expensive, and hazardous, many merchants preferred to use bills of exchange. By this means, merchants could sell goods on credit in a distant market, use one of the market's local banks to invest the proceeds in local goods, and then have the goods shipped back to the home market. Because all the transactions were based on bank credit, no actual gold shipments were required. By the beginning of the INDUSTRIAL REVOLUTION, fractional-reserve banking had become common in Europe and elsewhere around the world, and institutions recognizable as the ancestors of modern consumer banks were in widespread operation.

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banking, investment

INVESTMENT BANKS, OR I-BANKS, assist with a large variety of financial transactions generally involving the restructuring of the ownership of firms. These transactions include private placements, initial public offerings, mergers and acquisitions, leverage buyouts, and securitization. The role of an investment bank is generally that of a financial intermediary or advisor rather than a lender or investor so most of its compensation is in the form of fees. The most active investment banking houses in recent years have been: Merrill Lynch, Salomon Smith Barney, Morgan Stanley Dean Witter, CREDIT SUISSE First Boston, J.P. MORGAN CHASE, Goldman Sachs, Deutsche Bank, Lehman Brothers, UBS Warburg, and Banc of America Securities.

Private placements and venture capital funds. Most businesses begin life as proprietorships or partnerships, and then, as the more successful ones grow, at some point they find it desirable to become corporations. Initially, its founders and key employees own most of a firm's corporate stock. Founding firms that are extremely successful tend to grow very quickly and therefore need expansion funds beyond the resources of the initial founders.

The first outside source of funds usually obtained by startup firms come from private placements. Private placements are stock issues that do not have to be registered with the SECURITIES AND EXCHANGE COMMISSION (SEC), and are therefore highly restricted in who may purchase them. In a non-registered private placement, the company may issue securities to an unlimited number of accredited investors, but to only 35 non-accredited investors. Accredited investors include the officers and directors of the company, high wealth individuals, and institutional investors. An additional restriction on private placements is that none of the investors can sell their securities in the secondary market to the general public.

For most startup companies, the first private-equity placements are to a small number of individual investors called angels. The angels tend to be high net-worth people with significant knowledge about the industry they are investing in, and commonly sit on the company's board of directors. As a company's financial needs grow, the next step is commonly to seek support from a venture capital fund. Venture capital funds are private limited partnerships that typically raise $10 million to $100 million from a small group of primarily institutional investors, including pension, funds, college endowments, and corporations. The managers of venture capital funds (venture capitalists) are typically very knowledgeable about a given industry, and limit their investments to only one investment sector.

Initial public offerings (IPOs). Going public means selling some of a company's stock to outside investors and then letting the stock trade in secondary public markets such as the NEW YORK STOCK EXCHANGE. Taking companies public is the primary business of most investment banks. Investment bankers assist firms by helping to determine the stock's initial offering price and selling the stock to its existing clients—generally a mix of institutional investors and high net-worth individuals. After the stock is sold, the I-Bank, through its brokerage house, will have an analyst "cover" the stock to maintain investor interest in it. This analyst will regularly distribute reports to investors describing the stock's future growth prospects.

When taking firms public, the firm and its investment bankers must decide whether the bankers will work on a best-efforts basis or will underwrite the issue. In a best-efforts sale, the banker does not guarantee that the securities will be sold or that the company will get the cash it needs, only that it will put forth its "best efforts" to sell the issue. On an underwritten issue, the company does get a guarantee, because the banker agrees to buy the entire issue and then resell the stock to its customers. Except for extremely small issues, virtually all IPOs are underwritten. Investors are required to pay for securities within 10 days, and the investment banker must pay the issuing firm within four days of the official commencement of the offering.

Typically, the banker sells the stock within a day or two after the offering begins, but on occasion, the banker miscalculates the offering price and is unable to sell the issue. If this occurs, the investment bank must absorb any losses. Because investment bankers bear significant risk in underwriting sock offerings, large-issues bankers tend to form underwriting syndicates. The banking house that sets up the deal is called the lead, or managing, underwriter and the other banks share in the initial purchase and distribution of the shares.

Since the creation of the SEC in 1933, investment-banking services have been highly regulated. The SEC has jurisdiction over all interstate public offerings in excess of $1.5 million. State agencies also regulate the securities market. Newly issued securities (stocks and bonds) must be registered with the SEC at least 20 days before they are publicly offered. The registration statement, called Form S-1 provides financial, legal, and technical information about the company to the SEC. A prospectus, which is embedded in the S-1, summarizes this information for investors. After the SEC declares the registration to be effective, new securities may be advertised, but a prospectus must accompany all sales. Preliminary, or "red herring," prospectuses may be distributed to potential buyers during the 20-day waiting period after the registration is effective.

After the registration statement has been filed, the senior management team, the investment bankers, and the company's lawyers go on a road show during which the management team will make multiple presentations each day to potential institutional investors—generally existing clients of the underwriters. During the presentations potential investors may ask questions, but the management team may not give out any information that is not already included in the registration due to a SEC mandated quiet period. The quiet period begins when the registration statement is filed and lasts for 25 days after the stock begins trading. After a presentation, the investment bankers will ask the investors for an indication of interest in the new company based on the range of offering prices shown in the registration statement. The investment bankers will record the number of shares that each investor is interested in buying. This process is called book building. If there are more investors interested in purchasing the company than there are shares available, then the offer is oversubscribed and the I-Bankers may increase the offering price, if there is little interest in the new company, then they may lower the offering price or withdraw the IPO.

Mergers and acquisitions. A merger occurs when two or more firms become one firm with approximately equal control of the combined firm going to both management teams. An acquisition occurs when one firm takes control of another, generally smaller firm. From the stockholder's point of view there are good reasons for mergers such as firm synergies, and bad reasons for mergers such as diversification. If two companies merge and the value of the whole is greater than the sum of its parts, then a synergy is said to exist. Synergistic effects can arise from five sources:

1. operating economies, which result from economies of scale in management, marketing, production, or distribution
2. financial economies, including lower transaction costs and better coverage by security analysts
3. tax effects, where the combined enterprise pays less in taxes than the separate firms would pay
4. differential efficiency, which implies that the management of one firm is more efficient and that the weaker firm's assets will be better managed after the merger
5. increased market power due to reduced competition.

Some of these reasons for mergers are good for the economy and consumers since they will receive equal or better goods and services for lower prices, and other reasons, such as decreased competition, may hurt consumers. The ANTITRUST division of the Justice Department regulates mergers and acquisitions.

Managers often cite diversification as a reason for a merger. While this makes sense from the point of view of the manager, it makes little sense from the point of view of the stockholders in the firm. If a manager controls a larger firm involved in multiple different industries, he will collect a larger salary and control more assets than if he only manages a small specialized firm, so diversification helps management. If a stockholder wants to be diversified, he need only buy stock in multiple different firms. Furthermore, since management may only be knowledgeable in one specialized area, mergers based on diversification may actually make the combined firm less valuable than its individual components. As of October 2002, the five largest corporate mergers or acquisitions in the United States were: America Online Inc. acquiring Time Warner; Pfizer Inc. acquiring Warner-Lambert; Exxon Corp. acquiring Mobil Corp; Travelers Group Inc. acquiring Citicorp; and SBC Communications Inc. acquiring Ameritech Corp.

Leveraged buyouts. In a private transaction, the entire equity of a publicly held firm is purchased by a small group of investors that usually includes the firm's current senior management. In some of these transactions, the current management group acquires all of the equity of the company. In others, current management participates in the ownership with a small group of outside investors who typically place directors on the now-private firm's board and arrange for the financing needed to purchase the publicly held stock. Such deals almost always involve substantial borrowing, often up to 90 percent of assets, and thus are known as leverage buyouts (LBOs). The acquirer believes the firm is drastically undervalued in the market or that the firm's value can be increased by changes current management is unwilling to make. Thus, a group of investors might take a firm private, fire the management, and restructure the firm to making a profit. For example when Kohlberg, Kravis, Roberts, & Company (KKR) won the battle for RJR Nabisco, they removed the top management and terminated a money-losing "smokeless" cigarette project. LBOs tend to take place when the stock market is depressed and debt financing is more appealing. Many LBOs were financed with junk bonds issued by Michael Milken and Drexel Burnham Lambert during the early 1980s. Subsequently, Morgan Stanley Dean Witter, Merrill Lynch, Salomon Smith Barney, and other major investment banks have entered the junk bond market.

Securitization. A security refers to a publicly traded financial instrument, as opposed to a privately placed instrument. Thus, securities have greater liquidity than otherwise similar instruments that are not traded in an open market. In recent years, procedures have been developed to securitize various types of debt instruments, thus increasing their liquidity, lowering the cost of capital to borrowers, and generally increasing the efficiency of the financial markets. The oldest type of asset securitization is the mortgage-backed market. Here, individual home mortgages are commonly combined into pools, and then bonds are created that use the pool of mortgages as collateral. The financial institution that originated the mortgage generally continues to act as the servicing agent, but the mortgage itself is sold to other investors. Savings and Loans (S&Ls) are in the business of borrowing money on a short-term basis through passbook accounts and short-term certificates of deposit, and lending money to home purchasers through long-term fixed-rate home mortgages. During the high inflation period of the late1970s and early1980s many S&Ls went bankrupt due to this duration mismatch between their assets and liabilities. When inflation increased, the value of their assets (home mortgages) went down drastically, but the value of their liabilities (passbook accounts) did not change. The securitization of home mortgages is one of the ways developed to help S&Ls and banks limit their exposure to this type of interest-rate risk. Today, many different types of assets are securitized, including auto loans, credit card balances, home loans, and student loans.

History of investment banking. Investment banking services have been available since the early days of the United States. Before the 1850s, when the financial needs of the railroads gave rise to some of the first investment banking houses, the business in securities was conducted by various kinds of unspecialized middlemen. In the United States, as in Europe, investment banking started out as a sideline to some other business. In America this role usually was filled by speculators and merchants, since relatively few other men of large wealth were willing to take the risks entailed in buying securities or had funds other than those invested in land or trade. Early securities trading mainly involved government and railroad bonds.

Of the many incorporated commercial banks performing an investment banking function before 1840, none was more deeply involved in the business than the United States Bank of Pennsylvania, which took over the nongovernmental affairs of the second Bank of the United States, when its charter expired in 1836. Nicholas Biddle, its first president and former head of the Bank of the United States, contracted and negotiated for all kinds of public and private securities, including some of the first railroad issues. Like some large commercial banks doing an investment banking business a half-century later, he tried to attract the deposits of the companies and governmental units whose securities he distributed. His most important innovation, which was partly responsible for the institution's ultimate collapse in 1841, was the practice of lending issuers money on securities he was trying to sell on commission.

By the outbreak of the Civil War, investment banking in the United States had achieved a significant degree of maturity and specialization. During the Civil War, the Union government was having significant difficulty raising funds, so Abraham LINCOLN's first Secretary of the Treasury, Salmon P. Chase called on his brother-in-law, Jay Cooke, who had opened a private banking house in Philadelphia in 1861. Cooke proposed a hard-selling, well-organized, campaign to appeal to the patriotism and self-interest of the small investor. Chase accepted the banker's suggestion since bankers and large investors, the usual purchasers of debt securities, were unwilling to buy the bonds; thus, the first mass marketing of securities was born. Subscriptions ranged from \$300,000 to as little as \$50. After the war, Cooke attempted the same techniques selling railroad bonds. He was not as successful, and in 1873, Cooke & Co. went out of business due to unpaid debt and unsold bonds of the Northern Pacific Railroad.

After Cooke's failure, a new financial giant—J. Pierpont MORGAN—rose to prominence. His father, Junius Spenser Morgan was born on a Massachusetts farm, but became a powerful international banker as a partner with George Peabody & Co. in London. The younger Morgan, after a brief apprenticeship with Duncan, Sherman, & Co, opened his own banking house in New York, dealing largely in foreign exchange, gold, and securities. In 1871, J.P. Morgan entered into a partnership with Anthony Drexel of Philadelphia. With his advantageous foreign connections, he soon became prominent in underwriting securities issues. In 1879, Morgan took on the important responsibility of helping William H. Vanderbilt sell a large portion of his enormous holdings in the New York Central Railroad. Morgan found English buyers for the stock, and became their representative on Central's board.

From this time period until his death in 1913, Morgan was the dominant figure in American finance. In 1893, the U.S. Treasury suffered from a run on gold reserves motivated by fear that free-silver legislation would end the gold standard causing a depression in the dollar. Morgan organized a marketing syndicate to issue new government bonds and replenish the gold reserve. In 1901, Morgan was one of the key figures in the formation of United States Steel Corporation—at the time the largest business corporation in the world. And in 1907, when Wall Street was swept by a financial panic, Morgan acted as a "one-man Federal Reserve bank" by organizing the heads of New York City's leading banks to put up enough cash to prevent suspension of payment by weaker banks.

Members of the Monetarist and AUSTRIAN SCHOOLS of economics believe that the Great DEPRESSION was largely caused by mismanagement at the FEDERAL RESERVE system, but there were also abuses at the banks. The stock market crash of 1929 and the depression that followed inspired significant new banking regulation. Prior to 1933, most commercial banks offered investment-banking services. The Banking Act of 1933 also known as the Glass-Steagall Act required banks belonging to the Federal Reserve System to divorce themselves from their security affiliates within one year. Commercial banks were still allowed to underwrite general obligation bonds of federal, state, and municipal bodies, and of government corporations, but were prohibited from underwriting equities and corporate bonds. The act also prohibited partners and officials of security firms from serving as directors or officers of commercial banks that were members of the Federal Reserve system, and created the Federal Deposit Insurance Corporation (FDIC). As a result many banks were broken in two. The Morgan Bank, for example, was split into a commercial bank, the Morgan Guaranty Trust Company, now known as J. P. Morgan Chase and an investment bank, Morgan Stanley, now know as Morgan Stanley Dean Witter. Also passed during this time period were the Truth in Securities Act of 1933, and the Securities and Exchange Act of 1934. The provisions of the Truth in Securities Act were discussed in the section on IPOs. The Securities and Exchange Act created the Securities and Exchange Commission, established a minimum margin requirement of 55 percent, and put regulation of broker's loans under the control of the Federal Reserve system.

While it took many years to recover from the Great Depression and adjust to all of the new banking regulations, banking was largely successful and stable from World War II until the 1970s. In the 1970s and 1980s excess inflation caused by government overprinting of money to finance the national debt resulted in significant bank failures. What followed was a multi-decade wave of regulatory restructuring. Most of this deregulating was related to commercial banking. In 1999, the Financial Services Modernization Act was passed, which allowed commercial banks, securities firms, and insurance companies to merge—essentially repealing the Glass-Steagall Act. The most prominent example of bank expansion into securities services is Citicorp's merger with Traveler's Insurance Company, which resulted in the financial conglomerate named Citigroup. Since Traveler's Insurance Group already owned the investment bank Salomon Smith Barney, the merger was a massive consolidation of banking, securities, and insurance services. This merger occurred in 1998, the year before the passage of the Financial Services Modernization Act.

Yet, the act was still critical, because it allowed Citigroup to retain its banking, securities, and insurance services. Since the re-merger of investment and commercial banking there have been accusations of tying (given loans only under the condition of receiving I-Banking business) and of large banks giving questionable loans in exchange for I-Banking business.

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bankruptcy

DATING BACK TO the ancient Romans, bankruptcy has been the course of action for when a business or individual is unable to repay outstanding debts owed to creditors, or avoids repayment. In the last 400 years, governments have put formal laws in place that penalize debtors, while at the same time protecting the rights of creditors.

Bankruptcy, in its early form, was viewed as debtor fraud. Those who were bankrupt were severely punished and laws were created to ensure creditors were repaid.

Bankruptcies mainly took place in the business world and were involuntary, in that a business was charged with bankruptcy when it could not repay creditors. The penalties for merchants and individuals charged with bankruptcy included prison, public flogging, and in some instances, execution.

The meaning of bankruptcy has changed dramatically in today's society. Rather than being charged with bankruptcy, it is now something that businesses and individuals declare, which eliminates virtually all the criminality involved in its original definition. In modern times, bankruptcy has evolved into a practice that centers on eliminating debts, particularly as personal bankruptcy has become a more common practice. In cases of personal bankruptcy, the process of declaring oneself bankrupt—filing for bankruptcy— is viewed as a cleansing act, giving the debtor a fresh start economically and relief from creditors.

Some believe the term bankruptcy was derived from the words *bancus* (tradesman's counter) and *ruptus* (broken), meaning that a person's business was gone. Others see the word coming from the Italian *banca rotta*, or "broken bench," for the practice in medieval times of destroying a businessman's trading bench if he did not repay outstanding debts.

Early bankruptcy. In ancient Rome, under the Caesars, debt collection laws were enacted to make certain that creditors were repaid. A trustee (often referred to as a protector or caretaker) auctioned off the debtor's property to the bidder who agreed to pay the most to the creditors. The trustee was either chosen by the creditors or appointed by a magistrate. In severe cases, a debtor could be sold into slavery.

Historians disagree about the date of the first English bankruptcy law. Some think it was enacted in 1542, while others believe the first law was passed in 1570. The 1542 edict, passed under the rule of Henry VIII, established harsh penalties against the debtor to prevent fraud committed on creditors. Bankrupt individuals appeared before a chancellor, faced examination under oath at the discretion of the creditor, and if the debtor failed to surrender his possessions to repay the debt, the offender was sent to debtors' prison.

The 1570 law passed because the earlier statute put so many people in prison that it became a national epidemic. The penalties, however, were no less severe. All assets were taken, sold, and distributed to creditors. Bankruptcy officials even had the right to break into a person's home to seize property that could be used to repay debts. Unlike today's less hostile version of bankruptcy, there was no discharge of the remaining debt, regardless of the penalty the debtor faced. Debt collection continued until all creditors were satisfied. As the debtors' prisons filled, new forms of punishment took place that did not include jail time. Debtors could be publicly flogged, while others had an ear cut off or had an ear nailed, while still attached, to a pillory in a public forum. The 1705 Statute of Anne law gave prosecutors the right to execute debtors and approximately five people were put to death under this law.

Bankruptcy in America. Given the chaotic state of the economy in early America and large debts the nation owed for financing the AMERICAN REVOLUTION, the founders were not willing to enact punitive bankruptcy laws in the young country. The federal government empowered the individual states to dictate bankruptcy laws. Many of these mimicked the English in harshness, including nailing convicted debtors to the pillory and branding a "T" on the thumb of debtors for "thief."

The first official bankruptcy law in the UNITED STATES was passed in 1800 to regulate land speculation deals. The law was later repealed in 1803. Although modeled after English bankruptcy law, American federal laws were less punitive and allowed the debtor to discharge some debts. The rest of the 19th century saw similar bankruptcy laws enacted in response to specific economic crises. Each of these was followed by repeal, usually after the law proved too cumbersome or people figured out ways to defraud the system using the new law.

The Bankruptcy Act of 1898 began a new era of bankruptcy laws, favoring the debtor over the creditor and giving the bankrupt party legal protection from those who were owed money. The Great DEPRESSION forced more bankruptcy legislation, with new laws being passed in 1933 and 1934. With the Chandler Act of 1938, Congress revamped the laws. Chapter 13 bankruptcy was introduced, which gave debtors the ability to repay over a three- to five-year plan, while retaining their property and residence. The Chandler Act also defined how businesses could reorganize during bankruptcy.

During the long economic boom that took place after World War II, bankruptcy did not change significantly until the 1970s. The Bankruptcy Reform Act of 1978 overhauled bankruptcy practices. Chapter 11 was created to help businesses reorganize, while a new Chapter 13 replaced the old program. Both made it easier for corporations and people to file for bankruptcy and emerge with much less financial damage. Much of the bankruptcy news in the 1980s occurred as the 1978 Act was tweaked and new laws were passed to include groups that were not given special treatment in the earlier laws, such as the Chapter 12 provision created for family farms in 1986.

Boom and bust bankruptcy. The boom and bust economy of the 1980s and 1990s caused record numbers of corporations and individuals to declare bankruptcy. The leniency of modern bankruptcy laws has made it, to some people's viewpoint, an attractive alternative to actually repaying creditors. Many of the world's most well-known companies have filed for bankruptcy, including Continental Airlines, Texaco, and LTV Steel. In 1997, nearly 1.4 million people filed for personal bankruptcy, an average of one for every 76 American households.

Most people filing for bankruptcy now use Chapter 7 liquidation, which discharges all unpaid debts, but does not allow creditors to place a lien on property or garnish wages. In the business world, Chapter 11 reorganizations are the most common form of bankruptcy. Under this program, businesses are allowed to continue operations with their own management teams in place, while assets are protected from creditors. Management has 120 days to propose a plan of reorganization to creditors, but the deadline can be extended for years.

While corporate bankruptcies, such as those by ENRON and WORLDCOM still receive the most media attention, consumer filings dwarf those of business. In 2002, 1.57 million were filed, but only 38,540 were businesses. Yet it is difficult to quantify the true economic effect of the largest bankruptcy filings, such as WorldCom with nearly $104 billion in assets when it filed in 2002, or Enron totaling $63 billion.

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Barclays Bank

BARCLAYS IS A FINANCIAL services group, based in the UNITED KINGDOM, engaged primarily in banking, investment banking, and investment management. It is one of the largest, oldest, and most revered financial services groups in England, Scotland, Wales and Ireland, and a leading provider of coordinated global services to multinational corporations and financial institutions worldwide. As a whole, it is comprised of seven business groupings: Barclays Africa; Barclaycard; Barclays Capital; Barclays Global Investors; Barclays Private Clients; Business Banking; and Personal Financial Services.

In 2003, Barclays had 74,400 employees operating within those groups, spread throughout 60-plus countries. All corners of the world—in Europe, the North America, Latin America, Africa, the Caribbean, Asia, the Middle East and Australia—are represented as Barclays' markets. Barclays has 2,088 branches in the United Kingdom alone, 564 branches overseas, and an online banking service, to which nearly 3.5 million users are registered.

The history of Barclays can be traced back 300 years to when banking partners John Freame and Thomas Gould founded the institution in 1690. The name Barclay came about when a third partner, James Barclay, joined the firm. Since then, it has remained at the physical center of London's financial district, and also the metaphorical center of London's finance business.

By 1896, when a new, realigned bank was formed from mergers, it had 182 branches and deposits of £26 million, a vast sum in Victorian England. After another series of amalgamations, the bank claimed more than a thousand branches in 1926. In 1969, it acquired Martin's Bank, the largest bank outside of London, and in 2000 The Woolwich, a principal lending bank.

According to its 2002 annual report, Barclays aspires to be "recognized as an innovative, customer-focused company that delivers superb products and services, ensures excellent careers and contributes positively to the communities." Striving to uphold a long and honored legacy, it continues to build its business in retail and commercial banking outside the United Kingdom and to nurture global business in the areas of investment banking and credit cards. In 2002, the group achieved a sales of $27.5 billion with profits of $3.7 billion.

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barter

THE EXCHANGE OF ONE COMMODITY for another, barter is used in the absence of any widely accepted type of money, where money is defined as any commodity, coin, or paper currency whose primary value is as a medium of exchange, not as a good or service. Barter evolved early in the history of mankind as individuals recognized the benefits of a fundamental component of capitalism: exchange. Historical evidence suggests barter developed as early as 9000 B.C.E. when human beings exchanged cattle and plant products such as grain.

Before they integrated barter into their daily lives, societies were largely self-sufficient. Individual households provided the necessities of food, clothing, and housing for themselves and consequently had little time to pursue leisure, education, research, or any of the other activities generally associated with economic growth and improved standards of living. The existence of sustained hunter-gatherer and agrarian societies in the early history of man proved that individuals could coexist in communities. The endurance of such living arrangements proved significant for two reasons. First, it exposed individuals to a wide array of different talents and skill sets. Second, community living provided a certain level of trust among its inhabitants.

It was not long before individuals recognized the high costs of remaining self-sufficient. By exchanging with one another, individuals could take advantage of diverse specialization talents and, in so doing, rid themselves of the limitations of remaining self-reliant. Consumption and production were no longer constrained by the type and amount of resources that one possessed. Through specialization and exchange, an individual could produce those items for which his resources and abilities were best suited, trade with someone else to get goods and services he could not otherwise obtain and subsequently free up time and other valuable resources.

Adam SMITH formally recognized the benefits of such specialization when he outlined his "Theory of Absolute Advantage" in his 1776 work, *An Inquiry into the Nature and Causes of the Wealth of Nations*. The rewards of exchange were further endorsed by David RICARDO when he formulated his "Theory of Comparative Advantage." Individuals grew more dependent on one another as barter spread. This, however, did little to negate the tremendous gains from exchange as community living typically fostered a certain degree of trust among individuals.

Specialization and the division of labor have long been acknowledged as driving forces of improvements in productivity and living standards. Not only does a system based on exchange allow individuals access to a greater number of goods and services, it also permits individuals to obtain these commodities more easily and at a lower cost to themselves as well as society. The repetitive nature of specialization leads to improved factor productivity as individuals become better skilled and find more efficient methods of production. Advancements in social and economic welfare accelerate as specialization leads to cultural, technological, and intellectual progress that would be unattainable with self-sufficient systems. Such achievements ultimately promote economic growth and advances in a society's standard of living.

The substantial benefits of specialization could not be realized as long as individuals remained self-sufficient. Hence, barter was a necessary prerequisite for specialization, the division of labor, and the ensuing increase in economic activity. Despite that, few cultures presently exist in which barter continues to be used as a principal method of exchange. In nearly all cultures in the world today, exchange involves the use of some generally accepted form of money.

The Chinese used bronze knives and the Lydians, electrum ingots, to facilitate exchange as early as the 7th century B.C.E. By the 4th century B.C.E., disks of metal that mimicked today's coins were circulating as a medium of exchange throughout the Greek world. Barter systems were replaced quickly by money systems as the high costs of barter became apparent. While the use of barter allowed civilizations to prosper in ways that would have been impossible under self-sufficient regimes, the substantial transactions costs associated with barter placed limits on social and economic advancements.

Barter required what has become known as the double coincidence of wants. A pig farmer who finds himself in need of a sweater would have to find an individual who had sweaters to trade and who also wanted pork (i.e., the desires of the pig farmer and sweater-maker would have to coincide before the two would barter with one another). Assuming the pig farmer could find a sweater-maker in need of pork, the search costs could be prohibitive and hence the pig farmer may choose to retreat to a self-sufficient lifestyle.

Even if the pig farmer were able to overcome the double coincidence of wants, other impediments exist. The durability and portability of the pigs may pose a problem should the farmer live a great distance from the producer of the sweaters. Assessing the true value of the pigs may prove difficult as all pigs are neither uniform in size nor quality. Because one pig is likely to be worth more than one sweater, barter may be further hindered due to the fact that pigs are not divisible. The pig farmer would have to agree to take ownership of a large number of sweaters or find something other than a pig to offer for the sweater. Lastly, a barter system is typically characterized by a large number of exchange rates where the number of exchange rates, E, in a barter economy with n goods will be equal to $1/2n(n-1)$. This further increases the difficulty of quickly assigning a value to a particular commodity and hence discourages exchange.

Barter provided an important impetus for specialization and the division of labor without which social, cultural, and technological advancements would most likely have been hindered. High transactions costs, however, frequently led to the replacement of barter by money systems. Despite that, barter did not disappear altogether. It continued to crop up throughout modern history particularly during periods of high inflation (e.g., hyperinflations). During the German hyperinflation of 1923, for example, rapid declines in the purchasing power of money caused "lifetime savings to vanish overnight, while economic life was reduced to barter." Similar episodes occurred as recently as the early 1990s at which time hyperinflations in Yugoslavia caused many individuals to return to barter as their primary means of exchange.

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Bastiat, Frédéric (1801–50)

ARGUABLY HISTORY'S MOST persuasive and influential popularizer of free-market economics, Bastiat explains, with clarity and humor, the LAISSEZ-FAIRE lessons of economists such as Adam SMITH and Jean-Baptiste Say. For example, in his "Candlemakers' Petition," Bastiat proposes that government end "unfair competition" by blotting out the sun.

The point is to ridicule protectionists who seek to stop the "flood" of "cheap foreign products." Replacing the sun's competition with man-made illumination indeed increases the demand for candles, but consumers lose far more than producers gain. In his other writings, Bastiat spreads his ridicule widely. Protectionism is his favorite target, but he also goes after socialism, redistribution, make-work programs, and debunks critics of thrift, middlemen, and mechanization.

Bastiat is also the author of what some economists consider the finest essay on opportunity cost ever written, "What Is Seen and What Is Not Seen." He begins with a parable: a boy breaks a window. What is the effect on society? The benefits seem to ripple out: the shopkeeper pays the glassmaker to replace the window, the glassmaker in turn buys something else, and so on. But this analysis ignores "the unseen," what the shopkeeper would have bought instead of replacing the window—perhaps a new pair of shoes. As Bastiat puts it:

> There are not only two people, but three, in the little drama that I have presented. The one . . . represents the consumer, reduced by destruction to one enjoyment instead of two. The other, under the figure of the glazier, shows us the producer whose industry the accident encourages. The third is the shoemaker . . . whose industry is correspondingly discouraged by the same cause. It is the third person who is always in the shadow, and who, personifying *what is not seen*, is an essential element of the problem.

One interpretive lesson includes: When government acts, weigh the observed gains against whatever government crowds out. Military spending may employ millions; but imagine what those millions would have accomplished if taxpayers had been allowed to keep their money and spend it as they pleased.

Bastiat was an original theorist as well as an educator. Economists have often wondered why foolish economic policies come into existence and Bastiat has an intriguing answer to this important question. The proximate cause of protectionism may well be industry lobbying, but the root cause is the public's lack of economic understanding: "I am not one of those who say that the advocates of protectionism are motivated by self-interest. Instead, I believe that opposition to free trade rests upon errors, or, if you prefer, upon *half-truths*," Bastiat explains.

According to Bastiat, then, the primary reason for protectionism and other wealth-reducing policies is not the machinations of special interests, but democracy's tendency to heed public opinion—right or wrong. Modern research suggests that this simple explanation has much to recommend it.

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Beard, Charles Austin (1874–1948)

BORN INTO A PROSPEROUS Indiana mercantile family, Charles Beard was educated in the UNITED STATES and Britain. A scholar who argued forcefully that the function of history was not merely to describe the past but provide guidance for contemporary public policy, Beard was the prototype for the generation of politically engaged "New Left" historians that rose to prominence 20 years after his death.

Of Beard's many works, *An Economic Interpretation of the Constitution* (1913) best displayed both his originality and his talent for generating controversy. In this book, Beard suggested that the founders of the United States had been motivated above all by their own material and political interests, and that the system of government adopted by the infant republic was best understood as a conservative device aimed at protecting the property and status of a planter elite.

Though subsequent research has failed to uphold the more provocative aspects of Beard's thesis, *An Economic Interpretation of the Constitution* nonetheless stands as a landmark in American historical scholarship that opened up to critical debate a topic that had traditionally been treated with considerable deference.

Subsequent works, notably the immensely popular *Rise of American Civilization* (1927), co-written with his wife Mary Ritter Beard, elaborated upon similar themes, depicting material forces, especially the turbulent process of industrialization, as the locomotive driving the historical development of the United States.

Beard's reputation suffered during the last decade of his life, a result of his outspoken opposition to American participation in WORLD WAR II. Persuaded by the work of "revisionist" historians of WORLD WAR I, such as his former student Harry Elmer Barnes, that proposed GERMANY was a country more sinned against than sinning, Beard concluded that Franklin Delano ROOSEVELT's increasingly antagonistic demeanor toward the Nazi regime was motivated above all by a desire to divert public attention from the shortcomings of the NEW DEAL.

In his final years, Beard published several works purporting to prove that Roosevelt had engineered the Japanese attack on Pearl Harbor in an attempt to draw the United States into the war, and spoke in condemnation of the trial of German war criminals at Nuremberg. In the 1960s, however, Beard's attacks on American liberal interventionism enjoyed a partial revival, being echoed by a new generation of historians who, in the light of the VIETNAM WAR, had come to share his critical stance against the United States' record in foreign policy during the 20th century.

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Becker, Gary (1930–)

AN INNOVATIVE ECONOMIST, Gary Becker has applied the tools of microeconomics to fields of inquiry that were not traditionally recognized as the purview of economics, such as racial discrimination, marriage and divorce, fertility, crime, and addiction. Whereas previously such behaviors were assumed to be determined by habit, culture, or irrationality, Becker's research shows that behavior in such areas is consistent with models of rational choice, in which individuals maximize their utility subject to constraints of time and finances.

Becker also increased the flexibility of the rational choice model. While early models of MICROECONOMICS posited that people were selfish, Becker allows agents in his models to be altruistic or selfish, discriminatory or egalitarian. In recent work, Becker has developed models in which people can choose their preferences.

One of Becker's most significant contributions is *Human Capital*, which studies the relationship between earnings and human capital (i.e., skills and knowledge), and how people choose to invest in their human capital. Becker argues that people will invest in their skills when the net present value of the future benefits of the investment exceeds the net present value of the costs. This work has been the foundation for research in education, on-the-job training, job search, migration, and wage inequality.

Becker was born in Pottsville, Pennsylvania, and grew up in Brooklyn, New York. He received his undergraduate degree from Princeton University and earned a Ph.D. in economics from the University of Chicago; his dissertation addressed the economics of discrimination. He has served on the faculties of the University of Chicago and Columbia University. In 1992 he was awarded the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel "for having extended the domain of microeconomic analysis to a wide range of human behavior and interaction, including non-market behavior."

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Belgium

THE MODERN COUNTRY of Belgium did not exist until the 19th century. In the Middle Ages, it formed part of a loose conglomeration of 17 provinces known as the Low Countries. When the seven northern provinces split off to form the NETHERLANDS at the end of the 16th century, the area usually shared the designation of its imperial overseers, either by family name (Habsburg Netherlands) or country of origin (Spanish or Austrian Netherlands). The north and south briefly reunited in 1815 until the southern provinces again broke free and took the name Belgium.

In the Middle Ages, the southern provinces of Flanders and Brabant were among the most dynamic areas in the western world. Towns such as Bruges, Ypres, and Ghent pioneered the techniques of early industry and the area was a major exporter of luxury textiles, practically Europe's only industry. Those seeking work flocked to the towns, and the area was the most heavily urbanized in Europe outside of northern Italy.

The textile industry formed an important trading link to the rest of Europe. In the 12th and 13th centuries, the Flemish established outlets in northern Italy and became important merchants at the great international fairs. Shortly thereafter, many of the Flemish textile towns joined the Hanseatic League. Between 1250 and 1450, this commercial network united northern Europe in a trading nexus that stretched from England to Russia. For a brief period, the Brabant town of Antwerp functioned as the fulcrum of Europe and was a major center for trade, re-exporting and processing, and finance.

The reign of the southern Low Countries would come to an end with the Dutch Revolt from Spain at the end of the 16th century. The Spanish armies occupied the southern provinces for most of the Eighty Years War. Facing stricter Spanish religious policies, tens of thousands of merchants and textile workers fled to the independent provinces in the north, leaving the industry in the south sorely depleted. To add insult to injury, the newly formed United Provinces of the Netherlands placed a full embargo on trade with the south and blockaded the Scheldt river, the major artery for ships to reach Antwerp. With the flourishing of the Dutch republic, the southern Low Countries were relegated to relative economic obsolescence and obscurity.

The situation reversed in the late 18th century when Belgium became the first continental European country to embrace the INDUSTRIAL REVOLUTION. At first, Belgians did so by learning from the masters. In 1799, British industrial expert William Cockerill came to Belgium and developed a factory system that made use of their considerable coal reserves. Cockerill's factory, which produced metals and machinery as well as textiles, was for a time the largest in the world. Belgians also hired George Stephenson, credited with developing the first steam locomotive in England, to help them create an efficient railway system. By the World War I, per capita industrial output in Belgium equaled Great Britain's and Belgians were a leading world producer of steel.

In the 20th century, Belgium has shown remarkable resilience to the ravages of war. Thanks in part to post-WORLD WAR II economic aid such as the MARSHALL PAN, the non-coal producing regions in the north became the home to a variety of light industrial and chemical producing corporations, that helped the country to be one of the first to recover its balance of trade. These boosts worked to offset increasing losses in the aging and increasingly inefficient steel industry. The country remains prosperous and productive, with GROSS DOMESTIC PRODUCT (GDP) levels among the highest in the world, though Belgium also carries large amounts of debt.

The industries of Belgium consume enormous quantities of raw materials and the country's economic growth remains dependent on imports, most of which come from other European countries. Belgium also relies on European countries to purchase over three quarters of its exports. This dependence, along with small territory, has turned the Belgians into major supporters of European integration. They joined Benelux (1921) the European Coal and Steel Commission (1952), the European Monetary Union (1999), and currently the capital city of Brussels serves as the headquarters of the EUROPEAN UNION (EU).

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Bentham, Jeremy (1748–1832)

THE SON OF A WEALTHY London lawyer, Jeremy Bentham studied law but had little interest in pursuing an active legal practice. He was known to his English contemporaries as a dedicated reformer and as a philosopher of reform rather than as an economist.

The reforms he championed encompassed a wide variety of programs ranging from prison to parliamentary reform, and his influence eventually changed the look of 19th-century England. Yet the philosophical radical movement associated with Bentham also exerted significant influence on post-Smithian (Adam SMITH) economic theory.

This movement attempted to develop principles, analogous to Isaac Newton's in the natural sciences, on which moral and social science could be built. These scientific principles were intended also to serve as the basis for social reform. However, it was not Bentham's technical economics but his utilitarianism mixed with hedonism that affected the future development of economics.

Bentham was influenced by the 18th-century Scottish historian and philosopher David HUME, who taught that human behavior was ultimately the product of sensation rather than reason. Consequently, from this perspective, Bentham developed his social ethics with an association of pleasure with moral goodness and pain with evil. With the underlying doctrine that one's objective should be to seek one's own greatest happiness, Bentham argued that government policies ought to be designed toward promoting the greatest happiness for the greatest number of persons. Such policies should include legal, moral, and social sanctions constraining any individual self-interest that might impede the greater good.

This was clearly a departure from the strict LAISSEZ-FAIRE philosophy of Smith that was based on a natural harmony of self-interests. Moreover, Bentham devised a social arithmetic or felicific calculus to add up pleasures and subtract pains from them, and hence made an early attempt to measure social welfare. According to Bentham, the social welfare was equal to the total welfare of all individuals in the society, an approach that was both democratic and egalitarian. He used money as a measure of pleasure and pain, and formulated the premise behind the principle of the diminishing marginal utility of money: that each extra unit of money provided less additional pleasure than the last.

Bentham's focus on the maxima and minima of pleasures and pains set a precedent for the search for optimum positions that is central to modern microeconomic theory. Bentham was a prolific writer, but the best of his expositions concerning human nature is *An Introduction to the Principles of Morals and Legislation* that remains a classic still today. Though utilitarianism no longer exerts the influence that it had in Bentham's day, the conceptual mechanism that Bentham used addressed many problems, such as the measurability of utility and of social welfare, and is still debated in WELFARE economics today.

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Berle, Adolf A. (1895–1971)

BEST KNOWN FOR PROMOTING governmental supervision of corporations, Adolf Berle was a member of Franklin D. ROOSEVELT's brain trust, and formed government economic policy in the 1930s. His other significant contributions came in the form of legal scholarship, especially the seminal *The Modern Corporation and Private Property* published in 1932. In this work, Berle argued that the concentration of wealth and power in corporations had robbed stockholders of their ownership, and that the government should intervene to remedy this situation.

After graduating from Harvard Law School in 1916, Berle practiced corporate law while continuing a scholarly career. His legal articles in the 1920s focused on the lack of defined stockholder rights in an unregulated securities market. His first book, *Studies in the Law of Corporation Finance* (1928), favored corporate self-regulation rather than federal oversight to give greater control to stockholders.

In 1932, Berle joined Roosevelt's presidential campaign as an advisor on corporations. Primarily serving as a speechwriter, he developed the theme that speculators had to be curbed to allow the economic management that would create stability and security. With these words, Berle established the planning manifesto of the NEW DEAL. *The Modern Corporation*, an attack on large corporations written in conjunction with Gardiner C. Means, gave further support to the New Deal by arguing that the very size of modern industry meant that those outside of corporate management could only ensure that companies served the community by employing collective action to make small voices heard.

Berle spent the rest of his life serving in various political positions while also teaching and publishing. His legacy lies in his definition of government as the liberator of individuals from the tyrannies of large corporations.

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Bismarck, Otto von (1815–98)

BORN IN BRANDENBURG, Germany, Otto von Bismarck studied law and agriculture and in 1847 entered the new Prussian Parliament as an ultra-royalist who was totally opposed to democracy. During the 1848 revolutions, he argued against constitutional reform, but as a member of the Federal German Diet at Frankfurt he demanded equal rights for Prussians.

Bismarck served as a foreign ambassador to RUSSIA (1859) and FRANCE (1862). Recalled in 1862, he became the leader of Prussia. At that time the kingdom was universally considered the weakest of the five European powers. Less than nine years later, Prussia had been victorious in three wars, and a unified German Empire had emerged in the heart of Europe, arousing envy and fear among its rivals. All of Bismarck's considerable tactical skills had been successful in creating a powerful German Empire in his first decade in power. For the next two decades these same skills maintained the peace.

In 1878–79, Bismarck initiated a significant change in economic policy, which coincided with his new alliance with the conservative parties at the expense of the liberals. Tariffs were introduced on iron as well as on major grains. The new policy was a result of the DEPRESSION that had swept Europe and the UNITED STATES in the mid-1870s. Bismarck's shift had serious political implications. It signified his opposition to any further evolution in the direction of political democracy. From 1879 onward, the landed elite, major industrialists, the military, and higher civil servants formed an alliance to forestall the rise of social democracy.

Ever since the Commune of Paris of 1871, Bismarck had developed an uncompromising hatred for socialists and anarchists. His attacks on them were egregious. At one point he wrote, "They are this country's rats and should be exterminated." Another time he called them "a host of enemies bent on pillage and murder." He thus introduced a crude and unsavory discourse into everyday German politics that was to be long-lived. Although only two socialists sat in the Reichstag parliament in 1871, their number and support grew with each election, until they had 35 seats in 1890. As early as 1876 Bismarck had sought legislation to outlaw the party but failed to get a majority. After two assassination attempts against

William I, Bismarck ran a campaign in which the socialists (quite unjustly) were blamed for the failed efforts to kill the emperor. The conservative parties triumphed and the Social Democratic Party was banned in 1878. The ban was renewed until 1890.

The second part of Bismarck's strategy to destroy social democracy was the introduction of social legislation to woo the workers away from political radicalism. During the 1880s, accident and old-age insurance as well as a form of socialized medicine were introduced and implemented by the government.

Bismarck was motivated to introduce social insurance in Germany both in order to promote the well-being of workers in order to keep the German economy operating at maximum efficiency, and to stave-off calls for more radical socialist alternatives. However, despite his impeccable right-wing credentials, Bismarck would be called a socialist for introducing these programs, as would U.S. President Franklin ROOSEVELT 70 years later. In his own speech to the Reichstag during the 1881 debates, Bismarck would reply: "Call it socialism or whatever you like. It is the same to me."

The German system provided contributory retirement benefits and disability benefits as well. Participation was mandatory and contributions were taken from the employee, the employer, and the government. Coupled with the workers' compensation program established in 1884 and the "sickness" insurance enacted the year before, this gave the Germans a comprehensive system of income security based on social insurance principles. (They would add unemployment insurance in 1927.)

But Bismarck's two-pronged strategy to win the workers for the conservative regime did not succeed. Support for the Social Democrats increased with each election. The election of 1890 was a disaster for Bismarck. The Centre, the Social Democrats, and the Progressives, the parties that he had termed enemies of the empire, gained more than half of the seats in the new Reichstag. The new young emperor, William II, did not want to begin his reign with a bloodbath or a coup d'état by the state. Seventy-five years old in 1890, Bismarck resigned with a sense of having failed. The antisocialist law was not revived, and the new government set out to win the workers to the regime.

Bismarck retired to his estate an embittered man. That he was now a prince and extremely wealthy did not ease his retirement. For the next eight years he issued sharp critiques of his successors. Elected to the Reichstag, he chose not to take his seat. He wrote his memoirs, which became bestsellers. He died July 30, 1898.

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black market

THE BLACK MARKET is the sector of economic activity that involves illegal activities. The term can be used to indicate different phenomena. It can be used to describe the illegal avoidance of TAX payments, the profits of narcotic trafficking, or profits made from theft. Black economy or black market affairs are conducted outside the law, and so are necessarily conducted metaphorically in the dark, out of sight of the law.

Black markets flourish particularly when governments place restrictions on the production or the selling of goods and services that come into conflict with market demands. These markets prosper, then, when state restrictions are heavy. Typical examples are the Prohibition Era in the UNITED STATES, when organized crime groups took advantage of the lucrative opportunities in the resulting black market in banned alcohol production and sales, or rationing especially during wars or famine. In many countries today, a "war on drugs" has created a similar effect for goods such as marijuana. Black markets are normally present in any type of economy as for some it is common wisdom that laws are made only to be broken.

The direct result of the increase in government restrictions is the rising of black market prices for the controlled goods, because legal restrictions represent a decrease in supply. According to the theory of SUPPLY and DEMAND, a decrease in supply, making the product more difficult or impossible to find, will increase PRICES. Similarly, increased enforcement of restrictions will increase prices for the same reason. However, products acquired illegally can also be less expensive than legal market prices, because the supplier did not have to sustain the normal costs of production and taxation (this is the case, for example, of bootlegged cigarettes).

Underground markets are vast and represent an important sector of national economies. The size of the black market in a particular country at a particular time also reflects the size and effectiveness of the bureaucratic machinery the government mobilizes to catch people who violate its economic regulations and the severity of the punishments that are regularly inflicted on those who get caught. Thus it was surely no accident that the regulated economic institutions of Nazi GERMANY, Soviet RUSSIA, eastern Europe and communist CHINA coexisted in symbiosis with gigantic regulatory and secret police apparatuses, extensive informer networks, crowded prison systems featuring thousands of slave labor camps, and frequent imposition of the death penalty for so-called "economic crimes."

The paradox was of course that members of the communist party who were officially fighting the black market were actually its first clients. Through the black market they could obtain services and commodities unavailable on the legal market. It was surely no accident that even the first very tentative and partial actions by the various communist regimes to abolish or restrain many of their more extreme "police-state" practices during the last decades of the 20th century soon resulted in an enormous expansion of black market activity, despite the fact that these governments were also just beginning to loosen up their control of the economy at the same time. In ESTONIA underground dealings are accountable for the 39 percent of the gross domestic product and the figures rise up to 45 percent for Russia and peak to the 51 percent for Ukraine. Underground markets represent the largest section of the domestic products of dictatorial regimes in developing countries: 65 percent in Bolivia and up to 76 percent in NIGERIA, just to limit the example to the most apparent cases.

The currency used for these illegal transactions is the U.S. dollar. This phenomenon started in the late 1960s and in the 1970s and climaxed in the 1990s when analysts calculated that about $20 billion in U.S. currency was shipped to foreign countries every year and that three-quarters of the total $100 bills circulated outside the United States. This wide circulation of American currency has proved a bonus for the American economy and figures show that, in 2000 alone, the U.S. Treasury earned approximately $32.7 billion in interest from foreign circulation of its banknotes. Some market analysts suspect that the 1996 redesign of the $100 bill was due to the creation of an extremely convincing fake from Middle-Eastern forgers, which was undermining the real bill in unofficial operations. It is anticipated that the new 500-euro note will be just as popular with smugglers and drug-dealers and for this reasons countries such as Portugal have already banned it.

Black markets are not simply endemic to dictatorial regimes or to countries where the state's interventions in the national economies are extensive. At the beginning of the 21st century, in European democracies shadow economies range from an estimated 12 percent in Britain to a 27 percent peak in ITALY, nourished by years of high unemployment, high tax rates, illegal immigration and widespread suspicion of governmental policies and politicians. In the United States, government efforts to regulate the economy have historically been minimal and the American commitment to the general ideal of free enterprise is usually considered as the strongest in the more industrialized Western countries. Nevertheless, several large examples of the black market can be easily found also in the United States. For example, the U.S. government has been extremely aggressive in its attempts to regulate and control economic activities during times of perceived national crisis, especially during wartime. World War II rationing and price controls were accompanied by extensive black market activity involving illegal dealings in meat, sugar, automobile parts and gasoline, penicillin and other regulated commodities, as well as common evasion of rent controls.

Even in relatively normal times, however, there are important areas of black market activity in the U.S. economy. According to Eric Schlosser, underground dealings covers 10 percent or more of the whole national market and, since the last three decades of the 20th century, has represented a parallel economy with its own secretive and well-hidden structure, its labor demand, prices and set of commodities. The American black market feeds on a queer mix of Puritanism and American's reckless faith in the ideal of a free market. For example, Americans consume more marijuana but also imprison more people due to marijuana-related crimes than the rest of the world. American laws guarantee maximum freedom to Californian agricultural employers so that migrant workers have become mainly illegal immigrants from MEXICO. This is a clear instance of how "the growing reliance on illegals has far-reaching implications beyond the underground, affecting wages, working conditions and even the practice of democracy in the rest of society."

As Schlosser has pointed out, the division between an underground and an over-ground market should be challenged: the shadow economy is inextricably linked to the mainstream. Striking parallels can be drawn between the two: both tycoons and gangsters rise and fall, new technology shapes both markets, government intervention can reinvigorate black markets as well as mainstream ones, big business learns and profits from the underground. "The lines separating them are fluid, not permanently fixed. One cannot be understood without regard to the other," Schlosser concludes.

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BNP Paribas

THE FEBRUARY, 2003, issue of *Fortune* magazine listed this powerful financial services group as number seven among the world's banks and financial institutions. Created through a successful merger in the 1990s, BNP Paribas has solid roots around the world. In fact, analysts have cited it as the most profitable bank in continental Europe currently formulating an active presence in the United States. As well, it holds a leading position in Asia and is rated one of the top-ranking financial institutions in most of the 85 countries where it does business. But, because it is Paris-based, three quarters of its 85,000 employees work in geographic Europe, many within its 2,200 retail-focused branches in FRANCE.

The company is comprised of three core businesses: corporate and investment banking, retail banking, and private banking (which includes asset management, securities services and insurance). A franchise, BNP Paribas Capital, spearheads the private equity business, offering a comprehensive range of property-related products and services.

Continuing a growth strategy for the North American continent, BNP Paribas in the United States now owns BancWest, First Hawaiian Bank and, most recently, United California Bank. In 2001, net banking income rose 7.3 percent and operating income 11 percent. Revenues are at $55 billion with 18.2 percent return on equity and a cost/income ratio of 62.7 percent, one of the lowest in Europe.

BNP Paribas credits its success to its obsessive adherence to "Three Commitments." These are: To give first priority to customer satisfaction and to constantly improve customer relations and products; to put value-creation at the heart of shareowner options; and to ensure stimulating career-management and share-ownership programs for its employees. Commitments aside, BNP Paribas ranked as the 44th largest company in the world in 2002.

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board of directors

ACTING AS A GROUP, a board of directors collectively governs a corporation. The number of directors is set forth in a corporation's articles of incorporation, or the corporate bylaws, and may be subject to statutory limitations. Most directors serve for a term of one year, but many state statutes allow directors to serve for more than one year or stagger their terms.

Shareholders of the company elect the members who serve on the board. A director may be removed for cause, that is, for failing to perform a required duty. Generally, there is no statutory requirement concerning a director's qualifications. A few states do impose a minimum age or residency requirement. The articles of incorporation or the bylaws specify the amount of compensation a director shall receive.

Basically, a director has three major duties: the duty of care; the duty of loyalty; and, the duty of obedience. The duty of care dictates that the director uses such care that a reasonably prudent person would exercise under such circumstances. The duty of loyalty requires the director to act in a fiduciary manner. That is, the director must put the interest of the corporation and the shareholders ahead of her own. The duty of obedience requires directors, subject to law, to abide by the organization's mission and purposes as expressed in both the bylaws and articles of incorporation.

In addition to the above duties, a director must abide by any duties that may be imposed under statutory laws and court decisions. Directors are bound by civil rights laws that prohibit discrimination based upon gender, disability, religion or age. A director's failure to comply with these laws may expose her to personal liability. Recent corporate scandals, such as ENRON, and WORLDCOM, have caused lawmakers to evaluate the responsibility and accountability of directors.

Directors do have certain rights: They have the right to notice of all meetings, and the right to participate in them. The directors have the right to access to all corporate books and records, so as to allow them to undertake their duties properly. Such a right is absolute, and cannot be restricted in any manner.

The board of directors is responsible for certain management decisions. These include: the declaration and payment of dividends; the appointment and removal of officers; financial decisions such as the issuance of authorized shares of stock or bonds; and making major corporate policy decisions.

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Boeing

IN 1903, THE WRIGHT BROTHERS MADE their first flight in Kitty Hawk, North Carolina. A few years later, William Boeing, an engineer, became entranced by aviation, and together with another engineer, began to develop an airplane. Boeing was founded in 1916 in Seattle, Washington, and grew to be the world's largest aircraft manufacturer, helped by significant government investment in the (military aircraft) industry before and during WORLD WAR II. Boeing has dominated the U.S. market since World War II, and indeed, by 1967, there were just two other rivals, McDonnell Douglas (MD) and, to a lesser degree, Lockheed Martin.

Douglas was incorporated in 1920, McDonnell in 1939, and the two firms merged to form MD in 1967. Although the firm dominated the early civil-aircraft industry, by 1991, MD was the United States' leading military-aircraft contractor, but was no longer a key player in civil aircraft. This was essentially due to its failure to devote sufficiently high RESEARCH AND DEVELOPMENT (R&D) to develop high quality civil airplanes. After MD faced serious financial difficulties in the 1990s, and as defense spending slowed significantly, Boeing acquired MD in 1997, after intense scrutiny by both the United States and European ANTITRUST commissions.

Boeing's biggest increase in market share came with the jet age, beginning in 1959. Boeing's first jet, the 707, successfully commercialized the technology developed with an earlier-awarded U.S. government military contract. In 1967, Boeing introduced the 737, and followed this with its most successful plane, the 747, in 1970. The 747 was an innovation that nearly bankrupted the firm, mainly due to the (unexpectedly) high R&D costs of $1 billion that were necessary to bring the plane to market, as well as a steep learning curve and significant production economies of scale. By 1990, however, its manufacturing capacity stood at 430 planes per year (approximately 70 percent of global demand at that time), and in 1994, Boeing held a 57 percent global market share, with a virtual monopoly in the long-range niche with the 747, and a major presence in all other ranges. The aircraft industry was often the largest net contributor to the U.S. balance of trade, and Boeing the largest U.S. exporter.

Since the mid 1980s, Airbus (a European consortium from GERMANY, FRANCE, the UNITED KINGDOM, and SPAIN, that was formed through the aid of EUROPEAN UNION subsidies) has emerged as a significant industry player. Airbus began life in the virtually untapped short- to medium-range market, but now competes against Boeing directly in the long-range market, and by 1994, had achieved a 28 percent global market share. In 1996, Airbus booked close to 50 percent of the world's new orders, and delivered almost one-third of the global output of civil aircraft.

There have been various trade disputes since the inception of Airbus, due to the large R&D subsidies, which Boeing and the U.S. government claim have violated the GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT, now the WORLD TRADE ORGANIZATION). In 1992, these disputes were believed to be settled when Boeing and Airbus signed a bilateral agreement that limited the EU's direct R&D subsidies, and also the U.S. government's indirect aid (via military contracts).

After the 1997 merger with McDonnell Douglas, shareholders did not see the synergies that were expected and, in fact, Boeing recorded its worst performance for 50 years in 1997. This was mainly due to losses in civil aircraft arising from the phasing out of MD's airplanes, the relative neglect by Boeing's own management of their civil business in order to focus on expanding the military side, escalating production costs and inefficiencies, as well as the increasing competition from Airbus.

As the crisis deepened, Boeing attempted to return to profitability in 1998 by changing top management, reorganizing the two major product groups and introducing radical cost-cutting measures, including cutting R&D expenditure. In addition, Boeing chose not to invest in designing a new plane to compete with Airbus' new super-jumbo jet, the A380, but instead to focus on short-haul flights. Boeing also relocated their headquarters from Seattle to Chicago.

By 2002, Boeing had improved its performance. Boeing's revenues were $54.1 billion, 53 percent from civil aircraft and 47 percent from the military sector; net earnings were $2.3 billion, R&D expenditure was $1.6 billion, and 166,800 people were employed worldwide. Boeing's commercial aircraft include the 737, 747, 767 and the 777; its military aircraft include the F/A-18 Hornet strike fighter, and the F-15 Eagle bomber.

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Böhm-Bawerk, Eugen von (1851-1914)

ALONG WITH CARL MENGER and Friedrich von Weiser, Eugen von Böhm-Bawerk made up the original AUSTRIAN SCHOOL of economics. Böhm-Bawerk's particular contribution was in the area of CAPITAL and interest theory.

One of the major strands in the theoretical explanation of interest is that interest is paid because of the ordinary predominance of positive time preference. This is widely accepted among economists due to the influence of Irving FISHER, whose interest theory is, to a great extent, a translation of Böhm-Bawerk's idea into mathematical language.

Böhm-Bawerk's interest theory can be stated succinctly: Interest is an *agio*, a premium paid in an intertemporal exchange. Interest is normally positive because positive time preference usually predominates. To have positive time preference is to prefer obtaining something sooner rather than later.

For example, were your professor to bring a basket of sandwiches to class, and offer to give one to anyone who would promise to give in return two identical sandwiches next week, some people would probably agree to this. They would do it because they are hungry and they want the sandwich now. The extra sandwich would be interest. People pay interest because they want things now.

It is fairly easy to understand interest paid on a consumer loan as resulting from positive time preference. Böhm-Bawerk extended this idea to cover two cases in which the connection might not be so apparent. First, the net income that accrues from renting the services of a durable good is an *agio*. The price of a videotape is equal to the discounted value of the stream of services the tape is expected to provide. If one buys the tape at this price, then rents the services, the income received will be equal to the undiscounted total value of the stream of services. The difference between the two is interest. Buying the tape today and renting its services is an intertemporal exchange. Second, capitalist undertakings, in general, involve the transformation of things such as raw materials and labor into consumer goods. Since production takes time, this transformation can be thought of as another intertemporal exchange, and the capitalist's profit as interest.

Unfortunately, Böhm-Bawerk is better known for a widely dismissed idea about capital than for his seminal contribution to interest theory.

One of the reasons for positive time preference is "the technical superiority of present over future goods." This results from the benefits of "roundaboutness" in production. Spending time making a boat or a net is a roundabout way of catching a fish. Generally, deliberately chosen roundabout methods are superior. The more roundabout the method, the more capital goods that will exist, such as partially completed boats or nets, raw materials, and tools.

Böhm-Bawerk tried to use the "average period of production," defined as the average elapsed time between the expenditure of productive powers and the emergence of the finished product, to indicate the capital intensity of a process. This is what many people came to think of as "Austrian capital theory." The average period of production was used by some economists in the first half of the 20th century, but did not have much life after that.

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bond

A BOND IS A NEGOTIABLE contract that evidences debt and usually has a maturity of greater than five years. The issuer of a bond makes periodic, usually fixed, payments according to a predetermined schedule to the bondholder, and agrees to repay the principal amount at the maturity of the instrument. Bonds are usually issued in a standardized format, in physical form or book entry, with a contract that specifies all relevant terms and dates. Bondholders have claims that are senior to those of equity stakeholders in a company.

Bonds will usually have a series of key or common features. Principal value is the denomination or value of a bond. For trading purposes this is usually expressed as a percentage. Maturity or redemption is the date on which principal repayment occurs. A coupon is the interest payment amount. The coupon is usually quoted as an annual percentage of nominal value, and occurs on pre-determined dates as specified in the bond contract. Bond-call provisions set out the terms on which a bond issuer has the right to redeem a bond issue prior to maturity. This early redemption may usually only occur after a specific date and at a pre-determined price or yield. Bond-put provisions specify the holder's right to seek early redemption of a bond issue prior to maturity. Amortization also means that the bond is partially redeemed prior to maturity. Amortization can occur in several forms. A serial bond allows for either partial repayment of the principal amount or the retirement of a portion of the issue prior to the maturity of the bond. A sinking fund requires the issuer to repurchase part of the issue prior to maturity, while a purchase fund allows the issuer to repurchase part of the issue prior to maturity. A bond is usually put-able only on fixed dates and at predetermined yields or prices. A convertible bond gives bondholders the right to convert the bond issue into another security, often the common stock of the issuer.

Bond issues can be either secured or unsecured. A secured bond is collateralized by an asset or pool of assets pledged against the obligation by the issuer. The most common forms of secured bonds are asset-backed or mortgage-backed bonds. For an unsecured bond the issuer has only a general obligation. Consequently, secured bonds have prior claims over unsecured bonds with respect to certain assets in the case of default. This prior claim is a form of ranking, or seniority of a specific bond over other bonds of the same issuer. Unsecured bonds rank alongside general creditors, but above junior bonds whose claim is deferred to the claims of other bonds of a similar class. The claim of subordinated bonds is further deferred according to both class and repayment conditions.

Bond issues are governed by contracts, in which the above features are set out if applicable. These contracts are often called indentures or trust deeds and specify the obligations of both the bond issue and the bondholder. Often the trust deed will also detail a trustee who shall act for the interests of bondholders. This contract will also specify any covenants that may govern a particular issue. Covenants are terms and conditions that are intended to protect bondholders and can be affirmative or negative. While negative covenants require a bonds issuer to not take certain actions, affirmative covenants require issuers to take certain actions. A negative pledge means that a bond issuer has agreed not to issue any further debt that has priority over that issue. A breach of covenants can often be considered an event of default.

The price action of a bond can be described either in terms of percent nominal value or in terms of yield. Yield is usually cited as an annual percentage, and can be quoted as yield to maturity, yield to call, or yield to put. The yield calculates the return to the investor by taking the present value of the sum of future interest payments plus the present value of any future premium or discount and dividing by the purchase price of the bond. As this calculation shows, yield and price have a negative relationship: as the purchase price goes up, the yield must go down.

Bond yields are usually higher for those bonds that carry a greater risk of default. This risk is analyzed by credit-rating agencies such as Moody's, Standard and Poor's, and Fitch, who then publish credit ratings that act as standardized classifications of a company's comparative financial strength. This credit-worthiness is also usually evidenced by the price action, or yield of an issuer's bonds. Those issuers who carry a greater risk of default must pay a greater credit spread (a higher yield) in order to attract investors. Credit spreads are usually quoted as a basis point spread over the domestic government bond spread, or with reference to the risk free rate.

Certain government DEBT, such as with the UNITED STATES, has customarily been considered risk-free. The risk-free rate is the rate of interest that one can earn without the risk of default. Default occurs when an issuer fails to make interest payments or principal repayments, or fails to meet other requirements of the specific bond contract. Bondholders' rights in default are determined by this contract or indenture, as well as the relevant local regulatory and legal environment.

Bonds can be issued by many different entities, including governments, government agencies, municipalities or regions and corporations. Government or municipal debt can often provide tax benefits (such as interest earned tax-free to holders). Corporate debt can also provide tax benefits, but to the corporation itself (such as interest payment deductibility). In all these forms, bonds can trade in the securities market.

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Bosnia-Herzegovina

LOCATED IN THE NORTHWESTERN part of the Balkan Peninsula, Bosnia-Herzegovina has Croatia to the north, Serbia to the east, and Montenegro to the south. Bosnia-Herzegovina, often called Bosnia for the sake of simplicity, in the Middle Ages was the location of the kingdoms or principalities of Bosnia and Herzegovina.

In the mid-20th century, it was one of the six constituent republics (along with Serbia, Croatia, Slovenia, Montenegro, and Macedonia) of the Socialist Federal Republic of Yugoslavia. In April 1992, Bosnia declared its independence, which was recognized almost immediately by the UNITED STATES and other European countries and admitted soon after as a full member of the UNITED NATIONS.

In 1463, the Turkish Ottoman Empire took control of the region in its attempts to expand northward into Europe. Under Ottoman rule, many Bosnians, particularly wealthy elites who sought to maintain their properties and power, converted to Islam. The spread of Islamic culture and outlook also was influential in Bosnia. The result today is a religious and cultural mix. Most Bosnians speak Bosnian (Serbo-Croatian) and are Slavic in race but adhere to three different faiths. Bosnian Muslims (also called Bosniaks) make up approximately 40 percent of the population. Bosnian Serbs (who are Orthodox Christian) are about 31 percent and Bosnian Croats (who are Catholic Christian) are about 15 percent of the country's population.

This mix reveals one of the enduring characteristics of Bosnia: It is a border region that has never been ruled consistently or completely by any group, empire, or ideology. Unlike other parts of Yugoslavia, being a Bosnian refers to a region, not a nationality or ideology. The religious and cultural mix of Bosnians has caused them widespread and intense suffering in the 1990s as nationalist Serbs and Croats sought to carve out regions of Bosnia to create larger nation-states for themselves through the terror and carnage of warfare and "ethnic cleansing." In 1995, after years of terrible bloodshed, the United States and United Nations established and enforced, through the Dayton Accords, a military presence and a parliamentary democracy that precariously seeks to build a multi-ethnic nation-state. Bosnia and Herzegovnina consists of two areas, the Federation of Bosnia and Herzegovina (mainly Muslim and Croat, and divided into ten cantons) and the Republika Srpska (mainly Serb).

The country, with a population estimated at nearly 4 million, had a GROSS DOMESTIC PRODUCT (GDP) of $7 billion in 2001.

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bourse

IN OLD FRENCH, a bourse is a purse or sack, whose likeness was used as a symbol for the meeting place of merchants in medieval Flanders. The term is commonly used to designate the formal stock markets of continental Europe, especially the exchange in 19th-century Paris. The Paris stock exchange was not like any other, as unique as the history of FRANCE.

Beginning in the late Middle Ages, Parisian merchants congregated on a bridge which is now named for their activities, the Pont-au-change. The sale of stock was not widespread, however, until the arrival of a Scottish rogue, John Law, in the early 18th century. Law convinced thousands of Frenchmen, including the regent Duke of Orleans, to purchase stock in his Mississippi Company. Law's charisma boosted the status of stockbrokers, who formed an official corporation in 1724. Law's company failed in spectacular fashion and many prominent members of French society lost their fortunes overnight. Because of this, the regent was forced to resign and the French became very concerned with regulating financial speculation of any kind, especially the sale of stock and they took actions to regulate the exchanges.

The number of officially licensed brokers (called *Agents de change*) was limited to 60, a restriction that remained in force throughout most of the 20th century. Only these 60 agents could legally buy and sell securities in France. To obtain such a desirable position, an applicant had to get approval from the government, then purchase his position (usually at a price beyond the reach of an individual; partners were usually required), and finally to proffer a substantial deposit, to be held by the government as security for his activities. If the new agent should succeed, he had to routinely supply full accounts of every transaction made to a board designed to review transactions. Though they were appointed for life, agents were forbidden to buy any stock for themselves and their income was derived strictly from commissions. The Company of Agents was directly accountable for losses incurred by any of its members. These stringent measures may seem strangely uncompetitive from the modern viewpoint, but they were quite effective in restoring faith in French finance.

Though some contemporary critics found the system of official brokers old-fashioned or medieval, modern theorists do not. In the bourse, officials used an auction system to set stock prices at a level where supply equaled demand. A particular security was traded at that set price for the remainder of the session, a practice devised to minimize speculative activities. Economists John Maynard KEYNES and Leon WALRUS both used this example in their models of ideal price formation and defense of perfect competition

The monopoly of the agents was briefly rescinded during the FRENCH REVOLUTION, but restored by Napoleon to help refinance French debt. Because of their close relationship with the government, the agents became major handlers of government securities, especially foreign securities, in the 19th century. Until 1914, more than half of the transactions of the bourse involved foreign countries and total foreign investment topped $14 million. While these operations were normally profitable, the French would be the chief victims of the repudiation of debt that followed the RUSSIAN REVOLUTION.

The other main source of French investment in the 19th century was railroad stock, but these transactions were not usually handled by the agents. Outside of the official business done at the parquet (a raised circular platform inside the bourse), a number of unofficial agents did their business outside, on the steps. Because of this, they were referred to as *Coulisse* (those waiting in the wings) though they preferred the term "free market." The *Coulisse* handled railroad stock because they represented the speculative element in French finance, which was forbidden to the agents. By 1900, over 500 firms maintained this shadowy existence. There was nearly constant tension between the two groups and each tried to eliminate the other. Analysts believe that the two complemented each other in practice and efforts at elimination were blocked by the French voters.

In the end, the *Coulisse* won out and the Company of Agents was dissolved in 1988. Without the agents, the bourse lost many of its unique features. In 2000, the stock markets of Amsterdam, Brussels, and Paris combined to form Euronext.

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BP (British Petroleum)

BRITISH PETROLEUM (originally called the Anglo-Persian Oil Company) owes its origins to William Knox D'Arcy, who was convinced that there were large oil deposits in IRAN (then Persia). After making the oil discovery, BP was formed in 1909, and was fully privatized in 1987, when the British government sold its 51 percent stake, acquired for strategic reasons during WORLD WAR I. BP has major oil-exploration facilities in Alaska, the Gulf of Mexico, COLOMBIA, and the North Sea, with current production activities in 22 countries. BP is vertically integrated, that is, BP is present in the exploration and production of crude oil and natural gas, refining, marketing, and the petrochemical industry.

In the 1990s, BP undertook significant restructuring to improve efficiency, similar to many of its major rivals. BP and Amoco (incorporated in 1889, formerly Standard Oil, Indiana) completed their $53 billion merger on December 31, 1998. BP Amoco went on to acquire ARCO (founded in 1866 as the Atlantic Petroleum Storage Company) and Burmah Castrol in 2000, and Veba Oil (Germany) in 2002.

In 2001, BP was the second largest petroleum refining company in the world, and ranked fourth overall on *Fortune* magazine's Global 500 list of the largest companies in the world, with proved oil reserves of 7.8 billion barrels. BP has 115,250 employees, 16.4 percent in the UK, and 37.8 percent in the United States. BP earned revenues of $178.7 billion in 2002, operating 29,200 service stations worldwide, with 15,000 in the United States alone. Of total sales, refining and marketing accounted for 68.5 percent, oil exploration for 4 percent, gas and other renewables for 20.2 percent, and chemicals for 7 percent.

An exciting new growth opportunity for BP is the construction of the BTC pipeline, which will transport oil in the (formerly Soviet controlled) Caspian Basin. Over the next years, BP aims to develop new activities to replace and expand current reserves, as well as strengthening its capabilities in refining, marketing, and petrochemical manufacturing.

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Brazil

LATIN AMERICA'S LARGEST and most populous economy, Brazil is a mid-income developing country. Brazil's territory is larger than the contiguous United States and well endowed with natural resources; most of its soil is arable and rich in minerals.

The country's abundance of natural resources was nevertheless virtually ignored by the rest of world until 1530, when PORTUGAL, 30 years after first arriving in the area, started exploring Brazil's stock of brazilwood. The extraction of brazilwood did not last long, however. With the lack of proper care in the exploration process, before the 16th century was over the country's stock of brazilwood was virtually depleted.

Simultaneously, Portugal's interest shifted to the production of sugarcane in the northeastern part of Brazil. The production of sugar turned out to be a very profitable activity from the second half of the 16th century until around 1750, with the country holding the post of world's largest producer for several decades. This status was nonetheless lost in the second half of the 17th century, when the Dutch colonies in the Caribbean began to produce sugar more efficiently and of better quality than Brazil's.

The downturn in the profitability of sugar production characterizes a long period of economic stagnation in Brazil. The country's economy reinvigorated only by the end of the 17th century, with the emergence of the so-called gold cycle, which took place mainly in the southeastern state of Minas Gerais.

The extraction of gold, especially during the peak years, was by all criteria very substantial as a proportion of Brazil's economy, as a support of Portugal's declining economy, and even as a significant contributor to Europe's inflation. Moreover, and in spite of the deep decline in gold production from the mid-18th century on, the gold cycle had important structural consequences for Brazil. By fostering the development of urban agglomerations in the southeastern part of the country, it induced demand for goods and services that were supplied mainly by northeastern and southern producers, thus promoting the country's economic integration. The extraction of gold also stimulated the first significant flow of European immigration to Brazil.

On the political side, Brazil obtained its independence from Portugal in 1822, largely as a result of the Napoleonic Wars, which forced Portugal's king to move to Brazil in 1807, taking with him the official capital of Portugal's empire.

As an independent country, Brazil was ruled as a monarchy until 1889, when it became republican. During that period, and for at least 40 more years, the country's economy relied mainly on agriculture, where the production of coffee played (by far) the leading role: By the end of the 19th century, coffee accounted for more than half of Brazil's EXPORTS. The coffee boom in Brazil induced significant immigration flows from countries such as ITALY, SPAIN, GERMANY, and JAPAN.

It was only after the world economic crisis of the 1930s that Brazil's economy started to diversify and industrialize. The industrialization process was oriented toward "import substitution," with support for domestic industries and restrictions on manufactured imports as the rule. Industrialization was sought through public direct investments focused on "heavy" industrial sectors such as energy and steel, and with the use of multiple instruments to induce private investment in targeted industrial sectors. The latter included production subsidies, import restrictions, subsidized credit, and foreign-exchange controls. There were also circumstances when policies to attract foreign direct investment were promoted, but those were relatively short-lived, taking place especially during the Kubitscheck administration (1956–60).

Interestingly, the orientation in the control of the economy varied little until the early 1990s, in spite of sweeping periodical overturns in Brazil's political scenario. Ruled as an oligarchic republic in the first 30 years of the 20th century, Brazil was governed by only one person, Getúlio Vargas, for the subsequent 15 years under three distinct political regimes. Democracy was re-established after WORLD WAR II, but only to succumb again in 1964, when the military took control for the ensuing 21 years. Ironically, although the military coup was motivated mainly by economic problems, the conduct of the economy did not change much after 1964. In fact, the military ruling only amplified the tendency of enlarging the government and handpicking private sectors to support.

As a result of the interventionist policies of the state, by 1985, the government held direct or indirect control of a large part of the Brazilian economy. State-controlled sectors ranged from telecommunications and electricity to steel and oil. By contrast, the private sector was largely inactive and dependent on the government's incentives.

The interventionist strategy did, however, create a diversified industry. It also generated substantial growth during some periods, in particular throughout the Kubitscheck administration and for most of the 1970s. But growth plummeted after 1980 and has not yet (by 2003) recovered significantly since then.

A key element behind the dismal growth in the last two decades has undoubtedly been the recurrent public deficits, with resulting high internal and external debts. The public deficits reflected, to a large extent, the industrialization strategy and the government's historical disregard of inflation, which plagued Brazil from the late 1950s to the mid-1990s. In fact, the Brazilians' ability to cope with price instability has been remarkable: after more than two decades of double-digit inflation, the population still managed to adjust to inflation of three to four digits for yet another decade.

Many changes have occurred since 1990, however. Democracy has been fully re-established and the country has become substantially more market-oriented and open. This was the result of a set of liberal reforms that included a far-reaching privatization program and significant trade liberalization, at the unilateral and the regional levels, with Argentina, Paraguay, and Uruguay.

Moreover, the Real Plan in 1994 represented the first successful stabilization plan after a sequence of failed heterodox attempts to control inflation. Despite severe balance of payments restrictions from 1995 to the early 2000s, faced by most developing countries, the Real Plan has been by all accounts successful in eliminating chronic inflation.

Although it is hard to overstate the benefits of low inflation, in Brazil the most important consequence has probably been on income distribution, as the drastic reduction of the inflationary tax has helped especially the poorest in the country. Nevertheless, although alleviated with the end of high inflation, income inequality remains one of the most pressing issues in Brazil.

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Bretton Woods

THE BRETTON WOODS SYSTEM refers to the international monetary agreement negotiated in Bretton Woods, New Hampshire in July 1944. The agreement implemented an international fixed-exchange rate system tying the U.S. dollar to gold and, other currencies to the DOLLAR. This system functioned until March 1973, when it was replaced with a system of floating exchange rates for the major industrialized nations. The Bretton Woods agreement also established the INTERNATIONAL MONETARY FUND (IMF) and the WORLD BANK, two important financial institutions that continue to operate despite the demise of the exchange-rate system adopted at Bretton Woods.

The international GOLD STANDARD (1870–1914) fostered price stability and provided a mechanism to prevent nations from running chronic trade imbalances. As a fixed exchange-rate system, the gold standard enjoyed the predictability merchants and governments desired (since the value of one currency in terms of another was "fixed"), but necessitated active central bank intervention to preserve convertibility of currencies into gold. This intervention frequently required manipulating interest rates, a practice that often conflicted with other economic goals.

WORLD WAR I placed the gold standard on hold. Despite efforts to restore the gold standard after the war, the Great DEPRESSION and WORLD WAR II forced nations to again suspend gold convertibility. This left the international monetary system in chaos. Many observers viewed the system of floating exchange rates as a source of destabilizing speculation. There was also a growing awareness that national governments were no longer willing to sacrifice domestic employment goals to protect fixed exchange rates. Consequently, the Bretton Woods conference participants wanted to construct a post-war monetary system that resembled the gold standard but also accommodated newly recognized government responsibilities for fostering full employment.

The Bretton Woods agreement sought to address trade imbalances through a mechanism that wouldn't require recessionary policies, such as raising interest rates. This mechanism was to be achieved through a combination of "adjustable pegs," capital controls, and IMF lending. "Adjustable pegs" acknowledged the occasional need for a fixed exchange rate to be adjusted (through either a devaluation or a revaluation) because of a "fundamental disequilibrium." Though the term "fundamental disequilibrium" was never actually defined, it was generally understood to apply to a situation where permanent changes in trade conditions required modifying an existing exchange rate. As indicated, the Bretton Woods agreement also created the IMF, an institution designed to lend foreign currencies to nations facing trade imbalances. Finally, the agreement permitted government restrictions on international capital flows as a means to control speculative activity.

As World War II drew to a close, the war-torn nations of Europe needed U.S. exports to assist with rebuilding their economies, but they lacked strong manufacturing sectors to produce trade-able goods. The result was a chronic dollar shortage, only partially alleviated by the $13 billion dollar foreign aid package known as the MARSHALL PLAN implemented by the U.S. government in 1948. Marshall Plan assistance helped with the dollar shortage, but European powers struggled nonetheless, and many were forced to devalue their currencies in 1949. Interestingly, it is argued pressure from the U.S. government kept the IMF from intervening to assist Marshall Plan recipients with payments problems associated with trade imbalances, presumably to enhance U.S. leverage with those nations. In any event, by the late 1950s the rebuilding process had advanced sufficiently to permit European nations to restore currency convertibility, an important goal of the Bretton Woods agreement.

By 1960, the dollar shortage had vanished, European nations had built sufficient currency reserves, and policymakers began to worry about the long-term viability of a system based on gold-backed U.S. dollars. As the global dollar shortage turned into a dollar glut, a series of measures were implemented to keep the system solvent. These measures started as early as 1961 and persisted through the creation of two-tiered gold markets and "Special Drawing Rights" in 1968. Despite these efforts the United States continued to lose gold reserves and the long-term viability of the system grew increasingly problematic.

To further complicate matters, the post-war rebuilding process dramatically improved the competitiveness of European and Japanese economies, undermining the dominance of U.S. exports. This erosion, coupled with ambitious (and expensive) U.S. political and military agendas (as well as accelerating inflation in the United States) shifted U.S. trade surpluses to trade deficits by the end of the 1960s and further exacerbated the global excess of U.S. dollars.

By 1970, the situation had reached crisis proportions. U.S. gold reserves had fallen from $22.7 billion in 1951 to $11.8 billion. Dwindling reserves and rising U.S. trade deficits combined to create a situation that was not sustainable. As a result, U.S. President Richard NIXON "closed the gold window" in August 1971, declaring that the United States would no longer back U.S. dollars with gold reserves at the rate of $35 per ounce. Though viewed as a temporary solution until a devaluation of the U.S. dollar could be negotiated, this drastic action spelled the beginning of the end for the Bretton Woods system. Although a devaluation of the dollar was implemented later that year, it proved to only be a temporary solution. In early 1973, another crisis emerged, and by March of that year the currencies of major industrial nations were floating (within limits) against the dollar. This system of market-based exchange rates has remained in place ever since.

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bribery

GENERALLY DEFINED as money or favor, a bribe is given or promised in order to influence the judgment or conduct of a person in a position of trust. Transparency International, an international non-governmental organization devoted to combating national corruption, defines bribery in terms of behavior on the part of officials in the public sector, whether politicians or civil servants, in which they improperly and unlawfully enrich themselves or those close to them by the misuse of the power entrusted to them.

Thus, here bribery is expressed as the misuse of public power for private profit and is a significant aspect of a broader social, political, and economic ill: CORRUPTION. In 1997, the Organization for Economic Co-Operation and Development (OECD) broadened its definition of bribery to include international business transactions. Specifically, the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions defines bribery as a criminal offence whereby a person intentionally offers, promises, or gives any pecuniary or other advantage, whether directly or through intermediaries, to a foreign public official to obtain or retain business or other improper advantage in the conduct of international business. This broad definition explicitly recognizes that both parties, the public servant receiving bribe and the person giving the bribe, are equally guilty. It criminalizes bribery for everyone involved in the act of bribery: transnational companies, as well as the foreign civil servants.

From an economic and capitalist point of view, a bribe is a rent or personal profit collected by a public servant who is holding a monopolistic position in a public agency. The primary economic cost of bribery is misallocation of resources because it distorts competition and channels resources to areas where they are not used in the most efficient and productive manner.

On the other hand, according to the "efficient grease" hypothesis, bribery could be perceived as a way to go around the bureaucratic red tape, reducing the cost of regulation and hence eliminating delays. Therefore, it could actually improve economic efficiency. However, the argument that bribery could raise efficiency is shortsighted because, in the long run, the persistence of bribery would inevitably lead to an increase in bureaucratic regulation to collect bribes. This proliferation would at one point become regressive enough to lower economic efficiency significantly.

Other economic costs of bribery include its adverse effects on investment, economic growth, and economic inequality. Because bribery can influence government contracts, licenses, permits, legal outcomes, and benefits, it raises uncertainty and risk. It might therefore divert investment funds to speculative use, lowering investment and growth. It might even shift these funds into the underground economy. Bribery and corruption may decrease the quality and availability of public goods and services, such as education and health care, limiting the productivity and income potential of economically disadvantaged groups.

Bribery is often regarded as a characteristic phenomenon of developing countries. It is argued that factors such as culture, regressive political regimes, high inflation, low salaries for civil servants, and lack of economic freedom are causes of bribery in such countries. Recently, however, events in the UNITED STATES and Europe have shown that bribery and corruption are common to all political and economic systems.

At the same time, however, it is well documented that free market systems and democracy affect the quality of governance institutions and act as a deterrent to bribery and corruption. An effective way to deter bribery is the development of institutions that foster accountability and transparency in the public sector, and that have strong legislative and judicial systems with severe penalty for bribery.

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Buchanan, James (1791–1868)

THE 15TH PRESIDENT of the United States, James Buchanan was born in Mercersburg, Pennsylvania. After graduating from Dickinson College in 1809, he studied law and was admitted to the Bar in 1812.

Buchanan entered politics after returning from the WAR OF 1812. He served in the U.S. House of Representatives and Senate, and had a diplomatic career as President Andrew JACKSON's minister to Russia, President James POLK's secretary of state, and President Franklin PIERCE's minister to England.

As minister to the UNITED KINGDOM, Buchanan wrote the Ostend Manifesto, stating the United States would be justified in annexing Cuba through military force. The document's publication embarrassed the Pierce administration and enraged Northerners, as they perceived the Manifesto as a Southern effort to expand the power of slave owners.

Buchanan unsuccessfully sought the Democratic presidential nomination in 1844, 1848, and 1852. He was nominated in 1856, primarily because his absence from the country during the controversial Kansas-Nebraska Act and his reputation as a compromiser made him more acceptable than President Pierce or others. Buchanan won the election, primarily based on Southern support.

President Buchanan hoped to rise above politics by announcing at his inauguration that he would not seek a second term. However, this only weakened his position as both sides saw him as a lame duck from the beginning.

Buchanan's Cabinet included no anti-slavery Democrats. He urged support for the Supreme Court's 1857 decision in *Dred Scott v. Sanford,* which held that the government could not restrict slavery in any territories. Buchanan also supported the Kansas pro-slavery faction's application for statehood.

As *Dred Scott* and "Bleeding Kansas" enraged the North, abolitionist John Brown ignited Southern tempers. In 1859, Brown raided Harper's Ferry, Virginia, with the hope of starting a slave rebellion. Although the raid was quickly quelled, it rekindled Southern fears of a slave revolt.

By 1857, U.S. banks had heavily invested in railroads and western land. With increased uncertainty about the future of the west after the *Dred Scott* decision, land values fell dramatically. The subsequent failure of the Ohio Insurance Company in New York raised concerns that escalated when an uninsured shipment of more than 16 tons of gold from California was lost at sea, leaving bankers without sufficient specie to meet demand. First New York banks, but later banks nationwide, experienced panic runs and failures. The subsequent RECESSION led to deficit spending, tripling the national debt by the end of Buchanan's term. Because the recession particularly hit Northern manufacturers, some historians speculate the recession showed how Northern economic interests were in direct conflict with Southern interests, thus influencing the decision of Southern states to secede.

A divided Democratic party nominated two candidates for president in 1860. Northerners supported Senator Stephen Douglas, while Buchanan and the Southerners backed Vice President John Breckenridge. As a result, Republican Abraham LINCOLN won the divided election.

After Lincoln's election, but before he took office, Southern states seceded and formed the Confederacy. Buchanan did nothing to stop them. He even allowed his Southern secretary of war to ship arms to the South where the Confederate Army would take control of them. However, when Buchanan refused to abandon Fort Sumter in Charleston harbor, the South's attack on that fort began the AMERICAN CIVIL WAR.

Buchanan seemed relieved to leave the presidency. He supported Lincoln and the Union during the war although he opposed emancipation on the grounds it was unconstitutional. Despite his support, Buchanan was seen as a Southern sympathizer and as the president who let the nation fall into Civil War. Buchanan spent most of his final years trying to justify his actions as president.

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Buchanan, James M. (1919–)

JAMES BUCHANAN WAS awarded the 1986 Nobel Prize in Economics for "for his development of the contractual and constitutional bases for the theory of economic and political decision-making." His 1962 book T*he Calculus of Consent* written with Gordon Tullock, bridged a gap between economics and politics, by initiating a research field—public choice—that encompasses the economic analysis of political decision-making.

Public finance, as taught in the 1950s, assumed a social welfare function that needed to be maximized by the government as if by a benevolent dictator. This, according to Buchanan, trivialized economics as mathematical maximization exercises based on a suspect assumption, an aggregate measure of social welfare, and took economics away from its political economic roots. Policies based on this premise often have costly unintended consequences for both economic WELFARE and democratic institutions.

Buchanan, a student of Frank KNIGHT, offered an alternative perspective, which has come to be known as neo-institutionalism that is entwined with public choice, law and economics, and the economics of property rights. The central focus of this perspective is rooted in Adam SMITH's concept of mutually beneficial exchanges. Efficiency in voluntary exchange transactions is realized because markets allow an institutional framework for individuals to engage in mutually beneficial behavior. The modern political process did not allow mutually beneficent behavior between the public and its government (principle-agent problem). Buchanan created a political model that was based on the assumption that the principle agents, politicians and bureaucrats, acted like everyone else, in their own interests, and not in the interests of the public. As such, both adverse selection and MORAL HAZARD would be present in the political class. Buchanan thought that a cultural conservatism could temper the self-interest of the agent, but that in its absence the agent's self-interest would be toward bigger government budgets or to please the special-interest groups that could offer rewards with post-government private sector employment. The result would be a perception that the provision of public services doesn't serve the public's interests.

Although politicians and bureaucrats can be noble, it doesn't take many of the other kind to cause a cynical perception of government. When combined with the observation that regularly scheduled elections do not provide any real electoral sanctions, the public would have even less incentive to monitor the agents. Buchanan saw this as a threat to democratic government.

Influenced by the Swedish economist Knut Wicksell, Buchanan believed that to improve politics, one had to improve the rules and the structure. It isn't the agents' fault, given the rules of the modern political experience with democracy. It's the rules that need adjustment. Although a libertarian in political orientation, he also saw that individuals have a perceived importance of personal involvement in the collective process. He argued that the rule of unanimity was the counterpart to voluntary market exchange. To avoid the consequences of the Hobbesian state of anarchy, and its costs, cooperative behavior is sought out through rules. Buchanan's work will look for rules that are based on unanimity and result in mutual gain from social cooperation. For small homogeneous populations, unanimity is reached and a social contract can be established relatively easily. However, he realized that social contracts must be kept up to date and will need periodic adjustments. He was aware that changing the status quo is not a free good. For larger heterogeneous groups, unanimity is costlier and needs to be weighted against the benefits of social cooperation. Buchanan argued for a geographic decentralization of the political process that would allow for the devolution of the decision-making process with unanimity of consent attained more easily.

Buchanan's rules need to be set out under a veil of uncertainty. Although he would be troubled with an outcome espoused by social democrats, a good rule would not preclude that result. The key condition is that the rule be freely agreed upon unanimously, *ex ante*. Buchanan calls on fellow economists to seek out the rules that would improve the institutional environment for democracy. He sees this as the principal moral responsibility of economists.

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Burke, Edmund (1729–97)

AN ILLUSTRIOUS STATESMAN, parliamentarian political thinker active in British public debates after 1765, Edmund Burke is remembered primarily as England's most outspoken opponent of the FRENCH REVOLUTION.

His responses to this fundamental political challenge in his most famous work, *Reflections on the Revolution in France* (1790) produced arguments about the ideal quality of social change that lie at the basis of conservative political thought in the West since the French Revolution. Born in Ireland, Burke entered Parliament in 1765 as the secretary to a Whig minister, the Marquis of Rockingham, and served subsequently himself as minister representing the pocket borough of Wendover. In Parliament, Burke became known for his pragmatist and liberal views on FREE TRADE, the management of colonies, and opposition to national budget deficits.

He opposed British colonial policy in North America. Burke was a contemporary and friend of Adam SMITH, and evidence suggests that while Burke originally arrived at his economic views due to his education at the University of Dublin, and so independently of Smith, the two thinkers appreciated and influenced each other's subsequent work. The most important assumption of Burke's thought is his emphasis on the support of traditional order and the maintenance of social stability, two concepts that underlay all of his works.

This preoccupation has been related by various authors to Burke's loyalty to British hierarchical society, his inheritance of Aristotelian ideas and natural law thinking, his conviction that civilized society was the prerequisite for successful commerce (a contradiction to the views of the Scottish political economists, that commerce led to civilized society), or his view that the origin of government lay in its prerogative to protect property. On a political level, Burke argued that social change should occur slowly and organically, according to the inherited constitution of a country, and that tradition, rather than metaphysical speculation, should govern the structure and content of politics.

Although Burke's economic attitudes can be read throughout his works and seen to underlie his complaints about the French Revolution (he thought, for instance, that the debt crisis that provoked the threatened government bankruptcy of 1789 could have been avoided if the government had been prevented from financing its debt in this way), his most explicit economic text is *Thoughts and Details on Economic Scarcity* (1795). In it, he equated the laws of commerce with natural and divine law, and coined the phrase "bite the hand that feeds them" in an argument against government food support for the poor. This text is frequently used to support an understanding of Burke as a supporter of an unrestrained free-market economy, the interpretation of Burke's political economy adopted by utilitarians and most common until recent decades, against which Karl MARX reacted sharply in *Capital*. The text, however, should not be separated from its context. Intended as a persuasive memorandum to British Prime Minister Pitt in response to the Speenhamland famine, it was published only in 1800 after his death and is specifically a response to local circumstances. In 1795, after repeated famines, justices of the peace subsidized wages of workers whose earnings fell below subsistence, thereby negatively impacting the local wage market for both laborers and employers.

The text should be read as an argument against government wage supports, not a justification of allowing the hungry to starve, for Burke himself supported private charitable efforts both in print and in person. This apparent disjunction might be attributed to a general philosophical emphasis in Burke's thought on prudence and pragmatism.

Recent interpretations, particularly that of Francis Canavan, have turned away from reading Burke as an unmitigated supporter of LAISSEZ-FAIRE capitalism and focused on his notions of common good deriving from property, as an outgrowth of natural law.

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Bush, George H.W. (1924–)

THE 41ST PRESIDENT of the United States, George Herbert Walker Bush was born in Milton, Massachusetts. His father was a wealthy investment banker and a senator from Connecticut. Bush grew up in Greenwich, Connecticut, where he attended the Country Day School and later Phillips Academy in Andover, Massachusetts.

Bush enlisted in the U.S. Navy at the age of 18 and was, for a time, the Navy's youngest pilot. He served in the Pacific theater of WORLD WAR II and flew 58 combat missions, once shot down and then rescued by a submarine.

After the war, Bush attended Yale University and graduated in three years with a Bachelor of Arts in economics. He decided not to join his father's banking firm but to move to Texas with his wife and children to work for an oil-supply company. In 1953, he co-founded the Zapata Petroleum Corporation and, in 1954, became president of its subsidiary, the Zapata Off-Shore Company. He served as president of Zapata until 1964, and chairman until 1966, until he entered politics.

Bush first ran for public office in 1964 and was defeated. He had won the Republican nomination for the U.S. Senate but lost in the general election. In 1966, he ran for a seat in the House of Representatives and won. He was re-elected in 1968. In 1970, Bush ran again for the Senate and once again lost. After this defeat, President Richard NIXON, who appreciated the fact that Bush had given up a safe House seat to run for the Senate, appointed him to the position of Permanent Representative of the United States to the UNITED NATIONS.

By most accounts, Bush was an effective spokesman for the United States even though he had been criticized for having little foreign-policy experience. In 1973, President Nixon asked Bush to become chairman of the Republican National Committee just before the Watergate scandal broke. As the scandal progressed, revealing criminal activity in the highest offices of the White House, Bush defended Nixon until it became apparent the president was lying.

At that time, August 1974, Bush wrote to Nixon asking him to resign. Bush's letter was just one of many that Nixon had received, but along with Congressional and media pressure, Nixon's leadership was untenable; he resigned. The new president, Gerald FORD, asked Bush to head the U.S. Liaison Office in the People's Republic of CHINA. Bush remained in that post for 14 months.

At the end of 1975, Ford asked Bush to return home and take on the assignment of director of the Central Intelligence Agency. The Agency was reeling from Watergate-era revelations and Bush played a large role in lifting morale and preventing further damage to the Agency. After Ford lost the 1976 election, Bush returned to private life in Texas. In 1979, he entered the race for the 1980 presidential nomination, a field dominated by Ronald REAGAN. Bush, though winning the Iowa caucuses, did not do well in the primaries and withdrew before the convention. Reagan did receive the nomination and asked Bush to be his running mate. The Republicans carried 44 states and were sworn in on January 20, 1981.

A vice president's real importance derives from responsibilities given to him by the president. Bush traveled to more than 60 countries and maintained an office in the White House. Bush headed taskforces on crime, terrorism, and drug smuggling. Reagan and Bush were re-nominated in 1984 and won 49 states in the November voting.

Speculation was rife during Reagan's second term about what Bush knew of the Iran-Contra Affair; the selling of arms to Iran in exchange for the release of U.S. hostages held in the Middle East. Bush explained he had attended several key meetings but he denied knowledge of the deal.

Defying history, Bush won the 1988 presidential race. He was only the second vice-president in American history to move from the vice-presidency to the presidency directly (Martin VAN BUREN in 1837 was the first). Bush won 40 states and 53.4 percent of the popular vote, and was inaugurated on January 20, 1989.

The Democrats were in control of both Houses of Congress and as a result the president often took middle-of-the-road positions on issues. In 1990, Bush abandoned his "Read my lips, no new taxes" campaign pledge and acknowledged that new or increased taxes were necessary. This upset many Republican conservatives and his popularity ratings fell. Bush was able to fill two Supreme Court vacancies by appointing David Souter in 1990 and Clarence Thomas in 1991.

The president received strong support for his handling of foreign affairs. Due to his diplomatic experience, he was able to play a key role in advancing U.S. foreign policy. A series of summits was held with Soviet President Mikhail Gorbachev resulting in the signing of treaties on arms reductions, and the eventual dissolution of the Soviet state into numerous independent countries, including RUSSIA.

Bush quickly and officially recognized the new states and met with Boris Yeltsin (the new president of Russia) several times, resulting in an agreement to make substantial cuts in nuclear weapons. In addition, during the Bush administration, his policies militarily removed Manuel Noriega from power in Panama, helped to belatedly speed the dismantling of apartheid in SOUTH AFRICA, and played a key role in the defeat of the Sandinistas in Nicaragua.

In August, 1990, Iraq invaded Kuwait and the resolution of this crisis has been cited by historians as Bush's finest hour as president. He was able to put together an international coalition to expel the Iraqis from Kuwait. In a ground war that lasted just 100 hours, U.S. and allied forces drove the Iraqis from Kuwait. Bush did receive criticism for ordering a cease-fire before the Iraqi president, Saddam Hussein, was ousted. Historians point out Bush was constrained by resolutions passed not only by the U.S. Congress but also by the United Nations. But this inability to remove Hussein resurfaced in the administration of George W. BUSH, son of President George H.W. Bush.

After the Persian Gulf War, the president's popularity soared and it appeared he would be easily re-elected to a second term. However, with the U.S. economy mired in slow growth and recession after the war, Bush seemed unable to apply the success he enjoyed in foreign policy to economic affairs.

By the time of the Republican Convention, Bush's popularity had fallen dramatically on continued bad economic news. He received the nomination but left the convention with a divided party. Bush's Democratic opponent, Bill CLINTON ran his campaign on economic issues, even focusing his campaign staff with the slogan, "It's the economy, stupid!" and won the election of 1992.

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Bush, George W. (1946–)

THE 43RD PRESIDENT of the United States, George W. Bush was born in New Haven, Connecticut, the oldest son of George H.W. BUSH, the 41st president. When Bush was two, his family moved to Texas, where he spent his early childhood. He attended Phillips Academy and Yale University, graduating in 1968 with a degree in history. Bush then joined the Texas Air National Guard and took two years of flight training.

Bush, or "W" as many referred to him to distinguish him from his father, entered Harvard Business School and received a Master of Business Administration degree in 1975. Returning to Texas, he established an oil and gas business, and met and married his wife, Laura.

Bush ran for the U.S. Congress as a representative from Texas in 1978 but was defeated. In the 1980s, he put his oil business aside to work on his father's presidential campaign as both an advisor and a speechwriter. After the elder Bush won, "W" put together a group of investors and purchased the Texas Rangers baseball team.

Bush decided to go into politics relatively late in life, saying he lacked a focus until he reached his forties. In 1994, at age 48, he ran against a popular Democratic incumbent Texas governor, Ann Richards. During the campaign, she mocked Bush as intellectually vacuous, but her obvious contempt for the Republican candidate backfired and Bush defeated her. He ran for re-election as governor in 1998 and won. The strong re-election, and the obvious import of the family name, brought Bush to the forefront for the Republican nomination for president in 2000.

Initially, the field of candidates was large but Bush was able to attract major party and donor support early on, which demoralized the rest of the field and a number of the candidates dropped out. It was expected that he would coast to the nomination but no one counted on the broad appeal of Senator John McCain, a VIETNAM WAR hero and national leader for campaign finance reform. It became a bitter and increasingly personal fight, but in the end Bush won the Republican nomination.

Facing Democratic opponent and Vice-President Al Gore, Bush clearly benefited from the public's desire for change after eight years of the CLINTON-Gore administration. Bush narrowly won the electoral college vote though he lost the popular vote to Gore in the 2000 election, one of the most controversial in U.S. history. The vote in Florida was so close it triggered a recount in certain counties. Bush was declared the winner and Gore challenged the results. After two months of national anguish over whom the country had truly elected, the entire matter was resolved by the U.S. Supreme Court, which ruled in favor of Bush.

The Bush administration faced several problems right from the start. One was the closeness of the election and the feeling in some quarters that Bush was not the truly elected president; and secondly, the Senate and House were closely divided along partisan lines. Bush's economic policy was predicated on tax cuts, especially since the nation faced its largest budget surplus in history after the roaring economic growth of the 1990s.

But within a few months of his election, Bush faced an economic recession: The nation's economy was in the doldrums and the federal budget surplus was dwindling. Bush's popularity was declining and he was becoming the butt of jokes on late-night television shows. Then, on the morning of September 11, 2001, terrorists struck the World Trade Center and the Pentagon and the entire world woke up to a new reality.

The terrorist attack not only shocked the public, it had a major impact on the U.S. and thus, the world economy. The NEW YORK STOCK EXCHANGE was shut down for a number of days due to its proximity to the attack site in New York City. The American consumer, numb with shock, did not fly on airlines, did not buy goods, and promptly dumped securities and stocks as the exchanges plummeted. In the subsequent months, demonstrably showing just how important consumerism is to a capitalist economy, Bush and other leaders implored the American public to fight terrorism by going out and buying something.

As evidence suggested the terrorist attack originated with Islamic fundamentalists based in Afghanistan, Bush ordered U.S. air strikes against military installations and terrorist training camps in that country. With his straightforward manner, Bush was able to calm the country and put together an international coalition to fight terrorism. The public rallied behind Bush and any debate about who was the truly elected president quickly faded.

Focusing on the War on Terrorism and a renewed military action against IRAQ, in 2002 and early 2003, Bush had high marks for national defense but the economy remained in poor condition, still struggling to recover from the effects of the terrorist attack and recession. Unemployment rose steadily, job creation remained at all-time lows, state and federal budgets slid into deficits, and it seemed the collective economy held its breath, waiting to see what would happen next.

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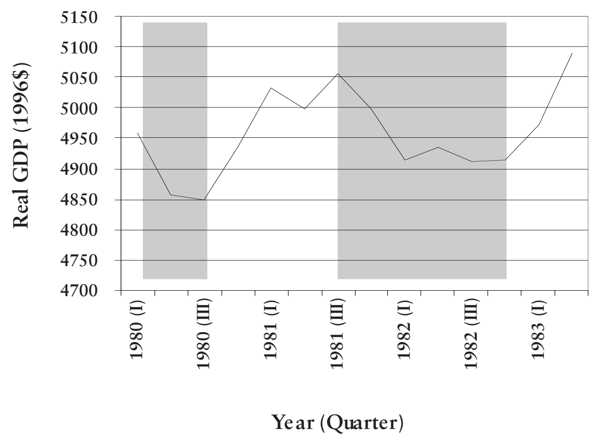
business cycles

SINCE 1820, THE U.S. ECONOMY has exhibited tremendous growth, as calculated by changes in real GROSS DOMESTIC PRODUCT (GDP). Real GDP is a measure of total output produced by an economy in one year, so that when it grows there are more goods and services of all sorts available within the economy. In fact, real GDP has increased 3.6 percent per year, on average, for this entire time, starting at $12.4 billion (measured in 1990 dollars—all prices have been statistically adjusted to 1990 levels) in 1820 and rising to approximately $7,916 billion (again, in constant 1990 dollars) in 2002.

Looking at this upward trend alone, however, one does not see that there were many short-term fluctuations, where the economy would actually contract, and only then increase after some period of time. These short-term fluctuations of real GDP, around the long-run trend, are known as business cycles. To be more precise, a business cycle can be defined in the following way: First, a capitalist economy will experience increasing levels of real GDP. This is known as an expansion, one phase of the business cycle. At some point, however, the economy will reach a peak, after which real GDP will then decline, going into what economists call a contraction, the other phase of the business cycle. In a viable economy, a contraction will, in turn, end with the economy reaching a trough, after which the economy will once again expand. This cycle of expansion-peak-contraction-trough-expansion repeats itself over and over again throughout the history of a capitalist economy.

Anatomy of a Business Cycle



An example of a business cycle is shown in the figure above. The ups and downs of the economy are clearly seen, with the shaded areas being contractions (as determined by the National Bureau of Economic Research). The first cycle shown begins with a peak in the first quarter of 1980. The economy then contracted for six months, bottoming out in the third quarter of 1980. This economic downturn coincided with the re-election campaign of President Jimmy CARTER, who, in large part because of this bad economic news, lost the election to Ronald REAGAN. The economy then expanded for exactly one year, reaching a peak in the third quarter of 1981. This ends the first business cycle shown in the figure. The beginning of the next business cycle ushered in extremely hard times for the U.S. economy. This contraction lasted for 16 months, the longest and deepest downturn to date (2003) since the DEPRESSION of the 1930s. The economy finally started a recovery in the fourth quarter of 1982, the beginning of which is shown in the figure.

Business cycles and panics. Business cycles are very irregular. There is no set duration to any of the phases, and correspondingly, there is no specific duration that the entire cycle lasts. For example, since the AMERICAN CIVIL WAR, there have been 29 complete business cycles in the United States. The shortest one was only 17 months (August, 1918 to January, 1920), with its expansion lasting 10 months, while the longest lasted more than 10 years (July, 1990 to March, 2001). Clearly the length of business cycles varies considerably.

Although we cannot specify with any precision the duration of business cycles, there is a particular relationship between the two phases. Since the U.S. economy has grown considerably over the past 150 years, expansions tend to be longer than contractions (the former averaged 38 months compared to 18 months for the latter, since the Civil War), even though both vary quite a lot in duration. The longest contraction, from October 1873 to March 1879, was only about half the length of the longest expansion.

Business cycles also appear to be characteristic of capitalism. We have seen that they exist in the United States, but they also exist in any capitalist economy. In the early 1930s, for example, every major capitalist economy in the world experienced contraction, but by the end of that decade all saw their real GDPs rising once again. This (irregular) expanding and contracting of an economy seems to be unavoidable within the capitalist framework.

Throughout history, economists have seemed to be ambivalent about what to call the different phases of the business cycle. The contractionary phase, in particular, has had many different appellations over the years. Originally known as panics, they became crises by the beginning of the 20th century. The term panic seemed to indicate a dire situation, not simply a normal manifestation of a well-functioning economy, and so it had to go. It didn't take long, however, for the term crisis to become problematic as well. So economists started to describe economic downturns as merely "depressions," using a word that seemed to offer more solace to those experiencing it. After a while, this word too began to seem, well, too depressing, causing economic commentators to finally stop using these psychological terms with negative connotations, and adopt the pleasingly neutral term, RECESSION. This is what is now most widely used as the descriptive term for a contraction, although some economists go even further, and try to put a positive spin on negative growth, by using such terms as "rolling readjustment" or "growth correction," explains economist John Kenneth GALBRAITH. Marxists, on the other hand, still use the term crisis to describe a contraction. Not having any desire to make capitalism look good, they continue to use this term as an apt description of a shrinking economy.

As for expansions, there have not been so many terms, perhaps because no one has ever seen the need to soften the blow of what is essentially a positive economic event. Variously referred to as a boom or a recovery, depending on the speed of economic growth, this phase of the business cycle is trumpeted as the success of an economy, something to be celebrated, rather than hushed-up or neutralized as is done for a contraction.

In terms of measurement, it is not always clear when a recession or an expansion begins or ends. Since a business cycle is defined as expansion-peak-contraction-trough, whose duration is measured peak to peak (or trough to trough), the determination of peaks (the end of an expansion) and troughs (the end of a contraction) is quite important. We defined a business cycle above as simply the ups and downs of real GDP. Corresponding to this understanding, a recession would be seen as six or more consecutive months of falling real GDP. This is what is used as a rule of thumb by most commentators on the economy.

However, a more complicated procedure is used by the National Bureau of Economic Research (the source of the business cycle statistics cited above). In these quasi-official statistics, "a recession is a period of significant decline in total output, income, employment, and trade, usually lasting from six months to a year, and marked by widespread contractions in many sectors of the economy." Note that a declining real GDP is only part of this definition. This means that our definition of a business cycle is a simplification, albeit one highlighting the most important aspect of the issue.

The effects of business cycles. The most well known business cycle in U.S. history began in August 1929 and ended in May 1937. With a couple of years added (extending the end to 1939), this period of economic difficulties is known as the Great Depression. While technically only 56 out of the approximately 120 months were during contractions, the economy during this entire period was faltering. Certainly, in terms of high unemployment and declining real GDP, the U.S. economy was never so dysfunctional. The unemployment rate averaged 18.4 percent, reaching over 25 percent at times, while real GDP fell 27 percent, bottoming out in 1933, and didn't reach its pre-Depression level until 1936. For many, the Great Depression seemed to be the death knell of capitalism. This is the negative side of the business cycle.

By definition a recession entails a declining real GDP. This is not good because it means that individuals, on average, will be able to consume fewer goods and services, thus lowering their material standard of living. With the assumption that everyone always wants more, this can only be a bad situation. This, however, is not the worst of it. When real GDP declines it does not affect everyone equally. Some people still continue to gain, others stay about the same, and others lose. Among those that lose, some lose a little and some lose a lot. In particular, those who become unemployed suffer the most. Without jobs, they earn no money, and can consume far fewer goods and services than before; their material standard of living inevitably declines precipitously. Rising unemployment is the worst part of a recession.

On the other hand, there is an upside to business cycles. Once the economy reaches a trough at the end of a recession, real GDP begins to rise, employment begins to recover, and most things economic look brighter. For example, during the expansion of the Bill CLINTON administration years, the longest one in U.S. history, the economy seemed to be booming. Real GDP rose 3.5 percent per year, the unemployment rate averaged 4 percent, and the stock market experienced its largest increase in history. Certainly, in many ways, the U.S. economy was healthy and prosperous. Expansions, as the counterpart to contractions, are the positive side of the business cycle.

Fortunately, in the United States, business cycles have diminished in severity. Since WORLD WAR II, there have been 10 cycles, with expansions averaging 57 months and contractions averaging only 10 months. In the most severe recession during this time (July 1981 to November 1982), output fell only 2.9 percent, and unemployment reached a maximum of 11 percent. In contrast, in the years between the Civil War and World War II there were 19 cycles, with expansions averaging 28 months and contractions averaging 22 months. In the most severe contraction during this time, the Great Depression, output fell 27 percent, and unemployment reaching over 25 percent. With output falling farther and longer, and unemployment reaching much higher levels, pre-World War II recessions were both more frequent and more severe than those of the past 60 years. Expansions are now twice as long as they previously were, and contractions average one-half of their former duration, so that the balance between the two has improved significantly. Capitalism, perhaps, is not as brutal as before.

INFLATION, defined as an increase in the average price level, has been a constant in the United States since the Great Depression. In all but three of the 70 years since 1932, prices have increased, and the last time that the United States experienced deflation (prices on average decreasing) was 1954. Thus, throughout the various business cycles of the post-World War II period, prices have continued to rise, both during contractions and expansions.

This structural inflation is unrelated to the business cycle. There is, however, a component of inflation that is related to the business cycle. During expansions, prices rise more quickly than during contractions. As an expansion takes hold, labor costs tend to rise, leading to an increase in prices charged by businesses (inflation). Then, once the economy reaches its peak, rising labor costs ease up, and there is less pressure on firms to increase their prices.

Thus, during expansions, inflation tends to rise, and during contractions inflation tends to fall. This cyclical inflation rises and falls with economic activity, around a long-term structural inflationary trend (which itself rises and falls).

Theories and policies of business cycles. Business cycles appear to be an inevitable part of capitalism. Throughout the history of capitalism, business cycles have come and gone, just as surely as waves have continually pounded our coastal shorelines. It may be too much to say that these cycles have pulverized economies just as the waves have reduced rock and stone to sand, but some of the contractions that we have seen have surely brought much suffering to the populations of capitalist economies. While expansions indicate a vibrant economy, where more and more goods and services are being produced, contractions indicate an economy that is failing to deliver as much as it can to consumers. With output down and unemployment up, recessions are an economic problem and generally seen as something to be avoided.

Given the harm done by economic contractions, for the last 70 years economists have attempted to see how recessions could be eliminated or at least mitigated. John Maynard KEYNES, perhaps the most famous economist of the 20th century, weighed-in with his thoughts on this matter in the 1930s. Writing during the depths of the Great Depression, he argued that economic downturns were caused by a lack of total (aggregate) demand. All of the purchasers in the economy—consumers, businesses, and the government—were simply not buying enough goods and services for the economy to be going ahead full steam. Firms, not needing to produce so much (because sales were slower), would cut back on production, causing real GDP to fall and unemployment to rise, in other words causing a recession. Could anything be done to get the economy back on track?

Keynes' prescription for the ailing economy (remember, at that time, capitalist economies worldwide were going through their worst Depression in history) was for the government to increase aggregate demand, either through reducing taxes or increasing government spending, thereby pumping the economy back up to good times. If only the government would take charge by manipulating aggregate demand, the Depression would soon be over. This method of manipulating aggregate demand is known as countercyclical FISCAL POLICY, because it was expressly designed to counter the business cycle, more particularly, to soften the hardships of contractions and to end recessions.

This policy passed its first test with flying colors during World War II. As the U.S. government increased its wartime spending at the end of the 1930s and the beginning of the 1940s, the Great Depression ended and the U.S. economy experienced phenomenal growth (actually doubling in size from 1939–44) and historically low levels of unemployment. In recent years, however, there has been some grumbling from economists as to the efficacy of fiscal policy.

A somewhat different view of recessions is taken by other economists. While agreeing that they create suffering in the economy (primarily because of increased unemployment), these economists emphasize the necessity of recessions for the overall health of capitalism. Expansions, as they gain steam, tend to raise labor costs (the primary cost for most firms), which, in turn, uncomfortably squeeze the profits of firms. A recession is then needed in order to repress wages so that in the future profits can get back to more normal levels. A recession is seen as a necessary cost of capitalism, or as a needed "correction" to an overheated economy. Ironically, this view is both Marxist (which sees it as an indictment of capitalism) and conservative (in agreement with many businessmen who explicitly see recessions as good for the economy).

The history of the U.S. economy shows that business cycles are here to stay. Try as they might, economists have been unable to eliminate recessions completely. While some success has been achieved in ameliorating the worst aspects of recessions, they still haunt the economy at least once every decade. Whether seen as a necessary correction to an over-exuberant economy, or as a social problem that needs to be minimized as much as possible by governmental action, recessions and their corresponding business cycles are an integral part of any capitalist economy.

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Cambodia

THE KINGDOM OF CAMBODIA is located in the southwestern part of the Indochina peninsula. It has borders with THAILAND on the north and west, Laos on the northeast, VIETNAM on the east and southeast, and the Gulf of Thailand on the west. With an area of 181,040 square kilometers, Cambodia is about the size of the state of Missouri. More than 90 percent of its people are Khmer; they believe in Theravada, a branch of Buddhism emphasizing the doctrine of elders. Ethnic minority groups include Chams (who believe in the Islamic faith), Khmer Loeu, Vietnamese, and Chinese.

The Khmer people have been living in today's Cambodia for thousands of years. The first Khmer kingdom was established in the first century C.E. The golden age of Khmer civilization, however, was the period between the 9th and 13th centuries, when the kingdom of Kambuja, from which Cambodia is derived, ruled the land.

In 1863, FRANCE made Cambodia a protectorate. During WORLD WAR II, the Nazi-controlled French Vichy colonial government collaborated with the Japanese in Cambodia. After the war, King Norodom Sihanouk negotiated his country's independence from France, which had returned to reassert colonial control. In 1953, Cambodia obtained independence. Sihanouk then formed his own party, the People's Socialist Community, and made Cambodia a constitutional monarchy. In foreign policy, Cambodia adopted neutrality and NON-ALIGNMENT.

Sihanouk's government faced political challenges at home. In 1970, Lon Nol, prime minister and a military general, staged a successful coup against Sihanouk. The new government under Lon Nol was not popular among the majority of people, who remained loyal to Sihanouk. A broad alliance between Sihanouk and the Kampuchean Communist Party (KCP, also known as Khmer Rouge) was formed against the Lon Nol regime. In 1975, the Khmer Rouge forces drove Lon Nol into exile and the Democratic Kampuchea was established under KCP's leader Pol Pot. The Khmer Rouge adopted radical and brutal policies in the 1970s, killing hundreds of thousands of people and drove many others to flee the country as refugees.

In 1978, Vietnam invaded Cambodia and installed a puppet regime in Phnom Penh, the capital. Different factions, including the Khmer Rouge, organized a resistance movement under the leadership of Sihanouk. Vietnam finally withdrew its troops from Cambodia and, in 1993, UNITED NATIONS-sponsored elections restored relative stability to the country. In 2001, Cambodia's GROSS DOMESTIC PRODUCT (GDP) was $18.7 billion with tourism as the fastest-growing part of the economy. Foreign investment is still weary of political instability but the country's economic climate is improving with the aid of international organizations.

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Canada

FRENCH EXPLORER Jacques Cartier (1491–1557) was the first mandated sailor to write in his numerous diaries the description of his journeys through what was called New France (Canada's six eastern provinces, including Québec) in 1534–35. Like many other explorers, Cartier was looking for a passage to reach India; instead, he discovered what would become France's biggest colony. Québec City, Canada's oldest urban center, was founded in 1608 by Samuel de Champlain. But endless conflicts between FRANCE and England that lasted long in Europe were later transposed to Canada.

After two centuries of prosperous French regime, frequent cooperation with natives and many attacks from England, Canada was invaded by the British army in 1755 and 1759; its immense territory (that included the Mississippi River Valley with many later states between the Great Lakes and Louisiana) became part of the British Empire in 1763. French-speaking populations from Acadie (the Canadian province later renamed Nova Scotia) were deported to Louisiana by the British Army in 1755.

According to scholars, the French-speaking population was still a majority in Canada until the mid-19th century. Since then, the province of Québec (today one quarter of Canada's population and the largest provincial territory) is the only province to remain with a francophone majority, many of them fluent in Canada's both official languages, English and French.

Considering those cultural and linguistic reasons, Québec has always been a distinct society compared to the rest of Canada. Since 1867, francophone populations have constantly been diminishing, assimilated into English in all other Canadian provinces, therefore Québecers feel their French language has to be protected by special provincial laws, something the federal government has failed to do. Because of these cultural, historical, and economic reasons, almost half of the population of Québec strongly feels their province should become an independent country. Two referendums were voted on (1980 and 1995) in which the people of Québec chose to give a last chance to the Canadian federation. As American scholar Marc Levine has explained, this political issue is crucial in order to understand traditional anglophones' attitude towards Québec's place in Canada. Also, Québec's aspirations for an independent, democratic country are sometimes given as an excuse for any Canadian problem or weakness.

Canada is a large and contrasted country, the second largest country in the world, and a little bigger than its southern neighbor, the UNITED STATES, covering almost 10 million square kilometers. Its population of more than 30 million is among the most highly educated in the world. With a GROSS DOMESTIC PRODUCT (GDP) of $923 billion (2002) and a per capita purchasing power of $29,400, Canada has been, by far, the United States' main commercial partner and economic ally for centuries. Both countries share the longest unprotected border in the world. Canada is a member of the organization of top economies in the world who participate in the G8 SUMMIT.

Historically, Canada has always been seen by Europeans as a privileged place for trade. Because Catholics were not allowed to eat meat during many periods of the year (Lent, Advent, Fridays), Basque and French fishermen sailed around Newfoundland to find rich reserves of cod. One of Canada's oldest companies, the Hudson Bay Company, was created for fur trading with natives and exportation of furs to Europe. The Hudson Bay Company, founded in 1670, is North America's oldest commercial enterprise still operating (today, under the name The Bay). At some point, before Canadian confederation (1867), almost half of Canada's territory was conceded to the Hudson Bay Company.

The Canadian confederation was the beginning of modern Canada, first with four founding provinces (Québec, Ontario, New Brunswick, and Nova Scotia), then with 10 provinces since 1949 (Newfoundland was the last to join). Ethnic and class tensions between anglophones and francophones, which could somewhat be compared with black-white relations in the United States, have been punctuated by class and constitutional conflicts since 1763.

Since 1982, all political parties in Québec have refused to sign Canada's new constitution; this means that the province of Québec is ruled every day by a constitution that was rejected by all successive provincial governments, leaders and parties, which is unusual, to say the least, in a Democratic federation. People outside Canada often get only one side of this issue if they rely on anglophone Canadian media, which are far from objective, as journalist Normand Lester and university scholar Kenneth McRoberts have explained in best-selling books.

Canada is too often considered as only a resource-rich country with its economy reduced to basic products (grains and fisheries) and utilities such as gold, minerals, wood, oil, gas and energy. Most people don't know much about the Canadian biotechnologies and high-tech research centers concentrated in Québec and Ontario. Important Canadian companies include Nortel Networks (the world's largest manufacturer of telecommunications and internet systems) and its rival JDS Uniphase, Alcan Aluminium, INCO (the world's most important producer of nickel), Bell Canada Enterprises (telephone and telecommunications), Québécor World (the largest printing company in the world), and Bombardier (aircraft and rail transportation equipment). Compared to the hundreds of financial institutions in the United States, Canada only has seven banks. The oldest of these, the Bank of Montréal, already issued coins and paper money in the 19th century. In Québec, most people prefer credit unions to banks; they are named (in French) *caisses populaires*.

The Canadian dollar's value has often fluctuated in the past decades. It was sometimes worth more than the

U.S. dollar, during the 1960s and also in 1976. At the beginning of 2003, it was worth around 65 U.S. cents, an historic low. This is why global economic strategist Sherry Cooper describes Canada as "The Fallen Global Growth Leader" in her book, *The Cooper Files* (1999).

Although not perfect, the Canadian HEALTH care system has a strong, enviable reputation: all Canadian citizens may see a doctor or go to the hospital for free. This also means that social costs are assumed by the provincial governments, which have to rely on higher income taxes. Some Canadian provinces, such as Québec, also offer free medical drug prescriptions.

The Canada-U.S. Free Trade Agreement created a free trade zone in 1989. In a traditional suspicion toward the United States, many Canadian provinces opposed that agreement, but Québec was strongly in favor from the beginning. The North Atlantic Free Trade Agreement (NAFTA) was launched in January 1994, with the goal of fostering greater economic growth in Canada, the United States, and MEXICO by removing barriers to trade and investment among the three nations. Though commercial conflicts fester now and then (the U.S. surtax on Canadian wood; a series of American branches and factories closing in Canada to reopen in Mexico), free trade is still presented as a way of constructing closer commercial relations between the neighbors. Although government measuring practices and methods of managing labor have changed during the 1990s, unemployment remains Canada's main challenge for the 21st century.

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capital

THE PLACE OF CAPITAL as an economic resource is of extreme importance. In economic theory, defining capital is not easy because of its nature. Capital GOODS are produced by humans, and therefore differ from the original factors of production, LABOR, and LAND. Capital is used in the means of production and is distinguished from consumer goods in that it is an intermediate product. Capital may be financial, physical, or human. Financial capital has to do with the value of physical capital or capital goods. Capital goods are usually divided into durable and non-durable types. Most early writers on the subject focused on circulating, or non-durable capital.

The economic analysis of capital did not begin until tools and machines became more widely used in production. Thus, writers did not examine capital as a factor of production essentially until the 18th century. These early writers saw capital as advancements to workers made necessary to provide food and other necessities from the beginning of the agricultural season to the harvest and the sale of the goods. The PHYSIOCRATS, in their view of the economy as a circular flow, envisioned capital in this vein. This view of capital achieved its peak in the wages fund doctrine of the 19th century.

Theories of capital. Adam SMITH borrowed much his theory of capital from the Physiocrats and A.J.R. TURGOT. Smith's view of fixed capital focused on its ability to contribute to the productivity of labor. Labor in Smith's view, as he makes clear in the opening chapter of his *Wealth of Nations* on the division of labor, is the engine of economic progress. Smith also argued that some capital is productive and some unproductive. Capital as advancements to servants, for example, is unproductive. Smith's influence on economic writings of the 19th century on capital was enormous and consequently we cannot speak of the development of capital theory without Smith. Fixed capital would not receive its due until long after.

Smith's influence did not stop there. Although he was not the first to formulate a labor theory of value, his acceptance and presentation of it sealed its fate for 19th-century economists. Smith's famous exposition of how capital first comes to play a role in "rude and original state of society" was simple and convincing. As a follower, albeit a critical one, David RICARDO plays a crucial role here in the labor theory of value. Ricardo defined capital as "that part of the wealth of a country which is employed in production, and cost of food, clothing, tools, raw materials, machinery, etc., necessary to give effect to labor." Capital is merely another kind of labor in a labor theory of value. It is embodied labor. This would lead to many difficulties, theoretical and technical, that would occupy and distract some of the best minds in economics throughout the century.

It was Karl MARX, however, who, extending Ricardo's labor theory of value, squarely put capital goods into the forefront of economic analysis. Marx viewed capital as a stock of goods and in the form of an aggregated value. Capital goods are owned by capitalists and as such exist only in such a society. Capitalists accumulate these goods in order to exploit workers and increase their surplus. Along with Marx's emphasis on capital, came the controversies that would surround the concept for the following century.

The greatest contribution in capital theory is, perhaps, from the AUSTRIAN SCHOOL. The leading figure in the Austrian theory of capital, Eugen von BÖHM-BAWERK, elaborated the principle of "roundaboutness." That is, capitalistic methods of production tend to be roundabout or indirect. The most direct way to get a pint of blueberries, for example, is to go into the woods and pick the blueberries. A more roundabout way is to plant some seeds, tend to the plants, and then to pick the blueberries. Böhm-Bawerk followed in the grand tradition of Austrian economics in incorporating the element of time into the notion of capital. It is easy to see in this example that the period of production is lengthened by the planting of the seeds and then tending to the plants. We can then think of an average period of production.

In this process of making production more roundabout, original factors of production, land, and labor are converted and stored into capital, which is later used to make consumer goods. The capital inputs are thus encapsulated within the production of a consumer good for some average period. Böhm-Bawerk recognized the heterogeneous nature of capital and allowed for this in his model. The heterogeneity of capital goods meant that the stock of capital cannot be aggregated. Hence, capital goods are simply valued by a theory of imputation that considers the present value of the capital goods in the production process. Capital and the period of production are measured in MONEY terms (although one may assume that money is neutral in this process). The calculation of the average period of production proved to be too difficult and confusing for Böhm-Bawerk and his theory suffered accordingly. Böhm-Bawerk's theory is, at heart, an extension of the classical theory because it relies on advances as the basis of capital.

The writer Knut Wicksell, who would broaden and give greater substance to the Austrian theory of capital, tried to meld Böhm-Bawerk's theory with that of Leon WALRAS. Walras' approach was to treat a capital good like any other good. It is the cost of production that determines the prices of capital goods. In a general EQUILIBRIUM, capital goods are valued in the same way as are consumer goods. The demand for capital goods are demands by firms that sell products, that in turn, have their own demands. The demand for capital goods are, therefore, derived demands. In a general equilibrium system, all prices and values are determined simultaneously. Wicksell accepted Böhm-Bawerk's average period of production asserting that a lengthening of this, that is, more roundaboutness, leads to a greater output of consumer goods. The original factors of production become dated quantities in Wicksell's analysis and are integrated into his general equilibrium analysis.

Capital controversies. One of the controversies generated by Wicksell's analysis is what is known in the literature as the Wicksell Effect. In a general equilibrium system, the value of capital goods is derived from the costs of production of the original factors of production. Although he accepted the average period of production as a measure of the amount of capital in the economy, it would not do as a relative measure. Higher wages mean a higher cost of production for capital goods. But this rise in the value of capital goods means a fall in the rate of interest. The real Wicksell Effect means a change in technique at various rates of interest. The Wicksell Effect is simply the change in the value of capital due to a change in the rate of interest (and the change may be negative or positive). Wicksell had unwittingly set the stage for the famous Cambridge Controversy over capital switching.

In the 1950s and early 1960s, the question of a production function based on an aggregate quantity of capital was called into question by Joan ROBINSON (1953) and other Cambridge University economists and would especially be sparked by a book by Pierro SRAFFA, *The Production of Commodities by Means of Commodities* (1960). This was the genesis of the legendary Cambridge Controversy. The central issue involved aggregating heterogeneous capital goods into a production function. This issue actually goes back to Wicksell who, while using the average period of production (a measure of actual capital) used capital values in comparing capital and other factors of production (which is necessary in aggregate production functions).

When there is a single homogenous capital good, however, aggregate production functions can be used without apology, save one: the possibility of reswitching. It can be shown that the same technique can be profitable at two different INTEREST RATES. That is, when the interest rate changes, if technique A is initially used at interest rate r_0, and technique B at a lower interest rate r_1 is used, then at the lower interest rate r_2, the economy reswitches to technique A. Without a unique relationship between the rate of interest and the amount of capital, the interest rate cannot be used as a determinate factor in capital demand.

Separating the rate of interest from the demand for capital would destroy the theoretical construct of capital. Around 1907, Irving FISHER, in his theory of interest, avoided this problem by avoiding macroeconomic formulations. This microeconomic approach steers clear of the problems presented by a heterogeneous amount of capital goods condensed into a homogeneous globule for an aggregate production function. The interest rate is simply a theoretical construct when it comes to physical capital and should be used only when considering capital values.

Now, the rate of interest plays a significant role in the determination of the capital stock. Wicksell, Ricardo, and others have all based their theory of capital directly on a theory of interest and the two are inseparable despite the Cambridge Controversy. Wicksell sought to reconcile a theory of saving (based on waiting) and the demand for capital. Wicksell used both short-run and long-run dynamics in showing how the interest rate affects SAVING and investment. In the short-run, the money rate of interest could deviate from the natural rate of interest (a long-term interest rate determined by supply and demand for saving). This would set in motion price changes that would provide what Wicksell saw as the missing link in quantity theories of money, namely the dynamics by which a change in the quantity of money (or equivalently in a credit economy, the bank rate) brings about a change in the price level. The inflationary spiral that a lower bank rate brings with it is important in understanding the link between the rate of interest and the prices of goods. If the bank rate remains stationary or is slow to move while the natural rate changes—a change in the demand and supply of saving and capital—the dynamics of the price changes will likewise occur.

From Wicksell, John Maynard KEYNES (1936) developed a theory of capital still widely accepted today. Keynes's theory is founded on the marginal efficiency of capital, which determines the demand for capital. Keynes clearly took the neoclassical approach to capital. The marginal efficiency of capital is assumed to be diminishing because of expected diminishing returns on future investments. The intersection of the marginal efficiency of capital and the supply of saving then determine the rate of interest. Keynes is very like Fisher in this regard, except that his analysis is geared more toward macroeconomics.

While there are many theories of capital and the issue is still unresolved today, it is unlikely that any formulation of an aggregate of capital goods will ever make it into an aggregate production function. This is true also for labor, however. It seems that heterogeneous capital goods can be used only in a general equilibrium analysis unless one is willing to accept that peculiarities such as reswitching might occur, although this seems to be empirically unimportant. The Austrian attempt of the treatment of time as a factor in capital theory, however, seems to be a lasting aspect of capital theory.

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capital accumulation

CAPITAL REFERS TO all materials that are necessary for the production of commodities. It consists of the stock of raw materials and partly finished GOODS, tools, machinery, and equipment. Pursuit of profits, in capitalism, is the driving force of capital accumulation.

Among the most important defining features of capitalism is the private ownership of capital (means of production) that is at the basis of its class system—a capitalist class that owns and controls the means of production, and a working class that does not own or control a substantial portion of the means of production, and relies mainly on the ability to work. Two of the most important sources of capital accumulation in the history of capitalist development are:

1. agricultural revolution and the enclosure movement
2. increased commerce and market expansion.

Adam SMITH undertook the examination of the accumulation of capital "stock" in Book II of *The Wealth of Nations*. He asserts that when the division of labor has thoroughly been introduced, a person's own labor can satisfy little of her wants and needs. Furthermore, distribution and exchange would also take time. Therefore, it is necessary to store up sufficient supplies to carry them through these periods. Accumulation of stock is, therefore, the prerequisite to the division of labor. Once the capital is sufficiently accumulated and we move from an independent commodity-producing setting into a capitalist one, according to Smith, capital becomes a property that yields its owner a flow of income, in the form of profits. Under these circumstances, the accumulation of capital becomes the principal source of economic progress, and profits become the source of new capital. He believed that the original accumulation was the result of abstinence by entrepreneurs.

In his endeavors to discover the source of profits, David RICARDO introduced his theory of rent and the law of diminishing returns to land cultivation. With prices determined by the labor theory of value, he specified economic agents as classes of landowners, workers, and capitalists. Ricardo shows that the size of profits is determined residually by the extent of cultivation on land and the historically determined real wage. Given profits, capital accumulation and labor-demand growth are deduced. Population is regulated by the funds that are to employ it, and increases or diminishes with the increase or diminution of capital.

Capital accumulation would increase population and require more land, of less and less quality, to be brought under cultivation. Therefore, according to Ricardo's theory, as the economy continued to grow profits would eventually be squeezed out by rents and WAGES. As this process continued, Ricardo argued, a "stationary state" would be reached where capitalists make near-zero profits and no further accumulation would occur. Ricardo suggested that technical progress and foreign trade would sustain accumulation.

In his endeavors to discover the laws of motion of capitalism, Karl MARX examined the capital accumulation process in detail in volumes II and III of *Capital*. As with the classical economists, Marx also believed that pursuit of profits is the driving force of capitalist accumulation. He contended that competition forces capitalist firms to invest in new technology to reduce costs and raise their profits. The new technology would yield the individual capitalist higher profits at the expense of other capitalists as its composition of capital rises. However, employing the new labor saving technique reduces the value content of the commodity by reducing the labor time socially necessary for its production. Over time as other capitalist firms adopt the new technique to remain competitive, the profit advantage would disappear. Capitalist firms as a whole will find themselves with a higher composition of capital (capital to labor ratio) and consequently a lower profit rate at a constant rate of surplus value. Marx's theory of the falling rate of profit predicts that the drive to capital accumulation would lead to the breakdown of capitalism.

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capitalism, ancient

ECONOMICS AND TRADE are as old as humanity itself and can be traced all the way back to the Stone Age. The real beginnings of business organization, though, can be traced to the four cradles of civilization in ancient IRAQ, EGYPT, the Indus Valley, and Shang CHINA. These economies of the ancient world would be considered mixed economies. They included both primitive local markets in foodstuffs and tools and long-distance trade organized initially by the "public sectors" of temple and palace.

The oldest civilization arose in Sumer during the Copper Age between 4000 B.C.E. and 3500 B.C.E. The Old Kingdom of Egypt was formed around 3100 B.C.E.; that of the Indus around 2600 B.C.E., and China followed not long after 1800 B.C.E. Ancient Iraq, though, was destined to become the most dynamic and the true cradle of prototype capitalist enterprise.

Sumer: the first urban/industrial revolution. The river network of the Tigris and Euphrates permitted Eridu, Uruk, Kish, Ur, and other Sumerian cities to each have independent access to foreign trade. In Mesopotamia, Uruk's public temples initially dominated its economy, which set the stage for the full flourishing prototype capitalism after 3100 B.C.E. when a few clever coppersmiths began to fashion tools and artifacts from bronze. These allowed peasants to grow enough food to support a growing city population that could earn a living in trade and manufacturing.

After 3000 B.C.E., the royal palaces of god-kings like Enmerkar and Gilgamesh rose to create a new public economic centre. Both temple and palace employed a manager—a Sumerian *damgar* or Semitic *tamkaru*. The *damgar* would travel long distances trading on behalf of the royal interest. Other activities included extensive private trading networks between the Tigris and Euphrates, independent grain and poultry farmers, and private real estate deals in the city of Lagash.

From 3000 to approximately 500 B.C.E., trade and commerce would flourish in the Near East on the model perfected in ancient Sumer. This might be called the *tamkarum* or the temple/palace model of capitalism. During the pre-urban Uruk period and toward the early part of the urban revolution, Sumerian temple clergy handled banking and social welfare functions. Its rulers sought to alleviate unemployment and other stresses of a new urban society through temple- and palace-building and other public works.

By 2600–2500 B.C.E., the Fertile Crescent was covered with a network of city-states each averaging about 20,000 inhabitants. One of the most prosperous was the Semitic kingdom of Ebla. Now known as Syria, Ebla boasted the most balanced and prosperous economy of the time. It was history's first liberal society with a constitution that let it make treaties in the name of Ebla itself. These treaties show a remarkably advanced comprehension of business law, international taxation, and territorial jurisdiction.

According to Ebla's discoverer Giovanni Pettinato, Eblaite *tamkaru* signify the first recorded real capitalists. Though there was still much state control, Ebla's economic system was more open to private enterprise than Egypt or Sumer. "The great novelty of Ebla," writes Pettinato, "lies precisely in the fact that in it coexist in a perfect symbiosis the public and private economy." Its economy stimulated by temple, palace, productivity, and hard currency, Ebla suffered little inflation. Its silver and gold became the basis for a Near Eastern trading system where Eblaite merchants coordinated the flow of goods from Egypt, Cyprus, Sumer, and Elam.

The city-states of Syria/Mesopotamia soon began to battle for hegemony in which Ebla lost out to more militaristic states such as Kish. The region exploded in a series of ferocious wars. The need for copper and tin to equip chariots, axes, swords, spears, daggers, shields, and arrows further stimulated commercial development. These metals were not found in Sumer so they were obtained through trading networks able to absorb the risks involved in long-distance trade. Timber and stone were also imported. Thus, Sumer, by 2600 B.C.E., became the core of a known-world economy stretching from Egypt to the Indus Valley. This international economy was already working on the principles of the resource- and market-seeking behavior characteristic of modern multinational enterprises.

The Mesopotamian economy reached its peak at the end of the Early Bronze Age (2250–1800 B.C.E.) with the Semitic king, Sargon of Akkad, who created the first world empire. This permitted, and even stimulated, the expansion of known-world international trade. Private *tamkaru* now truly began to flourish in Mesopotamia, although long-distance trade remained in temple/palace hands. Sargon's own records mention such far-flung locations as Bahrein, Baluchistan, and India.

After the demise of Sargon's empire, private enterprise became more significant in Mesopotamia. Smaller boats now plied the Persian Gulf as trading voyages had to be self-financed in the absence of public subsidies. International trade was now managed by an early chamber of commerce called the *karum*, which was granted authority to regulate commerce and governmental duties the public sector could no longer sustain.

Private merchants now traded from Iraq into the Gulf—especially from Ur. While Ur did not have a stock exchange, people speculated on future profits from the copper trade. Ea-Nasir financed trading expeditions that sailed to Bahrein and back, assembling investors in some of the first limited partnerships and joint ventures. Hundreds of small investors in Ur involved their money as well. Ea-Nasir thus managed the first mutual fund on the expectation of big future earnings in copper. The first mutual fund, though, ended in the first recorded crash when Ur's King Rim-Sin suddenly declared all loans null and void.

Around this time, the ancient Assyrians took a considerable step toward the multinational company. The kings Ilushuma (1962–1942 B.C.E.) and Erishum (1941–1902 B.C.E.) left the financing of international trade commerce to private merchants. To gain access to the valuable mines and keep trade in Assyrian hands, the merchants set up permanent Anatolian and Babylonian establishments. After approximately 1950 B.C.E., a network of Assyrian *karu* operated in Syria and all over what is now eastern and central TURKEY. Its head colony was in Kanesh, over 600 miles from Ashur.

The northern and central parts of Kanesh were occupied by a self-contained community of Assyrians with home offices. Ashur-based Assyrian firms shipped Babylonian grain and textiles within their own privately owned networks to Kanesh, Syria, and Asia Minor. The best known was the House of Ashur-Imitti, which "fashioned a highly organized commercial enterprise, an international import-export business in the fullest sense." Could this be history's first recorded multinational enterprise? By strict definition, probably not, since the establishments abroad did not engage in production. However, taking a broader definition of the proto-multinational and observing that these were privately owned companies operating permanent branch offices, then yes, a very considerable step toward the multinational was indeed taken.

Phoenicia. The *tamkarum* model became intercontinental when it was applied in the city-states of Lebanon and Syria. This strip of land was inhabited by debt-ridden Canaanite farmers who became dependent laborers in a feudal system. Shipbuilding and manufacturing became the most profitable means of economic survival. Seaborne Canaanites, known to the Greeks as Phoenicians, became the classic middlemen of the Late Bronze and the Iron Age. Craftsmen—many self-employed—manufactured goods from imported bronze and ivory. Royal and private traders then shipped them abroad by caravan or sailing ship.

The royal throne was the driving force behind Phoenician capitalism. Since the Phoenician city-states had limited agricultural resources, prince-kings (especially of Tyre) saw economic salvation in the capitalization of the strongest assets—a highly skilled population, timber for shipbuilding, and access to both the Mediterranean and the overland routes of Asia. The *Ras Sharma* text from Ugarit reveals a strong governmental role in the economy as well. Most of the economy was under the direct management of the royal vizier and his harbor master. Beneath them, the major nobles and princes also took part in commerce. Phoenician merchants and guilds organized joint ventures to finance trading expeditions to Egypt, the Hittite realm, Crete, or Babylonia. Copper, lumber, shipbuilding, and wheat were designated as the monopolies of crown merchants.

The Phoenician naval model was perfected by the rulers and merchants of Tyre after 1000 B.C.E. A royal trading alliance between Hiram of Phoenicia and Solomon of Israel meant vast profits and royalties, which were invested in temples, palaces, public works, shipyards, and vessels. After King Itobaal seized the Tyrian throne around 900 B.C.E., Israel was split into two kingdoms: Israel and Judah. Itobaal united Tyre and Sidon and continued to trade with Israel.

The final phase of Tyrian commerce, from 840–538 B.C.E. was truly intercontinental. The kings of Tyre erected a line of permanent establishments across the Mediterranean and Mesopotamia. The powerful Assyrian empire conquered the Near East but left Tyre independent. Assyrian demand for hard currency, garments, and metals provided Tyre's merchants with a vast new market. Tyre's managers began to expand their trade across the Mediterranean.

In SPAIN, Tyrian colonists purchased huge quantities of silver ore mined from southwestern Spain. Some was floated downriver to Cadiz while the rest was sent overland being processed en route. The Spanish operation stimulated further economic activity in southern Spain, Africa, Sicily, and Sardinia. By 650 B.C.E. the Tyrian viziers and their merchants were operating the most impressive trading organization in antiquity.

Greece. The economies of ancient Greece and Italy began to grow in synergy with the Tyrian after 1000 B.C.E. Greece adopted the iron technology of Cyprus that brought about an Aegean market revolution led by the large island of Euboea. With few good roads or big cities and no centralized power, the rural Greek world was quite conducive to independent enterprise. Before 1000 B.C.E., Greek traders began trading as far as Sardinia and Spain. Spreading outward from Cyprus, the knowledge of iron-working aided the development of a new economic individualism.

A trail of Egyptian amulets leading from North Syria through Greece to Italy points to the existence of an 8th-century B.C.E. trading network in which Greeks were involved. Greeks operated as private individuals and small-scale enterprises. Merchants operated as independent agents, buying on a contractual basis, bringing iron, goods, and profits back to Greece.

The new agricultural prosperity of cash crops such as wine and olive oil, combined with the development of iron tools and weapons strengthened the city-state or *polis* as the basic unit of Greek life. Business values began to challenge the dominant agrarian ones, though they never fully replaced them.

Rome. While the Greeks perfected the first democratic free-market culture, the Romans would modify that culture, universalize it, and apply it to big and small business. Starting as an outpost in central Italy, Rome slowly emerged from obscurity to conquer first Italy, then Carthage, and finally most of the Hellenistic kingdoms. Rome's constant wars stimulated the growth of a powerful business culture. Roman entrepreneurs formed huge partnerships called *publicani*, which bid on the open market for large food, uniforms, weapons and construction projects.

Roman firms were internalized—a further step toward multinational enterprise. Roman partners came together to execute a contract, and then disband. They were lean and mean in adapting to different markets with little permanent staff. Some of them may arguably be seen as the first real "multinational" conglomerates, and the first recorded limited liability corporations. *Publicani* often pooled the resources of as many as twenty *socii* who could be considered shareholders and the board of directors. The *magistii* wielded executive power and supervised the company's *decuria* or divisions.

In 27 B.C.E., *Princeps* Augustus Caesar officially ushered in the Roman Empire. No other economy would come as close to global proportions until the voyages of Vasco Da Gama and Christopher Columbus. Europe, Africa, and the Near East became one vast market whose hub lay in Rome. The Roman Empire was the first EUROPEAN UNION, integrated by a common currency (*denarius*), law, and infrastructure.

Roman emperors rejected the strict mercantilist policies of the Near East. Ports such as Puteoli and Ostia were open to all trade. After 100 C.E., these cities began to host branch offices of associations based outside Italy. Gaul and Spain exported food to Greece; Asia exported marble to Italy; grain flowed from Egypt and Libya to Latin Europe. Clay and metal industries among others became very important, and many of these even pioneered in an early form of mass production. The closest Roman counterparts to a modern multinational operated in the marble industry of Asia Minor. Building programs in the western part of the empire provided a huge market for Bithynian marble.

The first "world" economy. Rome's economic expansion went all the way to INDIA. Through Indian middlemen, Roman managers reached markets in southeast Asia and China. Roman agents lived on Indian soil, allowing them to upstage Arab traders. Roman ships left ports in Egypt on the Red Sea every July to arrive in India by fall. Returning to Egypt late in the year via the northeast monsoon, they came with huge shipments of Indian spices and Chinese silk. Shipping such bulk cargoes once a year could only be afforded by large Roman firms able to raise the money and hire the overseas agents.

The effect of this GLOBALIZATION on the Roman economy was noted even by the Emperor Tiberius himself, who worried that Rome's ladies were transferring its wealth to foreigners. The elder Pliny claimed that imports from Arabia, China, and India were costing Rome a huge annual trade deficit. Exaggerated or not, these remarks show the existence of the first known-world economy stretching from Spain to Africa to India to VIETNAM to China.

The memory of this exotic trade would continue to entice Europeans for hundreds of years after the Roman world economy collapsed. After establishing the business culture that is the closest to both the American and modern European model, Rome eventually declined through inflation, corruption, and loss of markets.

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capitalism, political

POLITICAL CAPITALISM IS a private-property market system shaped by special-interest government intervention. Regulation, subsidies, and tax-code provisions are less reformer-driven than business-driven. This is to say, most interventions are not the result of government authorities acting on general impulse about the public good but are sponsored, or at least shaped, by the directly affected businesses and their sponsored organizations.

The growth and modernization of the U.S. economy has created greater transparency and competition than was evident in the business-dominated politics of the past. Interventions can now result from the successful lobbying by representatives of the environment, labor, minorities, taxpayers, consumers, religions, gun owners, military, and others. These competing elites, the most powerful of which is still business, create what in the aggregate is political capitalism, also known as corporatism. This "ism" is closely linked to modern American capitalism.

There are two avenues to business success under the profit/loss system. The free market means is where entrepreneurs provide a good or service in an open market that is voluntarily patronized by consumers. The political means is where a governmental restriction or favor provides the margin of success beyond what consumer preference alone would provide. Market entrepreneurship is the way of capitalism; political entrepreneurship is the way of political capitalism.

Business interests, including labor, welcome competition for the things they buy (to minimize costs) far more than for things they sell. They may profess support for free enterprise in general but not in their particular area. Competition disparaged as "unbridled," "cutthroat," "excessive," or "unfair" can be the clarion call for constraints placed on open markets.

Historian Gabriel Kolko defined political capitalism as "the utilization of political outlets to attain conditions of stability, predictability, and security—to attain rationalization—in the economy." Much of the intervention that historians have documented was for business by business to "allow corporations to function in a predictable and secure environment permitting reasonable profits over the long run."

MERCANTILISM in Adam SMITH's day was a prominent form of political capitalism. Under this doctrine, the wealth of nations was perceived to result from the inflow of monetary species (gold primarily) from international trade. Business and political elites worked together to restrict competition from imported products to reserve home markets for home products and keep specie at home. Smith and other free-trade proponents argued that the wealth of nations resulted from capital accumulation and a global division of labor, not protectionism.

For much of the 19th and 20th centuries, American capitalism was business capitalism. Major interventions into the economy such as the Interstate Commerce Act (1887), public utility regulation, wartime planning, and 1930s NEW DEAL planning were driven more by the desires of big business than any other constituency. Business participation in foreign policy decision-making, explains economist Joseph Stromberg, coupled "domestic intervention (corporatism) with overseas intervention (empire)."

The following constraints on rivalry have characterized political capitalism, particularly from the mid-19th century until today:

Import restrictions. A tariff or quota on foreign goods can raise prices and increase market share for domestic industry.

Price supports. A price floor, such as for an agricultural product, allows a firm or firms to have greater and more predictable revenue.

Grant protection. A government permit, franchise, or license to enter into a line of commerce reduces the number of competitors to advantage the established firm(s). Under "natural monopoly" public-utility regulation, franchise protection is accompanied by rate regulation (the "regulatory covenant").

Loan guarantees. Taxpayer-backed obligations can reduce or eliminate risky business investments such as those undertaken in a developing country.

Antitrust laws. The spectrum of laws against charging more, the same, or less than one's rivals, called "monopolistic," "collusive," or "predatory" pricing respectively, have resulted in many more private than government antitrust lawsuits.

Subsidies. Grants for research and development are made in areas considered to be in the public good, such as non-polluting energy technologies.

Quality standards. A minimum standard can advantage firms at the high end of the quality range at the expense of lower-end competitors.

Virtually all of these interventions, intentionally and sometimes not, alter the production of goods and services compared to what would exist from consumer demand alone.

Political capitalism is closer to capitalism than SOCIALISM since private property and profit/loss accounting are at work, and major interventions such as price and allocation controls are the exception. Political capitalism is also different from macroeconomic planning of the so-called mixed economy. Activist fiscal and monetary policy are broader policies than those enacted by particular firms or industries, although the major institutions of intervention (for one, the Federal Reserve Bank) can be established and influenced by national business organizations such as the U.S. Chamber of Commerce.

Political capitalism is the unplanned, opportunistic result of transient interest-group coalitions and temporary political majorities. It is not the work of a central plan in part or whole, although elements of central planning can co-exist and, indeed, inspire dispersed special-interest politicking.

"Follow the money" has led many historians studying political capitalism from effect to cause, from intention to result. In an economic system where the use of the political means is accepted and common, the entrepreneur weighs whether the benefits of government lobbying are greater than the costs *ex ante*. If so, a firm or trade association is likely to pursue government favor. Such decisions to proceed often prevail over the interests of the less organized opposition since the benefits are concentrated to the involved firm(s) and the cost is spread out (and small) over all taxpayers and/or consumers. But this disparity has closed over time as taxpayer, consumer, and other "common good" groups have been formed to lobby alongside other interests.

Political capitalism has aroused strong criticism. Marxists and socialists seek a more "democratic" economic system in place of what is seen as an inherent link between political influence and capitalism. Libertarians see the "political" as the problem, identifying business as not only the friend but also the foe of capitalism, to support LAISSEZ-FAIRE. Defenders of political capitalism view competing elites as democracy in action.

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Carnegie, Andrew (1835–1919)

THE PRE-EMINENT SYMBOL of America's Gilded Age, Andrew Carnegie was the most powerful capitalist of the last quarter of the 19th century. Born in Dunfermline, Scotland, Carnegie died in Lenox, Massachusetts.

After emigrating to the UNITED STATES with his family in 1848, Carnegie worked as a telegrapher before joining the administrative staff of the Pennsylvania Railroad, where he was named a vice president at the age of 24. After amassing a fortune through his investments, Carnegie formed the Carnegie Steel Company in 1872. His vertical integration of the company—buying up raw materials and transportation facilities to control the entire process of steel-making—as well as his lucrative, and sometimes illegal, arrangements with other steel producers and railroads made Carnegie's company the largest manufacturer in the world by 1890. Stung by criticism over his company's use of lethal force to end a strike at Homestead, Pennsylvania in 1892, Carnegie attempted to rehabilitate his reputation by practicing the "Gospel of Wealth," giving away a substantial part of his fortune before he died.

Carnegie was the older of two sons born to William and Margaret (Morrison) Carnegie. The family emigrated to Pittsburgh, Pennsylvania, in 1848 after William Carnegie, a linen weaver, found he could not compete with the new, mechanized power looms that were just beginning to dominate the textile industry. Fascinated by technology, Andrew Carnegie worked in a telegraph office as a 13-year-old; four years later, he joined the staff of the Pennsylvania Railroad as a telegrapher and secretary.

Despite his lack of formal education, Carnegie rose quickly through the ranks of the railroad. Demonstrating his financial acumen with a series of profitable investments in railroads, sleeping cars, oil, and telegraph systems, Carnegie was a wealthy man by the time he was 30 years old. He founded his first company, the Keystone Bridge Company, in April 1865. With orders coming in to rebuild the country after the Civil War, Carnegie needed a regular supply of iron for his bridge-building enterprise. Accordingly, he soon established an iron company, the Union Iron Mills.

With his bridge- and iron-making companies, Carnegie demonstrated two of the strategies that transformed the American industrial sector in the latter half of the 19th century: investment in technological innovation and vertical integration of the industrial process. Carnegie did not hesitate to invest in new manufacturing processes that would improve efficiency and output, and he was always on the lookout to bring more steps of the production process under his control, buying up everything from the raw materials needed to make iron to the transportation facilities needed to ship his product.

Carnegie also did not hesitate to engage in secret—and illegal—kickback arrangements with railroads to get cheaper shipping rates for his product. When the Duquesne Works developed an innovation to the steelmaking process in 1889 that gave it an advantage over other steel producers, Carnegie sent a libelous letter to all of the railroads claiming that the new process produced inferior steel rails. Carnegie's tactic nearly forced his competitor out of business and he quickly bought it up at a bargain price; he then began producing steel with the same process that he had claimed was inferior.

Carnegie reached the pinnacle of his career as the steel baron of the Gilded Age. He entered the steel business by combining a series of holdings in 1872 to form what would eventually become the Carnegie Steel Company.

An important supplier of steel rails for the nation's railroads and steel beams for the construction of skyscrapers and other buildings, the company was one of the most profitable of its era and ranked as the largest manufacturing entity in the world. By the turn of the century, after buying up many of his rivals and driving several others out of business, Carnegie could essentially dictate the price of steel in the United States.

As Carnegie reached the height of his success, he began to articulate a theory of philanthropy that he hoped other wealthy industrialists and financiers would follow. In *The Gospel of Wealth and Other Timely Essays*, published in 1889, Carnegie expressed his sense of duty "To set an example of modest, unostentatious living, shunning display or extravagance . . . the man of wealth thus becoming the mere trustee and agent for his poorer brethren, bringing to their service his superior wisdom, experience, and ability to administer, doing for them better than they would or could do for themselves." Carnegie implemented the "Gospel of Wealth" by donating money to build libraries throughout the United States and endowing several universities and cultural institutions.

Although he was widely praised for his philanthropic endeavors, Carnegie's reputation did not fully recover from one of the bloodiest confrontations in American labor history, which occurred at his Homestead steel works in western Pennsylvania. Refusing to sign a contract with the Amalgamated Association of Steel and Iron Workers in June 1892, Carnegie ordered his partner, Henry Clay FRICK, to break the ensuing strike and reopen the works while he left for a vacation in Scotland. Frick employed Pinkerton agents to forcibly reopen the plant, which touched off a bloody battle on July 5–6, 1892. Nine strikers and seven Pinkerton agents were killed and the strike was eventually broken. From that point on, Carnegie had achieved complete mastery of his labor force, which worked in continuous 12-hour shifts, seven days a week.

After the Battle of Homestead, Carnegie was equally reviled and revered; his company, however, was an undisputed success. With revenues of $40 million in 1900, it alone produced more steel than the entire nation of Great Britain. The following year Carnegie sold his steel holdings to financier J.P. MORGAN, who reportedly paid a small sum for the company. Morgan then combined eight other steel companies to form U.S. STEEL, which became the first corporation valued at over $1 billion.

Andrew Carnegie died on August 11, 1919, at his summer home in Lenox, Massachusetts. He was survived by his wife, the former Louise Whitfield, whom he married in 1887, and their only child, Margaret. At the time of his death, it was estimated that Carnegie had given away all but $30 million of his $400 million fortune.

Some of his contemporaries pointed to Carnegie's life as an example of the opportunities available to talented, hardworking immigrants to the United States. Others noted his less-than-ethical business practices and ruthlessness in dealing with his competitors and his work force as examples of the dangers of America's rugged individualism during the Gilded Age.

Carnegie doubtless transformed the corporate landscape of the industrial world by emphasizing relentless technological innovation and corporate control of each step in the manufacturing process. His harsh tactics against labor organizations, however, tarnished his reputation as an all-American success story.

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carrying capacity

ACCORDING TO ITS historical evolution and field of application, the concept of carrying capacity has been defined in very many ways. Generally speaking, it addresses the upper limits of a certain system allowing, at the same time for continued existence of that system without any significant damage.

Thus, biophysical carrying capacity expresses the "maximal population size that could be sustained biophysically under given technological capabilities," whereas social-carrying capacity specifies "the maxima that could be sustained under various social systems," according to articles in *Ecological Economics*. In tourism, for example, carrying capacity is conceived as "a maximum number of visitors that can be tolerated without irreversible or unacceptable deterioration of the physical environment without considerably diminishing user satisfaction." Finally, human-carrying capacity has been redefined "as the maximum rates of resource-harvesting and waste-generation (the maximum load) that can be sustained indefinitely without progressively impairing the productivity and functional integrity of relevant ecosystems wherever the latter may be located."

The concept of carrying capacity dates back to Thomas MALTHUS' population theory stating that population growth will always entail food shortage under the assumption that population increases exponentially, whereas food production can only be increased linearly. During the last decades, the concept of carrying capacity has gained a broader perspective and is being more widely discussed, in particular with respect to a growing awareness of the upper limits of population, economy, and ecosystems. It is thus applied in several fields including biology, demography, applied and human ecology, agriculture and tourism. "The main contribution of carrying capacity in applied and human ecology is as a political concept generally highlighting that exponential growth, and thus environmental pressures have to be curbed," explain Irmy Seidl and Clem Tisdell.

The ecological footprint, originally co-developed by Wiliam E. Rees, has been suggested as an indicator of biophysical limits and sustainability, being defined as "the corresponding area of productive land and aquatic ecosystems required to produce the resources used, and to assimilate the wastes produced, by a defined population at a specific material standard of living, wherever on Earth that land may be located." Strengths and weaknesses of this indicator are differently perceived, as well as over- and underestimated. One strength consists in the conversion of typically complex resource use patterns to a single number—the equivalent land area required—and thus, allows for a ranking of the ecological impact of nations. The ranking reveals that out of 52 countries accounting for 80 percent of the world's population, only 10 are living below the world's carrying capacity limit of 1.7 hectares per citizen, including, for example, EGYPT (1.2 ha/capita), INDIA (0.8), the PHILIPPINES (1.4), and PAKISTAN (0.8). Due to resource-intensive production and consumption patterns, however, most of the developed countries show ecological footprints that exceed available capacities.

This implies that, at present, most industrialized nations are running massive unaccounted ecological deficits with the rest of the planet, thus living at the expense of underdeveloped nations. The question of intergenerational and interregional equity will thus remain one of the most challenging tasks to be tackled by politicians in the near future.

The ecological footprint concept has been further developed by including international trade, as well as a sustainability criterion in order to assess regional contributions to global sustainability. It could be shown that "most of global sustainability growth can be attributed to western Europe, Asia and Japan, particularly through high savings ratios," whereas the United States "has made a very small net contribution to the growth in global sustainability," according to ecological economists John L.R. Roops and others.

In some areas, the concept of carrying capacity has been successfully implemented (e.g., in hunting and tourism areas), notably in the Okawango Delta, Botswana, where the daily number of tourists is limited, or in some European mountain stations setting a cap for the number of people allowed in the skiing arena. In other areas, such as agriculture, research argues that global or regional carrying capacity limits have been reached, and current economic models used by the WORLD BANK need to be modified to take account of biophysical limits. It has been further stated by Jonathan M. Harris and Scott Kennedy that "a supply-side strategy of increased production has led to serious problems of soil degradation and water overdraft, as well as other ecosystem stresses. This implies that demand-side issues of population policy and efficiency in consumption are crucial to the development of a sustainable agricultural system." Nevertheless, on a global scale, more efforts will have to be made to reconcile economic development, population growth, and ecosystems' carrying capacity.

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cartel

AN ASSOCIATION OF FIRMS, a cartel explicitly agrees to coordinate its activities. A cartel that includes all firms in a market is in effect a monopolist (i.e., if a cartel includes all firms in a market then the cartel problem is identical to that of a monopolist, and the resulting market outcome with respect to price and quantity will be the pure MONOPOLY outcome).

Hence, in general, one can define a cartel as a formal price-fixing agreement among firms. During the 1880s a cartel of U.S. RAILROADS operated openly as the Joint Executive Committee. The Joint Executive Committee allocated market shares rather than the actual quantities shipped. While each member railroad was allowed to set their individual fares, the Joint Executive Committee reported weekly accounts so that each individual railroad had information regarding the total amount transported. Because total demand fluctuated, each member's market share depended on both the fares charged by all the members of the cartel, and the demand fluctuations. Hence, fixing the market share of each member can be viewed as price-fixing under demand uncertainty.

These kinds of horizontal price-fixing agreements, or more generally, cartels were a common phenomenon of American industries. The cartel agreements were not restricted to formal price-fixing agreements but also included sales quotas, exclusive sales arrangements, geographical market division, customer allocation, and the imposition of penalties for infractions. In 1890, the Sherman Act declared cartels illegal in the United States. The Sherman Act implicitly prohibits the formation of cartels. Section 1 of the Sherman Act prohibits "every contract, combination . . . or conspiracy in restraint of trade . . ." This vague language means that collective efforts to increase price, reduce output, prevent entry, exclude actual competitors, and a host of other business practices that are aimed at restraining competition are illegal.

However, the Sherman Act did not imply the end of legal cartels since most European countries did not have any systematic cartel legislation prior to World War II. Up to 1939, there were at least 70 international cartels operating in over 40 industries. All of these cartels were legal and had written cartel contracts. On average, these cartels lasted slightly more than five years before they broke up. About 83 percent of the cartels had 10 or fewer firms, 64 percent had five or fewer members, and 39 percent had three or less members, while 74 percent of the cartels each had a world market share of over 50 percent.

OPEC. Thus, as with U.S. cartels before the Sherman Act, these international cartels involved relatively few firms with large market shares. In the early 2000s, the best-known cartel still operating is the ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES (OPEC), a legal cartel of oil-producing countries that attempts to set the prices for crude oil by agreeing on production quantities for its member countries. Looking at the history of cartels a number of questions arise, such as: Why do cartels form? What factors cause some cartels to break up even without government intervention? What are the welfare effects of cartels?

The answer to the first question is simple. In a competitive market each firm, maximizing its own profit, considers only the effect that its output decision has on its profit, ignoring the effects that the output level it produces has on the profit of all other firms in the market. Thus, firms in a competitive market produce a greater level of output then firms that are part of a cartel. In theory, a cartel can achieve monopoly profits simply by maximizing the joint profit of its member firms. Since the pure monopoly profit is as least as great as any other feasible level of profit for the same market, all members of a cartel will be able to enjoy higher profit levels than under competition, assuming that the monopoly profit is divided appropriately among the cartel members. Hence, firms who recognize their mutual interdependence have a profit incentive to reach a cartel agreement as long as the profit, that each firm can obtain when acting according to the cartel agreement, is higher than when they act as competitors.

However, reaching a cartel agreement, which is acceptable to all members, is only the beginning of the process. Cartel stability becomes a crucial issue. The mere fact that the cartel price is above the perfectly competitive price and that, for the cartel members, marginal revenue exceeds marginal cost gives each cartel member an incentive to cheat. In fact, the more successful the cartel is in raising the price above the competitive price, the greater is the incentive for members of the cartel to cheat on the cartel agreement.

Because incentives to cheat are strong, a cartel, in order to be stable, must be able to detect increases in output above the agreed-upon output levels, or secret price cuts by one or more of its members in case of a price-setting cartel. Of course, detection by itself is not sufficient to prevent cheating. The cartel must also be able to punish its members who deviate from the cartel agreement. In an attempt to deter cheating virtually any punishment can be threatened. However, it is crucial that the threatened punishment is a credible punishment. For example, the cartel may announce that it detects cheating by a member, all other cartel members will cut their price below average cost, or increase output so that the resulting market price is below average cost, until the cheater is forced to leave the market.

However, such a threat is not credible, since it would not be the best response once cheating has been detected. The problem here is that the punisher gets punished as well as the cheater, and given a choice the punisher would probably not go through with the punishment. Threats can, however, be made credible via pre-commitment. There is a large body of literature discussing the conditions that facilitate the formation and stability of cartels.

Regarding the formation of cartels, it is necessary that a cartel is, indeed, able to raise the market price. In addition, formation is more likely if there are low organizational costs, and in the case of illegal cartels, the expectation of severe punishment is low. Regarding the stability or enforcement of a cartel agreement, it is necessary that cheating can be detected. In general, cheating will be easier to detect the fewer the number of firms in a cartel, the less prices fluctuate independently, the easier it is to observe prices and the more homogeneous the product sold by the cartel members.

The less prevailing these conditions are in a particular market, the more likely it is that a cartel will break up after a relatively short time period. Empirical evidence regarding formation and stability of cartels directly supports these theoretical assertions. Econometric tests have shown that most cartels, or price-fixing agreements, involve 10 or fewer firms that produced a relatively homogeneous product. Regarding the stability or lifetime of cartels, there is empirical evidence that supports the theoretical arguments put forward above. What are the welfare effects of a successful cartel? The cartel price will be above marginal cost, consequently, there will be a loss in consumer surplus and total surplus, or welfare. Hence, consumers and society will be worse off, while the cartel members will be better off due to a transfer of surplus from the consumers to the member firms of the cartel.

A number of empirical studies have tried to estimate the loss in welfare, also called deadweight loss. Most studies conclude that the deadweight loss is relatively small. However, these studies neglect the role of transfer and employment effects of cartels. Few would argue that the possible large transfer of wealth from consumers to the cartel firms is negligible from a welfare point of view. In addition, employment effects may also be important; the decreased cartel output leaves some workers unemployed, who may not, in the short run, find employment alternatives in the competitive sectors of the economy.

It is for these reasons that governments in many countries have adopted a hostile position regarding the formation of cartels, as is the case in the United States. In fact, one can argue that one of the major achievements of U.S. ANTITRUST laws and enforcement has been the elimination of formal cartels. However, one has to realize that cartel behavior may also rise from non-cooperative behavior (i.e., collusion does not have to be formal and explicit). So-called tacit collusion, which results in the cartel outcome, may well be the result of repeated interaction between rival firms.

Hence, with the exception of a few international cartels such as OPEC, formal cartels have been successfully eliminated, yet cartel behavior still remains.

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Carter, Jimmy (1924–)

BORN IN PLAINS, GEORGIA, Jimmy Carter became the 39th president of the UNITED STATES in 1976. He received an appointment to the U.S. Naval Academy at Annapolis and graduated in 1946. Beginning naval service on battleships, two years later Carter was accepted for submarine duty, and eventually became one of a small group of officers working on the nuclear submarine program.

Carter studied nuclear physics at Union College in New York and served on the crew of the nuclear submarine *Sea Wolf*. In 1953, after the death of his father, he resigned from the Navy and returned to Plains to take over the family farm. He started a fertilizer business, increased his landholdings, and acquired a cotton gin, a peanut-shelling plant, a farm-supply operation, and warehouses.

Carter began his public career as chairman of the local school board and, in 1962, ran for a new state senatorial district. He served two terms, then ran for governor of Georgia in 1970. Departing from the racially segregationist legacy of previous governors, Carter pointedly called for an end to racial discrimination in his 1971 gubernatorial inauguration. During his term as governor, Carter appointed increased numbers of African-Americans to state boards and agencies; reorganized state government; and abolished some 300 offices, boards, and commissions. He instituted zero-based budgeting and the passage of a "sunshine law" to open government meetings to the public.

Carter started his run for U.S. president as soon as his gubernatorial term expired in January 1975. The country was still recovering from the Watergate scandals and the resignation of Richard NIXON, and Carter correctly perceived the country wanted a candidate who was not associated with Watergate, the VIETNAM WAR, or Washington, D.C.

Carter campaigned by promising never to lie to the people and to institute a government that was decent, compassionate, and responsible. Going to some extreme in personal honesty during the campaign, Carter even admitted he sometimes looked upon women with "lust in his heart," as he told *Playboy* magazine. Carter narrowly defeated Gerald FORD, and immediately after his inauguration he took symbolic actions to demonstrate his disdain for what he considered to be the imperial presidency: He walked to the White House, sold the presidential yacht, and eliminated other ceremonial trappings of the presidency.

Carter was best known for establishing human rights as a tenet of American foreign policy, frequently criticizing nations that violated basic human rights. One of his first challenges involved the U.S. role in Panama and he successfully concluded the negotiations to turn the canal over to Panama in 1999. Carter's greatest foreign policy success involved the Middle East.

In 1978, Carter invited ISRAEL's Prime Minister Menachem Begin and EGYPT's President Anwar Sadat to the presidential retreat at Camp David to discuss and to reach a peace agreement, successfully signing the accord in 1979. Carter also hoped to continue the policy of detente with the SOVIET UNION. He signed the SALT II treaty with the Soviets, which limited the deployment of nuclear missiles, but it was never ratified by the U.S. Senate, due to the Soviet invasion of AFGHANISTAN in 1979. After the invasion, it was clear the Senate would take no action on SALT II. In retaliation for the Soviet invasion, Carter ordered a boycott by U.S. athletes of the 1980 Moscow Summer Olympic Games.

Carter continued to expand American contacts with China that had begun under Nixon. In January 1979, he granted formal diplomatic recognition to the communist Peoples' Republic of China, but in doing so, he had to withdraw formal recognition of capitalist Taiwan as the official Chinese nation.

But one event overshadows the historical perspective of the Carter administration: the Iranian Hostage Crisis. By early 1979, internal opposition to the shah (king) of IRAN had become so virulent that he was forced to flee and turn over power. Shortly after his abdication, the leading Islamic cleric, Ayatollah Khomeini, returned from exile in Paris and seized the reigns of power. The shah, now in Mexico, was dying of cancer, and Carter allowed him entry to the United States for medical treatment. Previous U.S. support for the shah had already enraged Islamic fundamentalists in Iran, but Carter's action was the last straw.

In November 1979, rioting university students and fundamentalists overran the U.S. embassy in Iran's capital, Teheran, and seized the American embassy personnel. After months of fruitless negotiations to free the hostages, Carter, in an agonizing decision, approved a poorly planned secret military mission to free the hostages. The mission ended in an embarrassing public failure as two U.S. helicopters collided over the Iranian desert.

This military failure seemed to reinforce the widespread belief that Carter was a president who could not get things done. For the rest of his administration, Carter was focused on finding ways to free the hostages; they were finally freed as President Ronald REAGAN was giving his Inaugural Address in January 1981.

Carter had inherited an economy that was slowly emerging from recession; however, during his tenure in office, the economy worsened. The annual inflation rate went from 4.8 percent in 1976 to 12 percent in 1980; federal deficits in 1979 totaled $27.7 billion and for 1980, $59 billion; unemployment leveled off in 1980 at 7.7 percent. The increasingly depressing economic indicators only further fostered a despairing view of Carter's presidency.

Carter did have some success in awakening Americans to their dependence on Arab oil. After the 1970s OIL embargo by the ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES (OPEC), Carter advanced a long-term program designed to solve the energy problem by proposing limits on imported oil; instituting a gradual price decontrol on domestically produced oil; imposing a stringent program of conservation; and encouraging the development of alternate energy sources.

By July 1980, Carter's approval rating stood at 21 percent, and Senator Edward Kennedy challenged him for the Democratic nomination. While Kennedy was not successful, the challenge required Carter to spend precious energy and time campaigning against Kennedy. Carter received the Democratic nomination, but left the convention with a divided party and a low standing in the polls.

Meanwhile, the Republican candidate, Ronald Reagan, asked the question: "Are you better off today than you were four years ago?" Americans said no and overwhelmingly voted for Reagan in November 1980; he received 489 electoral votes to Carter's 49.

After leaving the White House, Carter returned to Georgia where he established the Carter Presidential Center, devoted to democratic and human-rights issues, at Emory University. Rehabilitating his public reputation over the subsequent decades, Carter acted as a diplomat-at-large, facilitating peace agreements at various hotspots around the globe. He also helped to found Habitat for Humanity, an organization working to provide houses for underprivileged people. For his Camp David peace accord between Egypt and Israel and other efforts, Carter was awarded the 2002 Nobel Peace Prize.

Always considered highly intelligent and moral, Carter nevertheless presided over a period of "malaise," or sickness, in the history of American capitalism.

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cash flow

"CASH IS KING" is a favored proclamation of market analysts and entrepreneurs. Cash, in that sense, refers not to that physical green substance we all treasure, but to cash receipts minus disbursements from a given asset or operation for a specified period.

Cash flow, for all intents and purposes, is the transfer of money in and out of a given operation. After all, it is the cash inflows and outflows that determine the solvency of a business.

In the strict accounting sense, cash flow is assessed in a company's statement of cash flows, wherein the analyst starts from accrual basis net income, adds non-cash (or "paper only") charges, such as depreciation or amortization, subtracts or adds changes in asset and liability accounts, then adds or subtracts payments and receipts related to investing and financing, and arrives at a cash basis net income. The end result of a cash flow statement is to emphasize the change in cash and cash equivalents for the year.

There are various components of an enterprise that affect cash flow, such as inventory, accounts receivable, accounts payable, and investment and financing activities undertaken by the enterprise. By performing a cash flow analysis on these components, business managers are able to more easily identify potential cash flow problems and find ways to improve it.

Cash flow is meant to capture all real cash outlays of the present, and analyzing this in detail helps an ENTREPRENEUR to determine the ability of his business to generate cash from its current operations. While cash flow is not a fashionable point of focus among the majority of business media, to financial professionals it is generally a valuable indicator of a company's immediate financial health and its ability to stay solvent.

Austrian economist Ludwig von MISES explained that both economic actors and entrepreneurs take specific actions and make choices that allow them to more accurately cope with an uncertain future and improve their state of satisfaction. On balance, entrepreneurs wish to alleviate business uncertainties as painlessly as possible. Typical uncertainties that an entrepreneur faces are expected costs, risk, return, and earning power.

A business enterprise succeeds in generating earning power when it uses cash to generate more cash. Earning power, in turn, increases an enterprise's monetary wealth so that it may pass on this wealth to its owners, and this denotes a healthy cash flow. The passing of wealth may be to a single proprietor or a series of partners, or in the case of the corporation, it may be shareholders.

This brings us to another aspect of the value of cash flow, and that is providing information to outside users such as investors or creditors. Both investors and creditors rely on healthy cash flows of an enterprise to which they have committed funds, because clearly, the motive for committing funds is to earn a favorable rate of return from the investment, whether the funds were exchanged for a percentage of ownership and dividends, or for an interest-bearing loan.

Whereas solvency issues and growing-concern problems can be hidden beneath vigorous revenues and satisfactory profits, the financial reporting of cash flows allows prospective investors, creditors, and business partners to assess the viability of the enterprise to meet their wealth-increasing objectives.

Cash flows are essential in this respect because cash-flow information can always be derived from accrual information, whereas the opposite is not true. However, there has been a long-standing battle on whether accounting principles should emphasize cash flows and de-emphasize income, or whether income is indeed the more valuable tool for measuring the results of enterprise operations. In 1971, the Accounting Principles Board (APB) underscored the importance of income as the primary measurement in its Opinion No. 19, and they were followed by a similar position taken by the SECURITIES AND EXCHANGE COMMISSION (SEC) in 1973.

Certainly, there are other ways in which cash flows are useful in a capitalist system. Cash-flow ratios are used to measure performance factors within the firm. A cash flow-to-assets ratio assesses the ability of the assets on hand to generate operating cash flows, and a cash flows-to-sales ratio gauges how well sales are generating cash flows.

Nevertheless, difficulties in presenting accurate cash flows are at hand in a time of market volatility. With the deceleration of financial markets in the early 2000s, arrival of RECESSION, and the focus on stock price levels, corporations have become more dependent on the immediate appearances presented by revenue and profit numbers because of the modern media's fixation on short-term presentations, as opposed to long-term prospects. Therefore, accounting principles, overall, are stretched to allow for more tolerant accounting policies and procedures.

In early 2003, Tyco International, amid a looming liquidity crisis, decided to consider changing its standards for calculating cash flow because the company was under a backlash from investors for excluding certain types of cash outlays that would seriously hinder its earnings outlook. The company had been excluding the expenses of buying customer accounts from independent dealers in its ADT security alarm business, and this, in turn, glossed over some otherwise apparent cash problems within the company. By March 2003, Tyco had filed a lawsuit against its own CHIEF FINANCIAL OFFICER.

In fact, how companies adhere to overall accounting principles was under heavy fire by regulatory agencies, financial analysts, the media, and the general public. In an era of competition-heavy industries and mega-corporate bankruptcies and failures, companies are constantly looking for ways to edge out a competitor in order to look more attractive to Wall Street analysts and potential investors. Cash flow is just one of the many new measurements of financial performance that is gaining ground in terms of significance. Cash is, indeed, king.

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central banks

A CENTRAL BANK IS the most powerful financial institution in a nation's economy, charged with critical monetary and financial responsibilities. Central banks issue currency, serve the banking needs of the national government, maintain foreign exchange reserves, support the banking system (including serving as a clearinghouse for bank drafts and as a "lender of last resort"), and perhaps most importantly, protect the value of the currency through monetary policy.

Examples of central banks include the FEDERAL RESERVE (UNITED STATES), the BANK OF ENGLAND (UNITED KINGDOM), the BANK OF JAPAN (JAPAN), and the recently created EUROPEAN CENTRAL BANK (EUROPEAN UNION).

Though some of these institutions have functioned for centuries (the Bank of England was established in 1694), their current roles and responsibilities are very different than those envisioned when they were initially created. As capitalism has evolved, the central bank has shifted its responsibilities to meet the changing monetary needs of the system.

In earlier times, our modern conception of a central bank as a stabilizing institution did not yet exist. Instead, the early central banks were established to meet the borrowing needs of national governments and existed mostly as private, profit-making institutions. Whether the central bank competed alongside other banks or precluded their emergence because of its monopoly power, the central bank was not viewed as an institution responsible for supporting nor monitoring other banks.

Modern banking operates on a principle known as "fractional reserve banking." Under this system banks accept currency deposits and make loans. Because banks use some of the deposited money for lending activities, they do not hold all the currency they receive. Consequently, the total amount of money in circulation is greater than the total amount of currency. This system functions effectively as long as depositors do not wish to withdraw all the funds at the same time. If such a situation occurs, the system experiences a "bank run" (when the rush to acquire currency happens at one institution) or a "bank panic" (when the currency mania infects many banks at the same time). In these situations banks desperately need access to additional currency to calm the fears of depositors.

Because bank runs have the potential to turn into bank panics, individual banks are understandably reluctant to part with currency reserves to assist other banks in trouble (not to mention a conflict of interest in assisting a competitor bank). As a consequence of repeated 19th-century bank panics, central banks took on the "lender of last resort" function. In this capacity, the central bank stands prepared to provide emergency currency reserves to any bank that faces a run. Although this role was not understood nor embraced when central banks competed with private banks, by the early 20th century this role was well established and central banks had emerged as banking "leaders" rather than competitors.

In the heyday of the international GOLD STANDARD (1870–1914), central banks, where they existed (experts identify only 18 such institutions in 1900), were responsible for maintaining the convertibility of a nation's currency into gold. Under normal conditions, this responsibility limited the issuance of currency. In times of war, financing government debt took precedence (generally requiring central banks to issue additional currency) and convertibility was suspended.

When the international gold standard was suspended at the outbreak of WORLD WAR I, the convertibility constraint disappeared. Despite several attempts to restore the gold standard and modified versions of the gold standard (including the BRETTON WOODS system that lasted into the early 1970s), monetary policy was forever changed in 1914.

During the early 20th century, central banks discovered the power of MONETARY POLICY and have been exercising this power to influence macroeconomic events ever since. Monetary policy refers to the manipulation of the money supply and interest rates to achieve macroeconomic objectives. Central banks typically have a variety of tools at their disposal to conduct monetary policy including: altering the interest rate banks pay when they borrow from the central bank (known as the discount rate in the United States and the bank rate in Great Britain); changing reserve requirements (i.e., the portion of bank depositors' funds that banks must hold in liquid reserves); and engaging in "open market operations" (i.e., buying or selling bonds to alter the amount of cash reserves in the banking system).

Monetary policy objectives generally focus on price stability (i.e., restricting inflation), unemployment, or economic growth. Experience has shown that these objectives often conflict with one another and therefore must be prioritized. Although the Great DEPRESSION of the 1930s raised awareness of prolonged unemployment as a concern, central banks have historically emphasized maintaining their currency's value, a role most compatible with the price stability objective.

No central bank today can ignore the needs and perceptions of financial markets. With stock market volatility the norm and global capital flows at historic highs, public statements made by central banks often invoke strong market reactions. With the power to calm public concerns or induce fear merely through a press conference, central banks have inherited additional power. Consequently, central banking in the 21st century extends beyond the realm of banking and monetary policy and necessarily encompasses the entire financial sector.

Two long-standing controversies deserve attention. For nearly 200 years economists have debated the merits of operating under precise rules (e.g., the gold standard) versus empowering central banks to exercise greater discretionary power. Though the current consensus favors an active role for the central bank, this controversy persists.

A second issue questions the degree of independence central banks should enjoy. Recent studies suggest greater freedom from political pressures results in greater central-bank success against inflation. Granting such freedom is controversial because the stakes are so high. Anti-inflation policies often extract high costs on non-financial sectors of the economy, and some have argued that these choices require the open discussion and debate we've come to expect in a democratic society.

Regardless of how these particular debates unfold, there can be no mistake that central banks have proven to be indispensable institutions in a capitalist economy.

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ChevronTexaco

FORMED BY THE 2001 merger of OIL giants Texaco and Chevron, the company is involved in all aspects of petroleum production including exploration, drilling, refining, distribution, and retailing, as well as energy technology and petrochemicals. The company has operations in over 180 countries.

With 2001 revenues exceeding $100 billion, ChevronTexaco is one of the five largest oil companies in the world and the second largest headquartered in the UNITED STATES. The merger completed 65 years of cooperation between the two companies that started with the formation in 1936 of CalTex, a joint venture uniting the companies' marketing and production facilities in the eastern hemisphere.

Texaco was founded as the Texas Fuel Company by "Buckskin Joe" Cullinan and Arnold Schlaet in 1901 in Beaumont, Texas. After huge oil discoveries in south Texas in 1903 saved the company from bankruptcy, the company became involved in refining and retailing. The company expanded and officially changed its name to Texaco in 1959.

Texaco acquired Getty Oil for $10 billion in 1984, doubling its oil and natural gas reserves. The purchase led to an extended legal battle with Houston-based Pennzoil, which also claimed an intent to purchase Getty. A series of court rulings unfavorable to Texaco led the company to file for bankruptcy in 1987. With company assets in excess of $35 billion at the time of filing, the bankruptcy was the nation's largest to that point and remains one of the 10 largest in U.S. history. Texaco ultimately paid a $3 billion settlement to Pennzoil. After emerging from bankruptcy, Texaco was involved in one of the more prominent racial discrimination lawsuits of the 1990s. In 1996, Texaco settled charges of bias with 1,500 current and former African-American employees for $176 million.

Chevron was founded in 1879 as the Pacific Coast Oil Company following oil discoveries in southern California. The company merged with John D. ROCKEFELLER's STANDARD OIL COMPANY in 1900 and changed its name to Standard Oil Company (California). In 1911, in *Standard Oil of New Jersey v. United States,* the Supreme Court ordered the breakup of the Standard Oil Company and Standard Oil (California) again became an independent company. The company began using a "chevron" emblem in 1931 and eventually adopted the logo as its corporate name in 1984. Chevron purchased Gulf Oil in 1984 for $13.2 billion in what was the largest corporate merger up to that time in order to save that company from corporate raiders.

Fortune magazine ranked ChevronTexaco as the 14th largest company in the world in 2002.

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Chicago Board of Trade

FOUNDED IN 1848, the Chicago Board of Trade (CBOT) is the world's oldest and largest futures and future-options exchange. It began modestly, trading only agricultural commodities, but has significantly grown in both absolute and relative terms over the years; it now also trades financial contracts and options on futures contracts, and has become one of the great capitalistic institutions in America.

A futures exchange differs from a STOCK EXCHANGE in that contracts are bought and sold in a futures exchange, while stocks are bought and sold in a stock exchange. Futures contracts are standardized with respect to quantity, quality, delivery time, and location but variable with respect to the price of a commodity that is established or "discovered" on the trading floor of the exchange. These contracts are referred to as "futures" since they stipulate an intent to accept (buy) or deliver (sell) an agreed quantity of a commodity at a future date.

Futures differ from options in that a futures contract obliges both a payment and a delivery, whereas an option contract provides a right to buy or sell rather than an obligation to buy and sell. These types of markets facilitate and enhance commodity trade and financial transactions since they bring together buyers and sellers; provide information; act as a clearinghouse between buyers and sellers; and can appreciably reduce levels of risk, risks that would otherwise increase cost and dissuade transactions between buyers and sellers.

It is no accident that this exchange developed in Chicago. The Midwestern city's crucial location relative to the Great Lakes gave it a natural transportation system that endowed it with distinct advantages as an emerging commercial center. Canals and railroads augmented these inherent cost advantages and from the mid-19th century onward the economic expansion of Chicago was unprecedented.

Comparative advantages in storage and freight rates, along with the distributive effects of the AMERICAN CIVIL WAR and other public policies and political unions inexorably linked the economic and financial development of New York City and Chicago. As an early hub of financial and commercial activity, it was predictable that New York would emerge as a financial center with a concentration of banks, underwriters, and insurance companies, stock and bond exchanges. Given its proximity to western lands, raw materials, and agricultural resources it was reasonable for Chicago to emerge as the center of trade in agricultural and LAND-based commodities. Chicago was ideally situated to utilize its hinterland markets, the forests and woodlands to its north and east and the prairies to its south and west. Internationally, the Crimean War (1853–56) disrupted world grain trade and as the demand for American grain rose, large shipments of wheat flowed through Chicago's markets. By the mid-1850s, Chicago was the world's leading grain and lumber market. Grains and flour, lumber, and hogs and other animal products were the initial commodities traded but, more important, Chicago's position as the nation's leading interior commercial center was enhanced by the formation and operation of the Chicago Board of Trade. Markets are significant, not merely because they assist in the exchange of commodities but they also help establish the institutional conditions that are the basis of modern economies. In 1859, the Illinois Legislature chartered the Board and granted it authority over the appointment of inspectors, for the certification of standards of quality and consistency, and to establish arbitration procedures.

Within just a few years, the grading system first adopted by the Chicago Board of Trade in 1856 became the standard for the world's grain markets. Once commodities could be effectively categorized by grade, such as various types of wheat, they could be more easily stored in grain elevators, and could be more efficiently shipped and distributed through a central market like Chicago. Buyers and sellers could now effectively trade commodities by the exchange of contracts and the use of receipts rather than the archaic methods of buyers inspecting and bidding on piles of grain in the street or based on samples brought to the trading floor. It was no longer necessary to match individual buyers and sellers and this resulted in fewer risks that lowered costs and encouraged more expansion.

Given the time lag from planting to harvesting, there are obvious reasons for farmers to hedge their risks and to be interested in a futures market, and thus the Chicago Board of Trade was a likely place to see the development of futures and options. But hedgers are not the only traders in a futures market; there are also speculators. Whereas hedgers are trying to shed risk, speculators hope to profit by the assumption of risk in a futures market. Futures were exchanged on the Chicago Board of Trade as early as the 1850s and had become a regular feature by the 1860s.

By the 1870s, the value of trade in futures greatly exceeded the monetary value of grain as a commodity. Futures contracts are also bought and sold multiple times before a delivery date and as such provide price-change protection. By trading in the price of grain as well as the commodity of grain the market allowed for diversification of risks and was more financially sophisticated. It also explains why the Chicago Board of Trade remains the world's pre-eminent grain and commodity trader long after Chicago had ceased to be a stacker of wheat and hog-butcher to the world.

Over the years, futures have been developed in a wide variety of commodities and financial instruments, including U.S. Treasury bond futures, U.S. Treasury Yield Curve Spread futures, and options on stocks. Futures contracts are even bought and sold on such things as air pollution and health insurance. The development of a futures market was a notable financial and economic innovation and has had a lasting and profound effect on capitalism.

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Chicago School

THE CHICAGO SCHOOL of economics describes a number of economists and theories that have been produced or influenced by the economics department of the University of Chicago. What is known as the First School of Chicago began in 1920 under the leadership of Frank KNIGHT and Jacob Viner. The Chicago School is most closely associated with conservative economic theory that promotes a free market with full competition and an emphasis on laissez-faire government nonintervention. The tendency of the Chicago school has been to question, analyze, and rebel against accepted theory and practice, and the school has a reputation for promoting cooperation among economists in all fields.

The influence of the Chicago School has been documented through nine Nobel Prizes in economics: Friedrich von HAYEK in 1974, Milton FRIEDMAN in 1976, Theodore SCHULTZ in 1979, George STIGLER in 1982, Merton MILLER in 1990, Ronald COASE in 1991, Gary BECKER in 1992, Robert FOGEL in 1993, and Robert LUCAS in 1995.

In the 1940s, the range of the economics department was expanded by the addition of agricultural and mathematical economists. While Chicago economists had some impact on government decision-making before the 1960s, it was Friedman's departure from traditional Chicago thinking that began the period of overt government influence. Under Friedman's influence, the Chicago School adopted the theory of MONETARISM, maintaining that controlling the money supply would provide inflation controls and result in stable economic growth. Therefore, all past government actions to control the economy were useless. For example, cutting interest rates and unemployment only provided temporary remedies. Friedman's political-economic model has been used in decision-making in Great Britain, ISRAEL, Latin American, and IRAN. In the United States, monetarist influences convinced the FEDERAL RESERVE to announce in 1979 that it would place more emphasis on controlling the money supply than on other methods of fiscal control. The policy was abandoned, however, in 1982 because of the "unusual behavior of money growth." Reaganomics and the deregulation of the 1980s remains the most substantial tribute to the economic theories of the Chicago School of Economics.

The Reagan landslide in 1984 seemed to suggest the unqualified success of the theories of the Chicago School of economics, particularly those of Friedman. However, the national debt was over $2 trillion, and the United States had a trade deficit of over $15 billion a month. As candidate George H.W. BUSH said in the 1980 election, "voodoo economics" comes with a price. On October 19, 1987, which came to be known as Black Monday, the stock market took a nosedive. It was a signal for greater economic woes ahead. Even though Bush won the 1988 election, the stage was set for a Democratic election in 1992. Friedman contended that Reagan's worst mistake was choosing Bush as his running mate in 1980. Friedman also maintained that the reason Reaganomics did not totally achieve its goals was that Reagan never went far enough in implementing deregulation.

Not everyone accepts the theories of the Chicago School of economics. Paul SAMUELSON, a Chicago graduate and a classmate of Friedman's argued that the Chicago theories they studied had already failed. Unlike Friedman, Samuelson endorsed liberal economic views, influencing generations of economic students with his popular textbook *Economics*. Samuelson and Friedman have carried on a public argument for years, going so far as to write competing columns for *Newsweek* and co-authoring a book on the responsibility of government. Philanthropist George Soros, who personally funded efforts to end socialism, accused laissez-faire capitalism of being a threat to democracy because of its disinclination to prepare for the realities of a new world order.

Robert Kuttner, coeditor of *An American Prospect,* argues that the financial aspect at the beginning of the 21st century has much in common with the outlook of the 1930s during the Great Depression. The collapse of investor confidence, the lack of government regulations, and corruption within the financial community have created problems that Kuttner believes Chicago School economics cannot solve. He contends that a major problem with the free market is that it cannot police itself. Writer Steve Kangas offers a scathing critique of the Chicago School of economics, maintaining that most economists today are "New Keynesians" rather than advocates of the Chicago School.

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chief executive officer

HEADING ALL OPERATIONS and decision-making within a firm, the chief executive officer (CEO) is at the top of the corporate hierarchy, though there could be a president of the corporation, who would technically out rank the CEO. In a publicly held firm, however, the CEO is an agent of the stockholders of a corporation. Shareholders are the owners of the firm, but are unable to run the company, so they need an employee or CEO to oversee the operations of the firm.

Monitoring the CEO can become a problem. For that reason, a BOARD OF DIRECTORS will normally be appointed by the stockholders to oversee the CEO. Traditionally, the CEO is not involved with day-to-day operations as much as he or she is involved with the overall strategy or vision of the firm. More than any other person in the company, it is the CEO who converts challenges into profit opportunities. As part of the strategic plan, the CEO must allocate resources among various divisions within the firm. He or she is ultimately responsible for mergers and acquisitions. The CEO uses his or her knowledge of finance, marketing, globalization, and technology to facilitate corporate strategy. The CEO must use interpersonal skills and knowledge of incentives and corporate culture to motivate employees to follow through on strategy. Not only does the CEO need to be a strategist, but Wall Street seems to favor CEOs who have strong capabilities in raising the value of the company stock. At times, this requirement is met with missionary zeal when "selling" the company to the stock analysts.

It is important to recognize that the job duties that are attached to any job title can vary significantly from firm to firm. The CEO's job is normally very similar to the president of the firm and many firms have only one or the other. In firms with both a president and a CEO, the CEO's job description may by similar to a chief of operations (COO). Only rarely would a firm have all three. The CEO's job description is, however, different from the CHIEF FINANCIAL OFFICER who is responsible for accounting management, including financial reporting and fraud protection, management of the debt-to-equity ratio, and budgeting.

Occasionally, a CEO's salary becomes a public issue. Stockholders and reporters sometimes question whether or not CEOs deserve multimillion dollar salaries and incentive compensation or bonuses. However, many boards of directors feel that high pay for CEOs serves two functions; the first is that it is very difficult to monitor a CEO's work, and the second is to motivate upper-middle management.

Neither the board of directors nor the stockholders can easily monitor the CEO all of the time, so it is relatively easy for a CEO to shirk his or her responsibility at the margin. If the board of directors or shareholders detect shirking on the part of the CEO, he or she will be fired and his or her next best job offer will have a much lower salary. Thus, the thinking goes, by offering high salaries, CEOs become reticent to lose their jobs, thus increasing the cost of shirking.

High salaries also serve as an incentive for vice presidents. By the time managers become vice presidents, they realize that the chance of promotion is becoming exceedingly small. While the CEO is directly supervising vice presidents, and doing so much more closely than the board of directors can monitor the CEO, there is still an opportunity to shirk. A very high salary for the CEO forces the vice presidents into a tournament where one of them will make tremendous amounts of money, thus encouraging all vice presidents to exert maximum output.

It should be noted that these are the theoretical reasons for high CEO pay. In practice, boards of directors are not very independent. Often they are made up of people who were recommended by the CEO or who are themselves CEOs in other firms, with little or no incentive to closely monitor top management. Empirical research has found that the less independent the board is, the more the CEO makes. Furthermore, high CEO salary may not encourage maximum effort by vice presidents because shareholders can just as often pick an external candidate to be the next CEO. [Editor's Note: By the early 2000s, additional concerns have arisen about whether high-salaried CEOs should have their compensation tied directly to the performance of their respective companies.]

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chief financial officer

THE CHIEF FINANCIAL OFFICER (CFO) is typically the executive officer in charge of all financial matters within a business or organization. Exact duties and titles may differ within firms. In larger firms, the CFO may oversee both the treasurer and the controller. In smaller firms the CFO will often also perform duties of the treasurer and controller. Overall, the CFO is responsible for questions relating to capital budgeting, capital structure, net working capital, accounting, and tax planning. The CFO may also be called the vice president of finance. Typically, she will report directly to the president or CHIEF EXECUTIVE OFFICER (CEO) and make direct reports to the BOARD OF DIRECTORS.

Specifically, the CFO oversees capital budgeting decisions or decisions relating to the purchase or lease of fixed or long-term assets. She oversees analysis of capital structure or decisions relating to the way that the firm finances projects, whether through debt or equity. Net working capital analysis refers to the ways that firm manages cash accounts, collects payments, pays suppliers, and deals with inventory. She performs detailed profitability analyses and sales and profitability forecasts, oversees the monthly financial close, including preparation of full financial statements in accordance with GENERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP).

Developing, implementing, and managing appropriate financial-planning and control procedures are also part of the CFO's responsibilities. Often in larger firms these tasks are assigned to the controller, with the CFO acting as the final approver. She directs preparation of budgets, reviews budget proposals, and prepares necessary supporting documentation and justification including those documents that must be filed with the SECURITIES AND EXCHANGE COMMISSION (SEC) or other regulatory agency. The CFO manages the day-to-day activities within the accounting, finance, tax, and pension fund departments while helping to establish a financial team with other senior managers in the organization.

The CFO needs to have more than just financial analysis skills. She manages a large number of skilled professionals, so she needs to be able to direct other professionals and employees. She needs leadership abilities. In a publicly traded firm, she also needs to be able to deal with Wall Street analysts, not only answering their questions but also selling them on the value of the stock. The increased load of information, whether it be purely financial data or reporting requirements for the SEC, has also required CFOs to have strong information-technology backgrounds.

As an integral member of senior management, the CFO is also responsible for helping with strategy decisions. This is an increasingly important part of the job description, and as such, it requires a broad knowledge of the company and the industry in addition to the technical financial knowledge required for the position. One strategic aspect of the CFO's position is to implement a set of financial incentives and methods for measuring employee performance.

For a long time when CFOs worried about fraud and accountability, they worried about suppliers, customers, and employees defrauding the company. Currently, there is much more emphasis on senior management defrauding stockholders and even employees. Fraudulent accounting practices, such as those used by ENRON, have shifted the spotlight. Legislation, such as the Sarbanes-Oxley bill, has lowered the standard of proof that investigators will need in order to prosecute and convict corporate officers of misdeeds. The Department of Justice, the Federal Bureau of Investigation, and the SEC can bring criminal charges (and have done so) against executives who participate in fraud, or who should have known that fraud was occurring.

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Chile

CHILE WAS UNATTRACTIVE to the first configuration of international capitalism, MERCANTILISM. The long and thin mountainous coastal Latin American country lacked gold, silver, and docile indigenous peoples useful for cheap labor. However, with the INDUSTRIAL

REVOLUTION, the abundant copper and steel resources attracted investors.

Nominally independent since 1810, Chile's official independence began with the rest of Latin America in the 1820s. Although dominated by *caudillos* and dictators, liberal constitutions, stability and a social contract gradually evolved, making the state especially receptive to democracy in the late 19th century. There was no military coup in Chile from the early 1930s through 1973, making it one of the very few stable and democratic polities of turbulent Latin America. In 1970, a socialist, Salvador Allende who was unsuccessful in three previous elections, won a plurality of popular votes and endorsement of the Chilean Congress to become president. His most important campaign promise was to use Chilean resources to benefit Chileans. Thus, Allende's first actions as president were to nationalize foreign corporations, which in the case of Anaconda and Kennicott copper had turned an $80 million investment into a $4 billion return for the North American owners. He also established redistributive policies and price controls. These proved very distressing to international capital.

Henry Kissinger, U.S. Secretary of State at the time, was quoted, "I don't see why we need to stand by and watch a country go communist because of the irresponsibility of its own people." The ambassador to Chile, Edward Korry, said, "Not a nut or a bolt [will] be allowed to reach Chile under Allende." Capital starvation from international organizations under U.S. pressure, assassinations of Chilean nationalist generals, and support for pro-business factions that orchestrated a number of strikes to bring the country to a standstill, set the stage for a coup and the alleged suicide of Allende on September 11, 1973. After the takeover by a military junta, the commander of Chilean armed forces, Augusto Pinochet was appointed president beginning nearly two decades of military rule. U.S.-based multinational companies reopened, labor discipline was renewed (often by brutal repression of unions), and foreign investors were encouraged by very favorable terms.

Since that time, the class analysis of Chile's role and governance in the world, has demonstrated consistently contradictory interpretations. Some Chilean elite and members of the international financial community, suggest that Pinochet's police state, advised by University of Chicago economists, provided labor peace, rid the country of the communist plague, brought stability, and created the environment to make Chile an exemplar neo-liberal society in Latin America. To the rich and middle classes, the human rights abuses of the Pinochet regime were greatly exaggerated. However, for nationalists, unionists and human rights activists, the brutal dictatorship between 1973 and 1990 was the equivalent of dark ages, with massive repression and thousands of extra-judicial killings, privatization at the expense of the Chilean people, and management for the benefit of international capital.

Despite attempts to gain immunity from prosecution, the Pinochet regime began to face criticism and growing unrest in the late 1980s. The military stayed in the background or returned to posts in the civilian-elected governments. While Pinochet, who had named himself Senator for Life, was on a medical visit to Britain in 1998, he was arrested and held by a Spanish judge for crimes against humanity. That act of international conscience, brought the human rights community back to life in Chile, and although Pinochet was never jailed, he is no longer part of public conversation.

There is substantial criticism of Chile's privatized Social Security system, and little praise in Chile for the neo-liberal economic model. However, many Western economists think that Chile's economy makes it a logical target for expansion of the NORTH AMERICA FREE TRADE AGREEMENT (NAFTA), an option that was apparently negotiated in January 2003, behind closed doors. Chile had a GROSS DOMESTIC PRODUCT (GDP) of $153 billion in 2001, with a per capita purchasing power of $10,000.

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China

THE LARGEST COUNTRY in east Asia, China borders NORTH KOREA, RUSSIA, Mongolia, Kazakhstan, Kyrgyzstan, Tajikstan, AFGHANISTAN, PAKISTAN, INDIA, Nepal, Bhutan, Burma, Laos, and VIETNAM. China has a long coastline of 11,250 miles. Starting from the east coast, China's vast land of 3,720,000 square miles rises gradually westward.

The highest point of the world, Mount Qomolangma or Mount Everest, is located on the border between China and Nepal. About one-third of its land contains plains and basins, while mountains, plateaus, and deserts comprise the other two-thirds. The two famous rivers are the Yellow River and the Yangzi River and its major lakes include Poyang Lake, Dongting Lake, and Qinghai Lake. Most of China is in the temperate and subtropical zones, with four distinctive seasons. Its most southern part reaches into the tropical zone. Monsoon climate of much rain and humidity dominates most of China's eastern part. While its northwest has dry climate, it is cold on the Tibetan and Qinghai plateaus.

The Chinese nation is made of 56 nationalities or ethnic groups. While Han people make up more than 90 percent of the population, its major minority ethnic groups such as Mongolians, Tibetans, Weiwuers (Uygurs), Zhuangs, and Miaos number in millions. Many of the minority ethnic groups observe their own customs, have their own religions and customs, and speak their own languages.

Archaeological findings show that anthropoid ape and early humans lived in today's China millions of years ago. About half a million years ago, Beijing man (*Sinanthropus pekinensis*) used fire and created tools outside Beijing, today's capital of China. According to archaeological findings, around 4,000 years ago people were already carving inscriptions on bones or tortoise shells. These inscriptions are the beginnings of the Chinese written characters.

Confucianism is the most important school of thought supporting Chinese culture. Kongfuzi, or Confucius, from whom Confucianism derives, lived from 551 B.C.E. to 479 B.C.E. Confucius was among the many great thinkers of the time period; most of his ideas are in *The Analects*, a recording of conversations he had with his students. Confucius focused on social order and believed humanity was the highest code of moral conduct. To achieve humanity, man should "subdue one's self and return to propriety." Confucius was an educator; his students spread and developed his ideas into Confucianism. Most rulers in dynastic China promoted Confucianism.

Also important to Chinese culture and thought are Taoism and Buddhism. Taoism theorizes that the universe is a unity of opposites such as *yin* and *yang*. Because this is the most essential law of the universe, human beings should understand and obey it, according to Taoism. Buddhism was introduced into China about 2,000 years ago. Many dynastic rulers promoted it; some forbade it. Buddhism has experienced expansion and transformation in China. Its principal idea of escaping from all sufferings in life to achieve nirvana has attracted many Chinese believers since its introduction into China.

Early societies. China's long history underwent primitive and SLAVERY societies and in 211 B.C.E., it became a unified feudal system under Qin Shihuang, Qin the Beginning Emperor. Under Emperor Qin, China started a system of prefectures and counties for administrative purposes and standardized currency, weights and measures, gauges, and the written characters. The feudal society, ruled by an emperor and dominated by feudal lords and landlords, survived in China for more than 2,000 years. Feudal dynasties were usually overthrown by peasant uprisings and powers shifted from one emperor to another. Major dynasties include Qin, Han, Sui, Tang, Song, Yuan, Ming, and Qing.

The Great Wall of China, built to stop invaders, runs 6,700 kilometers east to west across five provinces.

The early Chinese civilization made many contributions to mankind. Chinese people invented the compass, paper-making, block printing, and gunpowder. The Great Wall, which was built to defend China from invaders, is one of the greatest man-made projects in the world. The Grand Canal, which is 1,120 miles long, remains the world's longest man-made water transportation route.

China was a self-sufficient agricultural country throughout its feudal period. Although trade with other countries, especially trade on the famous Silk Road, was developed very early, foreign trade and domestic commerce did not play a significant role in China's economic life.

The arrival of European capitalists. In the 18th and particularly the 19th century, capitalists from Europe and America arrived in China to exploit its market and raw materials. In 1839, having made opium trade illegal, the Chinese Emperor sent Commissioner Lin Zexu to Guangzhou, where most of the opium entered, to stop the illegal opium trade. Lin destroyed the opium that was already inside China. Britain, the main opium trader, launched a war on China.

The defeated China was forced by Britain to sign the Nanjing Treaty in 1842. According to the Treaty and a supplementary Treaty of the Bogue signed in 1843, China had to open five seaports to British trade, pay for the destroyed opium as well as Britain's military expenses for the war, and award HONG KONG to Britain. Further China had to compromise on its sovereignty by allowing extraterritorial rights for British subjects (exemption from Chinese laws), stationing of British troops, and permitting British control of the rates of import and export duties. After the Nanjing Treaty, the rest of Europe, RUSSIA, the UNITED STATES, and Japan obtained similar treaties. By the end of the 19th century, China was carved into many spheres of influence controlled by various foreign powers.

Defeat at the hands of Western imperialism led to the Hundred-Days Reform. Kang Youwei, a Confucian scholar, and other reform-minded Chinese intellectuals succeeded in persuading the Emperor to carry out a comprehensive reform. In a hundred days from June to September 1898, Emperor Guang Xu issued reform edicts including restructuring government institutions, changing criteria in civil service exams, establishing modern schools, promoting new ways for economic development, and encouraging international cultural exchanges. The reform met with tremendous opposition from officials in the central and provincial administrations. It was finally suppressed by the Empress Dowager Ci Xi when she put the Emperor under house arrest, executed some of the reform leaders, and took control of the government.

Groundwork of communism. The failure of the reform movement and the continued worsening of conditions opened ways for more radical changes. The Revolution of 1911 led by Sun Yat-sen ended the Qing dynasty. Sun Yat-sen, who had received Western education, established the Republic of China and ended the centuries-long monarchical system. Burdened by external encroachment and internal strife, the republic did not bring peace or prosperity to Chinese people or make China a strong country. In 1915, Japan made the notorious Twenty-One Demands, which, if accepted totally, would have made China Japan's protectorate. In 1916, Yuan Shikai, president of the republic, attempted to restore a monarchical system, which led to a civil war. After Yuan died in 1916, power fell into the hands of warlords and China verged on national disintegration. In 1919, the western powers at the Paris Peace Conference confirmed Japan's claim over GERMANY's former holdings in China's Shandong Province.

Intellectuals in China started to look internally and externally for answers to their nation's problems. The result was the New Culture Movement. Leaders of the movement proposed reforms in the Chinese written language in order to make it more accessible to ordinary people and called upon young people to rebel against the old and rotten elements of Chinese society and choose fresh and practical elements, such as democracy and science, from other cultures and societies.

The New Culture Movement received tremendous impetus on May 4, 1919, when students in Beijing demonstrated against the Paris Peace Conference's decision concerning Shandong. After that, the initiative became known as the May Fourth Movement, regarded by some scholars as the "Chinese Enlightenment" because it aroused patriotism and mobilized ordinary people to participate in politics concerning the future of China.

The intense patriotism aroused by the May Fourth Movement and the awakening of ordinary people paved the way for the rise of the Chinese Communist Party (CCP). On July 1, 1921, a dozen intellectuals, all of whom were active participants in the New Culture and May Fourth Movements, representing some 50 communities throughout China, met in Shanghai and officially founded the party. The party based its theory on Marxism and looked to Vladimir LENIN's successful revolution in Russia as a practical example. Its immediate goals included ending warlord control and imperialist oppression and creating a true, independent republic in China.

In 1922, Sun Yat-sen's Guomindang (GMD) and the CCP joined together in a revolution against the warlord government. In 1925, Yat-sen died. When the revolution was about to succeed, Chiang Kai-shek, commander of the GMD forces, staged a coup against the CCP in mid-1927, killing its members and sympathizers. By 1928, Chiang had defeated the warlords and his party, the GMD, became the ruling party in China. The CCP was driven underground and to the rural areas. In the rural, mountainous regions of southern China, the CCP relied on the support of poor peasants, organized its own army, the Red Army, to resist Chiang's effort to exterminate it, and carried out land reforms in the areas it occupied. In order to escape from Chiang's encirclement and extermination campaigns and to organize people in north China in a resistance movement against Japanese aggression, the CCP and its Red Army made the famous Long March from 1934 to 1936. The war between the central government, led by Chiang, and the CCP lasted a decade.

In 1937, Japan, which had occupied China's northeast for six years, launched a full-fledged war against China. After having focused on exterminating the CCP while tolerating Japanese aggression, Chiang Kai-shek finally began to resist the invasion. His government recognized CCP's legal status. The CCP Army fought against Japanese troops and liberated large occupied areas, while the larger government forces confronted Japanese advances.

The CCP and its army had grown a great deal during the war. In 1945, The CCP had a membership of 1,200,000 and an armed force of 900,000. In the same year, Mao Zedong, chairman of the CCP, delivered a speech proposing a coalition government in China. This coalition government, Mao said, should allow equal representation from all parties and factions and should lead the Chinese people in winning the war against Japan and then in building an "independent, free, democratic, unified, and strong" China.

After Japan surrendered, Chiang Kai-shek and Mao met to talk about forming a post-war government. Even during the talks, government forces attacked CCP forces. Chiang's military superiority of five-to-one over the CCP at the time made him believe that he could easily get rid of the communists.

The Chinese Civil War. A civil war broke out in China in 1946. The CCP and its army, now called the People's Liberation Army, took deep roots among peasants, carried out land reforms in the areas they controlled, and, with its platform for a new China, won wide support. The government, on the other hand, refused any social and political reforms, mismanaged an economy that was running wild with inflation and destroying the livelihood of millions, and was infested with wide-scale corruption. The government used murders and random arrests for suppression. By 1949, the CCP had won the war on the mainland. Chiang Kai-shek and his followers retreated to the island of TAIWAN.

Mao Zedong declared the founding of the People's Republic of China (PRC) on October 1, 1949. Land reform was carried out in the countryside, materializing the ideal of land to the tiller. Lack of farming tools such as draft animals and ploughs prompted peasants to organize mutual aid groups in order to share farm tools. Such organization was encouraged by the government and, by the end of 1957, the rural areas had become collective entities in which peasants worked and shared harvests together.

In urban areas, at first, the state made investments into private enterprises and shared profits and losses. Such joint ownership guaranteed state income, fair WAGEs and benefits for WORKERs, and promoted interests of business owners. But from 1956 on, the state bought out private businesses and paid owners annual fixed dividends based on the shares they owned at the time of the purchase.

The CCP's success in China met with military encirclement, political containment, and economic blockade from the United States and some of its allies. The United States regarded Chiang's regime on Taiwan as the legitimate government representing all China until the 1970s. China and the SOVIET UNION were allies in the 1950s but communist ideological disputes developed. In the late 1960s, China and the Soviet Union sporadically confronted each other. China followed and promoted the Five Principles of Peaceful Coexistence and established diplomatic relations with countries around the world.

In 1958, in order to push for fast industrialization and economic development, the CCP launched the Great Leap Forward, a program aimed at extremely high goals. Peasants were organized into communes, huge dining rooms were set up to save human resources from individual cooking, and primitive furnaces were put up to produce steel. Huge amounts of material and human resources were wasted. Officials at various levels inflated reports of yields. Although such radical programs did not last very long, the result, coupled with three years (1959–61) of natural disasters of droughts and floods, was widespread starvation and famine.

Revolution and reform. In 1966, Mao launched the Cultural Revolution. This was a mass campaign aimed at getting rid of all party officials who had supported capitalist development and at eradicating "non-proletarian ideology" in society. Violent conflicts erupted among different political factions. Party officials at all levels, managers and supervisors, former landowners, former business owners, and intellectuals were targets of the mass campaign.

Existing government operations at all levels were destroyed and new ones were put into place; large numbers of innocent people were tortured and persecuted in various ways; and some people with ambitions and hungry for power occupied government positions. Mao was deified and regarded as the embodiment of truth. Anybody who spoke out against him or his policies was criticized or condemned. The massive accusation and condemnation and factional violence subsided after the first few years, but the repressive atmosphere continued until 1976.

The Cultural Revolution caused economic stagnation and popular discontent. Mao died in 1976. The Revolution came to an end when the radicals in the Party Central Committee, known as the Gang of Four, were arrested. In 1978, the CCP introduced a comprehensive program of reforms. In rural areas, a contract system gradually replaced the collective system. Under the contract system, farmers signed contracts with local governments, managed the land themselves, assumed full responsibility for profits or losses, and, of course, paid taxes to the state.

The system tremendously increased the efficiency of agricultural production, benefiting the farmer as well as the state. In urban areas, four special economic zones along the southeast coast were established at the beginning of the reforms. In these zones, market economy was practiced and foreign investments were welcomed. The market economy was successful in the four zones and has now been adopted in the entire country.

In today's China, there are state-owned businesses, private businesses, businesses jointly owned by Chinese and foreign capitalists, businesses owned solely by foreign capitalists, and businesses owned by shareholders.

Since the beginning of the economic reforms, China's GROSS DOMESTIC PRODUCT (GDP) has been growing at an average annual rate of more than 9 percent, one of the fastest growing countries in the world. In 2001, its total GDP was $6 trillion. China's economy is the sixth largest in the world. Yet, with a population of 1.28 billion in 2001, China's GDP per person is only about $900, making it still one of the developing countries in the world.

By the late 1980s, widespread abuse of reform policies by party and government officials led to demands for more political reforms, culminating in the 1989 Tiananmen Square demonstrations that were finally suppressed by the government.

The political process is becoming somewhat more open. Efforts are being made to strengthen and improve the legal system. According to China's Constitution, the CCP is the ruling party. Citizens in China elect representatives, who form people's congresses at the city, the county, the province, and the national levels. These people's congresses, in turn, make laws and elect and dismiss government officials. At the local level, residents directly elect and dismiss officials of village and town governments.

In 1997 and 1999, China respectively recovered its sovereign control over Hong Kong and Macao, territories previously controlled by Britain and Portugal, respectively. According to China's Basic Laws, Hong Kong and Macao are special administrative regions, which continue to practice capitalism. China is a member of the UNITED NATIONS Security Council and has recently joined the WORLD TRADE ORGANIZATION.

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China National Petroleum

THE CHINA NATIONAL Petroleum Corporation (CNPC) is the People's Republic of China's (PRC) largest OIL concern, with 1.5 million employees. It focuses on the exploration and production of oil and gas, controlling all oil and gas fields, refineries, and petrochemical enterprises in 12 provinces, autonomous regions, and municipalities in northern and western China.

Ranked as the 81st largest company in the world by *Fortune* magazine, CNPC reported revenues of $41.5 billion in 2001.Originating in the early days of the founding of communist China, CNPC's roots can be traced to a 1950 Sino-Soviet agreement to develop Xinjiang's Dushanzi Oil Mines and the creation of the Ministry of Petroleum Industry (MOPI) in 1955.

The CNPC replaced MOPI in 1988, pursuant to the PRC's efforts to organize the petroleum industry and attract capital and technology through cooperative ventures with foreign companies. The CNPC's global search for oil began in the 1990s, when it acquired oilfield rights in THAILAND, CANADA, Papua New Guinea, the Muglad Basin, VENEZUELA, and Kazakhstan, expanding in 1999 with the completion of its first long-distance pipeline linking the Muglad oil field to Port Sudan.

In 2000, PetroChina, CNPC's main subsidiary, was listed on the New York and Hong Kong stock markets; however, controversy over human rights and environmental violations in the Sudan and Tibet led to disappointing results.

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Citigroup

CITIGROUP IS A FINANCIAL services company operating in over 100 countries. Its formation in 1998 through the merger of Citibank, Traveler's Insurance Group, and the investment bank Salomon Smith Barney combined commercial, insurance and investment services, a watershed in the history of the U.S. banking industry.

Founded in 1812, the City Bank of New York began as an agent in the trade of cotton, sugar, metals, and coal. Reorganized in 1865 as the National City Bank of New York, the bank performed certain official functions, such as distribution of the national currency and sales of government bonds while it continued to provide credit to merchants. By 1894, the National City Bank had $30 million in assets, the largest bank in the UNITED STATES.

From 1897–1933 the bank expanded in two dimensions. First, National City pioneered the creation of a network of foreign subsidiaries. Passage of the FEDERAL RESERVE Act (1913), opening of National City branches throughout Latin America (1914), and acquisition of the International Banking Corporation (1915) all helped to make the National City Bank the leading organizer of U.S. capital investment in Latin America and Asia. As a result, by 1919 the bank had over $1 billion in assets. Second, National City Bank expanded its services, moving from its main business of commercial banking into personal banking and investment services. This effort to diversify from a commercial bank into an integrated financial services company met resistance from government regulators. In 1933, the Glass-Steagall Act radically restructured the U.S. banking industry, separating commercial banking from investment services and insurance.

From 1933–1998, the two themes of overseas expansion and product diversification dominated the bank's activities. By 1975, foreign loans represented two-thirds of the bank's overall business. The bank continuously sought to avoid the restrictions of Glass-Steagall, and in 1974 created Citicorp, a non-banking holding company. Citibank also introduced certificates of deposit in 1961 and automated teller machines in the 1970s to secure customers and to help fund its ever-larger portfolio of loans.

After the repeal of the Glass-Steagall Act in 1999, the push for diversification culminated in the merger of Citibank with Travelers' Insurance Group and Salomon Smith Barney, creating the first integrated financial services company in modern U.S. banking history. In 2002, Citigroup ranked as the 11th largest company in the world with $112 billion in revenue.

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The Citicorp building is one of Manhattan's skyline icons of business and capitalism.

Clark, John Bates (1847–1938)

J.B. CLARK WAS arguably the first American economist to gain an international reputation, due in large part to his debate with Eugen von BÖHM-BAWERK over the nature of capital and interest. Clark exerted a profound influence on modern microeconomics by his unification of the theories of production and distribution, and by his rigorous analysis of static equilibria. He taught at Carleton University (where one of his students was Thorstein VEBLEN) and Smith and Amherst Colleges before settling in for a long career at Columbia University.

Prior to Clark's writings, John Stuart MILL had insisted that production and distribution were two distinct spheres. Whereas production was determined by technological factors similar to laws of nature, after things were produced they could be distributed however people chose. Understanding how this happened required one to study laws, customs, and institutions.

In *The Distribution of Wealth,* Clark used marginal productivity to show in EQUILIBRIUM, under competitive conditions, the value of marginal product of the last unit of LABOR hired. By analogy the same is true for rent, the payment for the productive services of CAPITAL. Clark saw LAND as a form of capital. Thus the payments to land, labor, and capital were determined by the value of their marginal productivity, or distribution and production were part of the same theory. Clark's analysis remains the backbone of the theory of factor demands found in most introductory and intermediate MICROECONOMICS texts.

Clark thought this finding exonerated capitalism from the charge of exploitation, since it showed that workers were paid exactly the value of what they produced. For this reason, Clark acquired a long-standing reputation as an apologist for capitalism.

Clark and Böhm-Bawerk had a 20-year debate centered on the nature of capital. Clark insisted that a distinction must be made between "pure" capital and capital goods, and that both concepts belonged in economic analysis. Pure capital is a permanent fund of value. Capital goods have finite lives. Pure capital is perfectly mobile. For example, the capital that used to be invested in the New England whale industry was later embodied in the textile mills. Böhm-Bawerk called Clark's pure capital a "mystical conception" and an "elegant abstraction."

Clark's pure capital appears to have been a stylized representation of the normal business practice of maintaining the value of capital. Whatever the justification, making capital permanent was necessary for capital to take a place in a static equilibrium model. There can be no equilibrium when capital is changing. Having banished time from his model, Clark, in a flat contradiction of Böhm-Bawerk, denied that time had anything to do with interest.

More profoundly, Clark challenged one of the premises that had been the basis of capital theory: Rather than being needed to provide advances required by the interval between the application of labor and its result, capital served to *synchronize* production so that labor was in fact paid out of current output.

The Clark *vs*. Böhm-Bawerk debate was never satisfactorily resolved, erupting again in the 1930s. Related issues were part of arguments raging between economists in Cambridge, England, and Cambridge, Massachusetts, in the 1950s and 1960s.

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class structure

MOST PEOPLE VIEW economic class as defined by income and wealth levels. According to this way of thinking, there are lower, middle, and upper classes, or alternatively, the poor, the middle class, and the rich. Members of these economic classes do not necessarily have any functional economic interests in common, but rather have lifestyles and material interests in common.

The three classes differ first by the annual incomes of their members. In the UNITED STATES there is an official federal government poverty level that can be used as the line between the poor and the (lower) middle class. In 2003, this level was set at $18,400 for a family of four. This means that any member of a family whose annual income was less than $18,400 was living in poverty, and thus was a member of the lower class (poor). Demarcating the middle class is not so easy. Certainly, the lower income limit would be $18,400, but what the upper limit would be is unclear. Some people would put it at $200,000, some people at $500,000, some even higher. Given that there is no generally accepted definition of the maximum income for the middle class, the range for the upper limit is quite large. At some income level, however, the upper class (rich) begins. As for the upper boundary for this class, the sky is the limit.

The second difference between the classes is net wealth, defined as the value of the total assets held by a household minus their debts. What is interesting to note about wealth is that a significant proportion (18 percent) of households have no wealth. Those with no wealth would include the poor, as well as the lower end of the middle class. The rest of the middle class would have minimal to fairly high levels of wealth, perhaps up to $900,000. Wealth really begins to accumulate, however, with the rich (after all, they are considered wealthy). As with income, the upper boundary for wealth is fantastical; for a single family it is in the billions of dollars.

When class is viewed in this tripartite fashion, the middle class is by far the largest of the three in the contemporary United States. Those classified as poor are about 13 percent of the population, while those who are rich constitute about 1 percent or 2 percent, depending on where the upper income limit for the middle class is set. That leaves about 85 percent of the population who would be considered middle class. By this standard, the United States is quite homogeneous by class.

In political economy, economic class is looked at in a different way. Rather than relating to income or wealth, a class is defined by its ownership, or lack thereof, of the means of production. The means of production are defined as the tools, machinery, buildings and all other non-human material with which labor works to produce output. In a capitalist economic system these means of production are privately owned; they are (primarily) not owned by the government. There is a connection between this conception of class and our first conception, since there is a correlation between class as now defined and income and wealth levels. Members of the owning class will, on average, be significantly richer than members of the non-owning class. Certainly there are exceptions to this, with some non-owners being quite wealthy, and some owners not having all that much, but the difference between the average material standards of living of the two classes is large and noticeable.

Those who own the means of production constitute the capitalist class. Through their ownership they are able to control production, as well as control workers, those who do not own the means of production. This latter group, the working class (proletariat), owning nothing but their ability to work must labor for capitalists in order to survive. Since they do not own anything with which to produce, workers must sell their ability to work to someone else—the capitalist—and subject themselves to the discipline of the production process.

These two classes—the working class and the capitalists—are considered in political economy to be the two major classes within capitalism. Each exists only as a counterpart to the other. By defining class in relation to the ownership of the means of production, it can be seen that the two classes are fundamentally antagonistic. Capitalists will want workers to produce as much as possible and as cheaply as possible. Workers, on the other hand, will resist being driven too hard, and will want to be paid as much as possible. Thus, there is an inherent conflict between the two classes over control of the production process and over distribution of income.

Divisions within class divisions. In addition to the basic division between classes, there also exist divisions within each class. For example, within the capitalist class there may be conflicts that arise between financial institutions, which lend money, and industrial capitalists who use this borrowed money for production—the former would want to receive high interest payments, while the latter would want interest payments to be low. Similarly, within the working class, interests may differ between skilled and unskilled workers, or between workers and managers. Thus, within the overall division of society into two classes, there is a further division of the classes into various parts.

It is the essence of class that society is not seen as a collection of atomized individuals. Their group identification—in this case defined by their ownership relation to the means of production—influences and informs their interactions in society. They will differ as individuals, of course, but they will have important similarities as workers or capitalists, especially with regard to their economic relations in society.

In addition to class, other social groups can be identified as well. For example, individuals may be members of gender, racial, ethnic, and religious groups that are important to their identity as social beings. While these intersect with class in a complex way, and may influence how class is experienced, it is important to note that they are distinct from, and have a different economic status than, class. All of these social formations combine into a complex social structure in which individuals come together in overlapping groups, acting not as isolated economic agents, but as members of various social groups.

Economic class is considered important in political economy because it is thought that economic interests primarily lie with this particular grouping. Because of this shared economic consciousness, strong political-economic bonds should be formed in opposition to the other class: class "distinguish[es] the groups whose antagonisms define the basic historical processes," explains Leszek Kolakowski. Or, as Karl MARX and Friedrich ENGELS put it in a famous passage from the *Communist Manifesto*, "The history of all hitherto existing society is the history of class struggles," or the dynamics of the class struggle are the basis for determining social change.

We have identified only two classes in the discussion above. In advanced capitalism (such as the United States), however, there appears to be a large group between capitalists and workers. This group would include, among others, the intelligentsia, managers, teachers, entertainers, and engineers. Some economists believe that this group constitutes a new class because they are in economic opposition to both of the other two classes. Since they are WAGE workers, selling their ability to work to capitalists, this middle class would have economic interests opposed to capitalists, and since they control and manage workers, they would also have a fundamental antagonism to workers. While acknowledging the existence of this middle stratum, other economists would see this group as occupying a

The upper levels of the middle class can enjoy leisure activities out of reach for the lower-middle class.

contradictory class position, not really a class, but sometimes aligning with workers, and sometimes aligning with capitalists. Whether a separate class or not, due to its large size, this middle stratum plays a significant role in the class structure of advanced capitalist economies.

One further comment on the possibility of a third class, or the possibility of shifting class alliances, is in order. In recent decades, there has been a tremendous upsurge in stock ownership throughout the entire population of the United States. In a legal sense this makes all of these people (partial) owners of the means of production, and thus, by the definition used above, capitalists. Legal ownership, however, does not constitute control over the means of production (i.e., economic ownership): This widespread diffusion of stock ownership does not imply widespread diffusion of any sort of control of the production process itself. Thus, owners of relatively small amounts of stock (who are the vast majority of stockholders) would have little reason to be economically aligned with capitalists, so that stock ownership would not change their class alliance. Similarly, holders of large amounts of stock, who would therefore wish to see profits maximized, and hence would have reason to be aligned with the capitalist class, would not see their class position change, as they would be wealthy, and have large stock portfolios, precisely because they were capitalists. Stock ownership, as it exists in the United States, does not appear to alter the dynamics, or the structure, of class.

Political economy sees economic class as one of the most important divisions within society affecting the historical development of the economy. The class structure of capitalism is both simple, consisting of only two (or three) classes, and complex, with numerous divisions within the classes interacting with each other and with the other classes, as well as with all of the other non-class societal divisions. The nature of the class struggle, along with the struggles of the other non-class groups, will determine, in large part, the future of capitalist economies.

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Clay, Henry (1777–1852)

ONE OF THE MOST ubiquitous political figures of the early 19th century, Henry Clay was born in Hanover County, Virginia. His political career, stretching nearly five decades, included positions as U.S. Senator, U.S. Representative, Speaker of the U.S. House of Representatives, and Secretary of State. In addition, he made five unsuccessful bids for the presidency (1824, 1832, 1840, 1844 and 1848) and was the guiding force behind the Whig party, and the author of the American System, a program of economic nationalism. An experienced politico and highly skilled orator, he orchestrated the era's most important compromises over the increasingly volatile issue of slavery.

When Missouri applied for statehood in 1819 as a slave state, it threatened to upset the balance of free and slave states in Congress and sparked an enormous controversy. Clay was instrumental in resolving the crisis, guiding two bills through Congress that allowed the entrance of Missouri as a slave state and Maine as a free state and divided the rest of the territory acquired in the Louisiana Purchase (1803) into slave and free sections. On the issue of slavery, Clay was ambivalent; though he owned a few dozen slaves in his lifetime, he believed slavery was evil and advocated the gradual emancipation and overseas colonization of American slaves. Clay's intense commitment to order, stability, and consensus placed him in a centrist position throughout the sectional wars of the antebellum years and earned him the nickname, the Great Compromiser.

This same commitment underscored his belief that economic progress should be supported and supervised by a strong and activist federal government. His nationalism grew out of his support for the WAR OF 1812, and by the 1820s had crystallized into an entire program designed to integrate the American economy into one whole instead of sectional parts, to encourage American manufactures, and to wean the young nation off of foreign trade. The American System included protective tariffs, internal improvements, slowed western expansion, and a new Bank of the United States.

It was around this latter issue, in particular, that the second party system coalesced in the 1820s and 1830s. While Jacksonian Democrats opposed the Bank's re-charter and viewed it as an emblem of economic privilege, greed, and debt, Clay saw the Bank as an insurer of sound currency and an instrument of economic stability and development. Clay vigorously opposed Andrew JACKSON's policies, and those of his successor, Martin VAN BUREN; likewise, Democrats did all in their power to defeat the American System at every turn. Congress passed very few of Clay's measures, and western expansion soon eclipsed the American System as the focus of political interest.

Clay's last starring role, perhaps the one that made him most famous, was as author of the Compromise of

1850. The MEXICAN-AMERICAN WAR (1846–48) added vast new territory to the United States' holdings, re-igniting the debate over slavery's extension. When California applied for admission into the Union as a free state, debate gave way to open sectional conflict. Clay was in favor of the territory's admission, but not at the expense of political instability and potential war. The Great Compromiser introduced an Omnibus Bill that attached to California's entrance concessions to Southerners: a new Fugitive Slave Law; the resolution of a border dispute between New Mexico and Texas in favor of the latter; and the passage of no further restrictions on slavery in the Mexican Cession. The compromise included an additional measure to appease Northerners, the banning of the interstate slave trade in the District of Columbia. The bill pitted Clay against his fellow Whig, President Zachary TAYLOR, who opposed it on matters of expediency. But when Taylor died unexpectedly July 9, 1850, Clay and his allies were able to win passage of the measures. The Compromise of 1850 averted war for the time being, but did not prevent it.

Clay died less than two years later from tuberculosis. His last congressional action was to introduce an internal improvements bill, which, like his American System as a whole, did not pass. Despite his political defeats, Clay died a revered American statesman who helped shape and define the politics and economic policy of his era and his Whig party.

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Cleaver, Harry M., Jr. (1944–)

BORN IN OHIO, Harry M. Cleaver received a B.A. in economics from Antioch College in 1967 and a Ph.D. in economics from Stanford University in 1975. He taught at the Université de Sherbrooke in Québec, Canada (1971–74) and the New School for Social Research in New York City (1974–76). Cleaver's Marxist perspectives in economics brought him to the University of Texas, Austin, in 1976.

Cleaver is a self-taught Marxist who, dissatisfied with the answers provided by mainstream economics, sought alternative theoretical frameworks to study social issues. He identifies himself as a member of the autonomist Marxist tradition alongside Antonio Negri, Mario Tronti, George Caffentzis, Silvia Federici, and C.L.R. James. This tradition places the working class, broadly defined to include non-WAGES sectors such as peasants, students, the unemployed, and housewives, at the center of capitalist development. The self-activity of the working class is identified as the basis of capitalist development and crisis, the origin of accumulation as well as its point of disruption, resulting in the centrality of class conflict for the analysis of capitalism.

A common thread in Cleaver's work has been the use of Marxist theory to analyze mainstream economic theory and policy in order to inform and strengthen social struggles. Evidence of this begins with his doctoral thesis on the Green Revolution, where his application of Marxist categories of analysis reveal new agricultural technologies as a weapon wielded against peasant struggles in developing nations. He later extended his analysis to other technologies, supply-side economics, and the international debt crisis.

Cleaver's most important contribution to Marxist theory is his analysis of Chapter 1 of Karl MARX's *Capital*, presented at length in his book *Reading "Capital" Politically*. His interpretation of the labor theory of value reveals capitalism as a system of social control through the endless imposition of work. Armed with this insight, he proceeds to conduct a political reading of *Capital* and capitalism, bringing to life abstract Marxist concepts in the analysis of contemporary class conflicts. Cleaver's method shows that no matter how much capitalist relations of production have changed since *Capital* was written, Marxist categories of analysis have retained their relevance for the study of contemporary issues.

Cleaver has also been an active participant in numerous social struggles since his early involvement in the civil rights and the anti-Vietnam war movements. A self-styled activist, he was a pioneer in the use of the internet to compile and disseminate information about the struggle of the landless Mayan peasants in Chiapas, Mexico.

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Cleveland, Grover (1837–1908)

CONSIDERED BY MANY historians to be the greatest president between Abraham LINCOLN and Theodore ROO-

SEVELT, Cleveland was also the first Democratic president since the Reconstruction and the only president to serve non-consecutive terms. Although best remembered for his independence and integrity, his two administrations were also times of political, social, and economic turmoil.

Born at Caldwell, New Jersey, the fifth of nine children of a Presbyterian minister, his family was of limited means. After his father's death, life became even more difficult, and Cleveland abandoned his dream of a college education. With the help of an uncle, he obtained a position studying law in a Buffalo, New York firm and was admitted to the Bar in 1859. After becoming active in the Democratic Party in a decidedly Republican Buffalo, he won election as Erie County Sheriff in 1870, a position in which he first gained his reputation for honesty by fighting petty corruption. After one term, he returned to private practice. His image of integrity was strengthened after being elected mayor of Buffalo in 1881, and the following year he won the governorship. Once again, he opposed corruption by standing up to the Tammany Hall Democratic machine.

In 1884, the Democrats nominated Cleveland for the presidency. The campaign was one of the most bitter in U.S. history. The Republican nominee, James G. Blaine, was accused of accepting bribes while in Congress, and Cleveland took responsibility for fathering a child out of wedlock. Cleveland won a close contest with 219 electoral votes to Blaine's 182. The popular vote was even closer. Cleveland garnered 4,874,621 votes to Blaine's 4,848,936.

As president, Cleveland continued his stand against graft and the spoils system. He expanded civil service protection, and continually vetoed what he considered special-interest legislation despite the political costs. He even vetoed a bill to provide modest aid to farmers suffering from the drought of 1887, and dared to veto a measure that would provide disability payments, even for disabilities unrelated to military services, to Union Army veterans.

He also vetoed hundreds of private pensions bills for veterans. His use of the veto power and a vigorous foreign policy reinvigorated the presidency, an office eclipsed by Congress since Lincoln's death. He further exposed and prosecuted those responsible for corrupt sales of government lands in the West, and supported federal arbitration of labor disputes. Although winning the popular vote for re-election in 1888, he lost the electoral vote to Republican Benjamin Harrison. Nevertheless, four years later he defeated Harrison to become the only president to serve two non-consecutive terms, and thus is considered the 22nd and 24th president.

During his more difficult second term, Cleveland continued his conservative policies centered on a limited view of government involvement in the economy, especially when regulating business activities. But his conservatism did not mean he always supported the corporate agenda. He called for low tariffs in the belief that protectionism unfairly favored business at the expense of consumers, and, during his first term, signed into law the Interstate Commerce Act of 1887 to address rate-setting abuses by railroads. Yet he was even more stringent in standing up to organized labor and sent troops to Chicago to crush the violent Pullman strike of 1894 over the objections of Illinois' governor.

The devastating Depression of 1893 and his controversial move to avert a monetary crisis, by having the government borrow $62 million in gold from a syndicate controlled by the widely hated J.P. MORGAN, damaged Cleveland's popularity. His support of low tariffs and the gold standard, his handling of the Pullman strike, and his refusal to support his party's pro-silver nominee, William Jennings Bryan, also helped to divide the Democrats and elect Republican William McKinley in 1896. After leaving the presidency in March 1897, Cleveland retired to Princeton, New Jersey, and served actively as a trustee of Princeton University.

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Clinton, William Jefferson (1946–)

BORN WILLIAM JEFFERSON Blythe IV in Hope, Arkansas, Bill Clinton became the 42nd president of the UNITED STATES. His father was killed in an automobile accident before he was born and his mother eventually married Roger Clinton, adopting the new family name.

Clinton met President John F. KENNEDY in Washington, D.C., on a Boys' Nation trip and he was inspired to go into politics. He earned a B.S. degree in international affairs in 1968 at Georgetown University and received a Rhodes scholarship to attend Oxford University between 1968–70. He then attended Yale Law School. Clinton taught at the University of Arkansas from 1974–76. He was elected state attorney general in 1976 and, in 1979, became the nation's youngest governor at 33. Defeated for re-election in 1980, he was nonetheless re-elected governor a few years later, and then ran for U.S. president in 1992.

Clinton was described by political analysts as "the most gifted American politician since Franklin Delano ROOSEVELT, in every respect: intelligence, policy, knowledge, political skill, capacity to relate to the American people." A study in contradictions, Clinton was also the first directly elected American president to be impeached and almost convicted.

Clinton presided over a period of extraordinary prosperity, yet left office with a widespread sense of squandered opportunities, particularly in HEALTH-care reform and social-insurance reform. He rebuilt a national Democratic Party to be competitive in presidential elections and, yet, he saw Democratic fortunes decline at every other level of political office. Clinton moved the Democratic Party to the center on crime, on welfare, on fiscal responsibility. He made paying down the national debt a tool of progressive policy. Clinton pushed through two deficit-reduction packages that led to improved interest rates, budget surpluses, and economic growth. He also lobbied Congress in 1993 to pass the North American Free Trade Act (NAFTA), which opened up new markets for American products and enabled Mexico to explore modern solutions for its old-world economy.

Clinton's 1993 transition into the White House was chaotic and his early years as president were disorganized. According to his critics, he ran most of his presidency based on polls; even to determine where he would go on summer vacation in 1996. The White House did not become organized until Leon Panetta became chief of staff. Some political pundits referred to this period as "when the grown-ups took charge."

Clinton's enduring legacy is likely to be the economic boom that began shortly before he took office in 1992. During his eight years in the White House, the economy expanded by 50 percent in real terms and by the end of the era the United States had a GROSS NATIONAL PRODUCT (GDP) equal to one quarter of the entire world economic output. The UNEMPLOYMENT rate dropped by half to 4 percent, a 40-year low, while the economy created some 15 million jobs. The stock market grew even faster, by more than three times, creating thousands of millionaires among middle-class stockholders. Clinton had decided early in his administration that debt reduction, not tax cuts, was the best way to preserve economic growth.

This economic policy set the scene for a series of confrontations between Clinton and Congress over what spending should be cut to reach a balanced budget. There were two government shutdowns when agreement could not be reached on the budget, one lasting nearly six weeks.

The U.S. trade deficit, the gap between the goods the United States sells to the rest of the world, and the amount it buys, ballooned during the Clinton administration. Clinton sanctioned a limited intervention in foreign currency markets, first to save the YEN from a catastrophic decline, and second, and less effectively, to try and boost the value of the EURO, the single currency for Europe. Interest-rate cuts in 1998 also helped stabilize the world financial system and prevented the ASIAN FINANCIAL CRISIS from spilling over into a global catastrophe, but at the cost of increasing imports to the United States even further.

Against strong opposition from within his own party, Clinton pushed through NAFTA in 1995. However, in doing so, he sidelined agreements incorporating labor and environmental standards. He was never able to gain "fast track" authority from Congress, which would have given him the authority to negotiate further trade deals without Congressional approval. His plans for a Latin American free-trade zone faltered. He did negotiate an agreement with CHINA in 1999 that cleared the way for its membership in the WORLD TRADE ORGANIZATION (WTO) and managed to persuade Congress to back that deal, encouraging the world's most populous country to continue its path of economic reform and integration in the world economy.

However, at the Seattle WTO meeting Clinton, against the advice of his own trade negotiators, urged the inclusion of labor-standards issues in the trade talks, alienating many third-world delegates. The talks then dissolved into acrimonious failure, with all sides blaming the United States for inadequate preparation and succumbing to domestic political pressure. As well, a number of nagging disputes over beef, bananas, aircraft subsidies, and tax breaks continued to cause friction between the United States and the EUROPEAN UNION (EU) during the late 1990s.

Clinton came into office with little experience and interest in foreign affairs, despite his undergraduate degree. In the beginning, he made serious missteps especially in Somalia, Rwanda, and Haiti. But he recovered and created a new policy that he called the "doctrine of enlargement." This policy embraced free trade, multilateral peacekeeping efforts, and international alliances, in addition to a commitment to intervention in world-crisis situations when it was practical and morally defensible. This policy also promoted and extended basic human and civil rights. One of the main foreign policy demands on Clinton came from the numerous civil and ethnic wars in Eastern Europe, especially the Balkans. He left behind a new approach to the world based on intervention in the interests of humanity rather than for profits.

Despite Clinton's economic leadership, many historians believe his presidency undermined the office of the president. His impeachment, extramarital affairs, and his easy way with the truth fundamentally eroded the chief executive's symbolic powers as the leader of the nation. His presidency was involved in scandals, and round after round of financial and moral investigations.

Unfortunately, no historical mention of Clinton will be complete without briefly discussing his affair with intern Monica Lewinsky, which led to his impeachment and near-dismissal from office. The president had an affair with Lewinsky, lied about it to the American public and under oath, was impeached but not convicted, and then apologized to the American public for his inappropriate behavior. Most Americans believed Clinton was guilty of lying to the nation and he received low marks for character and honesty. A majority of Americans wanted him to be censured and condemned for his conduct but not convicted of impeachment and removed from office.

The question to be answered by future historians is how could a man with so many gifts end up, in the words of Hamilton Jordan, Jimmy CARTER's former chief of staff, as a grifter (a term used in the Great DEPRESSION to describe fast-talking con artists).

Yet, from a purely economic and capitalist perspective, Clinton's presidency may go unmatched for decades to come in economic growth, stock valuations, and the general welfare of U.S. citizens.

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Coase, Ronald H. (1910–)

BRITISH-BORN RONALD COASE was awarded the 1991 Nobel Prize in Economics for his discovery and clarification of the significance of transaction costs and property rights for the institutional structure and functioning of the economy. According to the Nobel citation, "Coase's achievements have provided legal science, economic history and organizational theory with powerful impulses . . ."

Coase was known throughout the London suburb of Willesden as the most intellectual child in the community. "My main interest was always academic," Coase wrote. "I was an only child but although often alone, never lonely." He was a thinker and one of his favorite hobbies, playing chess, afforded him many pondering hours.

His earliest memories of Kilburn Grammar School include his erudite geography teacher, Charles Thurston, who introduced him to Wegener's hypothesis and, on field outings, to the wonders of the Royal Geographic Society. When called on to choose a college preparatory curriculum, he found torn between subjects. Science and chemistry fascinated him, but the requirement of a mathematics adjunct did not. Recalling, Coates explained, "I switched to the only other degree for which it was possible to study at Kilburn, one in commerce."

Coase was accepted to the London School of Economics in 1929. Majoring in commerce, he managed to fall under the tutelage of the celebrated Arnold Plant, previously of Cape Town University, South Africa. Professor Plant's series of lectures on business administration changed his views of economics. To Coase, he emphasized the value of "the invisible hand"—that is, how a competitive economic system could be coordinated by the pricing system.

From 1931–32, Coase studied abroad, having earned a Cassell Traveling Scholarship. In the United States he visited major manufacturing plants, such as GENERAL MOTORS, to understand how American business was structured and industries organized. Coase came away with a new concept of economic analysis, transaction costs, and an explanation as to *why* firms exist.

The lessons learned in America provided him with a focus, a beginning of a new concept for an economic structure, the nature of which he would continue to work on and finally publish in 1937 under the title, *The Nature of the Firm*.

In the meantime, he taught at the Dundee School of Economics (1932–34), at the University of Liverpool (1934–35), then at the London School of Economics, with which he would be associated through 1951. Coase's career was interrupted in 1939 when the UNITED KINGDOM entered WORLD WAR II. He served as a statistician for both the Forestry Commission and the British War Cabinet.

Accepting a position as professor at the University of Buffalo, New York, Coase immigrated to America in 1951. Eight years later, he joined the economics department at the University of Virginia. There he remained until 1964 when he took over editorship of the University of Chicago's *Journal of Law and Economics*. Coase retired in 1982.

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Colbert, Jean-Baptiste (1619–83)

MINISTER OF FINANCE under FRANCE's King Louis XIV for more than 20 years (1661–83), Jean-Baptiste Colbert is remembered as one of the greatest practitioners of mercantilist policy, and his influence was so extensive that the French coined the term *colbertisme* (or Colbertism), which is virtually synonymous with MERCANTILISM as that word is used in other languages.

Despite his modest origins, Colbert rose to this position of great power through hard work, attention to detail, and perhaps some unscrupulous means. Though King Louis provided the symbolic head, it was Colbert who was almost exclusively responsible for France's nationalistic policymaking and its implementation during this period. His historical renown is derived from his ambitious, but largely unsuccessful attempts to direct the French economy.

Colbert's objective was to systematize the state management of the economy that had begun under his predecessors. Under his administration, almost every aspect of economic production came under government control.

Colbert was successful in raising the state's revenues significantly, but he could never extract sufficient revenue to finance both the expenses of an extravagant court and of the king's perpetual warfare. Much of the blame could also be assigned to the system of taxation itself, which placed the main burden of TAXES on the rural population. Most noblemen, clerics, and office holders could claim exemption from the direct tax, and landowners were able to lessen their burden by reducing the valuations on their holdings.

Colbert could be described as a bullionist who favored expanded exports, reduced imports, and strict prohibitions on the outflow of bullion from the country. Because he believed that one nation could become richer only at the expense of another, he viewed commerce as an unending and bitter struggle among nations for economic advantage. Colbert encouraged the expansion of manufacture by means of subsidies. High protective tariffs and a system of prohibitions were designed to secure a favorable balance of trade and to make France economically self-sufficient.

Government regulation of business was also an important feature of Colbertism. This meant a network of detailed regulations for the manufacture of literally hundreds of products to attain quality control and to protect the good reputation for French luxury goods in foreign markets. Since these regulations were often resisted and evaded, enforcement became a costly undertaking and ultimately inhibited technological progress. Colbert was also responsible for laws that allowed aristocrats to engage in commerce without losing their status and privileges, and numerous decrees restricting the conduct of merchants.

Like many other mercantilists, Colbert desired to build and maintain an overseas empire. During the first half of the 17th century, the French had established colonies in CANADA, the West Indies, and INDIA, but had not given them much support. Colbert regarded the colonies as desirable outlets for French goods and as sources of raw materials. Though he sought to expand these efforts, he effectively smothered the colonies with an excess of paternalistic regulations. He also created monopolistic joint-stock companies to carry on trade with the East and West Indies, but these initiatives were largely public rather than private ventures and did not enjoy the successes of their Dutch and English counterparts.

Many of Colbert's efforts to facilitate internal trade were also unsuccessful, due largely to the feudal provincialism and tradition that still remained a strong influence in France. The internal customs barriers and taxes on the movement of goods, which Colbert opposed, were not abolished until the French Revolution of 1789. Even his attempts to establish a uniform system of weights and measures were thwarted. He did, however, exploit the remnants of the feudal system of compulsory labor of peasants to improve the transportation infrastructure internally. The more than 15,000 miles of road that were resurfaced under this system expedited internal travel, but made Colbert thoroughly unpopular among the peasants. He also was responsible for improving ports and building canals.

Despite the attempts that Colbert made to strengthen the French economy, the fiscal drains he encountered were overwhelming, and the economy did not flourish under his extreme mercantilist practices. The government's emphasis on manufacture, its relative neglect of agriculture, and the inability of the fiscal system to generate sufficient revenue continued to plague the French economy for many years.

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Colombia

THE REPUBLIC OF COLOMBIA is bordered by PANAMA and the Caribbean Sea to the north, VENEZUELA and BRAZIL to the east, PERU and Ecuador to the south, and the Pacific Ocean to the west. Bogotá is the capital.

In 2002, Colombia's population was approximately 41 million. Almost 60 percent of the population is *mestizos* (mixed European and Native Indian descent), with 20 percent being white, 14 percent mulatto, and the rest black, black-Amerindian, and Amerindian. Spanish is the official language, but the 1991 constitution recognized the languages of ethnic groups and provided for bilingual education. The population is largely concentrated in the interior Andean region and more than one-third of the population lives in Colombia's six largest urban areas. Colombia has a high-rate of emigration, especially to the UNITED STATES and oil-rich Venezuela. There is a high rate of internal movement from rural to urban areas, due in part to the search for better wages and living conditions, and to rural violence linked to the drug trade.

From the conquest and settlement of Colombia by Europeans in 1525 through World War II, when conservatives took control of the government and instituted reprisals against liberals, to the 1960s, when Marxist guerilla groups began to appear, Colombia has had a volatile history. But, since the mid-1970s, Colombia's economic power has developed as it became a major supplier in the international illegal drug market.

The drug leaders used their early profits from marijuana to diversify into cocaine trafficking. As the drug cartels became more powerful, they began to use terror as a means to increase their bargaining position with the government. In the 1990s, the government began a series of economic reforms that were in line with the neoliberal mood sweeping through Latin America. But drug-trade violence also reached new heights in the 1990s despite paramilitary forces uniting under the auspices of the United Self-Defense Groups of Colombia. In 1998, Colombia's economy entered its worst recession since the 1930s. In 2000, the United States approved an aid program that would supply military assistance to help control the drug trade.

Colombia is the leading producer of mild coffee and is second to Brazil in total annual volume of coffee produced. In the mid-1990s, coffee growers experienced a drastic drop in coffee earnings due in part to high production costs and low global prices.

Colombia is rich in mineral resources, chief among them coal, gold, and petroleum. In the 1990s, petroleum passed coffee as Colombia's largest source of foreign income.

Industry accounts for more than one-quarter of Colombia's GROSS DOMESTIC PRODUCT (GDP), services more than half, and agriculture slightly less than 20 percent. Small-scale enterprises carry out the majority of Colombia's industrial activity. Colombia's currency is the Colombian peso (COP). The Bank of the Republic operates the government's emerald, mint, and salt monopolies, and is the sole bank of issue. There are approximately 30 commercial banking institutions, several partially foreign-owned.

Colombia's exports are valued at approximately \$12.3 billion annually and its imports at \$12.7 billion; partners include the United States, the EUROPEAN UNION (EU), and the Andean Community of Nations.

Colombia's illegal drug trade is a major economic contributor—trade balances can be made positive even though they were negative for legitimate goods; drug dealers spend money to grow their businesses, which can benefit Colombians more than the legitimate economy does. Despite government initiatives, the drug trade remains a key factor in Colombia's economy.

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colonialism

COLONIALISM IS THE control by one power over a dependent area or people. In recent centuries, it was associated with political control by European states over people of other races inhabiting lands separated by the seas from Europe. Salient features of colonialism include: domination by an alien minority; assertions of racial and cultural superiority; economic exploitation; and reshaping of the colonized society.

The age of modern colonialism began around 1500, following circumnavigation of Africa (1488) and discovery of the Americas (1492). Through discovery, conquest, and settlement, the leading European powers of the time (PORTUGAL, SPAIN, the NETHERLANDS, FRANCE, and the UNITED KINGDOM) expanded and colonized most of the world.

The post-WORLD WAR II period spelled the demise of colonialism. Between 1945 and 1975 most European colonies gained independence and became formally sovereign states. As a foundational phenomenon of the modern age, colonialism shaped both the colonizing and colonized societies, and has left lasting impressions on the political, economic, and cultural forms of these societies.

Colonial expansion. Colonialism and the emergence of nation-states in Europe were contemporaneous. Portugal led the way, expanding westward to BRAZIL and eastward to the Indian Ocean. It enjoyed a monopoly of trade in these regions until other European states moved in. Spain first occupied the larger West Indian islands, and later, fueled by the gold and silver of MEXICO, established a colonial empire stretching from CHILE to California.

The rise of the Dutch as the leading European naval and commercial power in the 16th century resulted from their control of the spice islands of Asia (now INDONESIA). The Dutch East India Company was chartered in 1602 and controlled European trade with Asia for many years. The French began with New France (CANADA), founded Québec in 1608, and later established colonies in Africa and Asia. England established 13 colonies (1607–1732) on the Atlantic coast of North America. The defeat of Spain in 1713, and the successful conclusion of the French and Indian War in 1763 gained for England all of North America east of the Mississippi River. The British EAST INDIA COMPANY, chartered in 1600, led the colonization of INDIA starting with the conquest of Bengal in 1757. AUSTRALIA and the Caribbean were colonized soon after.

The Napoleonic Wars slowed Portugal and Spain's colonial growth. Due to French occupation of the two countries in 1807, Portugal and Spain were unable to effectively deal with nationalist movements and civil wars in their South American colonies. By 1825, Brazil gained independence from Portugal and Spain's American colonial empire was reduced to CUBA and Puerto Rico.

During the late 19th and early 20th centuries, new colonial powers emerged: GERMANY, the UNITED STATES, BELGIUM, RUSSIA, ITALY, and JAPAN. Russia expanded over land, as did the United States, eliminating and displacing indigenous inhabitants and cultures. Russia occupied Siberia, the Caucasus region, and East Asia as far south as the Korean peninsula. The United States expanded west of the Mississippi and following the defeat of Mexico (1848) consolidated its control up to the Pacific coast. The United States also took possession of Spain's colonies in the Caribbean, South Pacific, and the PHILIPPINES following the SPANISH-AMERICAN WAR (1898). The partitioning of CHINA by European powers began with the Opium wars waged by England to force China to accept exports of opium from colonial India. After these concessions were secured by the Treaty of Nanjing (1842), the United States, France, and Russia secured similar economic concessions from China. Japan started its colonial expansion with control of the Korean peninsula and northeastern China.

The European "scramble for Africa" unfolded between 1880–1900. The French colonized ALGERIA and the British took control of EGYPT. Sub-Saharan Africa was divided between Britain, France, Germany, and Belgium. Britain assumed control over SOUTH AFRICA following the Boer War (1899–1902). After WORLD WAR I, Britain and France took over Middle Eastern countries that were formally a part of the Turkish Empire.

Colonialism reached its highest point at the eve of World War I. Competition for colonies among the European powers was one of the causes of the war. During the inter-war period, forces opposed to colonialism grew in strength. Emerging nationalist movements in the colonies and the RUSSIAN REVOLUTION (1917) produced a worldwide movement against colonialism. Costs of containing nationalist movements, spread of ideas hostile to racism and colonial domination, comparative weakening of European powers, and changes in the global economic system, rendered continuation of colonial rule increasingly untenable.

World War II, caused in no small measure by competition for colonies, accelerated these processes. The UNITED NATIONS Charter (1945) contained an implicit endorsement of decolonization, and following the war decolonization unfolded rapidly. India and PAKISTAN gained independence in 1947 and Britain's colonies in Africa followed suit in the late 1950s. Decolonization of French colonies was accompanied by prolonged wars of liberation in Indochina and North Africa. Belgium, the Netherlands, and Portugal were forced to give up their colonial possessions during the 1960s and 1970s.

Capitalism and colonialism. Colonialism served vital though varied roles in the economic growth of modern Europe, particularly in the transition to and consolidation of capitalism. During the mercantilist era, gold bullion appropriated from the colonies helped fill the coffers of European powers. Colonial products were often paid for in exported manufactures, thus saving foreign exchange. Colonial trade and investments in the colonies helped in the transition to capitalism by furnishing an avenue for large-scale capital investments and formation of joint stock companies.

Colonialism helped inaugurate two enduring features of capitalism: that it is a global system of production and that it can help maintain pre-capitalist modes of production in subordinate roles. Slaves and indentured labor from the colonies supplied labor power for colonial plantations and extractive enterprises. Raw materials from the colonies freed European powers from dependence on European supplies that were more expensive and could be cut off during wars. Colonies provided favorable and stable markets for European exports, and thus helped employment in European industries. Colonies were prevented from developing competing industries and different sectors of their economies were disengaged from one another and linked with needs of the economies of colonizing powers. As investments at home became less profitable due to the rise of monopolies and declining profitability of marginal lands, colonies furnished an attractive outlet for investment of CAPITAL. Settler colonies of North America and Australia provided opportunities for European emigration, virgin lands, and capacity to absorb investments. Colonies were essential as markets for the SURPLUS production of European industries, thus helping mitigate the negative effects of the boom and bust cycles of capitalism. By serving as an engine of the INDUSTRIAL REVOLUTION and profitability in Europe, colonialism served as an insurance against social strife and unrest that may have resulted from absence of economic growth.

Modern Europe sees itself as the product of the Enlightenment, with the attending ideals of reason, freedom, liberty, equality, and the rule of law. Modernity of Europe is, however, coterminous with its colonial expansion and imperial rule, marked by conquest, subjugation, and even genocide. In an age when exercise of political power was increasingly linked with rights of citizens, and good government was recognized as intimately linked with self-government, colonialism rested upon the repudiation of these linkages. How were these two contradictory strands reconciled? It was the modern construction of race that facilitated the establishment and consolidation of colonialism, a relationship of domination and subordination. Faced with the contradictions between ideals of the Enlightenment and colonialism, hegemonic forces in Europe fashioned strategies of exclusion, grounded in a racial dichotomy between human and sub-human, or civilized and savage. This triggered the mutually constitutive role of colonialism and modern Europe. Many foundational constructs of modernity—reason, man, progress, the nation—were developed in contrast with a racialized "non-Europe," with the latter posited as pre-modern, not fully human, irrational, and outside history.

The age of colonialism also saw the consolidation of a unilinear, progressive, teleological, and Eurocentric history as the dominant mode of experiencing time and being. In this history, others' present is seen as Europe's past and Europe's present is posited as others' future. In this construction, nations attain maturity only when a people are fully conscious of themselves as subjects of unilinear and progressive history, and it is only such nations that realize freedom. Those placed outside this history have no claims or rights and may rightfully be subjugated even if to bring them into the stream of the Eurocentric history.

White man's burden. Colonialism, in this frame, is seen as an indispensable instrument the "civilizing mission" of Europe, the "white man's burden"—the project of forcing the otherwise incapable savage along the road to enlightenment and freedom. Modern racism, by fixing upon race as the repository of those attributes that enable or prevent evolution toward civilization, wrote the legitimating script for colonialism. Modern evolutionary racism consolidated the double binary of fair/dark and civilized/savage by positing the anatomical investigations of Europeans and Africans as establishing the top and bottom of a progressive series of races with differential mental endowments and civilizational achievements. With the diagnosis accomplished, prescription quickly followed: backward races were to be civilized under the discipline and "paternal despotism" of superior races. Modern construction of race thus bridged the Enlightenment with colonialism.

Colonialism and the attendant modern construction of race also furnished the scaffolding for many foundational constructs of modernity. Modern theories of the state based on consent of the governed rest upon a distinction between an original "social contract" and a pre-contractual "state of nature," with the latter identified with the state of affairs of the colonized people before colonization. The grounds of modern secular law rest on a posited distinction between civilized and savage norms and practices.

The very self-identity of modern Europe took shape in counter-distinction with the non-European other. Many modern academic disciplines, organizational models, institutions of governance and discipline, and cultural practices are a product of the colonial encounter. For example, the science of fingerprinting developed in colonial Bengal to facilitate revenue collection and law enforcement. What is today taken as the canonical curriculum of English literature was developed in the British colonies as part of training regime for colonial administrators. Green tea from Asia was roasted before shipment to Europe to protect it for mold induced by the long ocean voyage; today black tea is consumed all over the world.

Colonialism reconstituted colonized societies in many lasting forms. Many vibrant and growing indigenous economies were destroyed and denuded of wealth. Primary, secondary, and tertiary sectors of colonized economies were disjointed and separately linked with the economies of colonizing states. The coexistence of capitalism with pre-capitalist modes of production in the colonies retarded the prospects of a comprehensive transition to capitalism for post-colonial economies.

Hybrid legal systems were set in place distorting or destroying indigenous normative frameworks. As existing or newly established cities, usually close to a port, served as the nerve centers of colonial political and economic activities, the economic and cultural gulf between rural and urban areas widened substantially. Client classes were created to serve the colonial authorities as middlemen in political and economic fields, thus creating lasting internal fractures in colonized societies. Colonial rule was based on coercion not consent, and colonial political institutions were designed accordingly. Consequently, the state apparatuses bequeathed by colonialism to post-colonial states are conducive to centralized authoritarian control and resistant to demands for representation and civil rights. Colonial powers demarcated their possessions without any regard for cultural, linguistic, or religious homogeneity of their colonial subjects. The straight lines running across the map of Africa are a good example of this phenomenon. As a result, many post-colonial states have territorial boundaries that do not comport to any reasonable divisions of identity, ethnicity, language, or religion; instability, social strife, and civil wars often follow. Colonialism did indeed serve as a vehicle of transmission of modern ideas, frameworks, technologies, and modes of life across the globe. The structure and history of colonialism, however, remains stamped on the modernity thus transmitted. Post-colonial modernity remains partial and fractured, whereby its promise remains trumped by its burdens.

In a few, but vitally important places, colonialism was not followed by de-colonization but by the establishment of colonial-settler states. Australia, Canada, ISRAEL, NEW ZEALAND, and the United States fall in this category.

Colonialism is the relationship of domination and subordination between the West and the Rest that lasted for nearly 400 years. Economic exploitation, alien and authoritarian political control, and assertions of cultural superiority were its hallmarks. The modern construction of hierarchy of races facilitated and legitimated this un-equal relationship. Colonialism helped shape many defining features of modernity and capitalism, and has left deep imprints on both the colonized and colonizing societies.

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commodity

see GOODS, PRODUCT, SERVICES, OIL, LAND, LABOR.

communication

COMMUNICATION CAN BE seen as an evolving concept. According to historians Asa Briggs and Peter Burke (2002), the definition of communication has changed considerably in just a few decades, during the second half of the 20th century. Comparing two definitions of that same word in two editions of the same dictionary shows how current conceptions of communication have been significantly modified, adding a stronger degree of technical awareness and more sensibility towards recent conceptions of how people communicate at a distance. In the conclusion of their book titled *A Social History of the Media, From Gutenberg to the Internet*, Briggs and Burke oppose two very different quotes separated by only 17 years:

> In 1955, the *Oxford English Dictionary* defined "communication," the first of a related cluster of words to change its usage, as 1) "the action of communicating, now rarely of material things and 2) the imparting, conveying or exchange of ideas, knowledge etc. whether by speech or writing or signs." By the time that a 1972 Supplement to the *Dictionary* appeared, however, communication was described as "the science or process of conveying information, especially by means of electronic or mechanical techniques."

Briggs and Burke conclude from this shift that "the difference was enormous."

Since about half a century ago, it is not so much objects and merchandise that travel (although transportation still exists, of course). We are much more aware of the fact that ideas, images, sounds, bits, and networks can also carry a great deal of information, in just a few seconds; another kind of merchandise, namely messages, data, information, and signals, that can be produced, negotiated, bought, sold, exchanged, transformed, even stolen. Communication has become more virtual, but still has a cost, plus value, and can therefore be traded as any material GOODS that you could actually touch with your hands. Communicating, which means transmitting that information, also has a price, as sending any parcel through the mail, because satellites and networks rely on high technology. Among the new media, the internet is the most fascinating example of that recent mutation.

Since a complete history of communication would cover many books we will only highlight a few economic and social aspects about the ways people communicate today. We will concentrate on two aspects regarding media economics: first, the media as an actor or catalyst in the global economy and then, the media conglomerates as examples of a capitalistic tendency to concentrate OWNERSHIP.

Satellite and cell phone towers have become ubiquitous in our age of communications.

For many persons, the media have first been considered as a tool, a commodity, a practical technical device to enhance communication between persons that are physically separated or very far away. The telephone played that role from the end of 19th century; the mail service did the same since ages ago. The usefulness of the telephone has been proven since; it is still recognized as a public service and therefore regulated by governmental institutions in most countries. This explains why in some countries (CANADA, UNITED STATES), many local phone calls made from home are packaged as flat rates (except for some cellular phones), while in most European countries, every local phone call must be paid by the user, even at home, minute by minute, on every monthly bill. These are examples of different conceptions of the same fundamental public service, depending on telephone companies' rules. Until the 1990s, in countries such as Canada and FRANCE, telephone companies were monopolistic corporations regulated by the state. By breaking the MONOPOLY, the number of employees and profits were reduced, basic rates increased to cover higher advertising costs and higher wages for Board members. In this move, only costs for long distance calls were reduced.

Mass communication and advertising. The telephone is a perfect example of a device used to keep in touch two persons interacting together at a distance. But some other kind of media allow a few individuals to reach very large audiences; we talk about mass communication and mass media. Among those are books and the press, newspapers, magazines, but also motion pictures, radio, television, the latter two also known as electronic media.

From an economic perspective, the way the media are financed explains why they seem to be cheap for the consumer. For instance, when you buy a newspaper or a magazine in any newsstand, you just don't pay only for the paper and printing, but also for the whole chain of workers, merchandising, and services that have together built the pages that you read. In fact, the paper in itself is worth much less than the newsstand price. The retail price of that newspaper would be rather much higher if the press industry couldn't rely on another vital source of revenues: advertising. Publicity is now the heartbeat of most media. Newspapers, radio and television stations, and most major web servers depend highly on advertising. There are of course exceptions, depending on countries. Small community radio stations and public television have other sources of financing, such as donations, grants, governmental help; in some other cases in community networks, many employees volunteer their time and energy. Other corporations, such as the U.S. Public Broadcasting System, mix both systems.

Advertising in the public sphere. From telemarketing to ads on the radio, publicity is almost everywhere, even unusual newer places, such as museums, on public television and radio, in doctor's offices, on subway platform, and on restaurant menus. Even doctors propagate selected brand names from pharmaceutical companies (on posters in their waiting rooms ad offices, or on prescription pads). Schools are no exceptions anymore; colleges affiliate with their exclusive partner drink. In the United States, big arenas do not have a famous local name anymore, but rather a brand label: the Pepsi Coliseum, the Molson Centre, etc. Many industries benefited from an idealized, bigger-than-life image created by advertising in the 1950s. We observe the automobile industry (with happy, fast, and powerful drivers), the cigarette recognition (the "cool" smokers), or the happy, decent beer-drinkers and high-class liquor consumer. Publicity or advertising helps to sell and to give legitimacy.

Newspapers and magazines are subdivided into thematic sections, but everything that goes into these sections (as well as everything that is left out because of a lack of space) is selected by a handful of persons. Their criteria are to include what they consider as important matters (or those they believe their readers might find relevant) and to include breaking news that their competitors would cover as well, because no publisher would want to find he or she is behind the curve. In Roger Rosenblatt's *Consuming Desires*, the editorial atmosphere is put this way: "The pervasive emphasis on what's hot and what's not makes for an atmosphere frantic with anxiety."

One of the consequences of the dependency toward advertising in the media industry is that most newspapers might tend to pay more attention to their advertisers. For instance, according to that logic, a book critic who receives a free review copy of a recent novel might give more visibility to it. Small weekly newspapers or free magazines (those that you find for free at the door of your local supermarket) often depend exclusively on advertising and conceive as a tacit rule that companies must first advertise their products (either movies, books, shows, restaurants) in order to get attention in a review, that would serve as a recognition and exposure in the public sphere (that can be seen as a kind of advertising). Those who can't afford or those who don't want to pay for advertising might be given less attention or less space in those pages. Some magazines even buy their visibility in selected book stores' shop-windows. What you see easily in the showcase or near the cash register at the supermarket is not necessarily the best or the most important magazine; in some cases it is just the one that had enough money to buy the best chosen space with the best visibility.

The problem is many people rely on the media to select for them what to choose and buy, be it books, records, food, restaurants, etc. If many critics are sometimes guided by their announcers, their judgments might be influenced by the choices that were made for them. Other critics or commentators feel no pressure from their advertisers, but they see that other critics have largely covered a new show, a new movie, and they wouldn't want to be the last to talk about it. Some critics will even talk about a forthcoming movie that they haven't seen but that was rumored as excellent, just to prove they are aware of its existence. There is a kind of a similar competition among reporters who want to be the first to "discover" a new phenomena, fashion, trend, or tendency in any field.

The average citizen is not unaware of these subjective phenomena, but how can you and I know about something going on (a product, an event, something alternate or just out of mainstream culture) if it hasn't been publicized? It is always possible for us to know, one way or another, but you will have to do more research in order to find about it. The easiest way would be just to open your eyes and watch, but what we see first is mainstream mass culture. Major networks, be it national newspapers or large TV networks, don't talk much about local, regional, or alternate events, unless they are of a national interest. For instance, we don't see much about foreign movies—even celebrated ones—in local newspapers, especially in the United States.

More and more, people tend to respond to publicity, not necessarily by buying immediately almost everything that is publicized, but just by being aware that this product, that movie, this book, that program exists. And when time comes to choose between products, one brand will inevitably be the one we have heard about, the one we've seen before. To paraphrase Andrew Wernick, all discourse is so saturated with the rhetorical devices of promotion that, in our public lives and perhaps increasingly in our private lives, we are unable to think and act outside of a promotional frame of reference.

With no doubt, advertising is the first step toward the consuming framework in our modern societies. According to Don Slater, "advertising is generally understood as paradigmatic of modern consumer capitalism." In 1961, Raymond Williams wrote that 20th century capitalism could not exist without devices "for organizing and ensuring the market." The main device is advertising communication: "Modern advertising, taking on its distinctive features in just this economic phase, is one of the most important of these devices, and it is perfectly true to say that modern capitalism could not function without it."

The cost of watching free TV. The equivocal question about the costs of watching television is quite interesting. Apart from the electricity and the cost of buying the TV set, watching (broadcast, non-cable) TV seems to be costless. Not really. As we know, television stations get financing from advertisers, but these companies that buy publicity and air time use a part of their revenues in order to afford the advertising expenses. This sum is included in their products' price. As a consequence, you always pay, directly or not, for the advertisement that you see in the media. But we keep in mind the illusion that television is for free. In a book titled *Understanding Popular Culture*, John Fiske argues that "the economic function of a television program is not complete once it has been sold, for in its moment of consumption it changes to become a producer, and what it produces is an audience, which is then sold to advertisers."

Audiences are groups of people who attend any kind of a show, film presentation, conference or concert, or watch a program on television, or listen to the radio. Some people often imagine the audience (for a film, a book, a TV program) as a natural consequence of the program's contents, qualities, and effective potential to attract viewers. The truth is, no matter how good their products are, producers and publishers try to promote and offer everything they have to sell; distributors selecting products are first motivated by the commercial

The rise and dominance of global media affects how we communicate individually—and what we talk about.

potential and not by quality. This is a consequence of the mass marketing of commodities and culture. What Thomas Guback writes about the American motion pictures industry is also true for other media conglomerates dominated by U.S. corporations: "Consumers, of course, are at liberty to select from what is on the market. But the shape of this market, including its range of alternatives, is the result of conscious efforts to structure it and keep competitors in their place."

You may freely watch any program as long as you want; watching television is easy, at every hour, from almost anywhere. You can concentrate on a single station, select your favorite programs, change to another TV station, skip the ads. But it is very difficult for "ordinary people" to go on TV, to be on the other side of the camera, even for contests, quiz and game shows, where thousands of persons send in their names. The media is a privileged place. If you want people in the media to know that you will do a presentation, a conference, a show, that you organize an event, that you have just published a book, you might get a little attention from programs produced by the local stations, since their mission is to talk about what is going on around the regional community; but in many cases it is difficult to get a major presence in the media, especially national media, because too many persons have things to say or to publicize, and air time is in demand and costly.

Even politicians try to get more and more time on television (except if they are implied in a scandal), and unless they have something very important to tell, they usually won't get as much air time as they want. This explains why a candidate has to pay in order to get her message into the media, for instance by advertising that message or idea. When a new TV show or series is planned, producers often worry about potential advertisers; they hope that the biggest possible audience will watch the program and therefore beat the other networks' numbers. Advertising rates are currently adjusted accordingly to the total number of viewers by portions of 15 minutes. Producers, broadcasters, and television stations try to reach a larger audience and therefore prefer to air general content and mass culture instead of art, high culture, and more "serious" matters.

There are those who have access to the media, and also those the media look after, such as stars, celebrities, pop artists, cult icons, and popular idols. There has been a true celebrity culture since the 1920s, and as commodities, the most famous personalities have their own price, since they can attract large audiences and more viewers. According to Thomas O'Guinn, "One of the undeniable hallmarks of American consumer culture is a fascination with celebrity." For instance, among the data collected by O'Guinn, we learn that more than three million American read *People*, more than a million are members of at least one fan club. Fan cultures (with fans trading collectors items, collectables, photos, videotapes; the perfect example would be the Elvis Presley cult in Memphis) have to be understood as a means of "touching greatness."

The media concentration issue. We can't ignore the fact that even though the media corporations want less regulation from governments, especially about ownership and concentration, there is a constant tendency toward this trend. In terms of media economics, capitalist enterprises are allowed to exist as long as they avoid the extreme limit of the monopolistic control of news, ideas, and opinions. In other terms, those who control the means of communication must be numerous, and that number is, of course, discussed and negotiated over and over.

The circulation of all opinions and ideologies can be possible only if we avoid a system where a majority can only hear the voices of the few. Since the logical, profitable, efficient way of managing media enterprises seems to be the widest audience for a single message, public and independent regulation of the media propriety becomes vital. In this area, states cannot just let the market control itself, mainly because the actual rules already comfort the strongest players inside their already dominant position. As Benjamin Compaine wrote, "The mass communications industry is unique in the American private enterprise system because it deals in the particularly sensitive commodities of ideas, information, thought and opinion."

Juliet Schor and Douglas Holt go further: "Now, a handful of mega-conglomerates have taken over all the major media. Profitability and reproducing the political legitimacy of the system have become the dominant criteria for cultural production." But concentration has become a natural move toward growth for major media enterprises, either on a vertical (owning more companies from different media) or horizontal perspective (buying more corporations in a same field, and by doing so, reducing competition), such as proven by the AOL TIME WARNER merger in 2000. Vertical integration in the media industry means that the six biggest multi-media conglomerates (SONY, Universal, Paramount, Warner, Disney, Fox) will intensify their activities in similar or complementary fields, thus raising their collective power, control, and profits, "by spending millions to acquire interests in movie theater chains, cable television systems, over-the-air television stations, TV networks and home video operations such as Bluckbuster Video," Compaine explains.

History has shown that unique voices characterize most totalitarian societies; plurality of ideas and sources are proven to be the essence of free media. The problem is, concentration in the media might have advantages from an economic perspective, but at some level this trend couldn't be tolerated in any democratic society. In economic terms, the artificial compromise or disguise to mask a monopolistic control of an economic sector is known as an OLIGOPOLY. This system allows a handful of corporations, whose interests are common, to control a whole sector in one country or more. There are no laws against this structure of conglomerates, even though the consequences are that oligopolies operate very much alike a monopoly *per se*. In his authoritative and comprehensive analysis on media ownership in the United States, Douglas Gomery states that the current situation in the American media industry is almost a *de facto* monopoly, except that it is made with a few players and not just one. Gomery writes, "A handful of firms dominate in an oligopoly, the most heralded example being the longtime three (now more) television networks. But there are other oligopolies, including the five major music record labels, the six commanding major Hollywood studios and the 10 major book publishers. If there is a ownership pattern that best categorizes the mass media industries, it is one where sellers are few in number."

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company

A COMPANY IS AN ASSOCIATION of persons or of capital organized for the purpose of carrying on a commercial, industrial, or similar enterprise. The primary advantage of a company structure (of some legal types) is that it has its own juridical personality independent of its owners or shareholders. Companies are often considered the very backbone of capitalism; and yet they raise questions about their necessity in an economic system founded rather on markets than on organizations. The origin of companies then concerns two issues: how companies have come into being; and why companies have come into being.

History. The known history of several cultures involves developed institutions that may be called "companies." In a wide sense, any organized barter or trade that is not simply carried out on an ad hoc basis involves companies. Commerce along the ancient trade routes was maintained by trading companies. In Europe, they are rooted in the Greek *etairia*, a mercantile association, and in the institutions of *collegium* (or corpus) and *societas* under Roman law. European companies developed primarily from mediaeval institutions such as guilds, cooperatives, municipalities, monasteries, universities, and the *commenda* (or *collegantia*), a commercial joint enterprise limiting the liability of investors and endowed with its own legal personality.

Two mediaeval organizations that prospered for a long period of time were the Hanseatic League, based in Lübeck, and the Merchant Adventurers Company of London. The Hanseatic League was an association of German towns that, from major trading posts in Bruges, London, Bergen, and Novgorod, developed trade in much of northern Europe. The Hansa coordinated and distributed capital, goods, and skills throughout its domain and was engaged in many activities such as sheep rearing in England, iron production in SWEDEN, and agriculture in POLAND. The Merchant Adventurers were a group of British wool and cloth merchants who were granted special trading privileges and enjoyed extensive control over trade and commerce between northern FRANCE and DENMARK.

In the 14th century, Italian banking firms began to dominate international commerce. There were an estimated 150 Italian financial companies engaged in exchange, lending, and investment business throughout Europe, perhaps the most prominent among them being the Medici family of Florence. Two of the dominant multinational companies of the 16th century were those of the Fugger family in Augsburg and the Muscovy Company of Russia. By 1525, the Fuggers owned the wealthiest company in Europe, controlling mines from HUNGARY and SPAIN to CHILE, maintaining a string of trading depots or chain stores in all the great cities of central and western Europe, and dealing in all forms of finance (including the lending of money to kings, emperors, and popes). The Muscovy Company was an English group that had received permission from the czar to trade in Russia, and for decades dominated commerce in eastern Europe.

Different countries developed various legal types of companies, forms of sole proprietorships, partnerships, and corporations being known both in civil law and common law jurisdictions. For the development of capitalism, the most important of these was the (public or private) corporation. In the 17th and 18th centuries, two types of corporations developed: state-sponsored trading companies set up to support the colonial trading systems of European governments; and companies with the goal of promoting colonization and land development, particularly in the eastern UNITED STATES and CANADA. The British EAST INDIA COMPANY, founded in 1600 under a Royal charter, and the Dutch East India Company (*Verenigde Oostindische Compagnie*), chartered in 1602 by the States-General of the Netherlands, were early prototypes of public-trading corporations with a multitude of shareholders, monopolists under government control, and exercising sovereign authority on behalf of the state. The Hudson Bay Company, incorporated in England in 1670 to seek a Northwest Passage through Canada to the Pacific and to trade with the lands of northern Canada, was a major protagonist in the economic and political history of Canada (and still exists today as a retail chain). Colonization companies in North America comprised the Virginia Company of London, the Massachusetts Bay Company, the New Sweden Company, and the Company of New France.

The common trait of all early companies that achieved commercial prominence in Europe and America is their dependence on state privileges and protection under a mercantilist economic system. Based on a franchise, they were closer to the form of the modern public corporation than to that of a private business. With the rapid development of commerce in the 17th century and the INDUSTRIAL REVOLUTION in the 18th century, the corporation became the ideal way to run a large enterprise, combining centralized control and direction with moderate investments by a potentially unlimited number of people. The emergence of companies of the modern type occurred over the first two-thirds of the 19th century, during the "Second Industrial Revolution," and in some countries as late as in the 20th century. These companies are founded on private entrepreneurship, on the right to engage in business enterprise, and on a "divorce between ownership and control."

The development of large corporations was necessitated by the spread of new capital-intensive technologies of production and transportation. In particular, the construction of RAILROADS in Europe and America required large sums of capital that could be secured only through the corporate form, and efficient transportation in turn contributed to the expansion of steel and coal industries organized as corporations. Concurrently with these developments in industrializing economies, the various legal traditions became consolidated and were codified into modern company law.

Economic rationale. The second question is why companies have developed at all. In economies founded on a division of labor, producers specialize on their comparative advantages and exchange what they produce for what they want from among the produced goods of others. Even if intermediaries become necessary, one may argue, the price system alone would allocate goods and services without the necessity of companies arising. In a classic paper, Ronald COASE provided an answer to this question by showing that markets are costly to use. Allocation by the price system alone implies costs of searching for appropriate suppliers, and subsequently costs of negotiating and concluding a separate contract for each exchange transaction.

The total cost of transacting consists not only of the cost of goods and services themselves but also of the "marketing costs" of finding and engaging buyers and vendors. Market participants may reduce what has later become known as their transaction cost by using only one contract instead of several, and by concluding longer-term contracts. This is tantamount to substituting the firm for the market, and such substitution will occur if the cost of managing and organizing is smaller than that of transacting. This applies also to the cost of inputs, where producers are faced with a "make or buy" decision, the choice of producing every input factor themselves or buying it from other, more specialized, producers on the market. Vertical integration will come about if the cost of managing the production of the input is less than the cost of transacting to buy it. Thus, Coase described the role of companies in capitalism as being "islands of conscious power in this ocean of unconscious co-operation like lumps of butter coagulating in a pail of buttermilk."

This explanation of the spontaneous origin of companies has been the starting point for much economic work toward a general theory of the firm. Several current approaches in economics and management theory such as institutional economics, transaction cost economics, principal-agent theory, evolutionary economics, and the resource-based theory of the firm have incorporated the cost-reducing and efficiency-enhancing nature of companies in a capitalist system.

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comparative advantage

THE PRINCIPLE OF COMPARATIVE advantage asserts that any country can gain from trade by specializing in producing and exporting the good or GOODS that it produces relatively efficiently. This principle, expounded by David RICARDO in the early 1800s in his *Principles of Political Economy and Taxation*, is the most frequently used argument in favor of FREE TRADE.

Adam SMITH, in *The Wealth of Nations*, had in the late 1700s used the LABOR theory of value to assert the principle of absolute advantage. In a free MARKET, each good will be produced and exported by the country that can produce it using the least number of labor hours. Included in these hours are not just the labor used directly in producing the good, but also the labor hours embodied in the portion of the tools, equipment, and raw materials that is used up in the production process.

Ricardo's insight was remarkable. Even if a country was not the most efficient producer of any good, it would still be *comparatively* efficient in producing at least one good, and could still therefore gain from trade. An example shows how this works.

Suppose that in a given year England can produce a yard of cloth using 4 hours of labor and a bottle of wine using 6 hours of labor. Suppose also that Portugal can produce a yard of cloth using 2 hours of labor, and a bottle of wine using 1 hour. Portugal is clearly the most efficient producer of both cloth and wine. But let us see why England is *relatively* more efficient at producing cloth, and Portugal at producing wine, creating the possibility for them both to gain from trade.

England has two methods of getting wine: produce it using local labor, or buy it from Portugal. What is the tradeoff between wine and cloth in each method? By producing wine locally, England gets each bottle of wine at a cost of 6 hours of labor, which means that (6 hours)/(4 hours) = 1.5 fewer yards of cloth are produced, assuming full employment. So a bottle of wine "costs" 1.5 yards of cloth by this method. Now if England can instead import a bottle of wine from Portugal at a lower cost than 1.5 yards of cloth per bottle of wine, then England is better off putting its labor into cloth and importing wine from Portugal.

But is Portugal willing to sell a bottle of wine to England at a cost of less than 1.5 yards of cloth? Yes. Portugal reasons similarly: in producing a bottle of wine, it uses up 1 hour of labor, which means giving up the half yard of cloth it could have produced in that time. So the cost of a bottle of wine is half a yard of cloth. Portugal would be happy to export wine if England is willing to pay Portugal more than half a yard of cloth for a bottle of wine. And as we already know, this is so: England is happy to pay not only 0.5 yards of cloth, but any price up to 1.5 yards of cloth.

The price will therefore actually settle somewhere between 0.5 and 1.5 yards of cloth per bottle of wine, and both countries will be willing to trade. Both will be better off by doing so, because—as is not hard to show—both will be able to consume during a year a combination of wine and cloth which is larger than it could produce on its own. We say that Portugal has a comparative advantage in wine and England has a comparative advantage in cloth.

But is comparative advantage a good guide to trade policy? Is a poor country always better off adopting free trade and producing the goods in which it has a comparative advantage? Advocates of free trade tend to say yes. Critics, however, cite Alexander Hamilton's argument in favor of protecting infant industry, and point out that the United States and Britain developed under protectionist policies, only later lowering trade barriers.

After all, the comparative advantage model is a static model: it takes as given the state of a country's natural resources, technology, skills, intermediate goods and capital equipment at a moment in time, and says that opening up trade will bring gains. This may be true, but it may also be possible to achieve greater gains by deliberately changing a country's comparative advantage. In fact, once a country has opened up trade, the one-time gain due to comparative advantage is used up. From there on out, the contribution of trade to growth depends in large part on how rapidly export demand is growing for the particular good a country happens to export.

A government may seek to pursue *dynamic comparative advantage* by developing production of goods for which demand is rising rapidly. For example, as incomes rise, the demand for food tends to rise more slowly, so it is wise to shift toward producing manufactured goods, such as electronic equipment for which demand is growing. Credit can be subsidized to targeted sectors, policies can be designed aimed at acquiring new technology cheaply, and infant industry can be protected, as JAPAN, South KOREA, and TAIWAN did with great success in the 1970s and 1980s.

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competition

PROPONENTS OF CAPITALISM often seem to go against common sense. They maintain that left entirely to their own devices, profit-maximizing businesses will charge reasonable prices to consumers, maintain product quality, pay workers according to their productivity, and constantly strive to do even better. But if business only cares about the bottom line, why not charge consumers exorbitant prices for junk, and pay all workers their bare subsistence?

The answer is competition. A business that gives consumers a bad deal soon has no consumers left. They take their patronage elsewhere. An employer who pays productive workers less than they are worth faces the same dilemma. A rival employer will “steal” these workers by offering them a raise. Why bother to maintain product quality? Because cutting corners is penny-wise, pound-foolish: You save on production costs, but sacrifice your firm’s reputation.

Once you look at the economy through the lens of competition, the whole picture changes. To the untrained eye, greedy businesses “take advantage” of consumers and workers. Due to competition, however, the road to profit is lined with good intentions: To succeed, you must give your customers and employees a better deal than anyone else.

It is easiest to see the impact of competition in markets with thousands of small firms. Economists call this “perfect competition.” The wheat market is a classic example. If one farmer charged more than the prevailing price, all his customers would switch to one of the thousands of alternative suppliers. Under perfect competition, firms produce until the product price equals the marginal cost of production. Moreover, competition ensures that firms produce at the minimum average cost in the long run. Any firm with higher costs will be undercut. It is an elementary economic theorem that perfect competition’s triple equality of price, marginal cost, and average cost maximizes society’s gains to trade; it is, in economists’ jargon, “fully efficient.”

This conclusion is easily misinterpreted. It does not mean that *only* perfect competition is fully efficient. Perfect competition is a sufficient condition for efficiency, not a necessary one. It is important to bear this in mind because in most industries, perfect competition will not naturally arise, and would be disastrous to impose. Perfect competition normally exists only if the minimum efficient scale—the smallest quantity a firm can produce at the minimum average cost—is small relative to industry demand. If minimum efficient scale is large relative to industry demand, in contrast, only a few firms can survive; a small firm would have enormous average costs and be undercut by larger rivals.

Fortunately, it is entirely possible for market performance to be as good with few firms as with many. Indeed, two genuine competitors may be enough. Imagine that two firms with identical and constant marginal costs supply the same product. The firm with the lower price wins the whole market; if they offer the same price, each gets half. Competition still induces each firm to price at marginal cost. Why? If the firms initially ask for $1.00 above marginal cost, each firm could steal all of its competitor’s business by cutting its price by one penny. Like an auction, price slashing continues until price and marginal cost are equal.

What if the minimum efficient scale is so large that only one firm can survive? Surely competition breaks down? Not necessarily. As long as there is potential competition, a single firm may act like a perfect competitor. As long as other equally able firms would enter the market if it became profitable, the incumbent firm cannot raise prices above the competitive level. Note, though, that in this case competition drives price down to average cost, but not marginal cost. Given fixed costs, a firm that sets price equal to marginal cost would lose money.

Illegal competition. When does competition not work? The simplest and most empirically relevant answer is when a government makes competition illegal. In agriculture, governments have long strived to hold prices above the free-market level. The sector would be perfectly competitive in the absence of REGULATION, but many deem this outcome politically intolerable. Restrictions on international trade, such as tariffs, have the same effect for domestic firms. Licensing and related regulations have kept prices above free-market levels in airlines, trucking, railroads, and other industries.

The intensity of government restrictions on competition varies. In the post–WORLD WAR II era, restrictions were especially draconian in the Third World. Under the rubric of "import substitution industrialization," many less-developed nations cut themselves off from world markets with strict TARIFFS and QUOTAS. Internal policy allowed handpicked firms to receive strict monopoly privileges. Such policies are in retreat, but remain a heavy burden for developing countries.

Public opinion and ANTITRUST laws tend to overlook monopolies created by the government. Instead, they focus on firms' alleged ability to hold prices above average costs even though it is perfectly legal to compete against them. There is a simple, common, and relatively harmless way to achieve this: be the best. If the lowest-cost firm can produce shoes for $10 per pair, and the second-lowest requires $12, then the former can safely charge $1.99 more than its own marginal cost. While this is not perfectly efficient, the problem is mild. Indeed, punishing industry leaders for being the best ultimately hurts consumers by reducing firms' incentive to leapfrog over the current industry leader.

There are two other commonly cited paths to free-market monopoly: collusion and predation. The idea of collusion is that the firms in an industry stop competing with each other. This might be achieved through merger or monopoly, a formal cartel arrangement, or an informal "gentlemen's agreement." Under U.S. antitrust laws, these are all either illegal or heavily regulated.

When it was legal, collusion was still easier said than done. Even if the number of firms is small, it is hard to get all of them to sign a CARTEL agreement, and even harder to actually honor it. As the number of firms rises, the creation of viable voluntary cartels soon becomes practically impossible. Regardless of industry concentration, though, the most fundamental check on collusion is new entry. Once all of the firms currently in the industry raise prices, what happens when outsiders notice their inordinately high profits? Existing firms could invite them to join the cartel, but then the cartel has to share its monopoly profits with anyone and everyone. But if new firms are not admitted, they will undercut the cartel and ruin the arrangement.

What about predation? The idea is to condition your price on the behavior of other firms. You threaten to give the product away until you are the only firm left; once consumers have no other choice, you raise prices to recoup your initial losses. But predation, even more than collusion, is easier said than done, and there are few good examples even before the existence of ANTITRUST laws. The hitch is that the predator loses far more money than the prey. If the predator begins with a 90 percent market share, it loses at least $9 for every $1 than its rivals lose. It is not enough for the predator to have slightly "deeper pockets" to outlast the prey; in this example, their pockets need to be at least nine times as deep. Other factors amplify the predator's troubles: Rivals can temporarily shut down; consumers may stock up when prices are low, making it hard to recoup the losses; successful predators may attract the attention of large-scale entrants with even deeper pockets than their own.

In sum, competition is a robust mechanism for reconciling individual greed and the public welfare. The key is not the number of firms in a given industry, but whether competition is legally permissible. More firms may reduce the probability of collusion, but that is unlikely to happen anyway. "Trust-busting" and other artificial efforts to reduce concentration tend to backfire. Industries are concentrated because the minimum efficient scale is large. Nevertheless, many economists believe governments can do much to strengthen competition: They can repeal the panoply of policies designed to curtail it.

[Editor's Note: Most mainstream economists seem to be of the view that at least a few, not just one or two firms in the market, are necessary for competition to function effectively. This view is supported by significant statistical evidence. Hence, the justification for the trust-busting role of the government, in addition to the need for government intervention in cases of market failure occasioned by EXTERNALITIES, public goods, concerns of equity, etc.]

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competitive economics

THE ROLE OF COMPETITION in economics is vital toward understanding the entire process of production and the evolution of society. COMPETITION is the force that ensures progress and growth. The Malthusian theory of population growth is fueled by competition as much as evolution is determined by natural selection. It is competition that is responsible for this push forward in market economies. Yet the idea of competition in economics has always been controversial and often misleading. The idea of perfect competition, for instance, is wrought with such logic that it is virtually unrealistic in most respects. But the idea of realism is another story. Nonetheless, perfect competition has served as a useful tool of analysis, almost so much so that it drew economists, perhaps unwittingly, into seeing it as *the model* of competition even so far as to exclude dynamic rivalry among economic agents. This is the problem with neoclassical forms of theories, their neglect of time as an element.

The concept of competition in economics is as crucial as that of opportunity cost. Competition is a fact of life central in capitalist or market economies. Without competition markets would not exist. Competition takes place on many levels of economic society, that between persons within a firm, among firms, groups of firms, etc. Competition also takes place on other aspects of life other than what would think of as economic such as in card or board games, sports, video games, etc. and indeed may take place within an individual as a struggle within a person's conscience or psyche (Macbeth, for example). In biology, competition takes place among the individuals of a species, between species, etc. Quite simply, competition is an unavoidable fundamental fact of life. There are several conceptions of competition including the classical, neoclassical, Austrian, Marxian, and Darwinian theories in economics.

The classical theory gained a foothold in Adam SMITH's economics and would be practically unchanged in its basic format until the end of the 19th century (although writers such as Antoine Cournot were already discussing other forms of competition in the first half of the 19th century). Smith saw competition among firms as one firm's striving to obtain scarce resources, then competing with one another in selling its outputs. Smith did not, as some later economists would assert, conceive of competition as either perfect or as a general equilibrium.

The writer to whom the notion of perfect competition may be attributed is Cournot. He used mathematics to study what we call today market structure. Cournot is famous for his theory of OLIGOPOLY, especially that of a duopoly. While Cournot did define monopoly and how a monopoly prices—use analysis took marginal costs explicitly into account—he also discussed the effect that the number of firms had on price (and how the number would come to be one of the defining characteristics of market structure and competition). Cournot's influence on British economists would have to wait until Alfred MARSHALL's *Principles* in 1890.

Perfect competition is the theoretical base from which all neoclassical theories of competition stem. Cournot's analysis uses the basic definition of profit as revenue minus cost. By applying calculus one arrives at the first order condition for profit maximization, namely marginal cost equals marginal revenue. As the number firms grows larger, price approaches marginal cost. In another mathematical treatment, F.Y. Edgeworth defined the condition for competitive equilibrium, and his analysis also depended on the number of competitors in the market. Number of firms in the market would be the defining characteristic of neoclassical competition theory.

The crowning achievement, or rather most elegant and comprehensive—at least to that date—of perfect competition appeared in Frank KNIGHT's (1921) *Risk, Uncertainty and Profit*. Knight clearly outlined all the textbook assumptions necessary for perfect competition. The assumptions include perfect knowledge, free mobility of resources, large number of firms, a homogeneous product, and free entry and exit. These rather restrictive assumptions meant that no real world industry would fit the mold.

The Austrian concept of competition concentrates on the rivalry aspect and almost wholly excludes any notion of perfect competition. Perfect competition in the Austrian version is used solely as a benchmark. Austrian economists are concerned with processes in real time. Equilibrium is a useful idea as a benchmark, but not as a description of real world competition. Especially unacceptable is the assumption of perfect knowledge. As Friedrich von HAYEK (1945) was to make clear, knowledge is costly, and depends on place and time. To assume prefect knowledge is negate any notion of competition in real time.

The Schumpeterian (Joseph SCHUMPETER) concept of competition, while associated with the AUSTRIAN SCHOOL, gives center stage to the entrepreneur as a disequilibrating cause in economic development. The entrepreneur is a driving force in competition, at least at the industry level. The entrepreneur initiates, and keeps the engine of change and competition in perpetual motion. The entrepreneur introduces new techniques, products, markets, etc. and carries out innovation. In biological evolution, this is the role played by mutations in natural selection. While Schumpeter, however, might deny any strong analogy between economic and biological evolution, he did provide the analytical framework for a theory of economic evolution.

Hayek contributed one of the more important Austrian tenets in the economics of competition. Competition according to Hayek is very much a matter of place and time. Knowledge is the key to understanding competition among the many agents in the economic world. As Hayek put it, "The economic problem of society is mainly one of rapid adaptation to changes in the particular circumstances of time and place, it would seem to follow that the ultimate decisions must be left to the people who are familiar with these circumstances, who know directly of the relevant changes and of the resources immediately available to meet them." Hayek would adopt the invisible hand paradigm in the guise of what he called spontaneous order.

The invisible hand is an organizer of economic activity and promoter of competition that brings about socially desirable results. The competition among individuals, firms, etc, produces goods that are desired by consumers and at the lowest cost. None of the agents involved intends these results but because of competition, these results are obtained. The invisible hand is similar to an organizing force whereby the actions of millions of individuals in competition with one another brings about socially desirable consequences none had intended.

Darwinian competitive economics. The natural selection metaphor in economics came into the forefront with Armen Alchian's (1950) seminal contribution. His idea was simply to apply Darwinian natural selection to competition among firms. Firms are selected on the basis of the rules they put into operation and the actions they take based on these rules. The firms that use the better rules are selected in competitive environment. Those that do not, do not survive. It does not matter whether these firms know what rules are best; it is simply a matter of outcome as the firms adopting the best rules will be the profit maximizers. Alchian's theory neglects any role of intention. It does not matter about purposeful behavior, just as in Darwinian selection; teleology plays no role.

The fact that intentions were downplayed in Alchian's theory led to a debate among economists about the acceptability of the natural selection paradigm in competitive economics. Alchian's selection process can be criticized on many levels, not least is that it is a one-step process instead of a cumulative process. The debate brought to light the all-important second part of the cumulative process, retention of the better rules. Firms, like organisms that are selected must have memory—genes, of course, play this role in natural selection.

Milton FRIEDMAN's celebrated essay on economic methodology undoubtedly brought the "assumptions don't matter" practice into competition theory—the unrealistic assumptions of perfect competition do not matter so long as the results of the theory are accurately predictive of behavior among firms in the real world. The important result in Friedman's theory is that firms act "as if" they are maximizing.

Competition in economics has almost always been, even since the day of Smith, bound up in efficiency. Perfect competition again comes into play as the standard market structure by which all others are judged. In perfect competition, economic welfare is maximized (notwithstanding a rigorous explanation and proof of competitive equilibrium). Resources are allocated to their highest and best uses, and in the product markets, price is equal to marginal cost. With PARETO OPTIMALITY efficiency, it is impossible to improve upon this competitive equilibrium. Monopoly—one price monopoly that is— would then give the furthest deviance from perfect competition and therefore bring about the largest welfare loss.

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computer

A COMPUTER IS A DEVICE that takes data (input), processes it, and returns information (output) to the user. The development of computer technology has vastly increased worker productivity and opened up new opportunities for business.

Computers consist of hardware, which includes all the physical parts of the computer, and software, which includes all instructions that tell the computer how to operate. Hardware includes items such as computer chips, disk drives, modems, monitors, and cooling fans. Software consists of programs, which are sets of instructions written by human beings in specialized programming languages. The programming-language text of a program is called source code.

Though the details of computer technology are complex, the essential idea is simple: the on-off switch. All modern computers are essentially elaborations of this one simple idea. Computers contain billions of microscopic on-off switches in the electronic chips that serve as their brains and memories.

Any simple on-off switch, such as a light switch or a car ignition, can represent information by being on or off. The state of the switch, on or off, gives an instruction to a room light or to your car that it should be on or off. When you put millions or billions of on-off switches in sequence, the sequences can represent more complex information in what is called binary code. In computer binary code, each on-off switch is called a bit (for "binary digit"). Eight bits, which can represent a letter or number, are called a byte.

All modern computer programs work by using the computer's brain, called its processor or central processing unit (CPU), to read and manipulate bytes of data in the computer's memory, called either read-only memory (ROM) or random-access memory (RAM). The computer then sends the processed information to another device, such as a disk drive for storage, a monitor for viewing, a printer for printing, or a modem for sending to another computer over the internet.

Early computers. The earliest computer bearing any resemblance to modern computers was the "difference engine," conceived and partially built by British mathematician Charles Babbage in 1822. Another early computer was the slide rule, invented by Edmund Gunter in 1623 and used for mathematical calculations (including those for the first American moon landings) until Hewlett-Packard introduced the first personal-sized electronic calculators in 1972.

During WORLD WAR II, the first computers able to re-use software ("stored-program" computers) were developed in the U.S. Navy by Lt. (later Admiral) Grace Murray Hopper and at the University of Pennsylvania under John Mauchly. In these early non-electronic computers, software was programmed by manually setting mechanical switches inside the computer. The term "bug," meaning a software malfunction, was coined by Hopper when she tested a prototype computer on a ship at sea. When her program failed to work, she opened the case and found a moth wedged between two switches: the first computer bug.

The advent of the computer has vastly increased worker productivity in almost all facets of the U.S. economy.

Hopper's and Mauchly's efforts came to fruition in 1946 with the development of ENIAC, the closest ancestor of modern computers.

Hopper and Mauchly were later involved in the development of programming languages such as Fortran (Formula Translating Language) and Cobol (Common Business-Oriented Language). Other programming languages developed in the coming years were Pascal, Basic, C, C++, and specialty languages such as Jovial and Lisp.

Business computers. The first commercial computer was the BINAC, built by computer pioneers J. Presper Eckert and John Mauchly, who formed their own company to build business computers. Their company was bought by Remington Rand, under which they developed UNIVAC, the first general-purpose business computer. Another early business computer was the Lyons Electronic Office, built in 1951 by the Lyons Tea Co. in England.

International Business Machines (IBM) started in 1884 as the Hollerith Tabulating Machine Co. and built its first stored-program computer in 1948. In the 1960s, IBM's System 360/370 computers—called "mainframes" because of their enormous size—dominated the computer industry.

During the 1960s, software was developed by the computer manufacturers and was sold with their hardware. An ANTITRUST decision in 1969 forced IBM to unbundle software from hardware and sell it separately: that was the beginning of the software industry. Even then, most specific-purpose software ("application software") was developed by users who traded it for programs developed by other users. The process was facilitated by a small but important firm, International Computer Programs (ICP), which published catalogs of software available for trade or purchase.

Personal computing. The first personal computer was the Altair 8800, introduced in 1975 and sold via mail-order to hobbyists who assembled the computer themselves. At about the same time, Xerox's Palo Alto Research Center was developing a personal computer called the Xerox Star, with an icon-based screen display that would later inspire the Apple Macintosh, IBM's OS/2, and Microsoft Windows. Also in 1975, Microsoft co-founder Bill GATES dropped out of Harvard to develop an Altair 8800 version of the Basic programming language, which was Microsoft Corp.'s first product. In 1976, Dan Bricklin and Bob Frankston, students at Harvard and MIT respectively, developed VisiCalc, the first spreadsheet program for personal computers.

Personal computers became widely popular with the 1978 introduction of the Apple II, which many users bought to run VisiCalc. The Apple II was the first personal computer to be used mainly by non-hobbyists. In 1981, Apple introduced the Lisa, a $10,000 model whose icon-based screen and "mouse" pointing device were inspired by the Xerox Star and, in turn, inspired later icon-based systems. Also that year, IBM introduced the IBM PC, with the same 8088 processor as the Altair 8088, 64K of RAM, and one diskette drive.

Apple and IBM approached the personal computer market in dramatically different ways. Apple believed that personal computers were the wave of the future and, thus, chose to keep tight ownership and control of its technology. IBM, however, regarded personal computers as unimportant compared to sales of its hugely profitable mainframe computers. IBM expected that demand for PCs would be about 50,000 per year and that it would be a low-profit item. Thus, IBM designed its PC with off-the-shelf parts and a non-proprietary architecture that anyone could copy. The eventual result was that "IBM-compatible" PCs from non-IBM manufacturers became cheaper and more popular than Apple computers.

For the PC operating system, IBM first went to Digital Research Inc. in California, whose CP/M operating system ran most non-Apple personal computers. However, industry legend has it that Gary Kildall, Digital Research's CEO, kept the IBM executives waiting until they left in a huff. They then went to Bellevue, Washington, and hired Microsoft to do the job. Microsoft, in turn, went to Seattle Computer Products, which had developed an operating system called Q-DOS (Quick and Dirty Operating System). Microsoft bought Q-DOS and modified it to create the first version of PC-DOS.

In the 1980s, personal computers became more powerful and began to eclipse the older "big iron" mainframes. In 1983, Apple introduced the Macintosh, a smaller, cheaper version of the Lisa, with the same mouse and icon-based screen interface. A year later, Microsoft began development of Microsoft Windows, early versions of which were too slow and crash-prone to be useful. Windows awaited the development of more powerful personal computers to become popular.

PC software continued to be the main reason for buying PCs. VisiCalc was a top seller until 1984, when it was crushed by Lotus 1-2-3, the dominant PC spreadsheet program of the 1980s. VisiCalc's revenues plummeted from $40 million in 1983, before the introduction of Lotus 1-2-3, to a paltry $600,000 in 1984 after Lotus 1-2-3.

WordStar, WordPerfect, and a distant also-ran called Microsoft Word were the most popular word PC processing programs. Ashton-Tate's dBASE was the most popular database program, along with runners-up such as R:Base, Paradox, and various "dBASE-compatible" programs such as Clipper and dBXL.

Meanwhile, IBM belatedly realized the importance of the PC market and extended its alliance with Microsoft to develop a Macintosh-like operating system for the PC. The operating system, OS/2, would be jointly marketed by IBM and Microsoft.

After OS/2's introduction in 1987, Microsoft urged other software firms to focus their development efforts on moving their programs to OS/2. At the same time, Microsoft continued to develop Windows, which would in the 1990s displace both PC-DOS and OS/2 in the marketplace. Other software vendors later complained that Microsoft, which lacked a single number-one application software product under PC-DOS, dominated every category in the 1990s via its control of Microsoft Windows.

Partly as a reaction against Microsoft's heavy-handed tactics, the late 1990s saw the development of "open source" software, freely distributed programs whose program code was open for inspection and improvement by users. Also in the 1990s, the U.S. government filed an antitrust suit against Microsoft, alleging abuse of its Windows monopoly. Early in the George W. BUSH administration, however, the government settled the suit on terms favorable to Microsoft.

The internet. Developed in the late 1960s by the Defense Advanced Research Projects Agency (DARPA), the internet was originally designed as a communication tool for the Defense Department. By the 1980s, however, people in universities and business were using the internet as well. Outside those contexts, individuals could also get limited internet access by purchasing accounts on Compuserve, GEnie, and other online services, as well as email-only accounts from firms such as MCI Mail.

For individuals, full internet access was hard to get and harder to use. It required knowledge of both internet commands and the Unix operating system, which ran on most computers connected to the internet. For those reasons, home users seldom wanted full internet access, though firms such as Delphi sold subscriptions for a fee.

That picture changed in 1993 with the development of the World Wide Web, a graphic, icon-based interface that made it unnecessary to learn complex commands to use the Internet. Both businesses and individuals suddenly found it easy to access computers on the other side of the world—to get information, coordinate business activities, or to make purchases. The World Wide Web has been credited with creating a "new economy" of permanently higher productivity in the 1990s. Though enthusiasm for the Web led to unrealistic hopes that were deflated in the recession of

2001–03, the Web and personal computing will continue to influence economies and nations for the foreseeable future.

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Conference of Montréal

THE CONFERENCE OF MONTRÉAL is an annual forum of the Americas on the international economy that has met in Montréal, Québec, CANADA, each spring since its founding in 1994.

The Conference of Montréal brings together members of the international business community, public sector, universities, international institutions, and civil society. It focuses on issues of GLOBALIZATION and has sought to bring new ideas and understanding on such themes as innovation in an uncertain world; creating a hemispheric free-trade zone encompassing all countries in the Americas; how to do business with Africa and the Middle East; and how to do business with the EUROPEAN UNION (EU). Its speakers have included heads of state and leaders of international organizations such as the Inter-American Development Bank, the Organization for Economic Cooperation and Development, the North Atlantic Treaty Organization, and Doctors without Borders.

The Conference was founded in 1994 by Gil Remillard, who was then the Québec Minister of Justice and Minister of State for Canadian Intergovernmental Affairs. Remillard organized the Conference under the auspices of the Institut international d'études administratives de Montréal, with the support of the governments of Canada and the province of Québec.

The themes of the 1999 Conference, economic integration, free trade, cultural nationalism and the enormous disparities in wealth and income, inspired a PBS documentary "The Americas in the 21st Century" that was aired in both the UNITED STATES and Latin America. The 2000 Conference addressed issues confronted by Western companies and governments doing business with Africa and the Middle East. The 2001 Conference focused primarily on Western hemispheric economic integration. In 2002 and 2003, Conference themes included the effects of globalization and economic development on international security, public health, agriculture, the environment, small business, and corporate governance.

In November 2002, the Conference formed a partnership with the Organization for Economic Cooperation and Development (OECD), an international organization based in Paris, France, which holds a similar forum. The OECD Forum began in 1999 and gave business leaders, labor leaders and other members of civil society the opportunity to discuss important economic issues with government ministers and members of international organizations. The two organizations now cooperate in the organization of their international forums. They work together on program development, identification of speakers and issues, and promoting the visibility of both forums.

The Conference of Montréal has not gone unnoticed by opponents of globalization who view the conference as an additional hobnobbing opportunity for the transnational financial elite. Protests of the conference have been staged by such organizations as "Collectif d'actions non-violentes autonomes" and various progressive and anarchist networks.

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conglomerate

A CONGLOMERATE IS A FORM of combining companies in unrelated businesses. Companies can gain MARKET power through internal growth. However, merging with other companies is a much faster and more effective way to gain market power. Usually, large corporations spread beyond a single market. Multi-markets operation is a strategy for growth. These firms typically spread by conglomerate diversification as well as vertical integration (operating at different stages of production) and multinational operation.

In a conglomerate merger an automaker might buy a financial institution. Conglomerate mergers raise two main concerns. First, concentration of assets in the top companies has grown substantially. The data show that the share of the top 200 has almost doubled since 1910. This trend has concerned many economists, policymakers and the FEDERAL TRADE COMMISSION (FTC) as the giant corporations might "ultimately take over the country." However, in many instances of conglomerate mergers the effective competition has risen. When Du Pont purchased Conoco (an OIL company), or when Philip Morris (a cigarette company) bought General Foods, despite the fact that the concentration of assets increased, the degree of competition in the related industries seemed to rise. In addition, the data do not account for foreign competition.

The second objection to conglomerate mergers concerns the economic validity of the mergers. Many ask what does meatpacking have to do with airplane business or typewriters with birth-control pills? Recent merger of news organization with companies remotely related to journalism which have profit interests in aviation, financial services, hazardous waste materials and nuclear power, has become the subject of a great deal of debate. Many observers have expressed concern about the effect of these mergers on freedom of press.

Conglomerates are more likely to wage a predatory price war against specialist firms, or may refrain from competing vigorously with their allies, entering into tacit collusion to respect each other's sphere of influence, or promote their sale of products through reciprocal purchase of their customers' products. In actual merger cases predatory pricing and reciprocal dealing have been attacked. Three main varieties of conglomerate mergers are market extension mergers, product line extension mergers, and "pure" conglomerate mergers, which have no link with prior operations. All three types have been challenged under the Celler-Kefauver Act. One of the major objections to conglomerate mergers has been that such mergers can eliminate or reduce potential competition. This precedent was established in a case against Pacific Northwest Pipeline Corporation (1964). The principle of potential competition has been applied in many cases.

Another major challenge to conglomerate mergers was in cases of Reynolds Metal Company (1962). Reynolds was the nation's leading aluminum foil producer. The Federal Trade Commission raised the concern about the ability of the company to practice predatory pricing to drive out a small independent firm specialized in florist foil wrapping paper—the power of the "deep pocket." This view was also applied in the case against Procter & Gamble's acquisition of the Clorox Company.

Reciprocal purchase arrangements and its effect on potential competition was raised in another leading case concerning the Gentry, Inc. a specialist in manufacturing of dehydrated onion and garlic, owned by Consolidated Foods Corporation (1965). The record shows that the company brought reciprocal buying pressures on its suppliers, especially those making soup and related products that had the Consolidated Foods' brand name for distribution. Gentry's market share in onion and garlic rose from 32–35 percent in the next ten years. The Supreme Court ordered the firm to divest and separate itself from Gentry. This basis of their decision was the probable effect of the merger in the future.

In the case of conglomerate mergers, the courts have taken prospective cost savings into account. In the case of the Procter & Gamble (1967), the Supreme Court's view was that it could actually harm competition. The cost saving in that case was expected to be in adverting, which could have been used to deter potential entry.

The 1968 Merger Guidelines view was concerned with market structure and preservation of competition. It stated that "within the over-all schemes of the Department's antitrust enforcement activities, the primary role of the Section 7 of the Clayton Act enforcement is to preserve and promote market structures conducive to competition." Market structure was the focus of the guidelines because the individual firms tend to be controlled by the structure in their markets, principally the number of firms in their industry. Usually, when a few firms account for a large share of the market, the barriers to entry are high, price competition is discouraged; inefficient methods of production or excessive promotional advertising are commonly found.

At the time, the Department of Justice regarded two categories of conglomerate mergers as having "sufficiently identifiable anticompetitive effects . . ." They were mainly concerned with two types of mergers: mergers involving firms that could enter the market on their own; and mergers with potential for favoring a major customer over others.

The decade of 1980s brought a new chapter in American antitrust policy. The dismissal of the case against IBM and the revision of the guidelines was the beginning of a new chapter in regulation of business. The emphasis shifted to efficiency: "If big is efficient, big is good."

Globalization of the world's economy has led to a concerted effort to coordinate laws governing competition. Currently, the rules of competition are determined by more than 100 national and regional governments. The Department of Justice and the European Union Commission for Competition are collaborating to develop standards for multi-jurisdictional coordination of their laws for competition and their enforcement.

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conservatism

A SYSTEM OF THOUGHT, conservatism has a philosophical core that centers upon upholding traditional values, social arrangements, government, and economic structures. Conservatives have, over the past few centuries, held varying opinions about the role of government in the economy and the value of democracy. Conservatives have been linked by a suspicion of change in a modernizing world and the urge to preserve traditional institutions.

Historians typically find the origins of conservatism during the 17th and 18th centuries in Europe and America. The 17th-century philosopher Thomas Hobbes, author of *Leviathan*, argued that government is necessary to provide order that is typically lacking among humans subject to the consequences of original sin. For Hobbes, "all men in the state of nature have a desire and will to hurt" because they are all seeking the same thing, which usually the strongest acquires. The solution, Hobbes believed, was that the English should "confer all their power and strength upon one man, or upon one assembly of men, onto one will: which is as much as to say, to appoint one man, or assembly of men, to bear their person."

A century later the English philosopher Edmund Burke, reacting to the astonishing changes brought about by the FRENCH REVOLUTION, sought in his writings the stability of past tradition and absolute, unchanging values. Revolution is about utter change, chaos, ideas and institutions never before seen. Burke attacked the ideological program of the French revolutionaries, who worked to destroy the hierarchy of church and state and the aristocratic belief in human inequality. Burke was shocked by the revolutionary program to create a secular state, to abandon divine providence, to substitute traditional morality with humanistic values, and to embrace modern capitalism and all of its implications. Burke feared the impact of LAISSEZ-FAIRE economics and the rejection of landed property as the traditional basis of society, economy, and government.

American conservatism. Leading conservatives in America at the time of the American and French Revolutions included John ADAMS and Alexander HAMILTON. Adams and Hamilton were leaders of the Federalist political faction that strongly advocated the adoption of the Constitution of the United States. These American conservatives were heavily influenced by the writings of Thomas Hobbes. Adams and Hamilton did not go as far as Hobbes, defending the English monarchy, but they accepted Hobbes' pessimistic assessment of human nature, and assumed that government must impose order upon its people.

They applauded the Constitution for circumscribing the liberties of the American citizen within the structure of an orderly, rational government. American conservatives feared the disruptive consequences of the AMERICAN REVOLUTION, and sought to prevent anarchy and chaos by the overwhelming influence of the "best men," the economic, social, and cultural elite. Adams, for example, believed not in an aristocracy of birth (as did Burke) but in an aristocracy of talent and merit. This "natural aristocracy" represented the very few in America who should inevitably supervise the liberties of the majority. Such was the reasoning behind the Electoral College in the American presidential election process; it would mediate the popular vote with the influence of the elite electors. Hamilton, the first secretary of state, advocated an economic program that made the federal government very influential in the credit and banking structures of the United States. He encouraged the government to promote manufacturing, international trade, policies favoring the rich, and investment in the American economy.

The forces of modernization—the INDUSTRIAL REVOLUTION, new technologies, and the emerging dominance of scientific thinking—forced conservatives during the 19th century to reassess their ideas and policies. Conservative programs of continued government involvement in the U.S. economy during the antebellum period, such as Henry Clay's American System, gave way in the post–AMERICAN CIVIL WAR era to a conservatism that embraced laissez-faire economics. Republicans advocated limited government involvement in the economy, and opposition to labor and trade unions and other reforms that would impede unlimited economic progress. They advocated economic policies that supported the wealthy, big business, and manufacturing interests, which in turn would benefit the entire economy, and all Americans, rich and poor.

The maintenance of the GOLD STANDARD, that is, a limited money supply, which supported creditors over debtors, brought opposition to the Republican administrations of, for example, William MCKINLEY, from liberal reform groups such as the Populists. Industrialists, such as Andrew CARNEGIE, spoke for the majority of conservatives in *The Gospel of Wealth*, arguing that competition dominates economic and social existence; those who compete the best also thrive the best. Social Darwinists, such as William Graham SUMNER, applied the implications of Darwin's theories of natural selection and survival of the fittest to humans: inequality is the natural state of things; the poor serve a purpose—performing the drudgery of human labor—just as the rich serve a purpose—directing the application of labor to the infrastructure of society.

20th-century conservatism. In the early part of the 20th century, American conservatives, such as Irving Babbitt and Paul Elmer More, who led an intellectual movement called the New Humanism, feared the rise of the masses, the typical American and his rude habits and uncultured jargon, and the anti-intellectualism in American life. The New Humanists believed modern society was under attack from the new ideologies of pragmatism, naturalism, behaviorism, and liberalism. Babbitt, More, and other New Humanists believed in the moral presence of decorum and order existing within the human soul, which by cultivation and intuition can be accessed—but only a very few can do so. The New Humanists were not alone in responding with concern that the post–WORLD WAR I era would bring new democratic, liberal forces to the world. The "Roaring 20s" in America included a conservative reaction to the war in the forms of Prohibition, the Red Scare, the rise of religious fundamentalism, and the Republican administrations of Warren HARDING, Calvin COOLIDGE, and Herbert HOOVER.

Late 19th-century and early 20th-century American conservatives were clearly influenced by their European counterparts. In 1889, German intellectual Ferdinand Tonnies penned *Community and Association*, in which he decried the impact of modernization upon a traditional society. Artificial associations replaced the organic institutions of family and community. Close-knit society and orderly class structure were giving way to a new middle class and working class with completely different moral assumptions, economic concerns, and social habits. Max Weber, Emile Durkheim, and Auguste Comte examined past societies to question the validity of modern change upon medieval, communitarian institutions.

Conservatism after WORLD WAR II has been of two types. First, there was the intellectual conservatism of thinkers such as Russell Kirk, author of *The Conservative Mind* (1953). Kirk's brand of conservative thought was similar to that of 19th-century conservatives in his focus on absolute truth and morality, elitism, and opposition to modern relativism and secularism. Added to the postwar uncertainty was the triad of tragedies for conservatives in 1949 and 1950: the SOVIET UNION's acquisition of the atomic bomb, the fall of China to communism, and the attack of communist North KOREA against South KOREA. Anxiety about communism led to fears of espionage and the emergence of Joseph McCarthy to public attention in the United States. Many American conservatives rallied around McCarthy and his ideas of anti-communism and anti-liberalism—in short, opposition to anything that appeared un-American. Such was the mentality, liberals contend, that William Buckley promulgated in starting the *National Review* magazine in the 1950s.

The second expression of postwar conservatism has been represented by the Republican Party. Barry Goldwater, who unsuccessfully ran for president in 1964 against Lyndon B. JOHNSON, became the spokesman for a new political conservatism embracing the economic principles of laissez-faire. Goldwater, author of *The Conscience of a Conservative* (1960), argued for a vastly reduced federal government and deregulation of economic and social policies in favor of turning power over to state and local governments. Conservatives, according to Goldwater, opposed the rights of LABOR, the fight for civil rights, and government intervention into the economy. He supported individual freedoms and the sanctity of private property. He saw the federal government as having a limited role, involving itself in maintaining public order and involvement in foreign affairs. Goldwater's stance on the Cold War and the spread of communism in Europe, Asia, and Africa was that of a "hawk," believing in aggressive military and economic containment, and confronting the Soviet Union and its communist satellites with a vast superiority of nuclear weapons.

Although Goldwater lost to Johnson, his ideals found new life during the Republican administrations of Richard NIXON and Ronald REAGAN. Both Nixon and Reagan endorsed Goldwater's run for president, and both gained important influence in supporting a lost cause. Nixon rode his conservative reputation to the White House in 1968, while Reagan became a leading conservative spokesman and governor of California. As a two-term president from 1981–89, Reagan was the unquestionable leader of the conservative movement.

At the beginning of the new millennium, conservatism is still an important political philosophy focusing on government restraint, the free market, individual freedoms, sanctity of private property, and strong defense of American values both at home and abroad.

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consumer

TO CONSIDER THE CITIZEN as a consumer is not just another way to conceive the markets as groups of individuals seen as potential users and buyers. The consumer may be seen as any person, adult or minor, who uses goods and services, but who also has to manage a personal budget as well as affording credit and debts. In the 1990s, social scientist George Ritzer, among others, has theorized about the constant temptation of consuming that seems to be stronger than ever, talking about new phenomena such as the credit-card culture and the addiction to debt that many American consumers have to face.

Is there a real need for assessing the consumer behavior knowledge? Academic literature on consumer studies has burgeoned in the last two decades. Most recent research concentrates on many topics, even though behaviorist approaches are not the only ones referred to. Relationships between producers and consumers can take many forms and are not limited to just plain transactions. One key word to understand consumption issues and consumer dynamics is influence. Consumers' decisions can be influenced in various ways (by advertising, other customers' comments and choices, statistics, a sampler, a demonstration in a store); but these buyers and users can as well influence other potential consumers in their choices and could even bias producers, retailers, and corporations with their suggestions, complaints, or even organized boycotts.

Since we consume more of a wider variety of commodities, ranging from HEALTH care to entertainment, from news to body treatments, we need to be aware of the many strategies involved in the construction of needs, fashion, commodities, images, and distinctive symbolic meanings. From time to time, consumers try new products and new brands they have heard about, but they are not necessarily satisfied with all these changes. Others hesitate, are reluctant to make the move. Whenever advertising can incite a change in the consumer's habits, there must be a reward in the new product in terms of quality, price, design or availability. But as we have all experienced at least once, it is not always the case. As Douglas Holt and Juliet Schor rightly point it, "if corporations created needs, particularly in insidious ways, they could hardly be credited for meeting them."

The American way of life. In 1950, an American retail analyst named Victor Lebow wrote the following comments about the constant need to have consumers buying and consuming more and more, in order to get a wealthy economy and prosperity; his reflexions from more than half a century ago could serve as well as a definition, or at least an elementary explanation of the consumer society: "Our enormously productive economy demands that we make consumption our way of life, that we convert the buying and use of goods into rituals, that we seek our spiritual satisfaction, our ego satisfaction, in consumption. We need things consumed, burned up, worn out, replaced, and discarded at an ever-increasing rate." But, if what is usually labeled as the American way of life first appeared in the United States, the phenomenon is not anymore limited to North America and it often seems to be a desirable standard for some populations in non-Western countries.

German philosopher Karl MARX wrote about what he called the "fetishism of the world of commodities." As Marx explains, commodities are not sold according to the real efforts asked of the workers; there is a value added to these nonessential objects because of their social meaning, but the worker who builds them isn't paid for that extra portion of the value.

In the early 1970s, French sociologist Jean Baudrillard criticized Marx's approach and theorized the concept of the consumer society, saying that in common urban spaces of the late 20th and early 21st centuries, we don't interact anymore with persons, but mainly with objects (commodities made to be consumed) and messages (such as advertisements). Steven Connor has summarized Baudrillard's thoughts: "Consumer society is not based on scarcity but on overproduction. Where there are no agreed or demonstrable needs for a product, such needs must be actively stimulated by means of advertising and marketing strategies."

Fashion dynamics and new trends in society are not spontaneous popular responses from a majority of individuals who are *en vogue*. In an article, Christopher Hackley explains that advertising agencies that build corporate images and visions related to brands and labels play a decisive role in the production of consumer culture. The case of the fashion movement created by the Sony Walkman in the early 1990s remains a clear example. It is not just that brands have to correspond to a respectable reputation, but many consumers now rely only on companies' images and reputations in their choices of what they will buy.

In his provocative book published in 1991, *Promotional Culture*, Andrew Wernick explains that promotion has become so important that most consumers only react and respond to widely advertised products or novelties, ignoring other products, ideas, concepts that are not as widely advertised. "All discourse is so saturated with the rhetorical devices of promotion that, in our public lives and perhaps increasingly in our private lives, we are unable to think and act outside of a promotional frame of reference."

The consumer culture. In modern countries, shopping centers and malls are built to be the consumer's paradise. No temperature extremes, no day or night, no time (no clocks), no problem with parking availability and limits (as opposed to downtown stores surrounded by parking meters), therefore the consumer can concentrate on browsing, choosing, and buying at his or her own rhythm. Apart from those activities, one can also do something else than going into stores or boutiques, such as eating in restaurants, or watching a movie in a multiplex. There are even small artificial indoor parks, with trees, fountains and benches, where you can sit and rest, as in any happy city. Baudrillard identifies the modern drugstore (or the new shopping malls) as the "synthesis of profusion and calculation."

According to Don Slater, "The central aspects of consumer culture—such as needs, choice, identity, status, alienation, objects, culture—have been debated within modern theories, from those of earlier thinkers such as Marx and Georg Simmel." But it would be wrong to see all consumers as blind, unconscious slaves of a system that sees them as idiots. In her article, "Consumerism and its Contradictions," Mica Nava states that "Consumers are not cultural dopes, but active, critical users of mass culture; consumption practices cannot be derived from or reduced to a mirror of production; consumer practice is far more than just economic activity: it is also about dreams and consolation, communication and confrontation, image and identity."

During the 1990s, a new kind of consumer appeared, mainly in some Anglophone countries, nicknamed the Green Consumer. For ages, there were always people (individuals and consumer groups) who were concerned with environmental problems related to massive consumption, and thus reacted in different ways: looking for natural products without artificial additives, asking for bags, boxes and packaging made from recycled materials, or avoiding clothes made with polyester and nylon. There recently has been more positive response from industry and some multinational corporations that provide alternate products conceived according to their environmental and ethical choices.

Corporations are often seen as immutable, unalterable institutions, so monolithic, powerful, and prosperous that they can just ignore those few buyers who ask for changes and exceptions. But, as John Elkington, Julie Hailes, and Joel Makower have explained in their 1988 book, *The Green Consumer*, "The marketplace is not a democracy; you don't need a majority opinion to make change." This is true for consumers who ask for more environment friendly products, or recycled packaging. The three authors argue that only 10 percent of the customers are enough to force a change or to create a new line, a new "green" product. Letters, petitions, calls to customer service are frequent ways to express opinions. Corporations can be aware of any change about customer's satisfaction. When a change occurs, the other competitors often feel they have to follow the new trend.

The consumer confidence index. Although consuming often relies on emotions and desires, there are regular data about the state of mind of American consumers. In the United States, the quantitative measure of consumer optimism toward the national economy is called the Consumer Confidence Index. Created in 1985, this indicator was arbitrarily set at 100 and is now adjusted every month according to the results of a survey of almost 5,000 U.S. households. Randomly chosen families are asked about their opinion of present and future perceptions of the economy, as well as their saving plans and their possible spending. Even though it is highly subjective and related to a current state of mind, the release of every Consumer Confidence Index has a strong influence on stock exchanges, whether it is optimistic or pessimist.

Even in our everyday lives, some of our daily work at home is now replaced by someone else's work. Some people don't buy food to be cooked by themselves anymore; they rather buy frozen cooked dinners that can be rapidly heated. Therefore, they pay somebody to cook for them. In the same way, most employees at work buy their cups of coffee instead of preparing them. As Douglas Holt and Juliet Schor explain, "less and less of daily life is produced at home; more and more of what we consume is commodified, i.e., produced for sale on the market." But even in the best of worlds, growth and prosperity do have limits. The evergrowing expansion of consuming might drive negative side effects, such as consuming addiction, indebtedness, fraud, invasion of privacy, rationalization, dehumanization, and homogenization stemming from increasing Americanization, according to Ritzer. As Zygmunt Bauman explains, "Poverty is no longer defined by unemployment but by being an 'incomplete consumer.'" One question remains: Is consuming a means to an end, or an end in itself?

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consumer behavior

THE KEY QUESTIONS concerning consumer behavior are what determines it, and is it rational? Do innate personal characteristics factor into consumer behavior or does our environment alone shape it? Do consumers respond to changes in the economic environment sensibly, or do they err systematically?

As a general proposition, human behavior aims toward attaining more desired states of affairs. Rational consumers demand commodities when they recognize causal connections between the characteristics of these commodities and the increase of their well-being. Since these goods increase consumer welfare, they have value in use.

In terms of specific motivations, we need not assume anything in particular from the outset. We can assume altruistic, selfish, or malevolent motivations within the same general framework. Each consumer ranks different uses for GOODS from most to least preferred. If consumers have some quantity of a good, such as water, they will use it to satisfy their most urgent wants first. They might use water for drinking first, then washing perhaps, and after this want gets satisfied; they might use water for irrigation to raise food. As the satisfaction from drinking additional ounces of water declines relative to using water for washing or gardening, consumers will move toward these alternative uses for water.

Generally, consumers will get less satisfaction from consuming additional amounts of a good, relative to other goods. Economists call this diminishing marginal substitution. If a consumer has 200 gallons of water to use for a day, but only a few bits of food, she will value additional food more than water. Conversely, someone with 50 pounds of food for a day, but only a few ounces of water will likely place a very high value on additional water, relative to additional food. Since the marginal value that consumers get from goods changes in accordance with the relative amounts and uses that consumers have, the allocation of goods changes behavior

SCARCITY of goods implies the need for allocating goods according to alternative uses. Each consumer spends money on a good, so long as the amount of satisfaction that they expect from that good exceeds the amount of satisfaction that they expect from their next most desired good. Ideally, consumers equate the marginal utility of the last dollar spent on each good that they buy. Since water exists in great supply, consumers apply it to uses that have relatively low marginal use values. Some scarce items, like diamonds, are less essential to life than water, but have high exchange values because competition directs them to uses where they have the highest value at the margin. This connection between market prices and marginal-use values is important because it implies that consumer behavior directs market activity.

Incomes and market prices set limits on consumer behavior by prohibiting certain options. Consumers bargain over goods, given their incomes and the prices sellers offer. Consumers initially face different combinations of goods and potential prices that they can buy with their incomes. As actual prices form, consumer options narrow to combinations of different goods and actual prices that they can afford. As prices adjust, the combinations of goods that consumers can afford changes, as do the combinations of goods that consumers find most desirable

The law of demand. As the price of a good falls, money spent on a given amount of that good buys less of other goods. A lower price for a good, relative to other goods, means that consumers give up less by buying more of the cheaper good. Such a change in exchange values implies that the value in use per dollar spent on the cheaper good has increased. This is the law of demand.

We can illustrate this law by examining how changes in available supply affect price and market exchange. If wine becomes scarcer, then entrepreneurs who sell it are now in a position to charge a higher price for it. As the price of wine increases, consumers must give up larger amounts of other goods to get it. By requiring greater sacrifices for those who buy wine, market prices prompt consumers to conserve it. Since a higher price for wine increases the amount of other goods that consumers could buy for the money they spend on this good, they will substitute more of other goods for the good whose price has risen. This substitution effect is central to the law of demand. As the price of one good goes up relative to other goods, consumers will look for substitutes for it, and the demand for that good will fall.

It is important to note that the law of demand pertains primarily to the effect that changes in relative prices have on goods. Economist John HICKS distinguished between substitution and income effects of changes in prices. Reduced (increased) prices increase (reduce) the purchasing power of consumer income. Increased income usually means that people will want to buy more of all goods. There are some goods, called inferior goods, that people will buy less of when they have more income. But consumers buy more of most goods as their income increases. Since consumers can buy more goods in total after prices fall, price reductions increase the demand for most goods.

It is changes in relative prices that cause consumers to substitute cheaper goods for more expensive ones. A large income effect for an inferior good might overwhelm the substitution effect of a price change. Nevertheless, once we adjust for income effects, we find that the law of demand holds for all goods.

In a competitive market, consumers bargain with entrepreneurs until all parties involved agree to exchange prices that align their expected marginal use values. Once consumers have arrived at this point, trading will move resources to their most highly valued uses.

Since exchange values, or market prices, derive from consumer demand, factors of production (i.e., CAPITAL, LAND, and LABOR) derive their value from consumer goods. Increased demand for any particular good will increase the demand for labor and capital used in producing it. So, consumer behavior drives wage formation and other factor pricing.

Consumers and capital. Consumer behavior determines the rate and pattern of CAPITAL ACCUMULATION. All savings are really nothing more than deferred consumption. Consumers postpone some present consumption to increase their future consumption. Since they earn interest on income that they save, consumers have an incentive to postpone their consumption, according to the rate at which they discount future consumption. When consumers discount future consumption heavily, they save relatively little of their income.

Entrepreneurs borrow savings to earn profit. The interest they get charged deducts from their profits, so high interest rates (i.e., high discount rates by consumers) cause entrepreneurs to invest in smaller and shorter-term projects. Inter-temporal consumer behavior thus determines investment and the capital structure of industry. When consumers decide what to consume and when to consume it, they shape the capital structure of industry itself.

Some criticize the marginal utility approach to understanding consumer behavior for being unrealistic. Marginal value supposedly fails because it takes a static and teleological view of human nature. It ignores cultural and historical influences on behavior. It "conceives of man as a lightning calculator of pleasures and pains, who oscillates like a homogeneous globule of desire of happiness under the impulse of stimuli that shift him about the area, but leave him intact," said economist Thorstein VEBLEN. Do real consumers think and act as this theory implies?

It might seem that MARGINAL ANALYSIS indicates that consumer behavior always changes gradually. This is obviously not the way people act. Sometimes market demand shifts very suddenly. Economist Kelvin Lancaster developed an explanation for this kind of behavior. Consumers buy goods with characteristics that satisfy their wants. Goods often have several characteristics and consumers compare both the bundle of characteristics in similar goods and their prices. So, consumers may continue to buy a particular good as its price increases, but at some point, they will switch entirely to another good with a better combination of characteristics and price. Since Lancaster considered multiple elements to consumer choice, he was able to show how consumer behavior can appear disjointed but still derive from marginal valuations.

The generality of the law of demand becomes even more apparent when one considers how markets impose rationality on people who seek to act otherwise. Even if consumers try to buy more products at higher prices, the fact that prices place some options out of reach will still push consumers toward acting as if they were rational.

Factors other than price. Some consumers might emulate the actions of other consumers. Alternatively, consumers might dissimilate themselves from others. Consumers may also buy products simply to flaunt their wealth. It is certainly true that these factors sometimes affect some consumer behavior. Consumers can take multiple factors into account when making their decisions. The status element of certain goods amounts to a different type of use value to consumers, over which they will trade on relevant perceived margins. The incorporation of status into consumer motivations enriches our understanding of consumer behavior, but does not invalidate marginal concepts.

Economists typically assume that consumers behave according to innate preferences for goods. John Kenneth GALBRAITH objected to this because most consumer demands derive from the processes that produce goods, rather than from innate preferences. It is obvious that the only natural wants that emerge from within consumers are for food, shelter, and intercourse. Consumers are not born with the desires to see operas, wear designer clothes, or to hear a symphony. Galbraith concludes from this that the private wants that remain unsatisfied in society do not matter, and that we should instead devote more resources to meritorious public projects.

Economist Friedrich von HAYEK countered Galbraith's claim by pointing out that the mere fact that "processes that satisfy some wants create wants" does not imply that they are less important than public spending programs. Nearly all goods in modern society depend upon the social environment, including those which constitute mankind's greatest cultural achievements. Some of the things that consumers spend their money on might seem odd to others. Some may find opera boring or professional wrestling crude, but each has his own preferences, and the mere fact that we are not born with the want for these things does not make them unimportant. Nor does it imply that consumers cannot introspect to see how these things improve their personal well being, at the margin.

Economists at the University of Chicago and Harvard University argued over how advertising affects consumer behavior by focusing on how it affects prices. The Harvard hypothesis claimed that advertising changes consumer preferences so that demand increases, so more (less) advertising should produce higher (lower) prices. The Chicago hypothesis claimed that advertising informs consumers about alternatives in market. This means that advertising might increase demand initially by informing consumers about new products, but more (less) advertising will generally reduce (increase) prices by intensifying competition between entrepreneurs.

Some empirical studies have tended to support the Chicago hypothesis, but not in every instance. Thus, it would seem that advertising usually informs consumers, as well as influencing their behavior.

Consumer behavior sometimes changes with experience. There are some goods that we appreciate more, the more we consume them. Consumers will have an underlying preference for some activities, but will often indulge in them more over time. One explanation for this behavior is that consumer preferences might change over time. Alternatively, we might consider how changes in our abilities might change observed consumer demand. For instance, we may appreciate playing tennis more as we improve our tennis skills.

Consumers sometimes become addicted to certain products. We can think of addictive goods as goods that a consumer's current satisfaction from consuming depends upon the volume of past consumption. It might seem that prices have little effect on the demand for addictive goods, but this is not necessarily true. Permanent price increases may have little affect on the demand of current addicts. However, such price increases may deter potential addicts from experimenting with addictive products.

The full price of consumer behavior. When considering how consumers behave we must consider the full price that consumers pay for goods. Consumers pay not only in terms of the alternative goods that they could have spent their money on, but also in terms of the value of the time they spend acquiring goods. Consumers will search for alternative goods, and for prices for particular goods, up to the point where the marginal cost of time spent searching equals the expected marginal benefit from additional search. Consumers also account for risk in their consumption. If some types of consumption entail physical danger or a legal penalty, these factors add to the total price of a good.

Legal penalties against drug use, prostitution, or gambling increase the full price that consumers pay for those goods. If these penalties apply to sellers, marginal sellers will drop out of the market for these goods. This will raise the (black) market price and reduce demand. If penalties apply to consumers, they will factor this into their decisions, along with the cost of forgone consumption alternatives. Of course, these penalties do not eliminate consumer demand. Increased costs will reduce demand at the margin, and leave consumer behavior off of the margin unaffected.

One interesting aspect of this notion that full costs affect consumer behavior is the Alchian-Allen effect. Economists Armen Alchian and William Allen demonstrated that transportation costs increase the demand for high-quality goods. Since higher quality goods have a higher price, the adding of shipping costs to high quality goods lowers their relative price. If good apples cost 10 cents, average apples cost 5 cents and shipping each apple costs 5 cents, there is a difference between the relative prices of apples in the places where they are grown and the places they are shipped. Locally, the relative price is 10/5, or 4/2. Otherwise, the relative price is 15/10, or 3/2. Since shipping costs reduce the relative price of high quality goods, these goods will constitute a large portion of exported goods. It might seem to be the case that people buy expensive foreign goods in order to seem elite or superior. There is, however, a sound reason in price theory to explain why high-quality goods tend to get exported more so than others.

Economists tend to take consumer preferences as given. There are good reasons for this. Since personal consumer decisions depend upon unobservable satisfactions, we have no practical way of weighing one consumer's satisfaction against any others. Prices enable consumers to compare different alternatives, in terms of what others will trade with them. Some economists praise or object to particular types of consumer behavior. We might then consider if some particular goods are inherently meritorious or undesirable. If there are merit (or demerit) goods, then people will buy too few (too many) in efficient private markets. This implies a need for subsidies (or taxes or prohibitions) to ensure a proper level of supply in the market for these goods.

There are certainly some goods that some consumers see as meritorious or objectionable. The problem in using government intervention to alter consumer behavior, with respect to such goods, is in determining which consumer preferences are correct. Drinkers may see little or nothing wrong with alcohol. Members of temperance leagues obviously disagree. The prohibition of alcohol in the United States took place largely in response to claims that alcohol consumption is inherently undesirable.

While it may be true that alcohol consumption leads to undesirable behavior, the prohibition of alcohol (or any drug) will likely lead to the consumption of its harder form. By applying the logic of the Alchian-Allen affect, we can see that legal penalties for the sale or consumption of alcohol consumption reduce the relative price of hard liquor. If we add the costs of criminal sanctions to all alcoholic beverages, the price of expensive hard liquors will fall relative to cheaper drinks. Some may stop drinking due to prohibition, but those who do not will probably switch to harder liquor.

There is some disagreement over what determines consumer behavior. It is clearly the case that outside influences, such as prices, advertising, fads, and technology matter to consumer behavior. Some claim that consumers are born with innate preferences that derive from genetics. People have certain desires, dislikes, and fears because these traits enhance their ability to survive, as in Darwinian natural selection. Skills and culture surely enter into consumer behavior, but this does not mean that people lack innate preferences.

There is also disagreement over the rationality of consumer behavior. Some consumer behavior may seem odd to others. Though, in the strict economic sense, we sometimes have trouble making sense out of the decisions that others make, there are serious problems with forming a rational basis for directing economic activity by some means other than private consumer choice. The incentives inherent to private markets penalize error and reward learning. Consumer behavior shapes the outcomes of market processes, but the market process itself causes consumers to behave more rationally.

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contagion

THE REPUBLICAN SENATOR Dick Armey's most famous axiom in the field of political economy is "the market is rational and the government is dumb." After all, isn't it obvious that the best aggregate decisions will be reached by people taking them based on their individual knowledge and interest?

Consider the STOCK MARKET. Thousands of investors risk their money (which means they will be really careful) on shares or derivatives, after weighing whether that security is worth more than its current price, or less. After all of them sell and buy at a furious pace, we could reasonably expect the resulting price at a given moment to be close to its "real" one, in which all the "fundamental" information is included.

This is a powerful argument, and it was notably deployed by authors such as Friedrich von HAYEK in the 1930s against those arguing for a centralized economy (where Armey's "dumb government" would be charged with allocating production decisions).

But this argument of the market as an optimal price calculator takes for granted that people make up their minds in isolation, without regard for other participants in the market, and working upon the locally available information on the real value of the asset. What if buyers and sellers took very much into account what they think others think about the value of an asset? Wouldn't you buy something if you guessed other people would be desperate to buy it at some point, even if you thought it was essentially worthless? Say, first issues of (what you think is) a lousy comic, or ENRON shares in 2000. This is why the British economist John Maynard KEYNES compared finance to beauty contests once organized by newspapers, in which readers are asked to guess which girls will be voted the prettiest by the aggregate readership of the paper. So you're now trying to guess what other people are guessing all of us will guess.

But if the beauty-contest view of the market does provide an insight, serious problems arise for the central institution of capitalism. Investors could make poor and hasty judgments of what "the crowd" is bound to think of a particular event (some research in fact contends we are very poor judges of aggregate behavior). Imagine that a CEO sells stock of his own firm, and we believe that could be construed by other investors as an omen of an imminent fall in the price of those shares. Note that we ourselves might not think this is the case; we could even privately know that the CEO, say, needs cash for funding his charitable foundation, but the corporation is as healthy as ever.

No matter: we would immediately call our broker with a sell order. If many investors thought the same, and did the same, and as a consequence the price of the stock did come tumbling down, we would see it as a sure sign of the generalized mistrust of the market, and frantically shed all remaining shares like a stampeding herd. Fear is contagious. A "strong buy" would thus change to "strong sell" without any change in the fundamental situation of the underlying assets.

Take that to a country level. Suppose that a country is close to default on its INTERNATIONAL MONETARY FUND (IMF) loans, and that you own bonds of a neighboring country. You might think that the economy of this other country is sound enough to withstand without a flinch the crisis across the border. But you fear other less sanguine bondholders are bound to release theirs, and the price will accordingly decline. So you sell immediately, hoping to outdo them, they sell—hoping to outdo everyone else—and the price does go down.

All investors fear an epidemic of fear, they all sell in what is in fact an epidemic of fear, and thus a country, or an entire region of the world, is ruined. This scenario of financial contagion probably caused, at least in part, immense suffering in east Asia and Latin America in recent years, and the Great DEPRESSION of the 1930s.

Where we stand regarding the potential for contagion-based economic and financial behavior, and the social suffering associated to it, is quite relevant for a range of political choices. In terms of what the world financial institutions should be, for example, it has been argued that we need to lessen the ability of "hot money," investments and disinvestments that take place at literally lighting speed (thanks to electronic markets), to fly out of a country, and therefore for economic shocks to be catching. That could be implemented by means of a small tax, discussed in early 2003, which would kick in when shares or bonds are sold, adding some "friction" to virtual hot money.

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contract

CONTRACTS ARE AGREEMENTS between two parties whereby each of them gives up something to the other, in return for receiving something from the first person. Perhaps the best pictorial image of a contract ever depicted was that old Norman Rockwell picture featuring two delivery men eating a pie holding a bottle of milk; in the background are shown two trucks: one for milk and one for pies. What happened before this scenario took place? Obviously, the pie man swapped one of his products for that of the milkman.

Contracts of this sort, and this is the paradigm case, are guarantors of mutual benefits to both parties, at least in the *ex ante* sense of expectations. Before this contract was consummated, the pie man was probably saying to himself something like, "Here I sit with hundreds of pies, and not a drop of milk to drink." We know, also, that the milkman valued the pie he received more than the milk he had to give up. They both gained from this exchange; we can infer this since they agreed to swap. It must be that each of them preferred what he received to what he gave up, otherwise they would scarcely have agreed to the exchange.

On the other hand speculation about motives is always risky. Who knows; the milkman might have hated pies, and only entered into this contract in order to curry favor with the pie man. Maybe he wanted to date his daughter. We cannot know his motive; we can only know that there is something about the pie that he liked more than his bottle of milk, and vice versa for his trading partner.

It might be that one or both of them will come to regret the trade at a future time, even in the absence of any fraud or underhanded dealing, simply due to a later change in tastes. Or, possibly, each will learn he is allergic to the product of the other. Therefore, there is no iron-clad guarantee that such contracts will benefit both parties in the *ex post* sense. However, this is usually the case, especially for repeat purchases. It is the rare consumer who will regret, after the fact, the purchase of a pie, bottle of milk, newspaper, pen, or paper.

So far we have been considering a barter contract, where one good is exchanged for another. But this is only one of many possibilities. Other alternatives include sale, where money is traded for a good or service; or a WAGE contract, where money is again on one side of the equation, and labor hours on the other. Another is a rental contract, in which a car, or an apartment, or a lawn mower is leased to a tenant, for a given fee. Then there is the rental of money, or borrowing, where interest payments are made in return. But all of them, without exception, have the necessary characteristic that (at least in the *ex ante* sense, and most usually in the *ex post* sense as well) that they are mutually beneficial to both contracting parties.

Suppose, now, that some outside authority abrogates a contract. Can this possibly enhance the economic welfare of either of the parties (in the *ex ante* sense)? It cannot possibly do so, even if the motivation for this intervention is unimpeachable (remember, the road to hell is paved with good intentions).

Let us consider a few alternatives. Maybe the government is Marxist, and thinks that all commercial contracts are "exploitative." With the milk-pie trade prohibited by law, each party will have to keep his own supply of goods, and they will not be able to rearrange property titles among themselves as they had wished. Obviously, each will suffer as a result of this inability to arrange for and consummate their contract.

Or suppose that the state determines that one pie for one bottle of milk is not a "fair" price, and forbids trade at any other pie-milk price. Can we any longer deduce mutual benefit? We cannot. The pie man was willing to give up one unit of his product to obtain a unit of the other, but not three of his. The trade no longer takes place, to the regret of both parties. Now suppose that the government *compels* the two men to trade with each other on the basis of one pie for one bottle of milk. Here, no longer can we *deduce* mutual benefit from trade, for it was not, in this context, made on a voluntary basis. For all we know as outside observers, one of these men did *not* value the possession of the other more highly than what he gave up.

One last complication. We must distinguish between a contract and a promise. The two resemble one another, but in the former case, consideration is given, and not in the latter. Suppose that the pie milk contract stipulates that the following will take place: first in time, at noon, the pie is to be given to the milkman; second in time, at 12:01 P.M., the milk is to be given to the pie man. But now posit that the milkman reneges on the deal; that is, he accepts the pie at noon, but when 12:01 P.M. rolls around, he refuses to give any milk in return to the pie man. If he does this, he is guilty of theft—the pie that he took. This is the "consideration" that the pie man gave him at noon, which the milkman stole. Failure to abide by a contract constitutes theft of the consideration.

Now suppose that on day 1 a man promises to marry a woman; and on day 2 he reneges, and refuses to go through with this plan. Has he stolen anything from her? He has not. He may have hurt her far more than the loss of a pie, but, nonetheless, no theft has occurred. This, then, is a promise, not a contract.

Let us sum up so far. In this simple case we have shown that contracts are necessarily beneficial in the *ex ante* sense, and that there is a strong presumption to this effect in the *ex post* sense. We now consider real world cases in which government has abrogated contracts, and examine whether these conclusions can still be sustained.

[Editor's Note: Contracts between "non-equals" may be problematic, perhaps non-voluntary as in the case of a WORKER who faces the choice of working for a low wage given the alternative of starving.]

The minimum wage law. This legislation stipulates that no wages may be paid below a certain level. As of the time of this writing (early 2003), the federal cut-off point between legal and illegal wages is $5.15 per hour (the states vary in this regard). This means that a contract stating, for example, that A will pay B $4.00 per hour for the latter's labor services would not only be null and void, but could land both parties in jail.

Actually, it is unlikely that the employee would end up in the hoosegow, since he is seen by those who promulgated this law as the victim. The employer, in sharp contrast, is in danger of such a punishment merely for engaging in a mutually agreed upon contract, since he is looked upon as the exploiter. Why? This is due to the fact that the average citizen is woefully ignorant of economics, and thinks that this law in point of fact serves as a sort of floor below which wages will not be allowed to fall: raise this "floor" and wages will rise. Since people paid at this rate are among the most unskilled, and hence poorest in society, it is not difficult to explain the popularity of this law.

However, some economists believe this scenario is entirely misbegotten. The correct interpretation, they point out, is that minimum wages are more like a high-jump bar, and only those with skills of greater value than stipulated by this law will be able to "jump over" the barrier, and remain employed. Those who cannot catapult over this level will be consigned to unemployment. Why, after all, do employers want to hire employees? They do so because of the revenue forthcoming from the latter. But suppose the addition to the bottom line of a person is $4.00 per hour (i.e., that is his productivity) and that the law stipulates that such a worker must be paid $5.15, then it is clear that the firm will lose $1.15 every hour he is on the shop floor. If the minimum wage were raised to $1,000 an hour, then it would be crystal clear that no one would be hired in the entire economy apart from movie stars, top professional athletes, and other very highly productive superstars. But the logic is inexorable, and applies, as well, to the more modest end of the productivity pyramid.

To return to our insights regarding the mutual benefits of contracts, all contracts, we can see that as long as the unskilled worker agrees to take the $4.00 per hour job, it is, in his own estimation, the best option open to him; it is certainly better than unemployment.

Who, then, does benefit from such legislation? Paradoxically, it is the highly skilled, typically unionized worker. For, when organized labor demands a wage increase, the natural tendency of the firm is to attempt to substitute, at the margin, unskilled labor for it. However, some economists believe minimum-wage law effectively unemploys all those to whom the business might turn in an attempt to wrest itself free from union domination. It is thus no accident that organized labor is the most outspoken advocate of this unemployment law for the poor.

Unconscionability. The lawsuit *Williams v. Walker-Thomas Furniture Co.* (United States Court of Appeals, District of Columbia Circuit, 1965, 350 F.2d 445) is the classic case of the doctrine of "unconscionability" being used to overturn voluntary contracts. This firm operated in a poor part of town, and sold its wares on the installment plan. However, the contract stipulated that unless all goods purchased from this store were paid in full, the buyer would own none of them, and they could all be repossessed in case of non-payment for everything. A numerical example will make this clear. A plaintiff could purchase a couch for $500, and pay, in installments, $450 of this. Then he could buy a lamp for $200, and render $150 of that amount in this manner. He has now disbursed a total of $600 ($450 + $150) and yet, if he fails to pony up the remaining $100 ($500 + $200 = $700 – $600 = $100) of what he owes, he can keep none of these possessions, and must return all of them to the repo man.

This sounds pretty harsh. And it was upon the basis of the court's view of fairness that they overturned this contract, even though it was agreed upon by both parties, on the ground that it was "unconscionable," and thus against the so-called "public interest."

Yet, if there were vast amounts of money to be made in this business, more competitors would have flocked in, and the terms of trade would have tilted in favor of the purchaser. The reason this did not occur is that the buyers in this neighborhood were poor risks. They had a higher rate of reneging on their contracts than other people. The only way the furniture company could remain in business, other than with this installment-plan contract, would have been to either charge higher prices, or raise interest rates for the outstanding loans. Yet, if they did the former they might have been accused of "discrimination," and if the latter then "usury."

Blocked from recouping their losses in any way, firms of this sort could not operate at all. Hence, the people in this neighborhood, "thanks" to a dissolution of their contracts, would be left with fewer stores, and, in the extreme, with no stores at all. This example constitutes yet further evidence of the beneficial effects of contracts to all parties, even those ostensibly hurt by them.

Lochner v. New York. Lochner is a law case in which a contract to work more than 60 hours a week was upheld by the court, despite the fact that many people thought this unfair to the worker (U.S. Supreme Court No. 292, April 17, 1905). This case is sometimes thought of as the high-water mark in favor of contracts, in that the court upheld a voluntary agreement between two consenting adults, namely the baker and his employer. It was no such thing. Rather, it rested on the weak-reed majority argument that "There is no demonstrable causal link between labor hours of a baker and the quality of his product or his own health."

But suppose this link could be demonstrated. Then, presumably, the majority would have voted the other way, with the minority, and suppressed the contract. However, based on our insights regarding contract, this would have been a mistake. For suppose baking for such long hours was personally injurious. It is a violation of the baker's rights to override his decision to trade some of his health for additional money. Prohibiting such arrangements on these grounds would imply that we ban boxing, hang gliding, fatty foods, cigarettes, auto racing, etc. Suppose, now, that the quality of baked goods would decline with such long hours. Would the court be justified in banning the contract on those grounds? Not at all. Not unless, that is, it would also be proper to prohibit day-old bread, or anything but the most ornate, high-quality baked goods. Obviously, if the quality of the product falls, so must its price. Do not consumers have the right to prefer a cheaper, but inferior product?

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Coolidge, Calvin (1872–1933)

THE 30TH PRESIDENT of the UNITED STATES, Calvin Coolidge was born in Plymouth, Vermont. After graduating from Amherst College, he was admitted to the Bar and became involved in Massachusetts politics. Coolidge was soon elected to the state legislature, eventually becoming president of the senate. By 1918, he was elected governor of Massachusetts, and as governor he reached national fame through his resolute handling of the Boston police strike. During the strike Coolidge proclaimed, "There is no right to strike against the public safety by anybody, anywhere, any time."

In the wake of the RUSSIAN REVOLUTION and the subsequent public debate over workers' rights and workers' role in society, this statement put Coolidge on the national political stage and, in part as a consequence of this, he was chosen as Warren G. HARDING's vice president on the Republican ticket in the 1920 presidential election.

Upon Harding's sudden death in 1923 Coolidge became president. His removal of officials and his support for prosecution of wrongdoers quickly brought the corruption scandals of the Harding administration to an end. In 1924, Coolidge was elected to a full term. After announcing that, despite his popularity, he would not seek re-election in 1928, the Republican Party nominated Herbert C. HOOVER, who succeeded Coolidge in 1929—just a few months before the STOCK MARKET crash and the subsequent Great DEPRESSION.

Coolidge's philosophy of government was decidedly pro-business. Indeed, it was Coolidge who once exclaimed, "The business of America is business." His view of the fiscal responsibility of government is well-captured by a contemporaneous maxim on the principle of good government by C.N. Fay, vice president of the National Association of Manufacturers: "Least Government, with its companion principle of Least Taxation." Coolidge maintained a philosophy that taxes and government spending should be lower, and that regulatory activity should be minimal. This philosophy of "constructive economy" was meant to bring about greater individual freedom that would translate into entrepreneurial and innovative creativity, ultimately benefiting all members of society.

With substantial input from Andrew MELLON, secretary of the Treasury, the tax rates were decreased from the high rates enacted during WORLD WAR I and some TAXES were abolished altogether. The maximum tax rate on individual income was reduced from a high of 77 percent to 25 percent, and the so-called "excess-profit" taxes were repealed. A reduction in government spending caused the federal budget to decline from $5.1 billion in 1921 to $3.1 billion in 1929. Moreover, under Coolidge, regulatory agencies were frequently led and staffed by representatives of the very industries that they were to oversee, indeed, in some instances he appointed vocal critics of agencies to head those same agencies.

In 1926, Coolidge supported and signed into law the Railway Labor Act (RLA). The RLA guaranteed railway workers the right to form UNIONS, but also reduced the danger of crippling RAILROAD strikes by setting up a mediation board that handled all labor disputes. It is one of the oldest labor laws still in use, and has since been extended to cover AIRLINES.

Economic growth was rapid during the Coolidge years. The era witnessed the advent of mass production and consumerism and became known as the Roaring Twenties. The unemployment rate dropped from 11.7 percent in 1921 through a low of 1.8 percent in 1926 to 3.2 percent in 1929.

While there has been some debate about how much of this prosperity was caused by a rebound from the end of WORLD WAR I and how much was facilitated, if not caused, by the policies pursued by Coolidge, there is no dispute that the prosperity was not universal. One group who did not share in the prosperity was farmers.

From around the turn of the century, the agricultural sector experienced a boom that lasted through World War I. Farmers anticipated a continued increase in farm incomes throughout the 1920s. However, the post-war depression that hit the country in 1920 affected farmers particularly hard as they had invested large sums of money in land that quickly depreciated in value. Twice the U.S. Congress passed bills giving price supports to farmers. But both times, following the advice of his Secretary of Commerce Herbert Hoover, and his belief in free markets, Coolidge vetoed the bills.

For a long time the Coolidge administration and its policies of constructive economy have been viewed with skepticism, due to the Great Depression following Coolidge's term in office. Indeed, Coolidge was unaware of the impending economic collapse, stating in his final State of the Union message in December 1928 that one could "anticipate the future with optimism." However, such analysis is somewhat anti-historical and unjustified. Not only were the underlying dynamics that led to the Great Depression not understood at the time, it is still altogether unclear that Coolidge realistically could have anticipated and averted the Great Depression. In any event, the causes of the Great Depression are to a large extent found in failed monetary policies rather than the fiscal and regulatory policies that Coolidge championed.

Coolidge's ideas of constructive economy once again became very popular with President Ronald REAGAN, renamed "supply-side economics." In fact, Mellon, just like the supply-sider Arthur Laffer years later, had made the argument that reduced tax rates would lead to higher tax revenue due to the economic growth they induce economy-wide. However, a big difference between the Coolidge years and the subsequent Reagan years is that under Coolidge spending (in particular defense spending) was reduced, whereas under Reagan spending (in particular defense spending) escalated, leading to budget surpluses in the 1920s and deficits in the 1980s.

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Cooper, Peter (1791–1883)

AN INVENTOR, INDUSTRIALIST and philanthropist, Peter Cooper made his fortune during America's transition from agriculture to industry. He founded the Cooper Union School for the Advancement of Science and Art in 1859, a New York City tuition-free school.

Born in New York City, Cooper's father and grandfathers fought for American independence. He obtained no formal education and, as a child, Cooper worked with his hat-maker father. Then he tried his hand at brewing and brick making, and was also apprenticed to a coach maker.

At 21, Cooper found employment on Long Island making cloth-shearing machines. He purchased the sole right to make such machines in New York State, but after the War of 1812, business declined and Cooper turned to furniture making, then owned a grocery store. His financial success began when he invested in a glue factory—a move that led to the serendipitous discovery, with the assistance of his wife Sarah Bedell, of Jell-O.

In 1828, Cooper founded the Canton Iron Works in Baltimore, securing his enormous wealth. Two years later he built "Tom Thumb," the first steam RAILROAD locomotive built in America for the Baltimore and Ohio Railroad.

Cooper sold the Baltimore iron works and built a rolling mill in New York, moving it to New Jersey by 1845 as the Trenton Iron Company. In 1854, the first wrought-iron structural beams were made at Trenton, and similar beams from this factory can be found in the dome of the United States Capitol building. The Bessemer process (a technique for converting pig iron to steel) was used for the first time in America at the New Jersey company. Cooper was awarded the Bessemer Gold Medal from the Iron and Steel Institute of Great Britain in 1879 for his advancements in the steel industry.

During the 1850s, Cooper became principal investor and president of the New York–based Newfoundland & London Telegraph Company, financing the Atlantic Cable project of Cyrus Field when banks refused. He was also president of the North American Telegraph Company that controlled more than half the telegraph lines in the country.

As a civic leader of New York City, Cooper was elected alderman and was instrumental in initiating the public school system. In 1875, Cooper became associated with the Greenback Party that gained support from southern and western farmers who were concerned with high railroad rates, deflationary currency, and falling farm prices.

Cooper was the Greenback Party's 1876 presidential nominee against Rutherford HAYES and Samuel Tilden. Although receiving very few votes, the party still managed to send 15 representatives to Congress

In later years, Cooper published *The Political and Financial Opinions of Peter Cooper, with an Autobiography of His Early Life* (1877) and *Ideas for a Science of Good Government, in Addresses, Letters and Articles on a Strictly National Currency, Tariff and Civil Service* (1883).

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corruption

CORRUPTION IS TYPICALLY defined within the realm of capitalism as the misuse of government office for private gains. But many examples do not fit this definition; for example, insider trading is a more common form of corruption that does not involve a government office. The concept of corruption is thus a value-loaded term that receives different definitions. Political scientist Arnold Heidenheimer has defined terms such as black, gray, or white corruption. In his view, whether an act is corrupt depends on what the majority of people think of it. Black corruption means there is a majority of individuals who condemn the act. Gray corruption means some individuals would condemn the act, but some others would not; there seems to be no consensus. White corruption means there is a majority of people who do not want the action to be condemned.

Essential characteristics of corruption are: First, two parties or more act in mutual agreement; second, their action violates the law; third, they illegally benefit from the decision; and finally they try to conceal their behavior.

Corruption exists in all countries at various levels of society. We can, however, distinguish between three main forms of corruption:

1. Small corruption is also known as petty corruption. It can be found in situations where an agent bribes a custom officer to avoid merchandise taxes.
2. Large bureaucratic corruption can be found when a company bribes a top government official to get a contract.
3. Large political corruption can be found when interest groups bribe congressmen to pass a law.

Petty corruption occurs when officials (mostly low-level government officials) use their offices for private gains.

Typically, the official is put in charge of managing government resources, such as budgets and tax revenues. If the official is, for example, obligated to issue trade licenses and erects some barriers, he induces license applicants to bribe him. The official thus engages in an act of corruption. Petty corruption can take two distinct forms: First, when an official derives illegal private gains from services or contracts that are provided according to the rule; second, the official might derive gains from contracts he is prohibited from providing, as they are mostly against the rule.

Corruption takes place at all levels, from low-level to high-level government officials. When major political figures, or high-level government officials, are involved it is called "grand corruption." Grand corruption includes the last two descriptions mentioned above (large bureaucratic and political corruptions). This type of corruption can impact the country's budget and growth prospects, and includes major transfers of property rights, major contracts, concessions, privatization of major public firms, and the formulation of laws.

Sources of corruption. Most studies on the sources of corruption are quantitative; corruption data are now developed by various organizations such as Transparency International (TI). The data generally range from 0 (most corrupt) to 5 or 10 (least corrupt) and represent the perception of these organizations about the level of corruption in a given country. There are actually some survey data on the true levels of bribery (i.e., the amount paid by firms to officials in developing countries) but are not yet released to the public.

Some economists have argued that we should expect more corruption in countries with large governments, as defined by the share of government spending in the GROSS DOMESTIC PRODUCT (GDP). An increase in the size of the government raises the probability of having more red tape, regulations, and bureaucratic delays. When the data are closely examined, the positive relationship between size and corruption is not borne out. In fact, there seems to be an inverse relationship between these two variables: Corruption seems to be concentrated in countries with low levels of government expenditures.

Further study of the data has shown that countries where citizens are free to hold property and operate a business display low levels of corruption. This freedom may mean less harassment from government officials and therefore fewer bribes asked. The degree of political freedom is also an important source of corruption. Political systems consisting of a unique ruling party, or repressed opposition parties, tend to breed corruption; government officials working with the unique ruling party can engage in immoral behaviors such as bribe-seeking without facing a major penalty.

Less COMPETITION in an economy tends to be another source of corruption. When governments erect trade restrictions, it creates an opportunity for rent-seeking activities. For example, if a government imposes quotas on foreign goods only a few selected foreign firms will be granted access to the domestic market. Government officials in charge of the quota licenses have complete discretion over which firms to select, giving rise to the opportunity for grand corruption.

Corruption is also associated with low wages in the government sector. In many developing countries, wages are so low that they barely cover basic subsistence needs. Civil servants in these societies supplement their income through bribes. Typical examples include police officers stopping buses on the road to ask for "tips." In these countries, the level of illiteracy is so high that the masses can be easily exploited by the civil servants who, relatively speaking, appear to be "highly" educated.

Finally, economists have argued that sociological factors and the degree of ethno-linguistic fractionalization can be sources of corruption: Officials tend to grant favors to people from the same ethnic group.

Consequences of corruption. Corruption has serious consequences in the economy. Recent research indicates that corruption has a detrimental effect on investment and is associated with a significant fall in the investment rate. The effect of corruption on economic GROWTH tends to be mixed at a theoretical level.

Some economists believe that corruption can speed up economic growth (the revisionist view) while others (the moralists) believe that it is harmful to growth. The revisionist view argues that corruption might not be inconsistent with economic growth and development for two main reasons: First, bribes act as a piece-rate for government employees (i.e., bureaucrats work harder when "paid" directly), and second, bribes enable investors to avoid cumbersome bureaucratic processes and delays. We should then expect a positive link between corruption and economic growth, and the relationship should be stronger in countries with heavy bureaucratic regulations.

At the other extreme, the moralists argue that corruption slows growth. An investor can bribe several public officials and still face the possibility that none of them has the power to allow the project to proceed.

Empirically, most studies have found that corruption lowers the rate of growth of an economy. Some economists have found that, though corruption lowers investment, it fosters the latter in countries with heavy bureaucratic delays. (To the extent that investment is associated with economic growth, this finding will imply that corruption fosters economic growth in some developing countries.) However, they also point out that the empirical evidence seems to suggest that the revisionist view is not necessarily a robust finding either.

Another consequence of corruption involves the allocation of resources in an economy. When corruption is prevalent, talented individuals tend to migrate toward jobs offering them the opportunities for rent-seeking. Since these jobs are not necessarily the ones that make best use of their talents, corruption is said to introduce allocative inefficiencies into an economy. For example, in many developing countries, intelligent citizens who have completed their studies abroad in a given field return to their native countries and take jobs with the government in areas that have nothing to do with their education. These jobs simply offer them an opportunity for bribery.

High levels of corruption within a country lead to political instability. When citizens are frustrated because of grand corruption, their government is likely to be overthrown. Political instability itself can both be a source and consequence of corruption. It can be a source since government officials in unstable countries, facing a high probability of being overthrown, are more likely to engage in corrupt behavior to amass as much as possible before the inevitable change of regime. In a sense, corruption and instability can create a virtuous circle, whereby corruption leads to instability which itself creates more corruption.

Corruption also leads to distortion in the allocation of government expenditure. Corrupt government officials will tend to prefer those expenditures whose amounts are difficult to determine. For example, expenditure on such projects as bridges offer an opportunity for corruption since a bridge's value is hard to determine. The empirical literature also suggests corruption causes a decline in public expenditure on education and health. Further, corruption exacerbates social inequities in a country: It redistributes resources from the public to corrupt individuals. In many developing countries with high levels of corruption, the poor are made even poorer by government officials continually engaged in petty and grand corruption.

Finally, corruption may lead to the ineffectiveness of aid flowing from developed to developing nations. Corrupt officials in developing countries can divert funds earmarked for productive projects into unproductive ones.

Fighting corruption. How can a country fight or control corruption? Three main initiatives can be directed to deter corruption.

First, a country can increase its information-gathering to detect corruption by promoting transparencies at all sectors of the government and at the corporate level, and identifying individuals whose lifestyle is more lavish than it should be. A country can also give increased independence and power to auditing agencies so they can conduct better audits of targeted individuals. Government reformers can establish where corruption is the most harmful to its economy, and where it can be fought in the most efficient way. That is, a country should not waste valuable resources fighting all corruption prevalent in the economy, but should concentrate its efforts mostly on the most harmful.

Second, a country can increase the risk and costs, raising the penalty of corruption. This can be achieved by linking the penalty to the size of the bribe; as the bribe or expected profit rises, so does the size of the penalty. The penalty can include firing, jail times, and freezing bank accounts. Raising the risks and costs of corruption can also take the form of rewarding honest and decent employees through the implementation of progressive pay schemes. Since developing countries are also heavily indebted, raising the salary of government officials will probably mean reducing the size of the civil service. The regulatory environment that induces the firms to bribe should be carefully studied. Regulatory laws can be simplified in many developing countries; if regulations are too complicated, businesses are induced to circumvent them by bribing officials.

Third, a country can welcome the international community in the fight against corruption. Multilateral organizations such as the WORLD BANK and the INTERNATIONAL MONETARY FUND (IMF) can be of great help. These institutions have now (somewhat) linked financial assistance to the overall level of corruption. Aid can be interrupted if a country is too corrupt.

The international business community must also engage in strategic planning, coordinate transnational approaches, support anticorruption initiatives, and insist on good governance. Corruption is not only limited to developing economies; the multibillion-dollar bailout of failed savings and loan associations in the United States in the late 1980s is a striking example of corruption in a developed country. More recent examples include the collapse of big corporations such as ENRON and WORLDCOM. Anticorruption measures must include a system of checks and balances, effective law enforcement, and education programs. The media and the non-governmental organizations (NGOs) must also have a voice in the fight against corruption.

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cost accounting

ENTERPRISE PROFITABILITY is the sum and substance of a free market. Cost analysis, including the assignment of costs to particular products and services, is a precursor to managing entrepreneurial profits.

Cost accounting, overall, is perhaps the most valuable tool for the ENTREPRENEUR for making business decisions in a capitalist economy. It is the non-reporting variant of accounting that takes into account only the internal decisions necessary for the day-to-day operations and management of business profitability.

To improve profit-seeking activities, the entrepreneur must have a means by which to develop strategies for competitive advantage, and this is brought about by allocating costs to particular goods or services within a complex environment of changing market conditions. Cost accounting takes into effect all costs of production, and additionally, it focuses on an organization's acquisition and consumption of resources.

The methodology behind cost accounting is ever changing, and it becomes more critical in this era of increasing competition, economies of scale, and shrinking profit margins. Modern concepts of importance to the business decision maker include cost-volume-profit analytics that examine the effects of costs on overall revenue performance and bottom-line profitability; activity-based costing, which has a fundamental focus on activities as cost objects and uses the cost of these activities to assign costs to products, services, and customers; and relevance decision models, which take into effect qualitative factors in deciding expected profitability among varying courses of action. Such methodologies furnish timely information in the aggregate or in detail, and are concerned with profit, of course; but just as important, profits are more narrowly correlated to various divisions, lines, territories, customers, outsourcing decisions, and resource replacement evaluations.

Implicit in the economic concept of cost is the notion of sacrificing time, money, or other resources, in order to commit to the production of goods or services. After all, resources are scarce, and it is necessary to approach the use of scarce items with as much verifiable information as can be obtained. Cost accounting methodology therefore takes into account all perceived costs, including opportunity costs. Opportunity costs are the forgone benefits of the next best alternative when any scarce resource is used for one purpose over another.

The use of qualitative measures is what sets cost accounting apart from financial accounting, which is only concerned with the external reporting of historical information to outside users. The cost accountant therefore analyzes a basic economic problem revolving around scare resources: to what end do scarce resources get devoted, and what ends are sacrificed?

This combination of quantitative and qualitative analytics is unique in that it enables that which is perhaps the most significant pillar of capitalism, and that is economic calculation. Economic calculation necessarily depends on cost determinations, hence making cost accounting an essential apparatus for the individual entrepreneur as well as the competitive market force as a whole. Without cost accounting analysis, and thus the use of relevant information with the purpose of influencing strategies on resource use and production, the free market would not prosper, and instead, would be reduced to a state of disarray.

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cost of information

THE VALUE OF INFORMATION measured as the price one would be willing to pay for perfect information, or alternatively the expense incurred by an individual with imperfect information is termed by economists as cost of information.

Information and decision-making. A fundamental assumption of the classical model of economics is the existence of perfect information. Basic demand and supply analysis, as taught in most introductory economics courses, is constructed around this assumption. Consequently, the inner workings of the market mechanism are based on the philosophy that buyers and sellers have access to equal information. The conclusion that the market equilibrium represents an optimal solution in which neither a surplus nor shortage exists implicitly assumes that the EQUILIBRIUM was arrived at with full information.

Based on current information, quantity demanded and quantity supplied are equal (i.e., consumers are willing to purchase, for example, 100 boxes for $10 per box while firms are willing to produce 100 boxes for the same price). Both production and spending decisions in this case are based on the information sets available to consumers and firms at the time of exchange. Should a consumer or producer's information set change, he would most likely cease to be satisfied with the market equilibrium (i.e., he would no longer be willing to purchase, in the case of the consumer, or provide, in the case of the producer, 100 boxes for a price of $10 per box). Note that many economic models have been modified to allow for imperfect information, but that does not change the fundamental assumption of classical economists and the relationship this has to market outcomes.

For consumers, a lack of information may result in individuals paying "too much" or "too little" for a particular product. Consequently, the equilibrium quantity in a market economy may be artificially high or low (i.e., higher or lower than it would have been had consumers had access to more and better information). For example, consumers above may have been willing to purchase 100 boxes for $20 per box or perhaps 200 boxes for $10 apiece had they known that these boxes were top quality and contained features that were not available on other boxes in the market. Alternatively, consumers would have been extremely angry had they discovered they paid $10 for boxes that were of poor quality. Had consumers known the boxes were of such poor quality, they would have been willing to pay at most $4 per box or would have purchased no more than 20 boxes for a price of $10.

Imperfect information like this causes consumers to over- or under-pay and distorts the market equilibrium. Producers are not immune from the dangers of imperfect information either. If, for example, information regarding costs of production are not exactly known, a company may charge too much (reducing quantity demanded and profits) or too little (causing profits to fall because prices are not high enough to cover costs). Without perfect information an equilibrium outcome considered efficient might not be efficient at all. Had producers and consumers had access to full information, quantity demanded and quantity supplied would not have been equal at the "equilibrium" price. In fact, the "equilibrium" price would not be an equilibrium price at all.

Information problems. Information is a key component of decision-making and as such is a principal part of a market-oriented system. CONSUMER choice, production decisions, portfolio diversification, and numerous other decisions made every day in a capitalist system depend on the availability of information. Lack of information may, at best, delay decision-making and consequently exchange or, at worst, put a stop to exchange altogether if individuals feel they do not have enough reliable information to make maximizing decisions.

Capitalism relies on well-functioning markets. Market participation depends on information. Hence, the success of capitalism rests largely on the availability of perfect information for all market participants.

Despite the benefits of perfect information (e.g., maximum market participation, truly efficient market equilibria, etc.), numerous instances of imperfect information exist in market systems. One example of imperfect information frequently encountered is the problem of adverse selection, a situation in which sellers know precisely what kind of item they plan to provide buyers (e.g., whether the item is top quality or not) but buyers, on the other hand, have limited information about the quality of the product and hence are not quite sure how "good" the product is that they are about to buy.

George AKERLOF brilliantly and simply illustrated the problem of adverse selection in his famous work, "The Market for 'Lemons': Qualitative Uncertainty and the Market Mechanism." According to Akerlof, markets (in this case, the market for used cars) will operate efficiently only as long as both buyers and sellers have perfect information about the item to be exchanged (in this case, a used car). In other words, as long as buyers and sellers have access to full information, both good cars and lemons will sell and the market for used cars will clear. Buyers, presented with a lemon (i.e., a car of lower quality that most likely will require additional funds to repair), will know that they are being given a lemon and will offer sellers a relatively low price for the lemon. Knowing that they are selling a lemon that is not very valuable, sellers will accept the buyers' low offer, and all of the lemons will be sold. Likewise, presented with a top-quality car, buyers will offer sellers top dollar for the good cars. Sellers will accept, and all of the good cars will be sold. The result is an efficient market in which all cars, lemons and top-quality cars, sell (i.e., the quantity demanded equals quantity supplied), neither buyers nor sellers will have over- or under-paid for products purchased and equilibrium is achieved. This situation in which buyers and sellers have perfect information, however, is atypical.

Sellers generally have more and better information about the quality of goods and services for sale than buyers. In the case of the used car market, buyers, unsure about the quality of the car presented to them, will offer to pay sellers an "average" price that is based on, among other things, the probability that the car is a lemon. The average price proposed by buyers typically falls somewhere in between the sellers' valuation of a lemon and a top-quality car. Because good cars are worth more to sellers than the average price offered by buyers, only lemons will sell. The market will not clear and might possibly cease to function at all once buyers learn that they are overpaying for lemons. The problem of adverse selection is a common problem in virtually all markets and poses a particular danger in financial markets where buyers are receiving slips of paper rather than commodities.

Another information problem encountered in market economies is MORAL HAZARD, a situation in which buyers cannot observe the behavior of sellers after an exchange has taken place. This is a particular problem in service markets (including the labor market) and financial markets where buyers are not buying an item with some sort of intrinsic value. In the case of LABOR, the full value is not realized at the time of purchase but is obtained piecemeal over time as the worker performs the task for which he was employed.

Buyers in financial markets receive securities, slips of paper that gain or lose value depending on the future performance of the company. Whether a buyer has paid too much, too little, or just the right price will depend on the behavior of the seller after the initial transaction has taken place. The principal-agent problem is a classic example of moral hazard when it occurs in the equity market. The costs incurred as a result of the principal-agent problem are referred to as agency costs. The moral hazard problem implies that sellers, once they have obtained money from buyers, may perform poorly or behave in such a way that the value of the good or service purchased rapidly depreciates. Buyers, wary of such behavior, will be less likely to pay sellers top dollar for their wares if they will be willing to buy them at all. Moral hazard and adverse selection problems, should they become severe, may lead to market inefficiencies and under extreme circumstances may cause markets to stop functioning altogether.

Market for information. The fact that buyers and sellers stand to incur substantial costs due to lack of information means that buyers and sellers would (under certain circumstances) be willing to pay for information. There is, in other words, a market for information, and like any market it will be driven by the forces of demand and supply. As the demand for information increases so too will the price that individuals are willing to pay for information. If one assumes that the marginal cost of providing information remains relatively constant, the high demand for information will make the private production and sale of information profitable and hence one would expect to see firms enter the information market.

Evidence of such a market can be found by the existence of periodicals like *Consumer Reports*, a magazine sold with information regarding typical consumer products like cars, refrigerators, etc., *Moody's*, a collection of bond ratings, and *Standard and Poor's*, a publication that provides information about publicly traded corporations. The fact that individuals hire stockbrokers and accountants, for example, is further evidence that people are willing to pay for information. It is, on the other hand, no surprise that companies have not gone into the business of publishing comprehensive analyses regarding candy bars. Consumers would be unlikely to pay for this information presumably because they do not feel they would be harmed by a lack of information when choosing an afternoon snack or if they would, it would not be serious enough to warrant paying for additional information.

The availability of information will depend on how profitable it is to provide information. High demand means increased revenues and, as a result, encourages the production of additional information. Total revenues and total profits may not necessarily rise with increased demand, however, due to the free-rider problem, the situation in which consumers who have not paid for the information have access to, and hence are able to benefit from, the information. The existence of the free-rider problem makes the production of information less profitable and explains why so few companies are in the business of providing information despite the high demand for it.

Rapid changes in technology, particularly television and the internet, has significantly reduced the cost of providing information and consequently made the free-rider problem less of an issue to profit-maximizing firms that are able to make up for lost revenues by providing information for negligible costs. As a result, the supply of information has been increasing at an unprecedented rate. Unfortunately, more information is better only if it is reliable and consumers have the know-how to process it properly. As long as there is uncertainty about the accuracy of information or some question of how to interpret the information once it has been obtained, individuals will be willing to pay for top-quality data and markets for information will continue to exist.

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cost, theory of

KNOWLEDGE OF THE THEORY of cost is essential for a variety of reasons. In economic theory, many of the predictions regarding the behavior of firms are based on concepts such as profit, marginal cost, variable cost, fixed cost, and sunk cost. Without knowledge of these cost concepts one cannot empirically test these predictions or even understand them. In addition, every firm needs to know what it costs to produce its goods and/or services if it is to make rational business decisions. Profit maximization, the objective of most firms, requires cost minimization.

The cost function is a mapping from the input prices and the level of production to the total cost of producing. The cost function is therefore a technological relationship that can be derived from the firm's production function—showing the minimum private cost of producing various levels of output assuming that the input prices are held constant.

It is important to realize that economic costs differ from accounting costs since the former includes both explicit and implicit costs. Explicit costs are the actual out-of-pocket expenditures of the firm. Implicit costs are the value of the inputs owned and used by the firm. Thus, the notion of economic costs is that of an opportunity cost. Opportunity costs, or economic costs, will always be greater than (or equal to) accounting costs. To illustrate the difference between economic and accounting costs (or opportunity cost and explicit costs) consider the following example: Suppose you were one of the lucky ones who was able to buy a ticket to the NCAA Men's Final Four Basketball tournament. Suppose you had to pay $150 for the ticket. Attending the Final Four would require additional expenses for travel, lodging, meals, souvenirs, etc. Suppose these expenses total $1000.

Hence your accounting costs of attending the Final Four would be $1150. However, the economic or opportunity costs would be much higher. Since Final Four tickets are usually highly sought after by fans of the competing teams it is reasonable to assume that you could sell your ticket for more than the face value of $150 that you paid. Suppose that you were able to sell your ticket for $850. Hence, by attending the Final Four you would forego the $850, which you would get from selling your ticket. An economist includes these implicit costs, and the opportunity cost of attending the Final Four would be $2000: the explicit costs of $1150 plus the implicit cost of $850.

Cost theory also distinguishes between short-run and long-run costs as well as avoidable and unavoidable costs. The short run for a firm is defined as a time period for which at least one of the firm's inputs is fixed, whereas in the long run all of the inputs the firm uses are variable. The existence of a fixed input in the short run gives rise to a fixed cost. This is the part of the firm's total costs, which does not depend upon the level of output produced by the firm. Hence, the total short-run cost of the firm can be divided into fixed costs and variable costs. Variable cost is the sum of the cost minimizing quantities of the variable inputs multiplied by their prices; fixed cost is the sum of the quantities of the fixed inputs multiplied by their prices; and total cost is the sum of variable cost and fixed cost ($TC = VC + F$).

Given the total costs one can define four other cost concepts: average total cost (ATC), average variable cost (AVC), average fixed costs (AFC), and marginal costs (MC). If we let Q denote the output level of the firm, then $ATC = TC/Q$, $AVC = VC/Q$, $AFC = F/Q$. Since $TC = VC + F$, $ATC = AVC + AFC$.

Of course, since the fixed costs do not depend upon the level of output, AFC is decreasing as the firm increases output. Given the standard economic assumptions, i.e., positive input prices and positive marginal products for all inputs, variable cost and total cost increase as output increases. At what rate these costs increase—and therefore whether AVC and ATC are increasing, constant, or decreasing—depends upon the technology the firm has access to. Marginal cost is defined as the change in total cost resulting from a unit change in output, since by definition fixed costs do not change as output changes, marginal cost is, of course, also equal to the change in variable cost resulting from a unit change in output.

It is important to realize that the firm's short-run output decision is determined by the firm's marginal cost and the demand condition it faces (i.e., fixed costs do not affect the firm's output decision in the short run).

In the long run, all inputs of the firm are variable, hence there are no fixed costs and total costs are equal to variable costs. There is an important relationship between the firm's short-run average total cost and long-run average total cost (LAC): The firm's long-run average cost curve is the lower envelope of the firm's short-run average cost curves for various levels of the fixed input, $LAC = TC/Q$ where TC stands for the firm's long-run total cost. In addition, long-run marginal cost is defined as the change in long-run total cost resulting from a unit change in output.

Another important cost concept is that of sunk costs. Sunk costs are defined as unavoidable costs (i.e., costs that the firm cannot recover even if it ceases to exist). If, for example, an airline bought a plane for $20 million, used it for 5 years and the economic depreciation is $8 million but is only able to sell the plane as it goes out of business for $10 million, then the sunk cost associated with the plane would be $2 million. Note that fixed costs do not have to be sunk costs and sunk costs do not have to be fixed costs.

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Council of Economic Advisors

AN AGENCY WITHIN the Executive Office of the President of the UNITED STATES, the Council of Economic Advisors is composed of three members appointed by the president and confirmed by the U.S. Senate. The president designates one member as chairman and another as vice chairman. The chairman of the Council also serves on the National Economic Council that was created by Executive Order in 1993. To be a member of the Council, a person must be exceptionally qualified to analyze and interpret economic developments. Many members of the Council have been economists, teaching and researching at major universities, although other members have come from business, finance, and other sectors.

The Council of Economic Advisors was created in the Employment Act of 1946. Many members of Congress and the public were concerned that the end of WORLD WAR II could lead to another DEPRESSION and economic stagnation in the United States. Creation of the Council was part of a broader attempt to give the president more power to coordinate economic policy and to introduce long-range planning. The Council originally concentrated on macroeconomic issues, although it later also began to address microeconomic problems.

The Employment Act of 1946, as amended by the Full Employment and Balanced Growth Act of 1978, declared various policy goals for the federal government that the Council is charged with furthering. The Employment Act, as amended, calls for full opportunities for employment for all individuals, a reduced rate of inflation, coordination of federal policies and programs, expansion of private employment, a balanced federal budget, and expansion of the private sector. It is also federal policy to promote free enterprise, balanced growth, an improved international trade balance, and reasonable price stability. It is noteworthy that these goals can and often are inconsistent, requiring tradeoffs in legislation.

The philosophical approach of the Council of Economic Advisors toward government regulation of the economy has varied over time. This approach is consistent with changes in the federal government and American society toward government interference with business and the economy. Early approaches of the Council tended toward large and frequent intervention in the economy, while recent approaches have been friendlier toward free markets and government de-regulation.

The Council has a number of statutory duties. First, it assists in the preparation of the president's annual economic report. This economic report describes the current state of the U.S. and world economy, and then makes broad recommendations for changes in economic policy. The report can be used as a basis for the introduction of specific legislation in Congress and well as action in the executive branch.

Second, the Council gathers timely and authoritative information on economic developments and trends. It then analyzes this information with a view to submit to the president studies relating to these developments and trends.

Third, it analyzes the programs of the federal government in light of Congressional policy on the economy. The purpose is to discover whether federal programs contribute to the overall economic goals of the Employment Act of 1946.

Fourth, it makes recommendations to the president on national economic policies to foster free enterprise, avoid economic fluctuations, and maintain full employment, production, and purchasing power. Fifth, it makes recommendations to the president on economic policy and legislation as requested by the president. Finally, it makes an annual report to the resident which becomes part of the president's economic report.

The Council of Economic Advisors also prepares and publishes *Economic Indicators* for the Joint Committee of the U.S. States Congress. *Economic Indicators* appears monthly and contains important statistical information on the national and international economies. It addresses the following topic areas: domestic output, income and spending; employment, unemployment and wages; production and business activity; prices; money, credit and security markets; federal finances; and, international statistics.

Members of the Council of Economic Advisors have made major contributions in economics and public policy outside their membership on the Council. Many have been academics who published major advances in various disciplines such as economics and finance. Two former chairmen of the commission (Alan GREENSPAN and Arthur Burns) went on to become chairmen of the Board of Governors of the Federal Reserve System. Another, Janet L. Yellen, was appointed as a member of this same Board of Governors. Still another member of the Council, Joseph STIGLITZ was awarded the Nobel Prize in Economics in 2001.

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credit

A TRANSACTION IN WHICH resources are obtained in a present time while they are paid for in the future is based on credit. The future payment generally includes compensation in excess of the original value of the resource, that is, interest. Credit, and its opposite DEBT, are operations which involve lending. By giving a credit, a lender finances the expenditures of a borrower against future repayment. Accepting credit is simply an equivalent to going into debt.

While the credit extension and debt creation are almost as old as human interaction, the volume and complexity of credit transactions have grown exponentially with the emergence of capitalism. Credit transaction emerges whenever capital is used and savings are required. Thus, credit enables producers to close the gap between PRODUCTION and sales of GOODS and services. Similarly, it allows consumers to purchase goods and services at present time and pay for those services from their future income.

The credit instruments address the ways in which credit can be extended. The most commonly used instruments of credit are the acceptance, bill of exchange, letter of credit, and promissory note. The instruments are often negotiable and traded in money markets.

Generally there are three types of credit. The first type is consumer credit, a short-term loan extended to the public for the purchase of specific goods and services. The principal economic function of consumer credit is to move consumers' consumption of goods and services forward in time. The main types of consumer credit are non-installment credit and installment credit. Non-installment credit is to be repaid in a lump sum. Installment credit, which is a prevalent form, represents all consumer credit that is scheduled to be repaid in two or more installments.

The second type of credit is trade credit. This is a credit extended by a trader or producer to other business firms through the terms, which allow payment at some time in the future. It may be extended by material suppliers to manufacturers, or by manufacturers to wholesalers or retailers. While the explicit charge for the credit through the charge accounts and/or bill of exchange is possible, the implicit charge in the form of a discount for an early payment is more common. An individual firm or business can be both a giver and taker of this type of credit. Trade credit is a principal channel through which credit flows across various sectors of economy and is one of the pillars of the financial system.

The third type of credit is bank credit. This type involves lending by the banking institutions through bank advances, overdrafts, discounting bills or purchasing securities. Overdrafts are primarily used in the UNITED KINGDOM. The system of overdraft allows a borrower to draw checks beyond the credit balance in his account, but not over the pre-set limit. The borrower is obliged to pay interest on daily amounts by which his account is overdrawn. Based on the assessment of borrowers' credit worthiness, a bank may require a collateral security for the credit. The term, securities, is used for income yielding financial assets. There are two main types of securities, fixed-interest and variable-interest securities. Fixed-interest securities include debentures, preference shares, stocks, and BONDs, including all government securities. Variable-interest securities include ordinary shares. The securities are saleable, and they may be redeemable (fixed-interest) or irredeemable (variable-interest) quotable or unquotable.

Credit plays an important role in MACROECONOMICS, especially in money supply theory. In the aggregate models of the financial sector of an economy, credit markets and credit creation are analyzed via their relation to money markets and money creation and price level. These models clarify the role of CENTRAL BANK policies in controlling money supply and price level.

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Credit Suisse Group

CREDIT SUISSE BEGAN as a commercial bank in 1856, at a time when SWITZERLAND was first embracing the INDUSTRIAL REVOLUTION. In 2003, Credit Suisse Group was the second-largest financial services firm in Switzerland, behind rival Union Bank of Switzerland (UBS).

In 1856, Alfred Escher, a young Zurich political figure from a prominent local family, was making slow progress in his talks with foreign banks about ways to finance a proposed northeastern railway, so he decided to set up an independent bank in Zurich. Between 1856 and the outbreak of WORLD WAR I, Credit Suisse continued financing the country's RAILROAD system, and began financing the electrification of the country. The bank helped develop the Swiss monetary system and, by the end of the Franco-Prussian War in 1871, Credit Suisse was the largest bank in Switzerland.

With the outbreak of World War I, foreign investment stopped completely. Investors in hostile countries returned Swiss securities. Credit Suisse played a crucial role in placing them on the Swiss market while defending the interests of investors abroad.

During WORLD WAR II, Credit Suisse extended huge amounts of credit to Swiss authorities who were owed more than SFr 1.7 billion by Germany by the end of the war.

After the end of the war, Credit Suisse again took up issuing paper for foreign debtors.

During the 1960s the bank set up a business arrangement with White Weld, a leading American investment bank in Europe, which would eventually establish Credit Suisse's leading role in the eurobond-issuing market and would ultimately lead to its relationship with the American investment bank First Boston (CSFB).

The bank also experienced a major scandal in 1977 when authorities began investigating a fraudulent banking and foreign-exchange trading scheme at the company's Chiasso branch involving more than $1.2 billion. Meanwhile the company was tainted by mid-1980s charges of laundering drug money from Turkey and Bulgaria.

The stock market crash of 1987 hit CSFB and First Boston particularly hard. CSFB lost an estimated $15 million on a 1987 debt swap with Italy. First Boston meanwhile suffered large losses from bad bridge loans for mergers and acquisitions. In 1990, Credit Suisse bailed out the still troubled First Boston by agreeing to pump $300 million in equity into the firm, increasing Credit Suisse's stake to 60 percent and making the Swiss bank the first foreigner to own a Wall Street investment bank.

Acquisitions and new growth areas were major themes of the 1990s for Credit Suisse. In April 1990, Credit Suisse acquired Bank Leu, Switzerland's fifth largest bank. This was the first hostile takeover in Swiss banking. In addition to private banking, Credit Suisse added another operating unit to its organization chart when it entered the insurance business by establishing CS Life Insurance. Credit Suisse expanded its insurance operations by purchasing Winterthur Insurance in August 1997.

In 1996, Credit Suisse turned its attention away from Switzerland, and the group decided to become a truly international banking and financial services power that happened to be based in Switzerland and had some core businesses there.

About the same time the company was being restructured, its activities, and those of other "Big Three" Swiss banks during World War II, were being re-examined with resulting negative publicity. Reports of the banks' financial dealings with Nazi Germany were published, and Jewish groups pushed for the reclamation of money that had been placed into Swiss bank accounts before World War II by victims of the Holocaust. The Swiss banks reluctantly published lists of people who owned dormant accounts that had been opened before 1945. In early 1997, the Big Three banks agreed to set up a SFr 100 million (US $70 million) humanitarian fund for the victims of the Holocaust.

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FANNIE MAE

Cromwell, Oliver (1599–1658)

BRITISH SOLDIER, LAWYER, and statesman who rose to power at the head of a pro-Parliamentary army during the First English Civil War (1640–46), Oliver Cromwell headed the faction opposed to King Charles I during the Second English Civil War (1647–49), supported the regicide (1649) and after 1653 headed the British government as Lord Protector until his death.

Cromwell was educated at Cambridge and the Inns of Court. During the 1630s, he suffered a spiritual crisis of unknown origin that spawned a conversion experience from which he emerged a committed Puritan. He represented Cambridge in the Parliaments of 1639 and 1640, during which he became attached to the anti-royal faction or "Roundheads." Cromwell gained his initial military experience in a minor skirmish in 1642, when he seized the silver of the Cambridge colleges that had planned to sell it to support the king's forces in the First Civil War. He rose to military prominence as the leader of the victorious cavalry at the battle Marston Moor (1644), where after routing the royal armies, he showed his socially radical side by promoting soldiers solely on the basis of merit and was roundly criticized for it by his (noble) superiors.

In 1645, Cromwell helped to engineer the Self-Denying Ordinance, which prevented sitting ministers from serving in the army (but did not apply to him); the effect was to remove the nobility from military command. The Parliament was now represented on the field by the New Model Army, now cleansed of the nobility and filled with socially radical elements that Cromwell encouraged, such as Anabaptists, Levellers, and Diggers. Levellers were primarily pamphleteers and supporters of more radical democracy than the Parliament; Diggers incorporated early utopian socialist views into their mix of religious conviction and politics. Although Cromwell supported the Levellers in their dispute with Parliament in 1647, he never favored universal suffrage and appears to have used the threat of the army to purge those moderate parliamentarians considering a settlement with the king. After their expulsion (Pride's Purge, 1648), Cromwell sympathized with the remaining "Rump" Parliament, and suppressed Leveller mutinies in 1649, after which Parliament made him Lord-General.

He was responsible for the brutal massacres of Catholics at Drogheda and Royalists at Wexford. After defeating the Scots and royalist forces at Dunbar and Preston, Cromwell turned the army toward London, where he expelled the Rump Parliament, which he felt was too slow in instituting social reform, and instituted more agreeable and radical replacements. After suppressing Royalist revolts, he refused the office of king when it was offered, and was succeeded by his son when he died in 1658. By 1660, Parliament had restored Charles II to the English throne in the wake of severe chaos.

A gifted military strategist and man of acute political skills, Cromwell has defied characterization and the fundamental nature of his motivation has been contested practically since his death. Although he was a moderate supporter of economic and political reform, his intense Puritan sentiments are the best key to his actions. His initial support of parliamentarians and Levellers, which ended in the purge of both groups, has been seen as the result of political opportunism by those who argue that Cromwell supported the Levellers only long enough to keep them in the army, but sacrificed them as soon as his push to power was achieved. Little evidence suggests that he was other than a moderate bourgeois liberal. He consented reluctantly, on the basis of his commitment to thorough-going but not complete freedom of the press, to publication of James Harrington's *Oceana* (1656), a tract that argued that political power was based on land ownership and that the government should act to prevent the accumulation of large portions of land.

At the same time he revised the charter of the English EAST INDIA COMPANY in 1657 to permit the accumulation of capital. He was one of few to argue for re-admission of Jews to England. Still, Parliamentarians such as Slingsby Bethel were stronger supporters of lowering trade barriers than Cromwell, and he was frequently criticized by these men for the shortsightedness of his expensive foreign policy's effects on the economy. While he considered the development of foreign trading partners desirable, in part to prevent a royal restoration, his approval of the Navigation Act of 1651, which granted to English ships a monopoly on goods carried into English ports, provoked a war with the Dutch. Cromwell has been characterized as a bourgeois liberal traitor to the movement he had helped to foment. Views of Cromwell are inevitably tied up with preferences for particular explanations of the origins of the English Civil War.

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Cuba

THE REPUBLIC OF CUBA is located south of the Tropic of Cancer at the entrance to the Gulf of Mexico. The nearest countries are Haiti to the east, Jamaica to the south, and the UNITED STATES to the north. Havana is the capital.

In 2002, the population of Cuba was approximately 11.2 million, with approximately 50 percent mulatto, 33 percent white and largely of Spanish descent, 10 percent black, and one percent Chinese. Almost the entire population is native-born and more than three-quarters can be classified as urban. The national language is Spanish. Cuba's declining birth rate and increase in emigration has led to a sharp decrease in its rate of population growth.

Prior to SPAIN's exploration of Cuba, the native population was made up of the Ciboney, Guanahatabey, and the Taino. In 1492, Christopher Columbus discovered Cuba and in 1511, Spain began permanent settlements. The Spaniards used the island as a staging ground for its explorations of Florida, the Gulf Coast, and MEXICO's Yucatan peninsula. Due to mistreatment, disease, and emigration the native population became almost extinct and, by the middle of the 1500s, the Spaniards were forced to depend on the importation of African slaves to staff their expeditions, mining operations, and plantations.

By the mid-1800s, Cuba's sugar industry was the most mechanized in the world and accounted for almost one-third of the world's sugar. In 1895, war broke out between Cuba and Spain, and in 1898, the United States declared war on Spain. In 1899, Spain signed a peace protocol ending the war, as well as Spanish rule over Cuba. An American military government ruled Cuba until May 20, 1902, when the Cuban republic was formally instituted. The Cuban constitution, adopted in 1901, incorporated the provisions of the Platt Amendment, legislation that established conditions for United States intervention in Cuba, and gave the United States the authority to oversee Cuba's international commitments, economy, and internal affairs and to establish a naval station at Guantanamo Bay.

Under United States occupation, Cuba's income from the sugar industry was augmented by enormous growth in the tourism industry. While foreign interests controlled the economy—owning about three-quarters of the arable land, 90 percent of the essential services, and 40 percent of the sugar production—most Cubans were unemployed or under-employed.

Led by Fidel Castro, the 26th of July Movement took control of Cuba on January 1, 1959. The new regime modeled itself after the Soviet-bloc socialist countries and nationalized approximately $1 billion in U.S. property and businesses. In response, the United States imposed a trade embargo and, in January 1961, completely broke off diplomatic relations with Cuba. In April 1961, the United States unsuccessfully tried to invade Cuba at the Bay of Pigs. Relations with Cuba worsened even further in 1962, when the United States discovered Soviet-supplied missiles in Cuba. The United States imposed a naval blockade and after several days of negotiations, during which the threat of nuclear war seemed a distinct possibility, the SOVIET UNION agreed to dismantle and remove the missiles.

During the Castro regime's early years, hundreds of thousands of educated and wealthy Cubans emigrated to Spain, the United States, and other countries. These years were also marred by an inability to diversify the economic base, and by Castro's desire to export his ideological revolution. By the 1980s, Cuba began to provide aid to several African, Latin American, and Caribbean nations. In 1987, the United States and Cuba agreed to allow for the annual emigration of 20,000 Cubans to the United States. And, though there were additional improvements in Cuban-United States relations, the embargo has remained basically in force. In 1995, Cuba participated in forming the Association of Caribbean States (ACS), a free-trade organization.

From 1960, when Castro re-established full diplomatic relations with the Soviet Union, until the Soviet Union's dissolution in 1991, the Soviet Union was Cuba's main trading partner and source of economic aid and military support. The Soviet Union bought the majority of Cuba's sugar crop, usually at a price above the free market, and supplied aid that totaled several billion dollars annually. The dissolution of the Soviet Union in 1991 adversely affected Cuba's already troubled economy with the loss of essential commercial, economic, and military support that amounted to $4 to $6 billion annually. The effect was severe enough that Castro had to declare a "special period in peacetime" of food rationing, public services reductions, and energy conservation.

Prior to the Castro revolution, almost 300,000 tourists, predominantly from the United States, visited Cuba annually. However, by the early 1970s tourism had decreased dramatically. Since the 1980s it has begun to make a slight comeback.

In 1960, all Cuban banks were nationalized and, since 1966, the state has operated the banking system via the National Bank of Cuba. Cuba has no stock exchanges. All prices are centrally administered, and the national economic plans determine the allocation of investments. Cuba's monetary unit is the peso and its rate is officially linked to the U.S. DOLLAR. Due to Cuba's planned economy, inflation is negligible. Since 1982, Cuba has allowed foreign investment, but so far it has failed to attract substantial amounts.

Cuba's labor force is approximately 4.3 million, about half in services, one quarter each in agriculture and industry. Almost 80 percent of workers are employed by the state. Cuba's exports in 2002 were valued at approximately $1.7 billion annually and its imports at $4.9 billion. Exports include coffee, tobacco, nickel, sugar, and medical products. Imports include petroleum, consumer goods, food, machinery, and transport equipment. Its export/import partners include RUSSIA, CANADA, the NETHERLANDS, Spain, VENEZUELA, and ITALY.

In recent years, reforms have been undertaken to increase enterprise efficiency, alleviate shortages, and to stem excess liquidity. The average standard of living is still below that of the early 1990s. In 2001, damage from Hurricane Michelle, high oil prices, and recessions in key export markets hampered economic growth. Since the September 11, 2001 terrorist attacks in the United States, tourism has declined. In 2002, the peso was depreciated by approximately 30 percent and Cuba was aiming for economic growth of three percent.

Despite its difficulty with the United States, Cuba has achieved a high level of literacy, a low level of infant mortality, and an extensive network of educational and medical services.

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currency

GOING BY A DICTIONARY definition, currency is the notes and coins that serve currently as a medium of exchange in a country (i.e., currency is MONEY that facilitates buying and selling transactions in a market economy).

Coins, for example pennies, nickels, dimes, quarters, 50-cent pieces, and dollar coins, in the United States form a small (less than 5 percent) fraction of total money

A nation's currency, its coins and notes, is usually controlled by the country's central bank and its monetary policy.

supply of the nation. Coins are minted and issued under the supervision of the U.S. Treasury Department. Historically, coins contained sufficient value in metal that represented the purchasing power of the particular coin. This is no longer the case. The value of coins does not depend on their metal content anymore. Instead they are generally accepted in exchange transactions because the government has declared them to be legal tender (i.e., they must be accepted for all debts, public and private).

Notes or paper money on the other hand are the larger portion of currency and money supply. Historical origins of bank notes reside in the 16th and 17th centuries. European goldsmiths issuing receipts for gold deposited them for safekeeping. The modern-day banking practices are an extension of the activities of goldsmiths who began lending money based on these gold deposits for a fee (today's INTEREST RATE charged to the borrower) and their deposit receipts, as well as the bank-notes they issued, came to be used as money. These days such notes are issued in the United States by the FEDERAL RESERVE banks (and the CENTRAL BANKS in other countries). These notes, formally the Federal Reserve notes, printed under government supervision and distributed to the regional Federal Reserve banks are also legal tender: Each such note carries a statement printed up front: "This note is legal tender for all debts, public and private." That is to say that these notes are to be accepted by law as money in the payment of any and all debts incurred.

A store of value. Currency as money serves the purpose of being a store of value, which means that it can be held and later used for future purchases. Also, it serves as a standard of value (i.e., it is used to measure and compare the market values—prices of different goods and services). However, currency is not all the money a modern economy has. As already mentioned it is a small fraction of the total money supply—the rest is mostly represented by the demand deposits in the commercial banking system, the accounts that permit direct payments on demand to third parties with a check.

There is a common perception that the amount of currency in circulation is reflective of the amount of gold available to back the issuance of such currency. The impression persists because of historical evolution of money in general and currency in particular. The goldsmiths' receipts-turned-money began with an exact equivalence to the gold deposits at hand. However, the issuance of notes by the goldsmith was constrained only by the probability of a deposit of gold being withdrawn by the original depositor. If, at any given time, only a specific fraction of gold was being claimed and withdrawn from the goldsmith's vault, only that fraction was required to be kept on hand. The rest could be loaned out either as specie, or, more likely, in the form of bank notes issued by the goldsmith.

This is the basis of modern fractional reserve banking. But how much currency notes to issue at any given time? The so-called banking school theorists have argued that the demand for currency in a free market would be matched by a corresponding supply through the expansion of deposits regulated by the price of money (i.e., the rate of interest). The currency school proponents, on the other hand, claimed that this mechanism may not be sufficiently sensitive to take into account the effect of balance of payments (i.e., the net result of transactions in the international trade arena)

Hence the necessity of a non-market regulating mechanism, such as the guarantee of actual convertibility into gold. U.S. currency was, until the 1930s, convertible into gold, and until the 1960s, it was partially backed by gold. Since then, the currency—or the rest of money supply for that matter—is not backed by gold at all. The monetary authorities are free to change the note issue as required by the contingencies of monetary policy. The note issues are thus entirely fiduciary in nature (i.e., issued in response to financial considerations and based on trust in the economy alone—the power of the myth, so to speak).

Currency exchange. This leads to exploring the value of currency and its availability as part of monetary and economic policy measures, both domestically and internationally. Since all sovereign nations tend to have their own national currencies, there must be some rate of exchange between different currencies for international trade transactions. If an American tourist has dollars and wants to purchase French wine denominated in price in euros, it is necessary to be able to convert the euro-denominated price into dollars, that is an EXCHANGE RATE between euro and dollars. The intuitive exchange rate should be based on what is called purchasing power parity. This implies that if a basket of goods sells at $1 dollar in the United States and the same basket sells for 3 euros in France, then a dollar should be equated with three euros—the equivalence in purchasing power.

As eminently sensible as this equivalence is, it suffers from several theoretical and practical weaknesses. First, not all goods and services are internationally traded. Therefore, their corresponding demand/supply conditions are not reflected in the international market. Second, not all currencies are created equal. Some represent hegemonic, strong, and established economies, others are connected to weak, less-developed and uncertain economic arrangements. This is captured in the nomenclature of hard currencies: those with a persistently high demand in the foreign-exchange market like the DOLLAR; and soft currencies, those with declining and uncertain demand like the peso. Generally speaking, countries that suffer deficits in international trade—exporting less and importing more value—have respective currencies that tend to be soft or likely to lose value in response to a lower demand abroad for their goods, which is equivalent to having lower demand for their currency.

On the other hand, countries that have a balance of payment surplus in their account—exports being higher in value than imports—are likely to have hard currencies. And then there is a special category called a reserve currency. This is an institutional arrangement in which governments and other international agencies are willing to hold a particular currency as part of their foreign exchange reserves. The expressed requisites for such a status are:

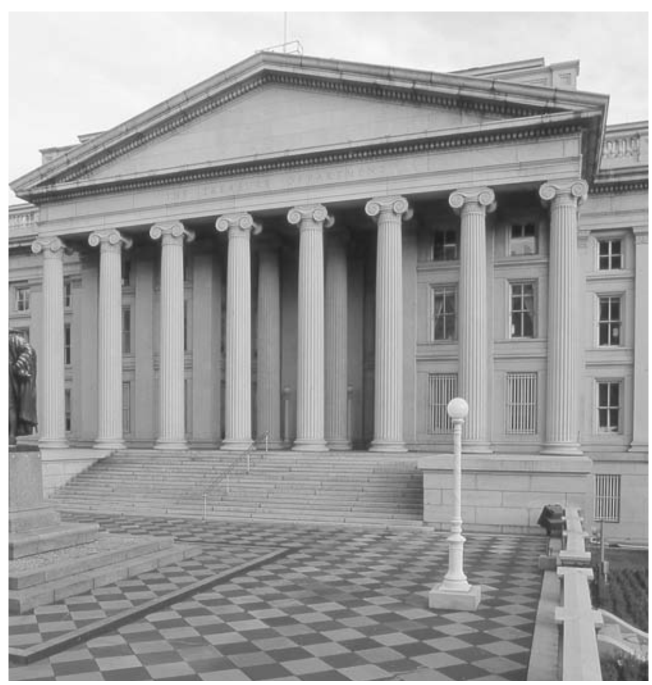
1. maintenance and stability of value in relation to other currencies
2. convertibility into other currencies
3. representation of a large, open economy that has a significant share of international trade.

The dollar and the pound sterling have historically served this function. It means that a large proportion of international trade is conducted through the medium of these currencies. This, in turn, lends a banking advantage to the respective economy represented by these currencies—for which reason the status is jealously guarded as an expression of hegemonic political endeavor as well as economic benefit.

In a free market context, the value of a currency (i.e., the exchange value of one country's money unit in terms of another country's money unit) tends to fluctuate like all other market prices in response to the changes in demand and supply conditions. If a country experiences persistent balance of payments deficit, its currency is likely to lose value in exchange. This market phenomenon is called depreciation. The converse happens with a balance of payments surplus and is known as currency appreciation. However, at times governments in their attempts to promote exports reduce the foreign exchange value of their currency as a policy measure—to make their goods appear cheaper to foreign buyers because of cheaper currency. This is termed devaluation. The reverse of this policy—a much rarer phenomenon for obvious reasons—is called revaluation.

On occasion, and for a short period of time, these policies of devaluation and revaluation may work especially if other countries do not retaliate in kind. After all, the benefit thus garnered by one country comes at the expense of the other countries. Retaliation is a likely response, thus neutralizing any differential advantage. However, this demonstrates the role of foreign-exchange determination in the execution of domestic monetary and fiscal policies. By devaluation, a prospect of increased exports is anticipated, which, in turn, can lead to higher domestic production and employment as well as address the deficit in balance of payments.

Conversely, a revaluation can help alleviate domestic inflationary pressures, at least in theory. The downside of



The U.S. Treasury in Washington, D.C., supervises the minting of coins and printing of notes in the United States.

this kind of policy manipulation is that the domestic currency loses its stability in the foreign-exchange market. This increases uncertainty and risk for entrepreneurs on the one hand, and opens up political space for undue interference in economic policy making on the other. Many less-developed countries find themselves in this dilemma of poorly managed foreign exchange and currency policies leading to severe detrimental economic consequences. In response, economic managers have come up with some currency stabilization schemes. The two main options, both highly controversial, are a currency board or "dollarization."

In the case of a currency-board regime, the monetary authority pegs its currency to an anchor currency at a fixed exchange rate and issues coins and notes only to the extent that can be converted into the anchor currency. The anchor currency, likely the dollar or pound sterling, is supposed to be not only relatively stable, but also internationally acceptable. Gold could possibly be used in lieu of the anchor currency as well for the well-documented characteristics of this metal serving as money. Clearly this implies that the currency board must have sufficient reserves of either gold or the anchor currency to provide 100 percent coverage to its issuance of coins and notes. This might be problematic by itself, but in addition it also means that the monetary authority has no policy discretion available to respond to macroeconomic conditions that could change over time.

The other option is outright dollarization. This entails buying dollars to use as legal tender instead of the local currency, in part or whole. Again, the strain of acquisition of dollars in exchange for sufficient foreign reserves, and the straitjacket of no monetary policy discretion to address domestic economic contingencies in return for a stable currency, makes this a rather mixed blessing. Several Latin American countries—beset with the problem of political interference in policy-making of central banks—have attempted to work with these new schemes with at best mixed results.

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Czech Republic

FOR 300 YEARS THE Hapsburg Empire ruled the Czechs until they combined with the Slovak Federal Republic. After WORLD WAR I, the independent country of Czechoslovakia was formed, but by the end of WORLD WAR II it fell under the Soviet Union's sphere of influence.

The Communist Party seized power in 1946 and instituted a Soviet-style socialist regime. In 1968, during a period of liberalization known as the Prague Spring, the government adopted a policy of "socialism with a human face." This did not last long, and the Soviets invaded and retook control.

In 1989, the Civil Forum movement began which, along with the dissolution of the Soviet empire, led to the nonviolent "Velvet Revolution" and the eventual end of the Czechoslovakian state. In 1993, the Czech Republic and the Republic of Slovakia were founded. Since then, the Czech Republic has become one of the most developed and industrialized economies in Eastern Europe. The Czech Republic is a member of the UNITED NATIONS and the North Atlantic Treaty Organization, and expects to join the EUROPEAN UNION (EU) officially in 2004.

With a population of 10.2 million people in 2001, the Czech Republic had a GROSS DOMESTIC PRODUCT (GDP) of $147.9 billion.

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Dai-ichi Mutual Life Insurance Company

SINCE ITS INCEPTION just over a century ago, in 1902, Dai-ichi Mutual Life has tried to live up to its name: "Dai-ichi" in Japanese means "first," and to date the company has driven itself to stay at or near the top ranking of not only Japanese insurance companies, but also worldwide. One of Japan's foremost insurers, the firm has gained recognition and esteem in the industry, culminating in its winning the Japan Quality Award for 2001, Japan's answer to America's Malcolm Baldridge Award in recognition of competitiveness, quality, and productivity.

Dai-ichi, based in Tokyo, sells individual and group life insurance, as well as individual and group pension products. Through partnerships, it also provides non-life insurance, such as automobile and fire, as well as strategic products such as asset management and risk management.

Its 40,000 sales representatives are guided by their employer's demand to conduct business "with the greatest regard for the needs and views of customers." Accordingly, Dai-ichi's pursuit of its three major goals—customer satisfaction, profitability, and cost effectiveness—led to structural reform in 2002. The restructuring was the company's latest step in following through with, what it calls, a "Lifelong Plan Concept." Translated, it means to address the changing needs of customers through each and every stage of their lives with quality planning, products, and service.

Despite social and cultural transformation throughout the industry, Dai-ichi Chairman Takahide Sakurai and President Tomijiro Morita recognize the importance of strengthening their company's products and services. To ensure that their Lifelong Plan extends to all those who require it, they have formed alliances with companies such as MIZUHO Holdings, Sompo Japan, and AFLAC (the U.S. company well-known for its duck commercials in the early 2000s) the largest foreign insurer in Japan.

Dai-ichi Mutual Life Insurance Company ranked as the 76th largest company in the world in 2002 on *Fortune* magazine's Global 500 list, with revenue exceeding $43 billion.

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DaimlerChrysler

FORMED FROM A merger of Daimler-Benz AG and Chrysler Corporation in November, 1998, DaimlerChrysler is today one of the largest automotive manufacturers in the world. With nearly 375,000 employees worldwide and manufacturing plants in 37 countries, the company generated revenues just over $136 billion in 2001, selling nearly four million passenger vehicles and nearly half a million commercial vehicles. Ranging from passenger cars such as Mercedes to Jeep, with at least eight commercial lines of vehicles, DaimlerChrysler enjoys a global presence, selling its products in over 200 countries. It has also diversified itself beyond vehicle production, offering financial and other services through DaimlerChrysler Services.

According to the company, its global strategy revolves around four concerns: global presence, strong brands, broad product range, and technology leadership. Technology has been a heightened focus since the merger, with DaimlerChrysler employing 28,000 people worldwide in research and development alone. The company secures some 2,000 patents annually. Some recent technological advancements have included development of fuel-cell technology, and DaimlerChrysler has announced the introduction of a fleet of fuel-cell vehicles to be tested worldwide. This technology relies on the reaction between oxygen and hydrogen to produce energy, and the result is a vehicle that produces little to no emissions, hence it's environmentally friendly and has enhanced efficiency.

DaimlerChrysler prides itself on its commitment to diversity: The corporation offers a minority dealer development program that trains qualified ethnic minorities, making them eligible for general manager positions in dealerships. In existence since 1983 as part of Chrysler, most of the program's participants have gone on to become dealers. One goal of the program continues to be to increase the number of minority-owned dealerships. Supporting this goal is an association for such individuals, the DaimlerChrysler Minority Dealer Association.

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De Gaulle, Charles (1890–1970)

CHARLES DE GAULLE served as president of FRANCE from 1945–46 and from 1958–69. Before WORLD WAR II, he gained the reputation as a military innovator, based upon a prescient text of 1934 that had criticized the French Army's antiquated weaponry and its reliance on outdated strategies, which he believed would be of little use in a modern war. At that time De Gaulle was associated with the far-right political-military group *Action Française*, but this was little remembered as compared with his critique of France's military elite and his decision to move to exile in Britain following the Fall of France in 1940.

De Gaulle's Free French resistance movement, based in London, gave him great political and national credibility, and in the latter years of the war he managed, with British support and the acquiescence of key resistors in France, to unify much of the French resistance into a single force. In 1944 it was "De Gaulle's Resistance," as well as the British and the Americans, who were seen to liberate France.

De Gaulle was an obvious choice as postwar leader of France, not least to himself and to the British and Americans who could stomach De Gaulle more than they could a possible communist government. De Gaulle led an interim government of unity as a successor to the collaborationist Vichy regime, with the aim of developing a technocratic administration, which would cut across the party and ideological lines that had conventionally split French politics. His abrasive personality led to rather limited success in this aim of recasting French political culture, though De Gaulle was once again called to power in 1958 when the politicians of the Fourth Republic found themselves unable to deal with crises at home and a bloody war of independence in the French colony of Algeria. De Gaulle demonstrated his essential pragmatism in leading the French withdrawal from Algeria, and his sense of *gloire* in initiating a Fifth French Republic in which much greater power was invested in the presidency.

In all areas of politics De Gaulle aimed for reform based on a very personal set of beliefs about France, its culture, and the French weaknesses he had identified in the interwar period. Just as De Gaulle wished to create a French political culture that went beyond parties, he envisaged a new kind of French economic arrangement that lay somewhere between capitalism and socialism, combining the best aspects of those systems, while abandoning their faults and their partisan qualities. De Gaulle's economic Third Way was rather vaguely defined using the ideas of association and participation, but there is no doubt that it formed a cornerstone of his political beliefs. He acknowledged the potential for wealth creation in capitalism, but his analysis of its human consequences was almost Marxian: "But, however, the ownership, the management, the profits of enterprises in the capitalist system belong only to capital. And so those who do not possess it find themselves in a sort of state of alienation inside the very activity to which they contribute. No, capitalism, from the point of view of humanity does not offer a satisfactory solution."

Such a critique was partly based on social Catholic ideas, and De Gaulle's aim was to recreate the Revolutionary notion of *Fraternité* through his schemes of participation, which in practice meant the establishment of worker representation in firms (1945), the development of social security schemes (1945), and guaranteed profit-sharing for workers (1965). During his time in office, De Gaulle's economic ideas were regarded with some skepticism by both allies (his own political colleagues) and by opponents (leftist political parties, employers groups, trade unions), but in retrospect his advocacy of a French capitalism that combined state-directed technocratic growth and a recognition of the alienation of workers in capitalist society, seems a rather elegant French solution to the challenges of the modern economic world.

While De Gaulle's symbolic policy of participation was decisively rejected by the French people in a 1969 referendum (shortly after which he left power, and then died), he could point to his role in the successful rebuilding of the French economy after World War II, and in particular the development of high-technology industries and the entry of France into closer economic union with its European partners.

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Debreu, Gerard (1921–)

AWARDED THE Nobel Prize in Economics in 1983, Gerard Debreu was cited by the Nobel Committee for "having incorporated new analytic methods into economic theory and for his rigorous reformulation of the theory of general equilibrium."

Born in Calais, FRANCE, Debreu studied mathematics at the College of the City of Calais until 1939 and the start of WORLD WAR II. In the first few years of the war, he attended regional universities until making his way to École Normale Supérieure in Paris, under German occupation. Despite the war, Debreu describes his years in Paris as extraordinary and teeming with an intense intellectual atmosphere.

By 1948, Debreu had shifted his focus to economics; he obtained a Rockefeller Fellowship and visited several American universities, including Harvard and Columbia, and the universities of Chicago and Oslo. While at Chicago, Debreu was offered a research position at the Cowles Commission for Research in Economics.

Debreu's contributions are in the field of general EQUILIBRIUM, explorations of whether and how each market reaches equilibrium. Writing with Kenneth ARROW, Debreu published the 1954 article "Existence of a Competitive Equilibrium for a Competitive Economy," proving that, under fairly unrestrictive assumptions, prices exist that bring markets into equilibrium.

In his 1959 book, *The Theory of Value*, Debreu proposed a more general equilibrium theory, using mathematical tools such as set theory and topology to prove his theorems. Though some economists cite a lack of real-world application for some of Debreu's theories, others say Debreu's work, even as pure theory, is helpful to any analysis of economic reality.

In early 2003, Debreu was a professor of economics and mathematics at the University of California, Berkeley, and had received honorary degrees from the universities of Bonn and Lausanne. He has also served as president of the Econometric Society and as a fellow of the American Association for the Advancement of Science. And, though Debreu became a naturalized U.S. citizen in 1975, his native France awarded him the honor of Chevalier of the French Legion of Honor in 1976.

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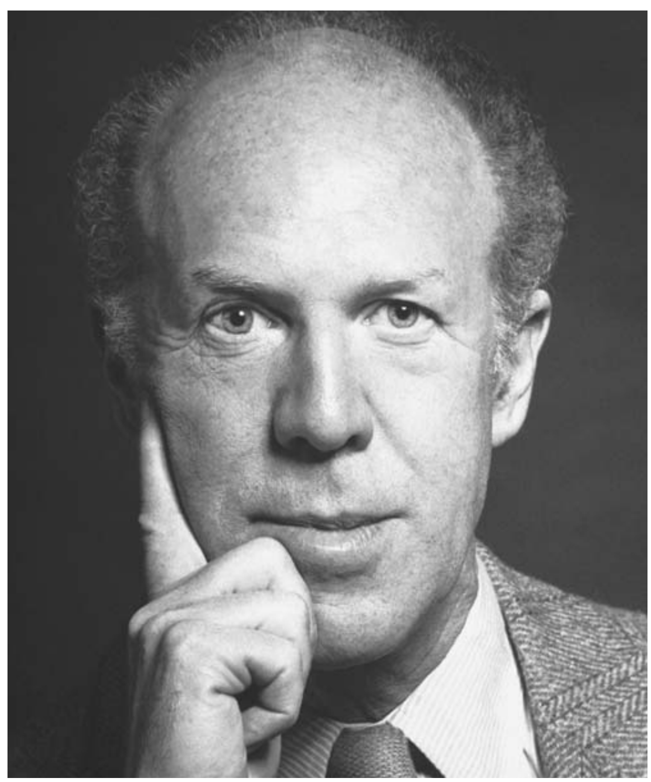

Gerard Debreu, using mathematical tools, explored how competitive markets reach equilibrium.

debt

IN ITS SIMPLEST sense, debt is a liability for the borrower who promises to make future payments to the lender. It constitutes an agreement between the lender and borrower regarding the exchange of funds, or resources. The borrower obtains the privilege to use the resources, and in turn compensates the lender with future payments. Such agreements can be informal contracts that are enforced by community and social institutions, or can be formal contracts that are enforced by legal institutions.

The economic basis of debt is the mismatch between the resources and needs of the individual parties involved. A debt contract matches a borrower, who is in need of or "short" of current resources, but commands or is "long" in future resources, and a lender, who is currently long, and thus sufficiently patient. Indeed, debt can be viewed as an exchange or trading of funds over time. The lender sacrifices current use of these funds in exchange for financial return. The return is usually referred to as the rate of interest, that also measures the cost of borrowing. For example, a high-school graduate, who wishes to obtain college education and improve her future earnings may lack the funds to pay the tuition. A loan (or student debt) with a certain interest rate allows the student to access education, and improve her skills. This effectively enables the student to transfer some of her future income to today. Similarly, firms may borrow against their future sales and profits, and governments may borrow against their future tax revenues.

Debt involves risks both for the lender and borrower. The lender transfers the funds and waits for future payments, that may never materialize, say, because the student never finishes college, or the firm goes bankrupt. This is the default risk for the lender. To cover some of these risks, lenders may request that a certain amount of collateral be posted by the borrower. Collateral is typically a physical asset that is the property of the borrower, and can be liquidated by the lender in the event of a default. The borrower, on the other hand, faces a risk due to uncertain future income and ability to pay back the debt and the interest. The college student, for instance, is usually uncertain about returns to education, and, similarly, firms are uncertain about future demand.

Debt contracts stipulate the amounts and frequency of future payments (typically over a specified period of time). The final payment date is known as the maturity. The yield to maturity is the constant interest rate that makes the price of a debt contract equal to the present value of its payments. Outstanding debts differ in terms of their maturity; a short-term debt matures within one year, whereas a long-term debt has a maturity of ten or more years. Medium-term debt falls in between.

Debt instruments. There are different types of instruments that can be used to issue debt. One of the most common debt instruments is a BOND, issued primarily by governments and corporations, and traded in exchanges. New issues are sold in the primary market to initial buyers. Previously issued bonds are then traded in the secondary market. The existence of an active secondary market makes bonds attractive, because it gives the bondholders the ability to liquidate their savings held in bonds before the maturity date.

Short-term debt instruments are traded in the money market. These instruments include short-term bonds (bills), negotiable bank certificates of deposit (only large denominations), commercial paper, and repurchase agreements. Long-term debt instruments are traded in the capital market. These instruments include long-term government and corporate bonds (bonds), residential, commercial, and farm mortgages, and commercial and consumer loans.

Borrowers are typically rated according to the default risk they carry. A default risk-free borrower commands a much lower interest rate than a risky borrower. The interest rate differential (spread) between the interest rates on bonds with and without default risk is called the risk premium. For instance, governments of developing and emerging market economies frequently issue bonds in international markets (in foreign currencies), and pay sometimes very hefty risk premiums.

The spread between the short- and long-term bonds with identical default risk is called the term structure of interest rates. This spread contains valuable information about the financial markets' expectations of future interest rates. For instance, when the spread is negative (short rates below the long rates), the short-term future interest rate is expected to increase. For this very reason bond markets are closely watched by analysts and economists.

Government debt. Two aspects of debt have attracted considerable attention: national and international debt. The analysis of national (government) debt concerns the causes and consequences of indebtedness of a government both to its citizens and foreign nationals, and that of international debt concerns the indebtedness of a nation vis-à-vis the rest of the world. We consider them in turn.

A government budget over a period (typically, measured by a fiscal year) consists of revenues (mostly taxes) and expenditures. If expenditures exceed revenues, the government budget is said to be in deficit. Government debt is the past deficits that have accumulated over time. In a given fiscal year government deficits will have to be financed through new borrowing. This new borrowing is then added on to the existing debt. Most of this debt is securitized in government bonds. Government expenditures thus usually have two components: government spending on goods and services, and interest payments on outstanding debt. The difference between government revenues and spending on goods and services is called the primary deficit (or surplus).

Although some of the short term financing of government expenditures is due to a mismatch between the timing of the receipt of revenues (collection of taxes) and outlays (salaries and wages, and transfers), government deficits typically arise due to national emergencies, fluctuations in the government revenues, and spending over the business cycle, and government's desire to smooth taxes. National emergencies include wars and natural disasters, which are temporary events. Under such circumstances government expenditures tend to increase and revenues may decline. Similarly, during economic recessions transfer payments to the economically disadvantaged tend to increase, because of rising unemployment, and tax revenues tend to decline, because of declining economic activity. In either case, the government can finance the primary deficit either by borrowing or by higher taxes or both.

The choice between raising taxes in the current period versus debt financing has been a topic of debate among economists and policy makers. In both cases, the government sector lays a claim on current resources that are otherwise available to the private sector. This transfer of resources appears transparent in the case of current taxes, but is sometimes underappreciated in the case of government debt. Indeed, by issuing bonds, the government simply postpones taxing its citizens, and thus the choice between debt financing versus current taxes can be viewed as a choice between current versus future taxes. After all, the only source of revenue available to governments to pay down their debt is levying taxes.

The notion of viewing government debt as future taxes has an important intellectual tradition in economics. One particular interpretation of this viewpoint is known as the Ricardian equivalence, which states that for the private sector decisions the precise form of financing government deficits (taxes versus bonds) should not matter. This influential viewpoint was originally developed by David RICARDO, and was resurrected by Robert J. Barro. One of the implications of this proposition is that the private sector's savings decisions mirror those of the government's. For instance, according to the equivalence proposition, if the government decides to reduce taxes today, without reducing its expenditures, the private sector would increase its current savings, because it would (correctly) anticipate higher future taxes.

Whether such equivalence results hold in reality or not is intensely debated in economics. While empirical evidence in support of the Ricardian equivalence may be weak (or at best inconclusive), most governments seem to exhibit preferences for bond financing over taxes for events that are evidently transitory. For instance, during the WORLD WAR II, the governments of Allied forces ran considerable deficits, most of which were financed through bonds. As a consequence, the financial costs of the war were spread over several generations of taxpayers, by way of relatively higher taxes. Such a choice is described as preference for tax smoothing, because this form of financing does not require significant fluctuations in the tax rate.

Government debt is a special case of sovereign debt, which has been in existence for more than 500 years. Philip II of Spain (1556–98) borrowed from the Genoese-led cartel of lenders to finance his war in Flanders and pay for his armies in the Low Countries. Partial default and debt repudiation are also as old as the sovereign debt itself. Philip II, for instance, suspended interest payments and tried to renegotiate the debt more than twice. In all the cases, the Genoese-led cartel responded by suspending further deliveries, and inflicted substantial damage on the ability of Philip II to supply provisions to his armies. This example also demonstrates that default is costly for the borrower, because the reputation effects restrict, or even eliminate, its ability to access future credit.

Default and debt renegotiation. Partial default and debt renegotiations have also been a recurrent theme, at least since the announcement by the Mexican government in August, 1982, that it was temporarily suspending interest payments on its outstanding foreign currency denominated debt. This announcement unleashed a period of economic turmoil and uncertainty, known as the international debt crisis. The causes of the debt crisis included rapid expansion of lending by international banks to emerging markets at relatively favorable interest rates. Coupled with the increased demand for funds by developing countries, as their economies were growing at a relatively rapid pace, these countries quickly accumulated large amounts of foreign debt. Both the governments and the private sector borrowed extensively. While part of this debt was used for productive investments and infrastructure, most of the foreign borrowing was channeled into private consumption. At the beginning of the 1980s the combination of slow economic growth worldwide and high interest rates culminated in excessive debt burden on developing countries and ultimately in the crisis.

The consequences of the debt crisis were far-reaching. The flow of foreign credit into the developing countries came to a sudden halt, and most indebted countries were forced to reduce their foreign-debt obligations over the 1980s. In most cases, the inability to borrow from abroad led to domestic financial crises, negative economic growth, and reduced social spending. While some of the countries affected by the debt crisis have since regained access to international credit and financial markets, the social and economic consequences of the debt crisis partly lingered for decades, especially for the group of heavily indebted poor countries. Their access to international credit has been limited because of their heavy debt burden. However, there have been debt relief or debt forgiveness initiatives targeted for these countries, since they already represent some of the poorest nations.

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demand

THE TOTAL AMOUNT of a good that a consumer is willing and able to purchase at various prices, with all other things (income, preferences, etc.) held constant, is commonly known as demand. One must be careful to distinguish the demand for a product from the quantity demanded, where the latter refers to the total amount of output that a consumer is willing and able to buy at one specific PRICE.

The concept of demand is of critical importance in a market-oriented economy and helps answer one of the most fundamental economic questions, namely what will be produced with scarce resources? Demand essentially tells us what consumers are willing and able to buy while the quantity demanded tells us how much of a particular product consumers are willing and able to purchase at a particular price.

Existence of demand for a product indicates that consumers expect to receive a certain level of satisfaction from (i.e., are interested in) that product regardless of the product's price. This does not, however, mean that consumers will purchase any amount of the item. Such confusion often arises when one uses demand and quantity demanded interchangeably; this highlights the importance of differentiating between the two. Individuals interested in a particular item may choose not to purchase the product if they feel they would not receive enough satisfaction to justify payment of the prevailing price of the item. In this case, the quantity demanded would be equal to zero despite the fact that there is a demand for the product. Alternatively, the absence of demand indicates that consumers expect to receive no satisfaction from and hence have no interest in a particular product regardless of price. It is not possible for quantity demanded to exist if demand is zero.

Demand plays a significant role in a capitalist system as it serves as a signal of how consumers wish to see scarce resources allocated. One can think of demand as a voting mechanism whereby consumers communicate to firms what they would like to see firms produce. As economic agents free to pursue their own self-interest, firms may entertain or ignore consumer demand. As we examine below, changes in demand are, in fact, extremely effective methods of communication as they provide profit-maximizing firms with the proper incentives to allocate resources according to consumer wants.

Deriving demand. Individual demand can be constructed using two common techniques: utility theory and indifference curve analysis. According to utility theory, an individual will decide whether or not he wants to buy an item and, if so, how much of the item he wants by considering the amount of utility or satisfaction that he will receive from the item. Assuming an individual is interested in a particular product, he will choose how much to consume by comparing the marginal utility, defined as the extra satisfaction provided by one more unit of consumption, to the product's price.

Because it measures the change in total satisfaction that an individual will experience should he consume one more unit of output, the marginal utility can be interpreted as an individual's valuation of the additional unit (i.e., a measure of how much an individual would be willing to pay for one more unit of output). An individual then will continue to purchase additional units of output only as long as the marginal utility is greater than or equal to the product's price (i.e., as long as the amount a consumer is willing to pay exceeds the actual price of the product). It is important to note that this discussion of utility is simplified and assumes individuals are consuming just one item at a time. By applying utility theory and varying the price of a product we can determine how much output an individual would choose to consume at various prices and hence generate an individual's demand. The outcome of utility analysis is a schedule of an individual's quantity demanded at various prices. One can think of this demand schedule as a contingency plan of how much output a consumer would be expected to buy depending on the actual price of the product.

It is important to remember that demand does not tell us how much output an individual will purchase but merely indicates whether a consumer is interested in a particular product or not. The graphical illustration of this schedule results in an individual's demand curve. Total market demand for a product can then be constructed by adding up individual demands or, in the case of the demand curve, by horizontally summing individual demand curves.

Utility theory provides valuable insight into those factors likely to contribute to changes in demand. Because the demand for a product is the collection of price-quantity demanded pairs, changes in a product's price will have no effect on overall demand but will lead only to a change in the quantity demanded and a movement along a fixed demand curve. A change in demand refers to a situation in which an individual chooses to consume more units at any given price (in the case of an increase in demand) and fewer units at any given price (in the case of a decrease in demand).

In other words, if consumers become more interested in a particular product regardless of price, demand will increase. When consumers become less interested in a product regardless of that product's price, demand will fall. Utility theory predicts then that only changes in the utility associated with a particular product will lead to changes in demand. Utility or the satisfaction derived from consumption is a function of how much an individual wants or needs a product and may be influenced by a myriad of factors including individual preferences, quality of the commodity, style, weather, age, tastes, gender, geographic location, advertisements, prices of related commodities, etc. Changes in any one of these factors will make an individual more or less interested in a product regardless of price and consequently will lead to changes in demand.

Another approach to understanding demand involves the use of indifference curve analysis. Indifference curve analysis and utility theory are not unrelated. The former is in fact a graphical representation of the latter. However, the two may be considered as alternative routes by which one may arrive at a better understanding of demand. Indifference curve analysis, like utility theory, emphasizes the importance of satisfaction in consumer decision-making. An individual's satisfaction and preferences are represented by a map of his indifference curves and explain, in part, how much of a particular item he will choose to purchase at various prices.

Indifference curve analysis deviates from utility theory by highlighting the role that an individual's budget plays in the decision making process. An individual's budget will depend on his income as well as the prices of the commodities he is interested in buying. His budget is thus a reflection of all the possible combinations of output that this individual could afford to purchase. Which one of these combinations an individual will choose to purchase will depend on his personal preferences and will ultimately determine the quantity demanded of the products in question. Assuming consumers are rational agents, they will attempt to achieve the greatest level of satisfaction that is possible within their budget. In most cases, the bundle chosen by an individual (i.e., the quantity demanded of output) will occur at the point at which one of the indifference curves is tangent to the budget. Indifference curve analysis then predicts that changes in an individual's budget or preferences will lead to changes in demand.

Changes in a product's price would be expected to alter an individual's budget and consequently the quantity demanded of that product. By varying the price of the product, the demand for a particular product can be derived. Changes in income and prices of other commodities would also affect the budget and consequently would be expected to influence consumption patterns even in the absence of a change in the price of the product in question. Hence, changes in income and prices of other commodities would be expected to lead to changes in demand as an individual would choose to consume more or less of an item at any given price.

Changes in the shape of the indifference curve brought about by changes in preferences would also be expected to lead to changes in demand. Factors influencing consumer preferences include, but are certainly not limited to, quality, style, weather, age, tastes, advertisement, etc.

The significance of demand in MICROECONOMICS is obvious as it, along with SUPPLY, directly influences prices, and in so doing determines the allocation of resources in a capitalist economy. An increase in demand indicates that consumers would choose to purchase more of a commodity at any given price. In other words, consumers either want or need the product more than they did previously regardless of price. Consequently, an increase in demand means a product has become more valuable to consumers and implies, therefore, that consumers will be willing to pay a higher price for the product. Higher prices will lead to a reallocation of resources toward the production of items desired by consumers. It is important to note that this reallocation occurs not because most firms are interested in maximizing consumer satisfaction (at least not explicitly) but because they see an opportunity to increase profits through the increase in price. Conversely, a decrease in demand suggests consumers do not want or need a product as much as they once did. Thus, with a decrease in demand a product becomes less valuable to consumers who will no longer pay as high a price for the product.

Thus, in a market economy, demand plays a significant role in determining which products are produced and which are not. The concept of demand also plays an important role in MACROECONOMICS. Aggregate demand, an extension of market demand, is used in macroeconomics to explain fluctuations in, among other things, general economic activity, unemployment, inflation and GROSS DOMESTIC PRODUCT (GDP).

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democracy

THE IDEA OF DEMOCRACY, like the idea of capitalism, promises much, though the reality always falls short. The promise is of wide participation in government, free and open competition among diverse groups, and self-determination. Democracy offers the vision of individuals working together to achieve their own particular goals, using similar means to accomplish collectively individual wealth and freedom. History offers few examples of really successful democracies, success being defined as actual structures of government and society that make concrete the image that the word democracy conjures up. Democracy, like liberty, freedom, and equality, is elusive, visualized in the mind as dreams never quite fulfilled. That these concepts, democracy, liberty, freedom, equality, are linked to capitalism implies that capitalism itself is more image than reality.

The word "democracy" is a combination of two classical Greek words from the 5th century B.C.E. The Greek *deme* was a tribe in ancient Athens; there were 10 such tribes that comprised the city-state, or *polis*, of Athens. The *demos* were therefore the people of the ten tribes. The Greek word *kratos* implies power, strength, control—the attributes of government. Demos joined with kratos means to give the people the power, hence the English word democracy, the rule of the people.

Democracy and capitalism. The linkage between democracy and markets is seen from the beginning, at the creation of the concept of democracy around 500 B.C.E. At that time, Athens had experienced centuries of government by kings (rule by one), by the aristocracy (rule of the best men), and by tyrants, which came to mean oppressive rule. But under the leadership of Cleisthenes, the Greeks adopted a form of government that developed from the interchange of goods and ideas at the marketplace. Here the citizens of Athens met in assembly to vote on proposals offered by speakers at the rostrum. The Council of 500, composed of 50 citizens selected by lot from each of the ten tribes, typically set the agenda for the assembly. The assembly of citizens passed legislation by acclamation, and in time by secret ballot. Athenian citizenship was restricted to adult men; women had little power in Athenian society. Slavery was practiced at Athens as well. Hence the majority of people living at Athens did not exercise power—they were disenfranchised. However, it was remarkable that among the male citizens there was no property qualification for voting, nor even for addressing the assembly.

Another clear example of the relationship between democracy and capitalism comes from the period of the later Middle Ages and early Renaissance in European history. Medieval FEUDALISM was the antithesis of democratic society and government. The Medieval manor, in which serfs worked the land of an aristocrat and warrior, the Lord who was the sole authority and judge, was a closed system of few rights, fewer opportunities, and no government participation on the part of the landed serfs. As long as the Medieval economy was primitive, relying on agriculture and barter, lacking widespread surpluses, having few of the components and resources for trade, serfs had no outlet, no way to change their condition. After 1000 A.D., various technological improvements in agriculture led to increased surpluses and generated wealth, trade, markets, and eventually market centers—villages, then small cities. This generation of a very limited capitalism provided the serf with the alternative to lifelong service on the medieval manor. Market centers were places of diversity and transition, where one could blend in, be anonymous, and start a new life. Trade has always raised the potential for newness, growth, and opportunity.

The commercial revolution after 1100 C.E. and continuing into the early modern period represented the replacement of feudal with urban structures. The organic, static, unequal, monarchal, aristocratic feudal society gave way to the independent, free and equal, republican and democratic European towns and cities. These towns were incorporated, that is, the residents joined together into a common self-governing cause where each person had certain rights and responsibilities incumbent upon citizenship. Such an open environment encouraged the self-made man and woman, who, in turn, knew that without towns, their freedoms, open markets, and mobility, such opportunity for personal success would be limited.

The Renaissance (1300–1600) focused on the individual, which was further supported by the Protestant Reformation of the 16th and 17th centuries, encouraged active men and women who worked for their city and state, their God, and themselves. One sees this personal capitalistic urge in the early colonists of America. Men such as Captain John Smith in Virginia and John Winthrop in Massachusetts worked for the good of the state of England, their own community of colonists, the development of their respective religious beliefs, and their own fortunes.

American democracy and capitalism. The historian of early America sees clearly the wedding of democracy to capitalism in the example of Benjamin FRANKLIN (1706–90), the great entrepreneur and democrat of the 18th century. Franklin's *Autobiography* is the story of a self-made man in the open society of early America. Franklin listed those characteristics that made him a success: temperance, silence, order, resolution, frugality, industry, sincerity, justice, moderation, cleanliness, tranquility, chastity, humility.

These were the same characteristics that made Franklin a successful diplomat, statesman, revolutionary, and political thinker. Franklin helped write the *Declaration of Independence*, agreeing with Thomas JEFFERSON that "all men are created equal." He served as the first Postmaster General, guaranteeing open communications in a free society. Franklin was one of the few American statesmen who could see the advantages of a government that provided order and security as well as freedom of movement, speech, belief, and work.

Most of the founders of the American republic, it is true, were less supportive of democracy, fearing the disorder and possible anarchy of a people who exercised influence over the government without control. This was the theme of James MADISON's famous *Federalist Paper 10*, in which he argued against a democracy that would yield a tyranny of the majority, supporting instead a republican government of important, if controlled, freedoms. Madison, who wrote the draft of the U.S. Constitution, was joined by Alexander HAMILTON in rejecting the first government of the United States, the Articles of Confederation, which allowed too many freedoms to states, localities, and individuals—for example freedom to determine the rules of interstate and international commerce. Under the Constitution, Congress has the power to regulate interstate and international commerce, which to some was an undue restriction imposed on the capitalistic inclinations of early Americans.

Jefferson was one of the great liberal intellectuals of the 18th century, yet was part of the system of slavery in the American south. One of the strongest advocates of free trade in the early republic, Jefferson was heavily influenced by the thinking of John LOCKE, the English philosopher who argued that humans are naturally good, free, and equal; that government is not a requirement, rather a choice; that humans choose to join together into voluntary association, giving up some of their rights and freedoms for the overall goal of mutual survival and prosperity. Jefferson once told his friend John ADAMS, when both were in retirement reflecting upon the past, that the AMERICAN REVOLUTION was unfinished, and would continue uncompleted for generations to come, only reaching finality when freedom became "intuitive," and Americans could exercise true self-government. Jefferson's image of a pure democracy existing in the future depended in part on free trade.

Democracy and free trade. Free trade, throughout American history, has been the perceived foundation of American, and world, democracy. Free trade means trade without restrictions, without the encumbrances of tariffs, quotas, embargo, and other means to hamper trade. The principle of free trade eschews using trade as a means of political policy, or using trade as an incentive in diplomacy. The foundations of the ideology of free trade emerged during the 18th-century Enlightenment. Adam SMITH, for example, in *The Wealth of Nations* (1776) argued against the control of trade as practiced by the British imperial system of MERCANTILISM. Smith applied liberal ideas to the economy. He argued that self-interest drives the economy and society. Benevolent altruism is not the stuff of capitalism, nor of democracy.

The American experience of having colonial trade controlled by the Navigation Acts and other forms of British mercantilism spurred American thinkers such as Jefferson to develop similar principles of American free trade. Jefferson believed that free trade would be an agent of the spread of the American system of self-government throughout a world that engaged in constant aggression and warfare, the origins of which often occurred because of trade restrictions. Free trade was the principle of the open mind and open society informed by reason and liberty rather than the narrow-minded, closed system of trade restrictions.

Free trade has been considered the agent of democracy, and has been one of the primary cornerstones of American diplomacy. Right from the beginning, presidents have generally refused to engage in trade wars and restrictions. Americans responded to the wars between England and France of the late 18th and early 19th centuries with proclamations of neutrality and free trade. Jefferson's embargo of 1808 was an exception, and a failure—it completely contradicted Jefferson's own principles. The MONROE Doctrine of 1823 was issued in part to promote free trade throughout the western hemisphere. Free trade was the cornerstone of Woodrow WILSON's post-WORLD WAR I plans and Franklin ROOSEVELT's post-WORLD WAR II plans. More recently, American political leaders supported such free trade programs as the North American Free Trade Agreement (NAFTA).

Alexis de Tocqueville, in *Democracy in America*, observed about 19th-century American society that the typical American, without pretense to birth or social rank, engaged in lifelong entrepreneurship. The American commoner was restless, hardworking, always seeking something, especially a satisfactory amount of wealth, which was always just out of reach. Such characteristics formed the backbone not only of American capitalism but of American democracy as well. The aggressiveness of the American in business spilled over to local assemblies, state legislatures, and courthouses. Ideas of American justice, morality, and law had a pragmatic, business-like approach. The American democracy, like American business, involved controversy rather than conciliation, anger and argument rather than acceptance and apathy. Even in the 20th century, in the wake of World War I and World War II, when traditional values were being challenged everywhere, and democracy was under attack from the left and the right, it was diversity rather than sameness, relativism rather than absolutism, that strengthened American democracy.

After centuries of development, democracy is still the rule of the people. The people, however, rarely act in unison, rarely agree, but it is in disagreement and disunity that democracy thrives. American democracy is based on pluralism. If America ever becomes uniform, predictable, and at one with itself, it might still be an American society, but it will not be American democracy.

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Denison, Edward (1915–)

EDWARD DENISON'S contributions to economics lie in the area of national income accounting and growth accounting. His work has pioneered techniques for estimating the contributions of various factors to aggregate economic growth, measured in a variety of ways, including total output, output per labor hour, and output per unit of input (combined labor and capital). Denison's work has enhanced our measurement and understanding of economic growth and has informed growth policy.

Born in Omaha, Nebraska, Denison graduated from Oberlin College in 1936 and earned his Ph.D. from Brown University in 1941. From 1941–62, he worked in the Office of Business Economics in the U.S. Department of Commerce, and became its assistant director. From 1962 through 1978, he worked as a Senior Fellow at the Brookings Institution. In 1978, he returned to the Department of Commerce as associate director of national accounts.

Denison's early work (1962, 1974) measures the contributions of LABOR, CAPITAL, TECHNOLOGY and other factors of growth in the U.S. economy. His estimates employ the residual method, whereby growth not accounted for by labor, capital and other specific sources is attributed to "advances in knowledge," his term for technical advance. He found technical advance and increases in education to be the two primary sources of growth in output per worker over the period. His finding spurred development in the areas of education and technology policy.

In a related book (1967), Denison altered his approach to compare the relative role of capital, labor, technology, education, and other factors in explaining differences in growth rates among eight western European countries and the United States. Denison's work here represents the first significant contribution in the area of comparative growth analysis. Other significant work includes an analysis of Japan's relatively strong productivity performance (1976), contributions to the slowdown in productivity growth during the 1970s (1979, 1985), and analysis of rates of growth of industry productivity (1989). In addition, Denison contributed significantly to developing and improving modern national income and product accounting conducted by the Bureau of Economic Analysis of the U.S. Department of Commerce.

Denison's growth accounting has augmented our understanding of the dynamics of capitalist economies, generating a foundation for forecasters, policy makers, and employers and others concerned about the path of economic growth.

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Denmark

THE KINGDOM OF DENMARK is located in western Europe, occupying the peninsula of Jutland and an archipelago of 400-plus islands. Copenhagen is the capital. The population of Denmark is approximately 5.3 million and approximately 85 percent live in urban areas. Danish is the official language and English is the predominant second language. The net population growth has remained stagnant for many years.

Once home to Viking raiders and subsequently a north European power, Denmark is now involved in the political and economic integration of Europe. Since the mid-20th century, Denmark has faced a series of economic problems including a negative balance of payments and a tight labor market. In the 1980s, the government was forced to implement austerity measures. In the 1990s, the economy improved and unemployment shrank. However, the country struggled with the status of immigrants and the desire to maintain its social welfare programs, while decreasing the taxes needed to support them. In 1992, Denmark removed itself from participation in the European Union's Maastricht Treaty. In 1993, Denmark joined the EUROPEAN UNION (EU), but only after it negotiated exemptions from certain of the treaty's provisions. In 2000, Denmark, rejected use of the euro currency.

Industry accounts for about one-quarter of Denmark's GROSS DOMESTIC PRODUCT (GDP), services approximately 70 percent, and agriculture the remainder. Denmark's industries include clothing, food processing, furniture, machinery, metal production, and textiles. Denmark's currency is the Danish krone (DKK) and is pegged to the euro. The National Bank of Denmark is the bank of issue. All banks are under government supervision and must have public representation on their boards.

Denmark's labor force is approximately 2.9 million, with about 80 percent working in services, 17 percent in industry, and the remainder in agriculture. Women make up almost half of the workforce. The majority of skilled workers, technicians, and handicraft workers belong to unions.

In 2002, Denmark's exports were valued at approximately \$56.3 billion annually and its imports at \$47.9 billion. Its leading exports are chemicals, dairy products, furniture, ships, and windmills. Denmark's leading imports include consumer goods, grain, machinery and equipment, and raw materials. Since the mid-1960s, West Germany (and later GERMANY) has been Denmark's leading export/import partner. Other partners include the UNITED KINGDOM, FRANCE, the NETHERLANDS, SWEDEN, and the UNITED STATES.

Denmark's economic objectives include streamlining government bureaucracy and further privatization of state assets. Given the sluggishness of the global economy in the early 2000s, Denmark's economic growth may be moderate.

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dependency theory

THE DEPENDENCY THEORY attempts to provide a comprehensive explanation to the phenomena of the simultaneous existence of highly developed, capitalist countries on the one hand, and underdeveloped, poor capitalist countries on the other, in the world today.

The concept was first articulated cohesively by Paul A. Baran in *The Political Economy of Growth* (1957), and Andre Gunder Frank in *Capitalism and Underdevelopment in Latin America*, (1967) and *Latin America: Underdevelopment or Revolution* (1969). These seminal works inspired a number of studies in the 1970s, a good representative collection of which appear in *The Political Economy of Development and Underdevelopment*, edited by Charles K. Wilber (1973). In late 1970s and 1980s, a number of modifications, additions, and deletions were made to this theory in light of the criticism, mainly from Marxist perspective that the original version had attracted. These critics' central point was that the theory did not incorporate the role of classes and class-conflict within its structure. Some of the major contributions to the New Dependency Theory were: James Petras (*Critical Perspectives on Imperialism and Social Class*, 1978); Guillermo O'Donnell (*Bureaucratic Authoritarianism: Argentina, 1966–1973, In Comparative Perspective*, 1988); Fernando H. Cardoso (*Dependency and Development in Latin America*, 1979); Peter Evans (*Dependent Development: The Alliance of Multinational, State and Local Capital in Brazil*, 1979).

The dependency theory emerged as a critique of the failed Import Substitution Industrialization strategy devised by the U.N. Economic Commission for Latin America (ECLA) for the economic development of Latin American countries after World War II. As Alvin So (1990) writes:

> . . . Many populist regimes in Latin America tried out the ECLA developmental strategy of protectionism and industrialization through import substitution in the 1950s, and many Latin American researchers had high hopes for a trend towards economic growth, welfare, and democracy. However, the brief expansion in the 1950s quickly turned into economic stagnation. In the early 1960s, Latin America was plagued by unemployment, inflation, currency devaluation, declining terms of trade, and other economic problems.

The two main contributions of the early dependency perspective were:

1. It pointed to the indispensability of incorporating the history of colonial domination and the particular division of labor imposed on the colonized countries into the analytical framework
2. It highlighted the role of unequal exchange relations between developed capitalist countries and underdeveloped countries as a factor that contributes significantly to stagnation in the latter.

However, the early dependency theory suffered from at least three major shortcomings. These were:

1. It theorized core-periphery relations at a very high level of abstraction, meaning that it treated all underdeveloped countries as essentially similar, overlooking the possibility of analyzing and understanding separate societies differently on the basis of their particular external and internal factors
2. It looked at underdevelopment almost exclusively as an economic phenomena
3. It inevitably relegated the possibility of development of an underdeveloped country to the rather impossible imperative that it sever all ties with the capitalist core and international markets dominated by its business groups.

These shortcomings were addressed by latter researchers within this paradigm mentioned above. Altogether, these authors expanded the dependency perspective along three different dimensions. First, following Cardoso's historical-structural method, dependency literature started paying much greater attention to the specific historical circumstances in which different countries become dependent, and the particular nature of each dependency relationship. The discussion deepened from the level of general and abstract analysis of the relationships between core and periphery to the specific and concrete analysis of the dependency linkage of different Third World countries with the core.

While early dependency theorists had mainly focused on the effects of external relationships of dependent countries, characterized at first by the distortions and deformities created in them by European colonial exploitation, and later, by the system of unequal exchange, the new dependency studies, while not ignoring these dimensions, mainly focused on the internal socio-political conditions within peripheral countries that make the continuation of dependency relationship possible. In other words, it focused on the "internalization of external interests." In doing so, these authors have given primary attention to the class basis of various political regimes and the role of the state. A summary synopsis of their argument would go something like this: There are three dominant actors in the context of dependent countries. These are the bureaucratic-technocratic state that is "relatively autonomous" from the control of national dominant classes; the indigenous bourgeoisie; and the transnational corporations (TNC) of the core countries.

The interests of these three forces come together in certain specific areas, namely, in creating social and political stability; in keeping wage increases in check; in orienting industrial manufacturing for production for export markets; in gaining access to the international markets for traditional products produced by the peripheral country; and in development of a modern communications and energy infrastructure. These common interests provide the context and basis of the formation of a "triple alliance" between the state, national bourgeoisie, and the TNCs. But it is an uneasy and limited alliance in which each party tries to maximize its interests and which can only be sustained given certain favorable circumstances, most important of which is an expanding international market.

The latter dependency theorists reshaped the original argument of this school considerably but without violating its basic premises. In this regard, two important points must be noted here. First, contrary to the early dependency theories which postulated that the domination of foreign corporations in the national economy precludes any possibility of development, the latter theorists advanced the idea of conceptualizing the existing socio-economic processes in terms of associated dependent development. Doing so accounted for the contradictory nature of development in peripheral countries under political and economic conditions that are established by the core countries.

This accounts for the phenomenon of dynamic economic expansion that some Third World countries experienced in the 1970s, that not only resulted in the growth of the internal market, but which also re-molded their economies in certain basic ways in accordance with the imperatives of world capitalist system. The development that did take place was limited, lopsided, disintegrated, and only the classes associated with the triple alliance regime benefited from it, while the majority of the people were left outside this narrow circle of beneficiaries.

Notwithstanding the changes that have occurred in many peripheral capitalist countries in the 1980s, the analytical framework of the dependency perspective is still quite useful in explaining the internal and external contexts and imperatives of government policies. However, certain limitations of this perspective still remain and it is necessary to overcome these in order to construct a theoretical framework with greater explanatory powers. Thus, while the new dependency perspective successfully focuses on the class alliances to explain the internal developments, it nevertheless lacks a cohesive and dynamic explanation of the underlying mechanisms and structures that produce the structural conditions of peripheral capitalism. The new dependency perspective also lacks the conceptual power to bring into purview and analyze the phenomena and tendencies that exist or unfold outside the real external links of a particular peripheral country, but nevertheless affect it due to the articulation and manifestation of capitalism on the international scale.

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depreciation

THE DECLINE IN value of an asset spread over its economic life is termed depreciation. Depreciation covers deterioration from use, age, and exposure to elements. Since the consumption of CAPITAL is considered as cost of production, the allowance for depreciation is always made before net PROFIT is calculated. The rationale of keeping these costs is to measure current income accurately and to prevent decreasing the value of the overall assets of business.

Depreciation can be measured only at the end of the economic life of an asset, so companies are required to estimate both the total amount of depreciation and the asset life. The annual depreciation allowance is determined by allocating historic cost less residual value over the service life. The annual depreciation provisions are typically calculated by one of two methods. The first is the "straight line method" where the annual amount of depreciation is calculated by subtracting the estimated disposable residual value (scrap) from the original cost of the asset and then by dividing that amount by the number of years of its expected life. The second method is the "declining balance method" where the actual depreciation expense is set as a constant proportion of the value of the asset. Since the value of the asset declines over time so does the annual absolute amount of depreciation.

The peculiar problem is the time of high inflation when the replacement cost of any asset may be considerably higher then historic cost. In these circumstances, the method of replacement-cost depreciation is used. This method implies periodic revaluation of assets and the adjustment of depreciation rates.

Depreciation is accepted as an allowance against profits for tax purposes. However, depreciation has to be calculated according to certain rules and those rules often differ from the depreciation charged by a business firm in its accounts.

The decline of value of an asset may also come from obsolescence, the loss of usefulness due to availability of modern and more efficient types of goods serving the same purpose. Obsolescence, however, is not an equivalent to depreciation, since the changes in value of an asset coming from obsolescence are rapid, and the life of the asset is written off over a very short period.

Another definition of depreciation is the decline in value of one currency in terms of gold or other currencies. The currency depreciation occurs under the flexible, or floating exchange-rate arrangements when there is a shortage of demand for currency and/or excess of supply of currency.

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depression

GROWTH IS A COMMON FEATURE of modern economies. However, economic growth is an irregular phenomenon. The recurring variations in the aggregate economic activity are known as BUSINESS CYCLES. The modern economic theory makes a distinction among several types of business cycles. Kitchin cycles (named after Joseph Kitchin) were the movements caused by the changes in the level of inventories with the average duration of 24–40 months. Trade cycle, or Juglar cycle, with the duration of approximately seven years, were typical in the European economies in the course of the 19th century. The longer Kuznets cycles (Simon KUZNETS) last between 20–25 years and indicate alternate phases of European and American long-term investment.

While a portion of the economic and business literature refers to depression as the bottom phase of a business cycle, economists in general, were reluctant to term the trough phase of these cycles as depression. Contraction, downturn, and RECESSION were more widely used terms to denote the phase of the business cycle characterized with the drop in economic activity.

The more suitable usage for the term depression is to describe periods of severe and prolonged periods of economic decline usually on a broader international scale. The typical examples of depression were the period following Napoleonic wars, the Great Depressions of 1873–96 and of the 1930s, as well as the period following the first OIL shock in 1973.

While outside of the traditional business cycle, depression as a recurring phenomenon warranted theoretical explanation. The first attempt of theoretical clarification was provided by the Dutch Marxist, J. van Gelderlen (1913). However, the major theory was developed by Russian economist N.D. Kondratiev (1922), who analyzed the price movement in major Western economies over the course of two centuries. Kondratiev identified two depression periods (from 1810–17 to 1844–51 and from 1870–75 to 1890–96) during which a significant decrease in price level as well as in the production of coal and iron, and in agriculture occurred. According to him, during the depression periods, new technologies were developed, and technological innovations spurred the increase in economic activity. The upswing phase of Kondratiev long cycles were characterized by the rapid rise in gold production, wars, and revolutions.

Joseph SCHUMPETER incorporated the Kondratiev scheme into his concept of cyclical development of modern capitalism. Schumpeter assumed that the Kondratiev long investment cycle incorporates six Juglars, and the depression phase contains three Juglars. The depression periods started with a major crisis, high unemployment rates, and overall decrease in economic activity, especially in the agricultural sector. Similar to Kondratiev, Schumpeter also emphasized that the driving force of investment booms and expansions are major innovations such as railways, electricity, and steel.

Walt W. Rostow offered a Keynesian version of long cycles in economic development. He identified three depression periods that lasted from1815 to 1848, 1873 to 1896, and from 1920 to 1936. The depression periods were characterized by falling prices, particularly agricultural prices, falling interest rates and low profits. The principal cause of economic crisis and prolonged downturn in economic activity (or depression) Rostow found in declining employment opportunities for capital, or in the excess of savings, due to the lack of profitable capital investment.

The attempt to associate major technological breakthroughs and/or their absence with recurrent periods of depression and economic prosperity regained its popularity during the prolonged crisis of the 1970s. Gerhard Mensch, Christopher Freeman, Ernest Mandel, and Robert Boyer advanced various explanations of how depressions can be averted by the rapid and broad introduction of new technologies.

Despite their appeal, the cyclical theories did not succeed in establishing a coherent explanation of the regular recurrence of economic depressions. Thus, the answer to the question whether the depressions are an intrinsic and salient feature of world capitalist development, or whether they are a product of a juxtaposition of circumstances, still remains open.

The viable alternative to the cyclical theories is to observe each of the depression periods as a unique and separate historical event. Thus the depression of 1873–96 should be viewed and analyzed separately from the depression of the 1930s. Economists vary in their explanations for the major causes of depression. The Keynesian approach focused on insufficient demand for goods and services and emphasized the role of government in creating a new purchasing power. Milton FRIEDMAN and other monetarists stressed the key role of money supply. According to Friedman, the downturn of economic activity was greatly aggravated by repetitive reductions in quantity of money. Consequently, a controlled monetary expansion is a secure way out of depression.

Keynesian and monetarist evaluations of causes and cures of the crises in the 1970s are diametrically opposed. Modern policymakers use prescriptions by both approaches in order to alleviate prolonged periods of depressed economic activity; in other words, they employ deficit spending in stimulating demand and attempt to control the quantity of money in the system via central bank (FEDERAL RESERVE) policies.

The modern history of depression in the world economy started with the Great Depression of 1873–96. The beginning of the depression was preceded by the collapse of the expansive boom in the capital goods industries (1871–73). The slump in economic activity was especially pronounced in Great Britain. The slowdown affected financial markets the most. These were upset by the default of the overseas borrowers, low profitability of investment in domestic economies, and the French war indemnity to Germany. However, the depression was less visible in real terms. While unemployment existed in the late 1870s and the mid-1880s, it was mild by the standards of the 20th century. The decline of GROSS NATIONAL PRODUCT (GNP) was moderate, and the sharp declines in profits affected only the grain farmers in agriculture. The depression affected the profit earners, and financiers the most, while the standard of living of the rest of population went up.

The depression of the 1930s, also known as the Great Depression, brought about financial crashes, the collapse in the real world production and trade, and unprecedented unemployment. The NEW YORK STOCK EXCHANGE crash in the fall of 1929 marked the beginning of the share collapse and was followed by series of financial disasters in Austria, Germany, Great Britain, and the United States. The fall in INTEREST RATES and profits was accompanied by unprecedented unemployment and decline in output and real national income. The unemployment affected 15–30 percent of the population in many countries; from 1929–33 the GROSS DOMESTIC PRODUCT (GDP) in the United States dropped by 30 percent and in Germany by 16 percent.

The drastic oil price rises by the ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES (OPEC) in 1973–74 and in 1979, and the floating of the dollar marked the beginning of the depression of the 1970s. This depression was characterized by the stagnation in economic activity and increase in the overall price level, or so called "stagflation," an entirely new economic phenomenon.

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derivative

A SECURITY WHOSE payoff depends on, or derives from, the value of another asset is referred to as a derivative, or a "contingent claim." The most common types of derivatives are options, futures, and swaps.

An option is a security that gives its holder the right, but not the obligation, to buy or sell another asset ("the underlying asset"). The lack of an obligation implies that the holder's loss from an option is limited to the price paid for it. The underlying asset may be common stock, bonds, stock indices, commodities, foreign currency or even other derivatives such as futures contracts or swaps.

The option contract specifies the price at which the asset may be bought or sold (the "exercise price" or the "strike price"), as well as the time over which the option contract is valid and may be exercised (the "maturity period"). A call option on a company's stock, for example, gives the holder the right to buy one or more shares (the underlying asset) in the company at a fixed price, not later than a certain date. Employee stock options, that are granted to the employees of a firm, enabling them to purchase company stock, fall under this category. A put option gives the holder a corresponding right to sell the underlying asset.

European style options may be exercised only at maturity, while American style options may be exercised prior to maturity as well. An option is said to be In the Money (ITM), if its exercise would lead to a positive payoff to the holder, such as when the strike price of a call option is lower than the current market price of the underlying asset. Similarly, an option is Out of the Money (OTM) if its exercise would lead to a negative payoff, and is At the Money (ATM) if its exercise would lead to a zero payoff. An option's value, also referred to as the "Option Premium," consists of two parts:

1. The intrinsic value, which is the payoff from immediate exercise for ITM options and zero for ATM and OTM options
2. The time value, which represents the potential future increase in value of the option from beneficial movements in the price of the underlying asset within the time left for expiration.

In 1973, Fischer Black and Myron Scholes, and Robert Merton independently, developed the first formula for determining the value of an option. The Black-Scholes formula has since been refined and expanded to become the most widely used option pricing technique.

Standardized option contracts trade on several exchanges, such as the Chicago Board Options Exchange, the Chicago Mercantile Exchange, the AMERICAN STOCK

EXCHANGE, and the Philadelphia Stock Exchange. These options have standardized contract sizes, exercise prices and expiration dates. Such standardization facilitates trading, by increasing liquidity and lowering trading costs. There also exists an Over the Counter (OTC) market for options, where the terms of the option contract may be tailored to meet the requirements of the transacting parties. However, the trading costs associated with such non-standard options are higher.

The rapid pace of financial innovation in the last two decades has led to the creation of many customized options with peculiar features. Such "exotic options" include the Average Rate or Asian Options whose payoffs depend on the average price of the underlying asset over a specified period; Knock-out or Barrier Options, whose payoff depends on whether the underlying asset price did or did not cross a specified barrier; Compound Options, which are options on options; Swap Options, which are options to enter into swap contracts at a later date; and Chooser Options, which allow the holder to choose at a later date whether the option is to be a call or a put option.

Forward contracts are contracts to buy or sell an asset at a specified price on a later date. Unlike options, such contracts carry an obligation on the part of the holder to go through with the purchase or sale of the underlying asset even if this would lead to a loss. Forward contracts are most frequently entered into in the OTC market for foreign currency. For example, a firm that anticipates a need for foreign currency to pay for imports may enter into a forward contract to purchase foreign currency on the expected date of payment for the imports.

Futures contracts are standardized versions of forward contracts that are traded on exchanges. A person who buys a futures contract on a commodity thus agrees to purchase a specified amount of the commodity at a fixed price (the "futures price") at a certain date in the future. Like options, futures contracts are traded on a variety of underlying assets such as commodities, metals, energy, foreign currencies, stock indices and bonds. An important feature of futures markets is the leverage inherent in these transactions: the initial outlay (called the "initial margin") required from a person purchasing a futures contract may be as low as 5 percent of the value of the contract. Another feature distinguishing futures trading is the practice of "marking to market." This refers to the process of daily settling of profits and losses (depending on the closing futures price) on all traders' positions.

Swaps are contracts involving the simultaneous purchase and sale of two securities. In currency swaps, the two securities are designated in different currencies. Thus, the swap will bind the parties to exchange fixed amounts of two currencies at regular intervals over the maturity of the swap. In interest rate swaps, the two securities may be two bonds, one paying a fixed interest rate and the other, a floating rate. Thus, the swap will bind one party to exchange a fixed cash flow for a variable cash flow at fixed intervals over the maturity of the swap.

All these derivatives are widely used by firms to hedge various kinds of risk that they are exposed to in the course of their activities.

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DeSoto, Hernando (1942–)

BORN IN LIMA, PERU, Hernando DeSoto studied economics in Switzerland, founded the Institute of Liberty and Democracy (ILD) in Lima, and was responsible for a series of legal and economic reforms in PERU.

The research of the ILD showed that despite the opportunity of entrepreneurship, the poor could not join Lima's formal market economy because of extensive government regulations and bureaucratic hurdles, such as application processes and fees for licenses and permits. In *The Other Path: The Economic Answer to Terrorism* (1989), DeSoto argued that the only effective way of overcoming the insurgent Maoist group, known as the Shining Path, was by incorporating the urban informal sector into the formal market economy by legitimizing the economic activities of the so-called "informals." Subsequently, DeSoto became an advisor to various presidents of Peru as well as abroad, including Haiti. He achieved international claim with his book *Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else* (2000). This book focuses on the effects of government bureaucracy and, more importantly, on the lack of formal property rights in Peru and other developing countries. DeSoto argues that this lack of legal OWNERSHIP of property in shantytowns and in squatter camps and townships prevents the poor from accessing formal credit markets.

Thus, the poor are blocked from an important means of raising the necessary financial capital for small entrepreneurs in capitalist economies. If poor entrepreneurs could lawfully show their property and their other assets as collateral, and could therefore finance their economic activities, they would be part of the formal market economy and contribute to economic growth and development through the accumulation of wealth. According to DeSoto, the existing potential for wealth and capital accumulation in developing countries can only be realized if laws are reformed to free the capital.

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Deutsche Bank

THE DEUTSCHE BANK (German Bank) is one of the world's leading international financial institutions. Of the bank's 84,500 employees 37,400 are employed in GERMANY, 22,200 in other European countries, 18,600 in North and South America, and the remaining 6,300 throughout the Asian-Pacific region.

The Deutsche Bank has about 12 million clients throughout 75 countries. Services Deutsche Bank provides include asset management and wealth management for private and business clients, corporate investments, global transaction banking, global corporate finance, and global equities. The 520,000 shareholders of the German Bank are as diversified as the services it offers, 50 percent of the shares are held outside Germany and corporate investors hold 80 percent of the shares.

Founded in 1870 in Berlin, the Deutsche Bank opened its first foreign branch office in 1873 in London. After WORLD WAR II, the Deutsche Bank closed its offices in Berlin and the Soviet military zone. In the British and U.S. military zones, the German Bank was broken up into 10 independent institutions. In 1957, these banking institutions were allowed to merge into the Deutsche Bank AG, with its headquarters in Frankfurt am Main. From 1970–2002 the German Bank established branch offices in Moscow, London, Tokyo, Paris, and New York and engaged in a number of successful take-over bids in Europe as well as the United States.

In 2001, the shares of the German Bank were for the first time traded at the NEW YORK STOCK EXCHANGE.

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Deutsche Telecom

DEUTSCHE TELECOM (Deutsche Telekom AG), with a 2002 operating income of about $40 billion, is the world's fourth largest and Europe's largest telecom carrier.

Deutsche Telecom supplies a large range of telecommunication services such as telephone, high-speed internet, data transmission, and mobile communications to more than 100 million customers worldwide. In addition, with approximately 5 million subscribers, Deutsche Telecom has also become Europe's largest internet service provider (ISP).

Deutsche Telecom operates in over 65 countries and has subsidiaries and offices in Tokyo, London, Brussels, Moscow, Kiev, New York, Washington, Chicago, Atlanta, San Francisco, Toronto, Singapore, Hong Kong, New Delhi, and Beijing. Deutsche Telecom's U.S. subsidiary is Voice Stream (T-Mobile USA).

As of December 2001, Deutsche Telecom had 257,000 employees worldwide, one-third of whom were employed outside Germany. In 2001, Deutsche Telecom had a capital stock of approximately $10.5 billion. About 25 percent of Deutsche Telecom's revenue was generated in foreign markets. Deutsche Telecom is listed on stock exchanges in GERMANY as well as the UNITED STATES and JAPAN. In 2002, *Fortune* magazine listed Deutsche Telecom as the 75th largest company in the world.

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discount

THE TERM DISCOUNT refers to the practice of treating money today as more valuable than an identical sum at a future date. For instance, given the choice between receiving $1000 today or $1000 in one year's time, the rational choice is to take the money today. In order to make meaningful comparisons between two monetary sums separated across time, we therefore use the tool of "discounting." This tool not only allows us to compare monetary amounts in different times, but it also simplifies the task of comparing monetary amounts that are qualitatively different (perhaps due to risk).

Several reasons explain why money has different values at different points in time. Positive interest rates are one important reason for the difference. Positive interest rates guarantee identical sums will always be preferred in the present rather than in the future (hence, we "discount" the future). For instance, money received today can be placed in a savings account (or used to purchase a certificate of deposit) for the time interval in question and will increase in magnitude simply as a result of earning interest.

Economists have a range of theories to explain interest rates, some of which use the concept of time preference, or the idea that present consumption is preferred to future consumption. Positive interest rates and time preference seem intimately connected, but it is possible to identify reasons for preferring present consumption without using interest rates as an explanation. Uncertainty about the future is one explanation. Without knowing whether you will be alive to enjoy future consumption, your bias may very well be to enjoy consumption today. Opportunity cost also helps explain positive time preference. Access to a financial sum today provides more possibilities than postponing access. The notion of savings as a sacrifice is directly connected to this concept of opportunity cost.

With an understanding of why future amounts should be discounted, the next question is, "How?" Discounting involves four variables: an interest rate, a time period, a current monetary amount, and a future monetary amount. If any three of these four variables can be identified, the fourth value can be found using the following formula:

$$\text{Present Value} * (1 + \text{interest rate})^{\text{time}} = \text{Future Value}$$

For example, \$100 today invested at a 10 percent interest rate would be worth \$121 in two year's time (earning \$10 in interest in the first year and \$11 in interest in the second year). Alternatively, we can say that \$121 two years from now is the equivalent to \$100 today if we use an interest rate of 10 percent to make the comparison. These results can be verified by applying the discount formula provided: $100 * (1 + 0.10)^2 = 121$.

Notice that the formula for discounting incorporates time as an exponent due to the nature of "compounding." In our example, the \$10 in interest earned the first year also earns interest in year two. It is this "interest on interest" that requires treating time in an exponential fashion.

Discounting is also used to conduct cost-benefit analyses where time separates the relevant costs from the benefits. For instance, if you needed to replace your hot water heater and had to choose between a relatively cheaper electric hot water heater or a more expensive solar heater, but recognized that the solar heater would generate a series of lower utility expenses during its lifetime, discounting would be necessary to compare future savings to current costs. Such a process is essential when comparing financial sums spread out over time, but not as straightforward as it may seem. For instance, in the mid-20th century the UNITED STATES and CANADA explored constructing a tidal power project between the two countries. Despite using identical cost and benefit estimates, they reached different conclusions because they each selected a different interest rate for conducting the calculation. Similar examples can be found in a variety of settings.

Historically the practice of discounting has also been used to compare monetary amounts with qualitative differences. For instance, if I made identical loans to Jane and John and Jane is more likely to repay the debt, then it would be irrational to treat the loans as identical sums if we wished to establish a "market value" for each loan. Based on this difference in risk, we would agree that John's loan should be discounted more than Jane's if I sold it to you (this assumes we both have the necessary information to evaluate each loan's risk).

In a similar fashion, 19th-century merchants and banks in the United States discounted banknotes issued at distant locations (prior to the AMERICAN CIVIL WAR, individual banks issued their own currencies known as banknotes). Because banknotes from distant locations were more difficult to exchange for specie (gold or silver), they represented a greater risk for the merchant or bank accepting them (similar to cashing an out-of-state check today). In each of these instances the greater risk can be quantified by discounting.

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discount rate

DEFINED BY the FEDERAL RESERVE system, the discount rate is "the interest rate charged to commercial banks and other depository institutions on loans they receive from their regional Federal Reserve Bank's lending facility—the discount window." Loans made by the

Federal Reserve to depository institutions are referred to as discount loans.

Upon the founding of the Federal Reserve system in 1913, commercial banks that chose to join the system (member banks) were granted the privilege of acquiring funds, when necessary, from the Fed. After a series of financial panics in the late 1800s that peaked with the panic of 1907, many Americans became increasingly concerned about the lack of a steadfast lender of last resort, an institution that would stand ready, willing, and able to provide liquidity to the financial system in times of trouble.

Runs on some of the largest trust companies in the UNITED STATES, including the Knickerbocker Trust Company, precipitated the panic of 1907, which might have had calamitous results on the economy had it not been for the assistance of George Cortelyou, secretary of the treasury, and renowned financier J.P. MORGAN. By organizing money pools of $25 million one day and $10 million the next, Morgan ultimately engineered a bailout package that contained the runs and brought the panic to an end. There was no doubt that Morgan's plan had worked but there was some skepticism about his motives as well as concern about the wisdom of allowing the entire financial system to become so dependent on a private organization

By establishing a central bank for the United States, the Federal Reserve Act provided a lender of last resort whose main objective was that of preserving the stability of the banking system, not maximizing profit. Also, with access to potentially unlimited funds, the newly created Fed could assure an elastic currency, something that even the country's largest financiers like Morgan could not guarantee.

During the Fed's early years, the discount rate was a key monetary policy tool. A substantial portion of bank reserves, as much as 82 percent in 1921, was provided by the Fed through the discount window. By providing discount loans, the Fed could increase liquidity in the banking system thus driving down interest rates to encourage more spending. Likewise, the Fed could attempt to slow down the economy if need be by raising the discount rate which would, in turn, tighten credit markets driving up interest rates discouraging spending. Changes in the discount rate continued to have a significant impact on reserves in the decades immediately following 1921, but have since become a lesser monetary policy tool in the United States. Open market operations have replaced discount policy as the chief instrument of monetary policy.

The discount window is no longer available exclusively to member banks of the Fed but, as a result of the Monetary Control Act of 1980, is now accessible to all depository institutions in the U.S. Federal Reserve District Banks generally offer three types of discount window credit to depository institutions: adjustment credit, extended credit, and seasonal credit. Emergency credit is available, according to Section 13 of the Federal Reserve Act, to "individuals, partnerships and corporations under 'unusual and exigent' circumstances." Such loans, however, have not been granted since the 1930s. Typically overnight or weekend loans, adjustment credit loans are extended to institutions in need of funds to meet temporary liquidity problems arising from changes in the market value of the institution's assets and liabilities. The interest rate charged on adjustment credit is set below market interest rates (hence the name, the discount rate). Borrowers, however, are expected to exhaust all reasonably available alternative sources of funds before seeking the less expensive adjustment credit from the Fed.

Depository institutions that require funds on a recurring basis during particular times of the year (e.g., banks in agricultural or seasonal resort communities) may apply to the Fed for seasonal credit. Before 1990, banks paid the same interest rate on seasonal credit as they did on adjustment credit. In early 1990, however, the Fed established a market-related rate for seasonal credit as well as extended credit that remains outstanding for more than 30 days. Depository institutions in need of liquidity due to "exceptional circumstances" may receive extended credit from the Fed. Exceptional circumstances include changing money-market conditions as well as troubled banks in danger of failing.

The rate that is commonly referred to as the discount rate is the rate charged by the Federal Reserve system for adjustment credit. In the early stages of the Fed's history, each Federal Reserve District Bank set its own discount rate. Consequently, it was not unusual to see discount rates vary across regions. The discount rate presently is established by each Reserve Bank's board of directors, reviewed and approved by the Board of Governors of the Federal Reserve System. As a result, the discount rate is constant for depository institutions across the United States.

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Disraeli, Benjamin (1804–81)

POLITICIAN AND NOVELIST, scion of a well-to-do Jewish family of Venetian origins, Benjamin Disraeli was born in London and baptized as an Anglican at the age of 13. As a young man, he wrote several moderately successful novels dealing with contemporary English social problems before aiming for a career in politics.

Having failed to secure election to the House of Commons as a Whig, he switched party allegiance and became member of parliament for Maidstone in the Tory interest in 1837. A man of few fixed principles, Disraeli helped to split his own party in 1846 when he led the opposition against Prime Minister Sir Robert Peel's repeal of agricultural tariffs, largely out of pique at having been overlooked by Peel for governmental office. His tenure as Chancellor of the Exchequer in three subsequent Tory administrations (1852; 1858–59; 1866–68) was unremarkable, with the notable exception of his stewardship through Parliament of the Second Reform Act. This measure, which doubled the size of the British electorate, represented Disraeli's attempt to outflank the Whigs by fastening to the Tory Party the landed aristocracy at one end of the social spectrum, and the better-off members of the working class at the other. Although in the long term this strategy was to prove highly successful, it was insufficient to prevent the fall of a short-lived administration headed by Disraeli himself in 1868. During the next six years in opposition, the Tories refined their appeal to the newly enfranchised electorate. In the general election campaign of 1874, Disraeli offered a potent combination of inexpensive but popular measures to improve the conditions of the working class and a more aggressive stance in foreign and imperial affairs. The result was a comfortable Tory victory, the party's first in more than thirty years and an achievement for which Disraeli could legitimately claim the credit.

Disraeli's second term in office started well in both domestic and overseas affairs. Guided by his able Home Secretary, Richard Asheton Cross, the prime minister oversaw the passage of a series of acts to improve public health, limit the maximum length of the working day, and extend the legal rights of employees. In imperial policy, Disraeli scored a distinct coup when he arranged in 1875 for the purchase by the British government of a controlling interest in the SUEZ COMPANY, thereby securing control over a vital trade route to the East Indian colonies and paving the way for an eventual de facto protectorate over EGYPT. The passage of the Royal Titles Act conferring upon Queen Victoria the title of Empress of India the following year was also a popular measure. The seal appeared to be set on Disraeli's reputation as a statesman when, ennobled as the first Earl of Beaconsfield, he assembled an international coalition at the Congress of Berlin in 1878 to check Russian expansion in the Balkans and protect the interests of Britain's traditional ally in the region, the Ottoman Empire.

Disraeli's star began to wane, however, during the last two years of his premiership. Wars in Zululand (Africa) and Afghanistan in 1879, in each case precipitated by over-enthusiastic imperial proconsuls, led to humiliating military reverses at Isandhlwana and Kabul. Although the tide of battle was quickly turned in both countries by the arrival of British reinforcements, many Britons regarded the conflicts as the result of a reckless and increasingly expensive Disraelian imperial policy. Disraeli's support of the Ottoman Empire was tarnished by Turkish atrocities against Bulgarian Christians, an issue upon which his great political rival, William Ewart Gladstone, campaigned effectively. In home affairs, too, the government seemed bereft of new ideas after its legislative spurt of the mid-1870s.

Lastly, Disraeli's indifference to near-famine conditions in parts of Ireland, for whose people he felt undisguised contempt, contributed to the rise of the militant Irish National Land League in 1879 and the outbreak of the somewhat melodramatically named "Land War." The Tories' heavy defeat in the general election of 1880 was thus hardly to be wondered at; that it came as a surprise to Beaconsfield himself was an indication of how far he had lost touch with the circumstances of the time.

Historians remain divided on the significance of Disraeli's achievements. To some he was a political chameleon, discarding policies and even party allegiance whenever they proved inconvenient. Others credit him with devising a winning formula for the Tory Party and paving the way for British Conservatism's future successes. Without question, however, he was the most charismatic politician of his age, whose parliamentary skills and mastery of the attention-seizing gesture would be emulated, though hardly equaled, by a host of imitators in British public life.

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distribution

SUPPLY AND DEMAND are considered as the two major forces that can make prices fluctuate in free markets. Distribution is the way to make sure a company's products are made available to all potential consumers, not only when they order them specifically, but also whenever they browse to compare items and labels, in a store, a supermarket, in a catalog or on the internet. For instance, over half a century ago, most people living in northern countries could only find oranges at Christmas time and therefore those rare fruits were given as gifts for the New Year's Eve. SCARCITY contributed then to their value as much as their taste. Today, oranges and more exotic fruits are commonly available all year long in North America and are imported from different countries, according to availability, contractual partnerships, prices and harvest seasons. Diversified distribution networks make these fragile fruits available to new foreign markets for longer periods.

Distribution is the vital link between the producer and the consumer, from the factory to the retailer, that gives any kind of a product a concrete existence and visibility, among many brands or labels. For almost any type of merchandise and commodity, there are either general or distinctive labels: those advertised novelties of all types and standard products that are to be found almost anywhere, as opposed to the hard-to-find non-mainstream things that are so distinctive (the selected imports) or high-quality products (from deluxe foods, imported French wines and cheese, to entertainment systems that are of a high fidelity and quality). These distinctive categories can in part explain why there are general retailers (such as Wal-Mart, Sears) and specialized stores for about every kind of a product.

For marketers, penetration is a way to measure how efficient a distribution strategy is, in a targeted market or area. For instance, a penetration of 25% means a product is available in a quarter of all possible related stores in an area.

Foreign products. It is always interesting to observe how different markets can change when you travel in foreign countries. In other contexts, the label landscape (i.e., what is currently offered to consumers in their local outlets) looks different in any supermarket or retail store abroad, because supplies and habits are not exactly the same. For decades, young American tourists traveling in France packed jars of peanut butter in their bags, because they were told by the first editions of the travel guide *Let's Go Europe* that there was no peanut butter in French stores and *supermarchés*. Things have changed since then, but this old rumor shows how a lack of distribution makes a somewhere popular product unavailable in a whole region or even a country.

Those tourists might remember the Renault, Citroën or Talbot cars that they saw or drove in Europe, and ask why these automobiles can't be found in North America as easily as a Ford, Chevrolet, Jeep, or even the German Volkswagen. One might say it is because most car buyers prefer the conventional U.S. types of cars; but from a socio-economic perspective, research proves that consumers might have the power to select the most convenient product to them, but they can only choose from what is currently being offered to them. "Availability" is more decisive, more determinative than a rather subjective and elusive concept such as "consumer preference."

Usually, imports are harder to find compared to national products. Sometimes, a strange paradox that appears in various situations makes foreign products more easily available than local ones. For instance, in the food industry, Icelandic and French lamb are considered as the best in the world for their naturally salted taste, but imported Australian and New Zealand lamb is less expensive and much easier to find in many Western countries, even in French or in Canadian supermarkets, although they are two countries that produce these animals at a large scale. In this case, imports from a far-away continent are offered to consumers at a lower price and local producers of the same merchandize sometimes have hard time finding local retailers who accept to buy their products.

Coke or Pepsi? On campuses and high schools, in recent years, big corporations have special agreements that give them exclusive visibility in cafeterias and vending machines. In arenas, public schools, colleges and university campuses, Pepsi or Coke becomes the "official" and exclusive drink on limited premises. These aggressive distribution strategies could be compared to a kind of monopolistic aim, because competitors are selected, chosen or excluded, and then ruled by institutions to be adopted or banned from a private area. But as a response, competing corporations prefer to reach the best possible deals with renewed key partners instead of battling, one competitor against another, in court. Above market competition, at an international scale, there are special exclusive distribution agreements, that are politically negotiated between countries and serve as an almost permanent protection against competitors.

One example is the famous Pepsi agreement, that President Richard Nixon made with Soviet Union government in the early 1970s, that allowed Pepsi to dominate the exclusive Russian market for 20 years. Coke responded soon after with a similar effort in China.

Direct sales. Corporations such as Avon (beauty products), Time-Life (books and CDs), as well as some Disney divisions (publishing) have created a large network of retailers in many countries, using direct-marketing and other approaches to reach customers in other places than common retail stores. For instance, Avon's salespeople meet you at home; publisher Readers' Digest sell subscriptions for its magazine mostly through mail and other telemarketing strategies; now, both corporations now use the internet to promote and show their products that are usually not available in stores.

Another alternative to retail sales is the underground economy. On a much darker side, there have always been parallel distribution networks when official channels could not be used, often for legal reasons. For instance,

The complexity and power of distribution can make foreign fish, for example, easy to find in local markets.

during national Prohibition in the United States, many illegal networks were created to import alcohol into the country (notably from Canada). Other underground networks exist today to import and distribute cigarettes, pornography, banned drugs, or other illegal substances. Counterfeiting and illegal copies of copyrighted materials (CDs, DVDs, electronic games, books) can also be included in these lucrative black markets.

The never ending circle. Usually, most stores tend not to keep products that are not sold within a year, sometimes if not sold in days. For commercial reasons and because of the lack of space, an item not sold within a specific period can sometimes be returned to its distributor for credit. Following that logic, only the best-selling products remain in stores, but not always the best quality. For instance, classic books and films are not instant best-sellers but durable, long-time true values. As publisher André Schiffrin explains, "serious work that may take time to find its audience, whether in the classroom or in paperback, and ambitious work by new authors, become harder and harder to publish."

This trend leads to the blockbuster strategy, which represents the worst of mass culture, in popular literature, music, videos, etc. The success (evaluated only in terms of profits) of the blockbuster strategy is always evaluated in terms of sales and return, visibility, and not artistic quality. Many people read the book or saw that new film, but did they really like it? Bad or good, films are judged at the box office. There is a step-by-step strategy for distributing movies in different ways: movie theaters, pay-per-view TV, cable television stations (such as Time-Warner's HBO), videoclubs, television, DVD, etc.

In many countries, movies presented on most television stations are rented by the TV networks from film distributors through a method of block-booking. This means, in order to get permission to rent one or two titles, they have to air some ten other films (of lesser quality, mostly produced by Hollywood majors) without having the possibility to choose them. By forcing TV stations to buy products none would select otherwise, film distributors can find an easy way to make sure all their less-appealing movies will be profitable. This explains why Hollywood films get more market share in most countries. "Indeed, worldwide distribution has been the basis of Hollywood's power," media analyst Douglas Gomery writes n *Who Owns the Media?*. This is why there are so few foreign movies on U.S. big television networks, compared to Canada or other European countries.

Sometimes distribution means slightly changing a product's nature or appearance. In countries such as Italy, many TV stations let the movie run while they present advertising spots or even cut movies that seem too long. Movies can be cut or abridged, but advertising is the untouchable element for private television stations.

Globalization and cultural hegemony. In the best of worlds, one could imagine globalization as the ideal way of fairly sharing products, programs, entertainment, arts, culture, from all countries to all countries However, the plain reality is that globalization means increasing dominant positions by breaking borders and protecting measures through free-trade agreements and other measures. In terms of media domination, the U.S. power is made on a successful capitalist strategy, and not for the quality of its contents. As film expert Toby Miller asks, "Is Hollywood really giving the people of the world what they want, or does it operate via a brutal form of monopoly-capitalist business practice?"

One of the main problems related to mass culture is that "massification" of commodities and cultural products does not mean more diversity, but rather more of the same style, contents, patterns, ideological schemes. Some believe that books and movies are not seen anymore as culture but rather just as plain commodities that are potentially lucrative. But the recent UNESCO Universal Declaration on Cultural Diversity Paris, 2002) stipulates (in its Article 8) that "Cultural goods and services which, as vectors of identity, values and meaning, must not be treated as mere commodities or consumer goods." Canada and European countries adopted this new paradigm of cultural diversity, meaning that one country's cultural landscape should be represented by works (art, music, movies) from different nations, foreign languages, and cultures from abroad. As a strategic response, some multi-ethnic countries may try to pretend that they already conform to the model of cultural diversity, only because their population is a mixture of people from many ethnic origins. Cultures and films should be free to circulate anywhere, but some travel more easily than others, and some others never go out of their national borders.

This conflict about the media control and cultural domination by the United States is not recent. Since 1980, UNESCO's efforts promoted another conception of world communication that would allow Third World countries to export more of their cultural products without being overwhelmed by the rich nations' mass culture. In terms of distribution, the media industry ranks among the most lucrative, but also remains the most debated and highly controversial.

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dollar

AT THE DAWN OF THE new millennium, the dollar is the imperial currency in every sense of the word. It bears the signature of the largest economy to date. Supported as it is by the most productive labor force in the world, provisioned with the best technological infrastructure, and endowed with an enormous resource base to draw on, the dollar today is the symbol of not only U.S. economic might but its political prowess. No wonder it is both admired and envied.

It was toward the end of the 18th century that, faced with the choice of owing England a debt of monetary survival or creating its own money, the U.S. Congress opted for the latter authorizing the issuance of the dollar as the unit of American currency. But it is the 20th century—also dubbed as the American Century by many commentators—that saw the dollar become the currency of international acceptance, or some would say, of universal dominance. Today, a traveler can pay a taxi driver in Moscow or a waiter in Jakarta in dollars without having to make any explanations. The taxi drivers and the waiters, among others, are only too happy to receive their payment in dollars. The dollar represents the universal convertibility and acceptance, a stable and predictable value, a prized asset. But to fully appreciate the logic and circumstance of this meteoric rise to prominence, it is useful to recall that this position of status was occupied by the British pound sterling for a whole era in which, as they used to say, "The sun never sets on the British empire."

Even though the British flag flew triumphantly over seas and continents for many decades, the U.S. population surpassed that of England in the 1870s, U.S. economic production outpaced that of England in the 1880s, and the U.S. share of world trade overtook that of England around the 1920s. Just before WORLD WAR I, the United States developed a vast industrial infrastructure, which allowed enormous economies of scale through mass production techniques. The war weakened, if not outright ruined, the productive capacity of European powers. The U.S. economy was strengthened even further in relative terms as "the arsenal of democracy." The interwar (between the two world wars) period proved to be rather unstable and chaotic in terms of international transactions and therefore currency valuations.

However, any lingering doubts about the ascendancy of the dollar were clearly set aside after WORLD WAR II. Most of Europe lay in ruins while the United States, both economically and politically, grew even stronger. The productive capacity of America got a big fillip by supplying war material of all sorts. Capital intensity of production increased dramatically. Productivity of the work force improved significantly. The gold reserves accumulated to massive proportions. And the demand for U.S.-produced goods appeared to be limitless. All these and other factors provided the backdrop for the dollar becoming the anchor currency when a post-World War II international monetary system was being fashioned.

At the BRETTON WOODS conference in 1944, it was agreed that the value of dollar would be tied to the price of gold (at $35/oz of gold) and that all other currencies would be pegged to the dollar in their relative value in a fixed-exchange regime of an international monetary system. The dollar obviously had arrived as a reserve currency par excellence in more ways than one. It was agreed that the burden of adjustment, when necessary, would be on the currency other than the dollar. If a country experienced a balance of payments deficit, its currency weakens and depreciates. But in a fixed exchange rate of the Bretton Woods type, this can be allowed only as an exception in response to some extenuating circumstance of fundamental economic change. Otherwise the fixed peg will have to be maintained. This is possible if the issuing country (e.g., Brazil) can buy its own currency with its foreign reserves to prop up its currency value, or if another country with appreciating currency (e.g., the United States) can purchase the weakening currency. The Bretton Woods system laid the burden squarely on the other country—in this case Brazil. But there is a limit to foreign reserves held by a country, hence a limit to how long it is possible to artificially prop up a currency.

Another option would be for the deficit country (say Brazil) to institute contractionary economic policy or for the surplus country (say the United States) to have an expansionary policy. Again, the adjustment responsibility was assigned to countries like Brazil. Consequently, the Bretton Woods fixed exchange system could not bear the burden of this one-sided adjustment for very long and had to be essentially abandoned. It may be mentioned here that a balance of payments deficits for a reserve currency does not pose the same problem. It is the demand for the reserve currency itself—its role in mediating international transactions—that compensates for the deficit and allows the country (like the United States) to enjoy a higher standard of living than would be possible as commensurate with their productions.

Euro-dollars and petro-dollars. The demand for the dollar, which in turn is demand for U.S. goods and U.S. bonds, increased dramatically in the post–World War II period. A whole phenomenon of a Euro-dollar market (dollar-denominated securities traded outside the United States) appeared and the United States was ready to supply it. Later on, the similar phenomenon of petro-dollars surfaced in response to the enormous cash accumulated by petroleum exporting countries for which the United States was quite happy to serve as the reserve currency supplier. The economic advantage to America was obvious: The United States supplied the currency in return for goods such as petroleum. The recipients of dollars bought U.S. securities, thus returning the proceeds as investment in the United States. The U.S. economy could not go wrong in such a scenario. But this was too good to last forever.

Despite its rise and fall in value compared to other currencies, the dollar remains the premier reserve currency.

The economic dominance of the United States and the pre-eminence of the dollar struck a sour note with the misadventure of the VIETNAM WAR. The internal compulsion of fighting a war on poverty and external requirement of supplying personnel and equipment for battle led to an endemic inflationary pressure. The value of he dollar depreciated. By this time, enormous pools of Euro-dollars—later to be supplemented by petro-dollars—had been supplied in the market.

There was pressure to cash dollars for gold at $35/oz. However, the price of gold had increased dramatically as the trust in the dollar turned a bit shaky. The United States did not have enough gold to cash the outstanding issues of dollars. It would have to buy it from the Soviet Union or South Africa—the two big gold producers. America would have to absorb a huge loss buying gold at much higher price and selling it at $35/oz—a real bargain for dollar holders.

On the political side, the United States did not want to allow windfall profits for governments it did not quite approve of. President Richard NIXON, in an evening's television address, informed the world of dollar holders that the United States would no longer honor the peg of dollar-to-gold (at $35/oz) and this saved the economy many billions of dollars of loss it would have had to incur otherwise. The fact that the United States could get away with going off the gold standard, without too much bother from other nations, is a testimony to the hegemonic power of the United States and the resultant staying power of dollar as the reserve currency.

Despite a few bumps in the road here and there, the dollar continues to be the premier reserve currency. It is still the anchor currency for stabilizing the currencies of less developed countries. Either because of inconsistent economic policies or undue political interference in policy-making, when the currency of a country loses value and stability they tend to peg their currency to the dollar at a fixed exchange rate. This eliminates the discretion from monetary authorities in return for a possibility of stabilization. Other countries have experimented with outright "dollar-ization"—in part or in whole. This requires that the country should purchase dollars with their foreign reserves and use the dollar as legal tender. Again, this is a huge cost, first in terms of having to procure dollars and then of being locked in a straightjacket of no monetary policy discretion to respond to domestic economic contingencies.

Clearly, the dollar gains in stature and value and the U.S. economy gains goods and services and investment in return—a pretty good deal for the United States overall.

The rise of the euro. In the early 2000s, the dollar faced some competition from the EURO—the official currency of the EUROPEAN UNION (EU). Since the European Union is objectively a serious competitor both in its size of combined population and combined economic output in relation to the United States, the euro was already a respectable contender—despite its teething difficulties. The 2003 significant rise in the value of euro vis-à-vis the dollar was noted all around—for its economic as well as political import. Some have even suggested that the tiff between the United States and its European allies over the Iraq War may have something to do with this dollar-euro competition. It was rumored that some of the Iraqi petroleum cash deposits were intended to become petro-euros rather than petro-dollars, thus dampening the demand for dollars with its attendant negative economic consequences for the United States. However, it is clear that the European Union is not quite ready for currency leadership, especially in the face of U.S. military muscle.

The clearest manifestation of the premier status of the dollar as reserve currency is that foreigners who produce goods for U.S. markets and earn dollars in profit have a great incentive to invest these profits in U.S. securities—the best way for them to keep their wealth safe (from their workers) and profitable in guaranteed returns from U.S. securities. For the United States, it is easy to return the favor. America accumulates a large balance of payment deficits, living a higher standard of consumption than would be warranted by domestic production, and still keeps the dollar in good standing—healthy and strong.

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Dow Jones

IN 1882, THREE young journalists left their jobs at Kiernan News Agency and established Dow, Jones and Company, as it was then known. Charles Henry Dow (1851–1902), Edward Jones (1856–1920), and Charles Milford Bergstresser (1852–1905) were well qualified since their place of employment, popularly known as Kiernen's Corner, was the center of the financial scene of the day and stood where the NEW YORK STOCK EXCHANGE (NYSE) is now located. When Bergstresser joined Dow and Jones, he chose to be added as "and Company."

Their first publication was the *Customer's Afternoon Letter*, called a "flimsie" because of the paper on which it was printed. It was hand-written and personally delivered daily to subscribers. By 1885, Dow Jones was doing its own printing, and the flimsie developed into the WALL STREET JOURNAL, which was published for the first time on July 8, 1899. The four-page paper cost 2 cents per copy and $5 a year. Its stated purpose was "to give fully and fairly the daily news attending the fluctuation in prices of stocks, bonds, and some classes of commodities." Each of the three partners brought special talents to the development of the company. Dow loved collecting financial facts and was always looking for better ways to get them out to investors. Jones, on the other hand, was best at managing and editing the newspaper. Bergstresser had people skills, and enjoyed personal contacts with business leaders and the financial community. The first issue of the *Wall Street Journal* identified Henry Dow's market concepts, which later became known as the Dow Theory.

Dow Jones has traditionally been determined to keep up with the technology of the day, so the Dow Jones News Service was added in 1897 to bring news and stock quotes quickly, using telegraph wires. In 1899, Jones sold his shares to his partners and left the company. Dow remained with Dow Jones until he died in 1902. After Dow's death, Clarence Barron (1855–1928) purchased the company for $130,000; he then modernized the printing process and added new staff. By 1920, the circulation had risen to 20,000. In 1942, the *Wall Street Journal* began publishing multiple business editions to better serve the country's financial needs; and by 1960, the circulation of the *Wall Street Journal* had swelled to over 500,000. Barney Kilgore (1908-67) who took over in 1941 has been credited with turning Dow Jones into a modern-day giant. Electronic services were added as access to the internet became commonplace, and information and stock data can be transmitted around the globe in seconds.

On May 9, 1921, *Barron's National Business and Financial Weekly* began publication at a cost of 20 cents a copy and $100 for a year's subscription. The journal had an elite list of subscribers made up of company presidents, chairs of various boards, directors, owners, and partners. The slogan was "For Those Who Read for Profit," and it included financial articles, analysis, and reviews. In addition to *Barron's National Business and Financial Weekly*, Dow Jones publishes *Smart Money,* and the *Wall Street Journal* is published in various versions around the world. The company also owns a number of local newspapers and several television stations.

The Dow Jones Index. The Dow Jones Index started with only 11 stocks, and nine of these were RAILROAD stocks since railroads were the most influential market sector. The two industrials were Pacific Mail Steamship and Western Union. By 1885, the list had grown to 14 as the St. Paul Railroad was deleted and four other railroads added. The average over the next few years tended to be consistent, rarely varying over 40 points because railroad stocks grew steadily, and the economic system was stable. By October

4, 1915, the number of stocks had risen to 20: American Beet Sugar, American Can, American Car and Foundry, American Locomotive, American Smelting, American Sugar, AT&T, Anaconda Copper, Baldwin Locomotive, Central Leather, GENERAL ELECTRIC, Goodrich, Republic Iron and Steel, Studebaker, Texas Company, U.S. Rubber, U.S. STEEL, Utah Copper, Westinghouse, and Western Union. The changes reflected the decline of railroads and the presence of new technologies such as electricity and automobiles. Changes were made only eight times in this list. On October 1, 1928, the list increased to 30 stocks.

At the beginning of the 21st century, the Dow is made up of 30 "blue chip" stocks that serve as a sample of the stock market as a whole. Changes are still rare. For example, in 1997, Woolworth, Westinghouse, Texaco, and Bethlehem Steel were replaced with HEWLETT-PACKARD, Johnson and Johnson, Traveler Group Inc., and WAL-MART. In January 27, 2003, the 30-stock list included: 3M, Alcoa, Altria Group, American Express, AT&T, BOEING, Caterpillar, CITIGROUP, Coca-Cola, DuPont, Eastman Kodak, EXXON MOBIL, General Electric, GENERAL MOTORS, Hewlett-Packard, HOME DEPOT, Honeywell, Intel, International Business Machines, International Paper, J.P. MORGAN CHASE, Johnson and Johnson, McDonald's, Merck and Company, PROCTER & GAMBLE, SBC COMMUNICATIONS, United Technology, Wal-Mart, and Walt Disney Company. The changes indicate trends in society as a whole, such as the growth of technology and the move toward one-place shopping and convenience. When most people think of the stock market, they think about Dow Jones and the New York Stock Exchange, but it actually includes thousands of companies whose stock is traded every day, as well as a number of other stock exchanges. Other indexes are also published, such as STANDARD AND POOR'S and the *New York Times*.

The stability of the stock market affects other elements in the economic system. For example, a company might decide whether or not to add to its holdings based on the Dow Jones Industrial Average (DJIA), which was first published in 1896. Editors of the *Wall Street Journal* continue to choose the stocks, and the index is used around the world to identify trends in the stock market. In its early days, the average was derived by the simple formula of adding the points (with each point equal to one dollar) and dividing the total by the number of stocks included in the average. As the stock market grew and became more complex, the formula for DJIA was changed to reflect mergers and stock splits and other such factors. In order to maintain a stable market, the stock market occasionally suspends operations. Rule 80B of the NYSE mandates that the market be shut down for an hour if the average drops below 10 percent by 2 P.M. from the previous day's closing amount. If it drops more than 20 percent by 1 P.M., the NYSE closes for two hours; and if it drops more than 30 percent at any time, the NYSE closes for the entire day.

The Dow, as it is commonly known, explains the behaviors of a single stock, a group of stocks, and the stock market in general. When stocks are up, investors are more active, and the public feels more secure. When stocks go down, the reverse is true. Tracking the DJIA over time provides an indicator of the health of the economic system. The DJIA is followed closely because more than half of the adults in the United States own at least some shares of stock.

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drugs

DRUGS, OR PHARMACEUTICALS, are inputs to the production of health. The market for pharmaceuticals is particularly interesting because of the many complexities that differentiate it from a free, perfectly competitive market. On the demand side, consumers of pharmaceuticals are constrained by government regulation and the purchase of pharmaceuticals is generally subsidized by health insurance. On the supply side, producers often act as monopolists under patent protection, engage in intensive research and development, and operate under strict government regulation.

In most developed countries, governments require a physician prescription for the purchase of certain pharmaceuticals. Pharmaceuticals that can be obtained without a prescription are called over-the-counter drugs.

When deciding whether to purchase prescribed pharmaceuticals, consumers weigh the anticipated benefits of the drug with its out-of-pocket cost. Because health insurance generally subsidizes the purchase of pharmaceuticals, the out-of-pocket cost to the consumer is typically far less than full price. As a result, consumers tend to consume more pharmaceuticals than would be socially optimal. If pharmaceuticals were available at zero out-of-pocket cost to consumers, they would use them if they offered any benefit at all. To prevent this expensive outcome, insurers typically only cover expenditures on pharmaceuticals above a specific deductible paid by the insured and/or the price of the drug above a specific co-payment on each prescription. Co-payments are typically set lower for generic, inexpensive drugs than for patent-protected name-brand ones. INSURANCE companies may also impose annual limits on reimbursements for spending on pharmaceuticals. In each case, the existence of some out-of-pocket cost is a disincentive for the insured to consume additional pharmaceuticals and limits MORAL HAZARD on the part of the insured.

Information is a public good; once created, information can be circulated at zero cost and its dissemination is difficult for its creator to restrict. For this reason, information, like other public goods, tends to be underprovided by free markets. Governments use two methods to encourage research and development (which is the creation of information) on pharmaceuticals.

First, basic research in this sector is subsidized by government agencies such as the U.S. National Institutes of Health. Second, governments issue patents on pharmaceuticals. The PATENT guarantees that the patent holder has a monopoly on production of that drug for a specified period of time; firms can invest heavily into producing new drugs with the confidence that their discoveries cannot be immediately copied by competitors.

Policymakers must balance the interest of encouraging innovation by guaranteeing a long period of patent protection with the interest of guaranteeing consumers access to inexpensive pharmaceuticals. After the expiration of a pharmaceutical patent, competitors are free to introduce generic equivalents to the previously patented drug. The added competition to this previously monopolistic market lowers prices and increases the quantity of the drug transacted. Generic manufacturers may seek to earn profits by differentiating theirs from other versions. The original patent holder may seek to price discriminate among consumers by continuing to sell its name-brand version at a high price (to exploit brand loyalty and name recognition) while simultaneously selling a generic version at a low price to compete with the new entrants.

Patents and regulation. Pharmaceutical firms respond to the profits possible through patent protection, and commit one of the highest fractions of revenues of any industry to RESEARCH AND DEVELOPMENT (R&D). While R&D costs are high, the profitability of drugs is highly variable. Only three-tenths of new drugs earn enough to cover the costs of production, distribution, and marketing. Thus, pharmaceutical companies use monopoly profits on a few blockbuster drugs to cover the costs of developing the vast majority of drugs that prove to be unprofitable.

It is not uncommon for pharmaceutical firms to charge high prices for the most efficacious drugs; this is the result of the firm's monopoly power combined with a price elasticity of demand that is highly inelastic. Price elasticity of demand is inelastic because some patients are willing to pay virtually anything for drugs that will save their lives or reduce their pain, and also because patients face so little of the total cost thanks to health insurance coverage of pharmaceuticals. For these reasons, the price of each dose of a patented medicine may be set a hundred times higher than its marginal cost of production.

Drugs, or pharmaceuticals, are often first introduced as a patent-protected monopoly.

The ability of manufacturers to exploit a monopoly position on patented drugs is, in some cases, limited by powerful forces on the demand side; for example, in the United States, health maintenance organizations have negotiated discounts from pharmaceutical firms after threatening to refuse to cover their products. Monopoly power is also limited by competition from firms producing drugs that, though chemically distinct, are in the same therapeutic class and can therefore serve as substitutes.

Governments of many industrialized and developing countries regulate prices or profits in pharmaceuticals. In this regard, the United States may be the least regulatory developed country; as a result, many studies have found that pharmaceutical prices are higher in the United States than abroad. This price disparity has led to periodic calls by U.S. consumers and insurers for price regulation of pharmaceuticals. To some extent, even if regulated, the prices of drugs need to be kept high to keep pharmaceutical firms solvent; pharmaceutical manufacturers cover their losses on the vast majority of unsuccessful drugs by earning high profits on the few successful ones.

Still, lightly populated and developing countries often free-ride, in a relative sense, in this market by imposing strict price controls or refusing to enforce patents on pharmaceuticals, confident that their actions will not be enough to dissuade pharmaceutical firms from continuing to innovate. Despite widespread regulation, pharmaceutical manufacturing has consistently ranked as one of the most profitable industries. The debate over price regulation of pharmaceuticals is a reflection of the societal tradeoff between cheap medicine for consumers in the present day and encouraging research and development by producers to improve the set of medicines available to consumers in the future.

Varying price regulation explains some, but not all, of the variation in prices of pharmaceuticals across countries. Like any monopolist that perceives differing price elasticities of demand among its buyers, pharmaceutical firms try to maximize profits by price discriminating across countries. Research also suggests that part of the cross-national price differential is due to differences in expected lawsuit damages. Such price differences across nations represent an arbitrage opportunity, but many governments ban such trade in pharmaceuticals.

Governments regulate the drugs that pharmaceutical firms are allowed to sell. Government regulators typically seek proof that new drugs are both safe and efficacious; a process that involves multiple phases of clinical testing, and years to complete. Here, too, policymakers face a tradeoff. They must balance the interest of guaranteeing that all drugs are safe and effective against the interest of giving patients immediate access to newly developed drugs. This can be rephrased in the terminology of statistics as striking a balance between the risk of Type I and Type II error; Type I error is the mistake of approving an unsafe or ineffective drug, and Type II error is the mistake of withholding from the market a safe and effective drug.

If bureaucratic decision-makers are more concerned about avoiding the public embarrassment of Type I error than they are about the largely unpublicized deaths that result from Type II error, then fewer drugs will be approved, or drug approval will take longer, than is socially optimal. The difficulty of choosing the right balance between these priorities was illustrated by the public debate in the United States in the early years of the AIDS epidemic, when little treatment for HIV existed, and it was predicted that newly developed treatments would take years to move through the approval process before becoming available to HIV-positive patients.

Traditionally, pharmaceutical firms marketed their products in a process called "detailing;" manufacturer's representatives visited individual doctors, providing information and offering enticements for the physicians to prescribe drugs produced by the firm. Pharmaceutical advertisements were limited to medical journals. In recent years, marketing in the pharmaceutical industry has taken the form of direct-to-consumer advertising. Critics, including some physicians, allege that such advertising represents demand inducement. Some insurers have tried to counter direct-to-consumer marketing with requirements that pharmacists substitute preferred drugs on the insurer's formulary for more expensive equivalent drugs.

As the number and efficacy of pharmaceuticals has increased, they are increasingly substituted for labor in the production of health. For example, in the 1960s, treatment of depression was overwhelmingly labor-intensive: psychotherapists would engage patients in psychotherapy one-on-one. With the development of antidepressants, the production of mental health has become overwhelmingly pharmaceuticals-intensive. Similar substitutions of pharmaceuticals for labor in the production of health have occurred throughout the health care industry.

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Duke Energy

DUKE ENERGY IS ONE of the largest ENERGY companies in the world, with sales of $59 billion in 2001. From its beginnings in 1904 in South Carolina, the core business of Duke Energy has been the provision of energy services, offering generation, transmission, and management of electricity and natural gas around the world. Duke Power, a subsidiary, is the second largest investor-owned electric utility in the United States. Other subsidiaries provide telecommunications, financial services, and real estate development services.

Duke Energy enjoys a strong reputation in the electricity utility industry, a strong balance sheet, and adaptability in the recently deregulated energy market. In the early 2000s, allegations had arisen, however, that the company manipulated the California wholesale electricity market by withholding power from its California plants.

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Dutch West India Company

FOUNDED IN 1621 by the States General of the NETHERLANDS, the West-Indische Compagnie (WIC) was chartered to manage Dutch trade and state-sponsored piracy along the west coast of Africa and the coastline of North and South America. Like its counterpart in Asia, the Vereinigde Ost-Indische Compagnie (VOC), the Dutch West India Company came into existence as an extension of 16th-century Dutch maritime exploration and commerce; these organizations exercised considerable power and independence in orchestrating Dutch overseas activity in the early modern world.

Early Dutch activity in the New World mirrored the politics of continental Europe, where the Dutch were engaged in the Eighty Years' War against SPAIN for their political and economic autonomy. Since this ongoing conflict played havoc with European trade routes, the Dutch, by the end of the 16th century, had begun looking elsewhere for imports. They launched what privateering operations they could against the treasure ships of the Spanish Main.

The Dutch West India Company was overseen by a board of directors appointed by the Dutch States-General, who granted the board virtually autonomous power over administration within its territories, stopping only at prohibiting it from declaring war of its own accord. In addition to its ongoing mandates to expand Dutch trade and carry out economic piracy against the Spanish, the WIC had by the early 17th century expanded into the management of commercial colonies in the Western Hemisphere, and became involved in running the Dutch slave trade with Africa.

In the 1620s, the WIC founded several North American colonies, including Fort Orange (Albany, New York), Fort Good Hope (Hartford, Connecticut), and Fort Amsterdam (New York City). Beginning in 1624, WIC ships seized part of northeastern BRAZIL from the Portuguese. One of the more colorful agents of the WIC, Piet Heyn, captured a Spanish treasure fleet in 1628; the WIC funneled the proceeds into further expansion throughout the New World. Its activities reached their height in the 1630s and1640s, when its main bases of operation were located in New Amsterdam, Curaçao, and Pernambuco.

The West India Company never, however, achieved the long-standing success of its eastern counterpart. Expansion beyond early gains grew expensive with increasing competition. The company then sought to only maintain and defend what it had, but even this proved impossible over time. By the middle 17th century, it had suffered a number of setbacks and defeats, losing the Brazil colony to the Portuguese in 1654 and New Netherland to the English in 1664. The company was reorganized in 1674, after which it gave up the goal of territorial acquisition and focused almost exclusively on the African slave trade, making additional profit running contraband goods to English colonies in North America. After the invasion of the Netherlands by French armies in 1794, control of the company passed briefly to the puppet state known as the Batavian Republic before the WIC was dissolved in 1798.

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Dynegy

DYNEGY IS ONE OF the largest ENERGY companies in the UNITED STATES with assets worth $25 billion in 2001. Unlike many other large players in the energy industry, Dynegy did not begin as a regulated utility. The company was founded in 1984 as the Natural Gas Clearinghouse, which was created to take advantage of opportunities in the about-to-be deregulated gas market. The core business of Dynegy today is the provision of energy services, offering generation, transmission, marketing, and management of natural gas and electricity around North America. Illinois Power, a subsidiary since 2000, is a regulated electric and gas energy delivery company located in Decatur.

Another subsidiary provides telecommunications services. Dynegy is generally admired in the energy industry for its innovation, talented employees, sound management, and financial soundness. In the early 2000s, allegations had arisen, however, that the company manipulated the California wholesale electricity market by withholding power from its California plants.

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E.ON Energie

HEADQUARTERED IN Munich, GERMANY, E.ON Energie is one of the largest investor-owned service utilities in continental Europe. It supplies electricity, gas, and water to some 25 million customers across Germany and a dozen more countries, among them RUSSIA, AUSTRIA, the Baltics, and SWITZERLAND. Continuing to invest in subsidiaries and affiliates, company forecasters in early 2003 look to a doubling in all types of sales within the next five years.

Fast becoming a global player, E.ON came to fruition in June, 2000, with its merger of two decades-old industrial companies, VEBA and VIAG. It currently operates via 80 subsidiaries and affiliates in which it owns large-stake holdings, including the recent addition of the Sydkraft Power Station in Sweden, acquired May, 2000. Of its three types of power plants—conventional, nuclear and those that run on renewable energy—they combine to produce a capacity of 34,000 mw.

Since the VEBA and VIAG merger, the consolidated E.ON has boosted electricity sales volumes by nearly 50 percent, a tremendous rise. In terms of gas and water, the acquisition of German-based corporations, HEIN GAS and Gelsenwasser, has greatly increased output in both industries.

Fortune's edition of July 22, 2002, reported E.ON's latest fiscal year figures as follows: revenues, $66 billion; profits, $2 billion; assets, $88 billion; and stockholders' equity, $22 billion.

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East India Company, British

IN 1599, A GROUP OF influential English merchants had established a joint stock of £30,000 with the purpose of voyaging to the "Est Indies and other ilandes and cuntries therabouts." They requested the monarch to grant them permission for this purpose and so was founded the English East India Company by a royal charter signed by Queen Elizabeth I in December, 1600. The new company was granted a monopoly on all English trade east of the Cape of Good Hope, Africa. It was rather pretentiously titled *The Governor and Company of Merchants of London Trading into the East Indies* and was composed of 218 members.

There were several reasons why the English crown saw it fit at that moment to launch a company of this nature. There was a need to diversify English trade, especially to find new markets for English woolen cloth after the loss of some of their traditional markets in continental Europe. The English also wished to gain more control over trade in general in Asia. The new route around the Cape of Good Hope opened up immense possibilities of trading with Asia and the English feared being out-maneuvered by the Dutch and the French. The English Crown and the merchants agreed upon the chartering of a company to deal specifically with Asia as a means to bolster overseas trade.

It was by no means smooth sailing for the newly formed company in its initial days. Indeed, there were hardly any indications in these opening years of the tremendous influence and power that this company would wield in the next two decades. It faced bitter competition from its European rivals, the Dutch and the Portuguese, and at home the fact of its monopoly brought them hostility from other English merchants.

Within the next 40 years, however, the East India Company had built up a network of factories all over southern Asia. It had become by this time the largest trading company, commanding a capital of nearly £3 million. It was also a formidable force within England itself. Most of the investors of the company were wealthy merchants who held important government offices thus instituting the interests of the company firmly into English politics.

Spice was the primary trading enticement that Asia offered the company. Pepper, significantly known as "black gold" in Europe, had been available around the Mediterranean area for a while. The company was anxious to purchase at source in order to increase their profits. Pepper was grown all along the southwestern coastal area of India, and Java, Sumatra and other southeastern Asian islands were home to rare varieties of spice.

There was a dangerous problem at the root of the English trade with Asia. While Asia had to offer an immense variety of products that Europe coveted, the reverse was far from true. The pride of the English market, woolen cloth, had no place in the warm climate of south and southeastern Asia. From the very outset, English merchants were unable to sell European products to the Indies and they were also almost solely dependent on the pepper and spice trade.

Two solutions emerged for the above problem. The first, certainly the less desirable, was arrived at due more to necessity than choice. Since there was nothing Europe could offer Asia as barter, the only way the company could pay for its imports was in cash. Silver fetched a high price in Asia and hence the standard practice for the East India Company became the export of bullion from England to pay for its Asian trade. This was a source of constant anxiety and much deliberation among scholars, merchants, and state officials. The export of treasures across national borders was not the most popular activity of the East India Company and made it the target of ceaseless popular criticism.

The second alternative for the company's trading choices was the development of what came to be known as the "country trade." The company discovered that the spices procured from one part of Asia could be bartered for goods from another part. The company thus began to use their ships to carry goods for other Asian merchants and as a result locked the entire region, from the Red Sea to Japan, into a complex network of interdependent trading units.

The popular assumption about the trajectory of the company is that it started out exclusively as a trading company and only reluctantly assumed the mantle of governance in India. Recent scholars have persuasively disproved such claims and have shown that force was "an implicit part" of Europe's trade with Asia. Control over Indian revenues was a lasting solution to the draining of bullion from England and this could only be secured by force. Protecting trading interests from rival European powers as well as from indigenous rulers could prompt the most astute of merchants to become the most fearless of warriors.

The victory of the English in the Seven Years' War (1756–63) in Europe was decisive in reordering the priorities of the East India Company. Competition with the French East India Company had reached a peak and between 1744 and 1761 there were a series of battles between the two rival companies to establish hegemony on Indian soil. The final impetus to the English side came, when in 1757, the English general Robert Clive won a critical victory over the ruler of Bengal. By 1765, the English had secured the right of civil administration in Bengal and its neighboring provinces, thus giving them power over nearly 20 million people and control over revenues worth £3 million. This revenue was used to buy Bengal goods resold at immense profit overseas, and also to fund the conquest of other parts of India.

The rise of the fortunes, profits, and dividends of the East India Company was marked by a contradictory fall in its popularity in the home country. Tales of corruption, degeneration, and bribery filtered into the popular press about the lifestyles of the company officials.

In reality, the monopoly of the company was slowly emerging as a threat to the newly emergent class of industrial capitalists in England. They were in need of their own markets to sell cheap manufactured goods and the trading privileges of the East India Company was a major barrier in their way. Thus emerged in this period a strident rhetoric in favor of "free trade" against company monopoly.

The first major loss of power in the company occurred in 1773 with the passing of the Regulating Act. The company was then at the verge of bankruptcy and appealed to the Parliament for financial aid. While the Crown agreed to a loan, it used the opportunity to establish control over the company. The Regulating Act established some guidelines for rule in India and also banned private trade by company agents.

It was not the end of woes for the company. By 1784, it was once again heavily in debt and this time Parliament established a Board of Control that would preside directly over the company's directors. This arrangement, arrived at by the India Bill of 1784, split the governing of British India between the company and the British government.

The loss of power in the company over its territories and the eventual take-over by the Crown was a gradual but steady process. In 1813, the company was stripped of its trading monopoly and trade was opened up to all English merchants by a licensing system overseen by the court of directors. In 1833, the company ceased all its trading activities and fell back strictly to a role of governing the vast territories that it had acquired in the Indian subcontinent.

The final blow to the company came with the mutiny of the Indian soldiers in 1857 that cost the British government £50 million to quell. The India Bill that officially handed control over to the Crown was passed in August, 1858. Queen Victoria was declared the Empress of India in an ostentatious ceremony in 1858 and the merchant-adventurers, having played their part in the colonial project, now yielded place to the industrialists and the civil servants.

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econometrics

ECONOMETRICS IS THE STATISTICAL method used to measure the effect one variable, and a group of variables have on one another. It is the main tool used in economics, finance, and business to untangle real-world empirical data. In the pure sciences, a controlled experiment can be set up to test the effect of one variable on the outcome. This controlled experiment keeps everything constant, except for one variable, so that any change in the outcome can be attributed to that variable. In business and capitalism, however, the laboratory is the economy, and the researcher cannot change variables in the economy independently just to see what happens. Instead, econometrics must separate out effects of a number of variables all moving at the same time.

Simple regression model. The basic form of estimation of the relationship between two variables in a simple regression model is:

$$y = \alpha + \beta x + \varepsilon$$

The simple regression model put a form on the relationship as a line that best describes how that data falls. y is the dependent variable that is being explained. x is the independent variable (also called explanatory variable) whose value is used to explain the dependent variable. α and β are the parameters of the relationship. α is the constant which give the average level of y if x is zero. β is the slope coefficient that tells how much a one unit change in x changes y. If β is positive, then an increase in x is associated with an increase in y, that is there is a positive relationship between x and y. If β is negative, then an increase in x is associated with a decrease in y, that is there is an inverse relationship between x and y. If β is zero, there is no relationship between x and y. ε is the error term (also called the residual) that is the unexplainable, random component of y since no real-world process can be completely explained.

Estimation. The most common method of estimating the parameters of a regression model is Ordinary Least Squares (OLS). OLS calculates the estimates a and b for the parameters α and β which minimize the sum of squared residuals for a given set of data. For each observed value of y, the estimated error associated with that value is $y - a - b\,x$. In this way, the estimated regression line passes through the actual data with the least squared error. By squaring the errors, this implicitly penalizes the estimate more for large errors than small errors. Squaring the errors also penalizes the estimate equally for positive and negative errors. The errors that remain after finding the estimated OLS regression line then can be used to determine the accuracy of the estimates since large errors indicate that the regression line does not fit the data well.

Multiple regression model. The only difference between a simple regression and a multiple regression is that in a multiple regression model more than one independent variable is used to explain the dependent variable:

$$y = \alpha + \beta_1 x + \beta_2 x + \beta_3 x + \ldots + \beta_k x + \varepsilon$$

A common concern with multiple regressions is *multicollinearity*. Multicollinearity is a problem when there are high correlations between two or more independent variables. When this occurs, OLS estimation is not as precise since the effect of each variable cannot be separated. A sign of multicollinearity is when the model seems to predict well, but no one variable has a significant coefficient (see statistical significance below). More precision can be gained by increasing the size of the dataset, transforming the variables into ratios or logs, or simply by dropping a highly correlated variable.

Determining the fit of the model. R^2 (pronounced "are squared") is one measure for how well the regression model fits the data. R^2 is calculated by taking the Total Sum of Squares (TSS), which is the total variation in the dependent variable around its mean without estimating the regression [$TSS=\Sigma(y - \mu_y)^2$ where μ_y is the average of y], and compared it to the errors explained by the regression:

$R^2 = 1 - ESS/TSS$

where ESS is the sum of the squared errors. R^2 can range between 0 and 1. The higher the value of R^2, the better the fit of the model.

One drawback of R^2 is that it does not give an objective answer to the question "Is this a good model?" The F statistic performs a test of the null hypothesis that the estimated regression does no better than a simple average:

$$F = \frac{R^2/(k-1)}{(1-R^2)/(n-k)}$$

If the calculated F value is greater than the critical value found by computer software (such as SAS or Excel) or found in statistical tables of the F distribution, then one can reject the null hypothesis that the independent variables provide no explanation of the dependent variables. The alternative is that at least one variable is statistically significant.

Statistical significance. To determine if the effect of a single independent variable is statistically significant, the t statistic is used. The t statistic tests the null hypothesis that the slope parameter associated with a particular independent variable is equal to zero (2 tail test) or is greater than or less than zero (1 tail test). If the coefficient is zero, then changes in that variable do not affect the dependent variable.

The t statistic is a standardized statistic, meaning that it takes the estimate of that parameter, b, and divides it by its standard error, σ_b (pronounced sigma). Calculation of σ_b is detailed in the references below. If the calculated t statistic is either above the upper critical value or below the lower critical value, then the null hypothesis is rejected and the coefficient is statistically significant. The alternative is that the variable does have an effect.

Properties of a good estimator. For any statistical estimate, there are some desirable properties. If an estimator is unbiased, then its expected value is the true parameter value. This means that even though an estimate will never be exact, on average it measures the true value. The next desirable property is to have an efficient estimator. An efficient estimator gets as close to the true parameter as possible (i.e., it has the lowest dispersion around its mean as measured by its standard error). Finally, an estimator should be consistent, meaning that as the sample size increases the estimate converges on the true parameter value.

The OLS estimator is said to be the Best Linear Unbiased Estimator (BLUE) since it is unbiased, consistent, and has the lowest standard error of any other estimate using a linear regression model. The OLS estimate is only BLUE, however, if it does not break the assumptions listed below:

1. The linear model must be appropriate, and the correct variables must be included. The linearity of the model forces each variable to have the same level of effect on the dependent variable for all ranges. This may not be appropriate in cases where an effect starts out strong, and then fades away. Taking the log of variables, or including squared independent variables to allow for decreasing or increasing effects can compensate for some non-linearity.
2. The expected value of the error term is equal to zero. This assumption ensures that the average of the predicted value of the dependent variable (a + b x) is equal to the average of the observed dependent variable. If this assumption is violated and the error has a non-zero average, then the constant will not be unbiased.
3. The independent variables are not random and are not perfectly collinear. If independent variables cannot be considered as given, then the estimate of the parameter may be biased due to simultaneous equations. Simultaneous equations is the situation where x effects y, but y also effects x. OLS cannot separate out the effect of x on y, instead some type of instrumental variable estimation must be used. Perfect collinearity indicates that there is a redundant variable since two or more variables move exactly together.
4. Error terms have the same volatility and are not correlated with each other. If errors have differing volatility (known as heteroscedasticity) then some observations are more precise than others. OLS does not use this information. While it is still unbiased, OLS is not efficient in the presence of heteroscedasticity. If errors are correlated, as is common with time-series data (known as autocorrelation), one time period can help predict another time period. With both heteroscedasticity and autocorrelation, Weighted Least Squares provides a more efficient estimate by using the additional information to weight the sum of squared errors.
5. There must be more data points than parameters to be estimated. Degrees of freedom (defined as the number of data points less the number of estimates) greater than zero ensures that there are enough observations to mathematically be able to solve for the unknowns. Furthermore, if degrees of freedom are less than thirty, then statistical tests lose power, and in some cases can not be used at all.

Business applications of econometrics. Theories abound in finance and management that point to better investing techniques, or more efficient organization of the firm. Econometrics is the process of putting these theories to the test. Some areas have more data than others, which in some part determines the statistical techniques used. For example, stock market data can be obtained daily, hourly, or by the second, so stock market researchers have thousands of data points. This means that sophisticated time series techniques can be used, and the data can be partitioned into separate datasets to test for robustness. Event studies are common in stock research to determine the market reaction to certain announcements and can be timed rather precisely when coordinated with electronic news services. Data for emerging market macroeconomic variables, on the other hand, are released yearly, or quarterly at best. This data set also rarely goes back more than 20–30 years and is often of suspect quality.

In some areas, econometrics has become so commonplace that practitioners may not even realize that regressions are producing the numbers. Altman's Z-score measures the probability that a company will not default. Certain financial variables of a firm increase the likelihood of a firm staying in business, such as liquid assets, liabilities, and market value. A type of regression analysis was used by Altman (1968) to find the proper effect of each factor. These weightings are still being used over three decades later.

Another area where regression analysis is routine is in the calculation of beta for the Capital Asset Pricing Model (CAPM). Beta measures the reaction of excess returns (return minus the risk-free rate) of a stock to fluctuations in the excess returns of a market portfolio. This is accomplished by running a regression with the excess returns of the stock as the dependent variable, and the excess returns of the market as the independent variable. Beta is the estimated slope coefficient. The higher the estimated beta, the higher the risk premium that is required according to CAPM.

The pervasiveness of regression analysis has also meant that statistical computer programs to estimate regression parameters are more accessible even for very large datasets. Some common statistical packages are SAS, STATA, SPSS, EVIEWS, and GAUSS, but regression add-ins also come bundled with many spreadsheet programs such as Excel, Lotus, and QuattroPro.

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economic indicators

DATA AND OTHER STATISTICAL measurements are the economic indicators used by economists, financial analysts, and public policy-makers to assess current, prior, and future economic events.

Indicators, and their reputed explanatory and predictive abilities, can be related to either general economic conditions as measured by a region's GROSS DOMESTIC PRODUCT (GDP) or to particular sectors of the economy, such as manufacturing, households, or labor. Levels of production, patterns of spending or consumption, investment and savings, employment, inflation, exchange rates, and the rate of economic growth are just a few of the economic events that are analyzed, and that can be correlated to a number of assorted indicators.

Many of these indicators are generally accepted in practice and by a majority of economists but since there are alternative economic theories there are also alternative economic indicators used by analysts with opposing explanations for economic events. Indicators can be used to evaluate current economic conditions or to forecast future conditions and are often used to literally indicate or signal changes in business or economic activity relative to the BUSINESS CYCLE. Business cycles are defined as the recurrent, alternating but non-periodic phases of expansions and contractions in a region's business or economic activity, and one business cycle can be defined as the length of time from one peak or trough to the next peak or trough.

The fluctuations in the business cycle are commonly referred to as periods of economic recovery, expansion or prosperity, recession or depression. Given the complex structure of modern economies, it is not surprising that fluctuations in business and economic activity persist. But accurately predicting, or even confirming, the precise shifting points—the peaks and the troughs in the business cycle—can be problematic.

Generally there are three types of indicators that are of particular interest to policy-makers and analysts: leading, coincident, and lagging indicators. Leading indicators are those indicators that tend to move in anticipation of turning points or changes in general economic conditions or the business cycle. That is to say, a variable that consistently reaches its peak or its trough prior to the peak or trough in the business cycle can be reliably used to forecast an upcoming high or low point in the business cycle. Business confidence and anticipated profits, interest rates, changes in the money supply, building permits, housing starts, and automobile sales are examples of leading economic indicators.

Coincident indicators are those indicators that tend to move with, or within a month or so of, the turning points or changes in the general business cycle. Thus a variable that consistently reaches its peak or its trough at about the same time as the peak or trough in the general business cycle can be used to monitor the high and low points in the business cycle. Industrial production, unemployment data, real weekly earnings, and the number of hours worked are examples of coincident economic indicators.

Lagging indicators are those indicators that tend to move after the turning points or changes in general economic conditions or the business cycle have occurred. These variables tend to consistently arrive at their peaks or their troughs only after the business cycle has already reached its peak or trough and, as such, these variables can be used to either confirm prior movements in general economic conditions, or these can be seen as resulting from those prior events or activities. Manufacturing capacity utilization, job vacancies and the duration of unemployment, order backlogs, productivity, and the average prime rate charged by commercial banks are examples of lagging economic indicators.

Normally, leading indicators are a sign of business expectations or commitments while coincident indicators describe current economic conditions, and lagging indicators bear out how production costs and economic conditions have changed. Unfortunately, the lead or lag time between the change in an indicator and the corresponding change the direction of an economic condition can also vary from one business cycle to another, so the use of indicators to form reliable forecasts remains less than an exact science.

Even though there are about 20 commonly accepted indicators used in leading composite indexes of indicators, there are literally dozens of indicators that could be used by economists, financial and public-policy analysts to evaluate current and future economic trends. And since economic analysis and forecasting is less than an exact science, there are some disagreements about the classification and effectiveness of some indicators.

Indicators are also re-evaluated over time to consider whether or not an indicator remains a useful estimator or indicator of economic activity. In addition, given that economic indicators are measured variables, there are bound to be variations in the estimated values of the statistics and the indicators themselves will likely be revised as additional information becomes available.

Despite these drawbacks, economic indicators can reveal relative changes in economic conditions. One method for increasing the probability of correctly estimating changes in economic conditions is to employ more than one indicator. For practical reasons, indicators are used in clusters to approximate the end of a period of expansion or the end of a contraction phase.

Since the precise timing of the end of one phase and the beginning of the next phase in a business cycle can be difficult to identify, making use of a number of economic or social indicators increases the likelihood of positioning the specific turning points in the business cycle and for assessing relative strengths or weaknesses in an economy.

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economic theory, classical

CLASSICAL ECONOMIC THEORY, which began in the 19th century and continued into the early part of the 20th century, evolved from the philosophies of British classical liberals such as Thomas Hobbes (1588-1679) and John LOCKE (1632-1704). Hobbes and Locke articulated the notion that individuals sign a contract with government to receive only those services that they cannot provide themselves. While Hobbes believed that a contract once made could not be broken, Locke argued that government had a responsibility to the individuals who created the government. Because individuals, in Locke's view, were born with inalienable rights that no government could take away, citizens retained the innate right of rebellion. Locke's inalienable rights were the right to life, liberty, and the right to own property.

Classical economists used Locke's inherent right to own property as the core of capitalism. Locke contended that each individual owns the results of his or her property. Because Locke believed that rational individuals were able to govern themselves, classical liberals endorsed the concept of laissez-faire, or limited, government.

Classical economists translated these theories to mean that government's main economic responsibility to individuals was to leave the market alone to become self-regulating. They endorsed the classical liberal idea of the three basic functions of government: domestic protection, national security, and public works. Since human nature dictated that self-interested individuals would try to grab as much of the limited resources as possible, classical economists believed that the public good would be served by allowing unfettered market competition to check innate greed. Individual economic liberty and the contention that each individual was best able to determine his or her own best interests meant that each person was free to choose how goods were accumulated, and to identify the kinds and amount of goods and profits needed to guarantee individual happiness.

Adam Smith (1723-1790). A product of the Scottish Enlightenment, Adam SMITH is known as the father of classical economic theory. In 1776, the same year that the American colonies declared their independence from Great Britain, Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations* called for independence from the economic theories and practices of the mercantilists who used the British government to pursue individual wealth. Smith originated the idea that an "invisible hand" regulates the economy as long as government foregoes unnecessary regulations on free trade. Although the idea of the invisible hand is Smith's most often cited contribution to classical economic theory, he only used the term three times in his writings. Unlike the mercantilists, Smith believed that the "wealth of nations" could be found in the ordinary people who produced goods for the market rather than in the industrialists who controlled production. He argued that the market has a built-in equilibrium. Wages, according to Smith, rose or fell according to the demand for labor. Smith saw specialization, or division of labor, as a major element of an efficient market.

Jean-Baptiste Say (1767-1832). The French liberal school of thought was heavily influenced by the economic theories of Jean-Baptiste Say who after reading *An Inquiry into the Nature and Causes of the Wealth of Nations* called Smith's work a "confused assemblage" of economic principles. While technically considered classical economists, the French liberal school rejected some of its core beliefs. Say's *Treatise of Political Economy*, published in 1803, contributed what became known as SAY'S LAW to the understanding of economics, maintaining that overproduction was an economic impossibility because demand would always rise to meet production. According to Say, each product produces a return in wages, interest rates, profits, or rents that enables individuals to acquire desired or necessary products. Say believed that whenever income dropped, prices fell accordingly. Excess profits and savings, in his view, were simply reinvested in the economy to ensure a certain level of spending

Thomas Malthus (1798-1820). Thomas MALTHUS rejected Say's Law out of hand. Malthus, often identified as anti-classical, argued that a natural process weeded out those not strong enough to survive. Since the food supply was essential to survival, the population decreased when food became scarce. If wages rose beyond subsistence level, population also rose. However, since wages tended to settle at subsistence level, population would be curtailed as the cycle repeated itself. Malthus was dramatically opposed to any kind of government interference that improved the lives of the poor and interfered with nature's cycle of elimination by poverty, disease, and death.

Jeremy Bentham (1748-1832). Jeremy BENTHAM is considered the founder of the utilitarian school of thought, also known as "philosophical radicalism." Bentham advocated the theory that the guiding principle of government should be the "greatest happiness for the greatest number." Individuals, according to utilitarian thought, sought to maximize pleasure and minimize pain. Utility, as might be expected, is the essential element of utilitarianism, and the goal of utility is to ensure happiness. In 1776, Bentham published *A Fragment on Government: Being An Examination of What Is Delivered, on the Subject of Government in General in the Introduction of Sir William Blackstone's Commentaries*, which attacked *Blackstone's Commentaries on the Laws of England*, the cornerstone of the English legal system. Bentham argued that Blackstone's conservative stance served as an obstacle to the passage of new and more responsive legislation.

David Ricardo (1772-1823). In *Principles of Political Economy and Taxation,* published in 1817, David RICARDO developed and refined Smith's theories into a more organized explanation of classical economics. Like Smith, Ricardo has had a lasting influence on economic theory. Ricardo contended that the value of a good is derived from the labor required to produce it. His "iron law of wages" maintained that wages tend to stabilize around the subsistence level; therefore, raising wages increases prices, which cycles the worker back toward subsistence. Ricardo also developed the idea of comparative advantage in which each country produced only what was most efficient and profitable, then traded with other countries who were doing the same thing. In this way, each country received the greatest advantage from international trade.

John Stuart Mill (1806-1873). John Stuart MILL articulated and synthesized the ideas of classical liberal economics. After its publication in 1848, Mill's *Principles of Political Economy* became the standard textbook on economics. The individual was important to Mill, and he believed that the classical system of economics was unjust but capable of improving. As a liberal, Mill was optimistic enough to believe that as capitalism evolved, individuals would be better served. He eventually rejected his earlier endorsement of the wage-funds theory that identified a fixed amount of revenue to be allocated among all workers. Like his father James Mill, John Start Mill had an enormous capacity for social justice. He was the first major political philosopher to consciously include women in his ideas.

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economic theory, Marxian

WHAT IS THE SUBSTANCE of value that makes commodities exchangeable? The answer to this question lies at the core of the economic theory in determining relative prices. Attributing value to the labor content, or to utility—the subjective value placed on the commodity based on pleasure derived—have led to the development of the two major schools of thought: 1) classical school and Marxian economics based on the labor theory of value, and 2) the neoclassical school based on the utility theory of value. Both of these schools are rooted in Adam SMITH's magnum opus, the *Wealth of Nations*. The labor theory of value culminated in the works of David RICARDO and Karl MARX and the utility theory of value culminated in the marginalist revolution of Léon WALRAS, William Stanley JEVONS, and Carl MENGER.

Marx had published his ideas on political economy on various occasions, however, Marxian economic theory was started with the publication of Volume I of *Capital*. Volumes II and III of *Capital* were published after his death based on his notes, by his lifelong friend, Friedrich ENGELS. As the subtitle of the volumes indicate—*A Critique of Political Economy*—Marxian economics attempted to critically assess and extend the classical political economy as a serious scientific inquiry, and did not address writings of other economists that Marx considered to be "vulgar." A distinguishing characteristic of Marxian economics is its interpretation of the labor theory of value that emphasizes the social character of production in the historically specific conditions of capitalism.

In Volume I of *Capital,* Marx made the simplifying assumption that prices were proportional to values. He then proceeded to develop his theory of exploitation by focusing on the labor process, clarifying the social relations underlying production, and showing the general nature of capital. Under capitalism, in this view, as the result of historical developments the ownership and control of the means of production—raw materials, tools, and machinery—had become separated form workers who applied their labor power to them in the production process. Capitalists, through ownership and control of the means of production extracted more work from laborers than was necessary to produce the laborers' means of subsistence (value of labor power). Thus, the total value of a commodity (W) is expressed as

$$W = c + v + s$$

where, c is constant capital (value of means of production), v is variable capital (value of labor power) and s is the surplus value. The ratio s/v is referred to as the rate of surplus value or the rate of exploitation. Thus, Marx's theory of exploitation asserts that extraction of surplus value through the control of the labor process created capitalist profits through the institution of private property. Industrial production by introduction of assembly lines or implementation of systems of scientific management increases the control over the labor process and the extraction of surplus value. Harry Braverman's (1974) detailed account of the process of deskilling of labor in the 20th century, and extension of capitalist control over the labor process is one of the major works in this area.

In Volume III of *Capital,* when considering the aggregate capital, Marx had to tackle the problem encountered by Smith and Ricardo earlier: the inconsistency between the labor theory of value and equalized rates of profit prevailing in competitive markets. This is the source of the famous "transformation problem" which has preoccupied both critics and proponents of Marxian economics to date. In aggregate the rate of profit r is defined as the ratio of surplus value to capital advanced—sum of constant and variable capital.

$$r = \frac{s}{c + v} = \frac{\frac{s}{v}}{\frac{c}{v} + 1}$$

Note that given the organic composition of capital c/v (capital to labor ratio) there is a direct relationship between the rate of profit and the rate of exploitation s/v. Furthermore, given the rate of profit, the expression for value of the commodity can be rewritten as:

$$W = c + v + s = c + v + r(c + v) = p$$

Where p is the price of production—long-run equilibrium price attained from equalized rates of profits in the long run. In aggregate, with equalized rate of profit (and constant rate of surplus value), prices of production would not correspond to total values. Hence, to transform values to the prices of production, the composition of capital must vary. Marx demonstrated that given the constant rate of profit and varying organic compositions of capital, prices would be higher than the labor content for firms with higher than average composition of capital, and lower for firms with lower than average composition of capital. Thus, surplus value would leak from the latter firms to former ones. However, as critics pointed out, while Marx transformed the output prices, he did not transform the prices of the inputs to production, and they are themselves, products of labor. A number of solutions have been presented to the transformation problem based on various interpretations of Marxian labor theory of value.

In Volumes II and III of *Capital*, Marx examined the capital accumulation process to discover the "laws of motion" of capitalism. Marx contends that competition between capitalist firms forces them to invest in new technology to save on labor costs and increase profits. The new technology yields the employing firm higher profits at the expense of other capitalists since their composition of capital rises. However, employing the new technique lowers the value content of the commodity by reducing the labor time socially necessary for its production. Other capitalist firms would soon have to adopt the new technique to remain competitive. When this process is complete, the surplus value would no longer be transferred between firms and the profit advantage disappears. However, capitalist firms as a whole will find themselves with a higher composition of capital, and as shown in the profit equation, this lowers profits at a constant rate of exploitation. Marx's theory of the falling rate of profit is at the core of his theory of crisis and breakdown of capitalism. Other theories of crisis fall into two groups: 1) underconsumptionist, and 2) disproportionality theories.

The underconsumptionist theories suggest that since workers only receive a fraction of the value they create as wages, their consumption demand always falls short of the value produced, leaving an excess supply on the market.

The disproportionality theories focus on Marx's dynamic analysis of accumulation and argue that disproportional growth between various interdependent sectors of economy would result in breakdown. As with other schools of thought, lively debate on these issues abounds as the frontier of knowledge is advanced.

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economic theory, neoclassical

NEOCLASSICAL ECONOMICS is the name often given to the dominant variety of MICROECONOMICS taught for most of the 20th century and into the early 21st. In the UNITED STATES, it is so prevalent that it is possible to get a bachelor's degree and never know that one was studying neoclassical economics. It is often presented simply as "economics." Economists outside of the mainstream are more acutely aware of such economics being neoclassical. When someone uses this term, it could refer to at least three overlapping things. This is because the mainstream is not all that precisely defined, and it is always changing. The label "neoclassical" could refer to: a structure of thought, a method of approaching economic analysis, or a historical legacy.

Structure of thought. Sometimes neoclassical economics refers to a large-scale conception of the economy, represented by a structure of thought. Due to resources being scarce, every society must somehow decide what to produce, by what means to produce it, and who gets it. In the neoclassical world these questions are largely answered through markets. The amounts of hamburgers, loaves of bread, blue jeans, and so on are the quantities demanded and supplied at market-clearing prices. The methods of producing these things are the ones that minimize cost to the profit-maximizing producers, thus minimizing the cost to society. The payments to productive resources are themselves determined in markets by the supply and demand for their services. The people who are willing and able to pay for the products get them. This depends on personal preferences and on incomes, which are largely determined by the prices of productive services.

Market prices play a crucial role in the neoclassical account. This is why introductory courses quickly get to SUPPLY and DEMAND. Market prices act as indicators of the relative degree of SCARCITY of things; while at the same time providing incentives to act appropriately according to such scarcity. Suppose oats become more desirable after a report that they reduce cholesterol. This causes increased demand, which results in rising oat prices. This higher price signals that oats have become scarcer. The higher price will give an incentive for farmers to plant more oats, while simultaneously providing a reason for users of oats to be more frugal with them. Both of these behaviors are suitable in the face of the increased scarcity of something. Contrary behavior, growing fewer oats and/or using them profligately, if widespread would threaten the viability of society. Resource allocation through a market system can thus be viewed as being regulated by feedback from prices.

Neoclassical economists have attempted to represent this system abstractly with general EQUILIBRIUM models. General equilibrium occurs when all markets in the economy are simultaneously in equilibrium. By contrast the supply and demand models that students encounter in introductory courses are partial equilibrium models. In partial equilibrium models incomes and prices of related goods must be assumed constant in order for the supply and demand curves to hold steady.

In general equilibrium all prices are variables. It is still unresolved whether general equilibrium models are powerful tools of thinking or intellectual curiosities. One thing they do is to make explicit how complex an economy is. A simple model of exchange (no production) with 1,000 individuals selling 1,000 goods has 1,000,999 equations and variables. This strongly suggests that a fundamental difficulty in replacing the market system with some form of central control is the likely impossibility of being able to gather, process, interpret, and act upon all the information needed. Another result of general equilibrium analysis is the invisible hand theorem. This states that every competitive equilibrium is Pareto optimal, and that every Pareto optimum can be realized by a competitive equilibrium. PARETO OPTIMALITY is a state in which no one can be made better off without making at least one person worse off. This is an abstract version of Adam SMITH's idea that people pursuing their own interests will produce a desirable social outcome.

Method. Neoclassical economics is also a method of doing economics. Although virtually every modern economist has been exposed to general equilibrium analysis, many, due to specialized professional interests or more practical inclinations, spend very little time working with or thinking about it. Yet they would still be called neoclassical economists by virtue of the methods they use.

The distinguishing feature of the neoclassical method is the search for and analysis of equilibria that result from arbitrage. Arbitrage is a process in which the existence of an opportunity for a net gain (the benefits of an action outweigh the costs) results in behavior that causes that opportunity to disappear. Arbitrage is the reason supermarket checkout lines tend to be the same length. If people see a short line they move to it. This lengthens the short line while shortening the longer lines. When all the lines are equal there is no incentive to change lines. In equilibrium all the lines are equal.

Characterizing individuals as rational optimizers provides the particular content of neoclassical arbitrage. As consumers, people want to maximize utility, or find the most desirable bundle of goods, subject to their limited budgets. As suppliers they want to maximize their profits. People are assumed to be economically rational in that they do not take actions that are contrary to the achievement of their goals, whatever these may be.

The widespread use of mathematical optimization tools in the second half of the 20th century caused the emphasis to shift from the process resulting in equilibrium to the equilibrium itself. The various arbitrage stories describing the process leading to equilibrium are now largely relegated to introductory courses. However, even if time and space constraints prevent the arbitrage story from being told, it implicitly underlies all neoclassical equilibria.

The reason behind the search for and analysis of equilibria is to explain social phenomena in terms of the rational decisions of economizing individuals. This methodological individualism is another distinguishing characteristic of neoclassical economics, although this is held in common with Austrian economics.

MACROECONOMICS does not generally follow methodological individualism, and thus is not strictly speaking neoclassical. Macroeconomics grows directly out of John Maynard KEYNES' *General Theory of Employment, Interest, and Money*. Keynes did not reject neoclassical economics, but he thought it was inadequate for analyzing his problem, the national level of employment. Specifically, Keynes thought that it was misleading to view employment as the outcome of a national labor market seen as a big supply and demand diagram. Keynes instead asserted that the national level of employment was a function of the national product that, in turn, depended on the level of investment, the marginal propensity to consume, the interest rate, and the money market. In Keynes' theory the fundamental units of analysis are accounting categories derived from the national accounts, not economizing individuals. Many economists have been dissatisfied with the Keynesian approach. This has resulted in attempts to provide micro-foundations for macroeconomics.

Historical legacy. Neoclassical economics is a result of the evolution of economic thought. The name "neoclassical" suggests that it is a revival of classical economics. This is accurate in some ways, but not in others.

The name "classical" is usually given to the economists, mostly British, of the two or three generations following Adam Smith. David RICARDO, Thomas Robert MALTHUS, James Mill, Nassau SENIOR, John Stuart MILL, and sometimes Karl MARX are considered classical economists. These economists refined and extended Smith's work, and applied it to the problems of their time. In most ways, classical economics is closely related to Smith's economics.

Smith gave us the idea that the economy is a complex system regulated by feedback from prices. This system produces desirable results, such as increased productivity of labor through specialization and the coordination of production with consumer desires, from individuals following their own interests. In numerous places in *The Wealth of Nations*, Smith employs arbitrage as an explanatory principle.

The overall emphasis of Smith and of the classical economists is on economic growth and development. Population growth and the accumulation of capital are major topics, closely woven together, for economists from Smith through Marx. Growing capital is the basis for high wages with Smith. It leads to low interest, the end of new accumulation, and thus the end of rising wages and growing population in John Stuart Mill's stationary state. It causes falling profits, concentration of OWNERSHIP, and attempts at increased exploitation of workers, all leading to the self-destruction of capitalism for Marx.

The biggest event in the transition from classical to neoclassical economics was the marginal revolution. This refers to the appearance of the marginal utility theory of W.S. JEVONS, Carl MENGER, and Léon WALRAS in the early 1870s, and marginal productivity, introduced by J.B. CLARK, Alfred MARSHALL, and Knut Wicksell in the 1890s. The eventual absorption of these innovations added much flavor to the style of economics now called neoclassical.

Marginal utility had a dual impact. It provided the basis for a subjective theory of value, in contrast to the cost-based backward-looking classical theory. This was Menger's emphasis. It also, in the hands of Jevons and Walras, ushered in the use of mathematics.

Utility had a prior history in British ethical and political philosophy. It was notably formalized and put at the center of the scheme developed by Jeremy BENTHAM. Bentham's radical step was to reduce all pleasure- and pain-producing capacity to a single dimension: utility. Not only could this be conceived of for an individual; but also individual utilities could be summed up to arrive at an operable concept of the common good, the greatest good for the greatest number.

Jevons, trying to practice economics as a natural science, took Bentham's utility and expressed it as a mathematical function of the quantity of a good possessed. He distinguished the total utility from the marginal utility, which is the particular addition to total utility of the last unit of the good acquired, or, the rate of change in total utility caused by an incremental increase of the good. Treating marginal utility as the rate of change of total utility makes it equivalent to the first derivative of the total utility function.

Twenty years later marginal productivity, a formal generalization of the classical Law of Diminishing Returns, allowed a new approach to factor demands. This resulted in a unified theory of production and distribution, as opposed to Mill's insistence that these were two separate spheres.

During the last 30 years or so of the 19th century the Ricardo-Mill orthodoxy and the "psychological school" (i.e., marginal utility theorists), debated the question of the cause of value. Marshall largely put these disputes to rest. He used a subjectively determined demand and a "real cost"-based supply curve to solve the problem of value. In the process, Marshall put supply and demand analysis, of the sort that is familiar to any modern student, at the center of economics. Marshall made numerous analytic contributions to modern economics, including elasticity, returns to scale, short- and long-run analysis, and the distinction between fixed and variable cost. If one were forced to attribute neoclassical economics to any single writer, Marshall would have to be the first choice.

In the 1930s, neoclassical economics changed to the result we almost see today. Joan ROBINSON and Edward Chamberlin contributed the theory of imperfect competition. Robinson's account included the analysis of monopoly profit maximization using the marginal revenue curve. John HICKS used ordinal indifference curves to derive the demand curve, borrowing a technique developed earlier by Irving FISHER and Vilfredo Pareto. John von Neumann and Oskar Morgenstern published a book on GAME THEORY in the 1930s, which, along with John NASH's equilibrium (1950), paved the way for one of the few introductions of new material to undergraduate microeconomic theory after the 1930s.

Apart from substantive theory, the biggest development in the second half of the 20th century was shift to mathematics as the preferred mode of expression. While this can be traced back to A.A. Cournot in the 1830s, the big push came with Paul SAMUELSON's *Foundations of Economic Analysis*.

Critics of neoclassical economics. Neoclassical economics has been under continual attack since its formative years. One dimension to these attacks is political/normative. Cambridge Keynesians, Institutionalists, and Marxians are usually less enthusiastic about the market system than are neoclassicals. Austrians are more so. It is important to note that knowledge of someone's motive for arguing a certain way is irrelevant in judging his argument. The fact that somebody wants something to be true doesn't make it untrue. However it is rare in economics for an argument to be decisively resolved, usually because of ambiguities concerning interpretation of the evidence. This leaves considerable room for argument. While the critics generally attack the structure or method of neoclassical economics, it would be misleading to ignore the political/normative alignments that flavor the controversies.

Led by the group that helped Keynes write *The General Theory*, Cambridge Keynesians questioned the use of comparative statics to represent a dynamic world. Their discovery of "reswitching" suggested the possibility of a flaw in the neoclassical model of income distribution, that depended on a negative relationship between factor pieces and the amounts demanded of these factors by firms. Pierro SRAFFA's *Production of Commodities by Means of Commodities* (1960) proposed an alternative abstract conception of the economy in which the distribution of income determined prices rather than the other way around.

Thorstein VEBLEN coined the term "neoclassical." The connection that he saw between the marginalists and classical economists was the determinate, teleological nature of their price theory, which Veblen attributed to outdated metaphysical presuppositions. Veblen proposed to replace this with an open-ended evolutionary approach to economics. In addition, Veblen and other Institutionalists have criticized neoclassical economics for overemphasizing pecuniary calculation, which is one aspect of human behavior, and therefore only a partial explanation of how society functions.

In the Marxist scheme, consciousness is the product of the epoch. Economists and other social philosophers are part of the "supporting superstructure" that props up the system of social relations based ultimately on the mode of production. The neoclassical conception of the economy takes for granted the existence of private property rights, without which there could be no markets. Marx saw private property rights as a defining characteristic of the specifically capitalist epoch, making possible exploitation and accumulation. He envisaged a future without private property.

Most neoclassical textbooks present scarcity as the fundamental cause of the economics problem. They also assert that opportunity cost is the concept of cost relevant to economic decisions. These are the Austrians' contributions. Yet Austrians remain outside the mainstream for a number of reasons. From the Austrian standpoint, neoclassical economics did not fully absorb the notion of subjective value, thanks to Marshall's scissors. Austrians are not comfortable with the emphasis on equilibrium, as opposed to the market process. The abstract model of perfect competition distorts actual competition. Many Austrians reject the use of mathematics to represent economic thinking. Some reject the use of statistics to test theories.

Neoclassical economics, as practiced and taught for most of the 20th century, became a theory of static resource allocation. Capital and population are treated as given parameters. It is not that neoclassical economists are uninterested in growth and development; rather, in the formal theory the mathematical methods ushered in by the marginal revolution resulted in a truncation of the subject matter to fit the available methods. A question for the future is whether economics will be driven by its methods or by its subject matter.

Insiders and outsiders have long questioned the adequacy of comparative static to represent a dynamic world. In *Capitalism, Socialism, and Democracy*, Joseph SCHUMPETER contrasted the standard neoclassical conclusion that monopoly is harmful to consumers with the empirical observation that the great increase in the average standard of living occurred precisely with the concentration of ownership in industry. His point was that it is highly misleading to judge the performance of an economic system with static models.

Representing dynamic phenomena is difficult. It can be done, in ways, with differential equations. This makes economics inaccessible to 98 percent of the population. Inexpensive powerful computers may offer help. Uri Wilensky at the Center for Connected Learning and Computer-Based Modeling offers numerous examples of complex dynamic phenomena (some economic) that can be represented rather simply using object-oriented programming environments.

The basic logic of arbitrage is compelling. Even when the lines do not seem strongly to equalize, such as where three lanes of high speed traffic empty into twelve tollbooths, the explanation that comes most readily to mind is obstacles to arbitrage. Scientific explanation has generally consisted of explaining a lot with a little, finding unity in diversity. It is possible that apart from arbitrage resulting from the rational pursuit of self-interest, there are no big explanatory principles in the economic realm.

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economies of scale

IN THE THEORY OF PRODUCTION, the word "scale" refers to a long-run situation where all inputs of the firm are variable. If one asks the question: what happens to output if all inputs are doubled? There would be three possible answers: Output doubles, output more than doubles, and output increases but less than doubles.

If output doubles, the firm's technology is said to exhibit constant returns to scale; if output more than doubles the firm's technology exhibits increasing returns to scale; and it exhibits decreasing returns to scale if output increases by less than twice the original level.

In general, constant returns to scale refers to a technology where output changes by the same proportion as inputs. Increasing returns to scale refers to the case where output changes by a larger proportion than inputs, and decreasing returns to scale refers to a technology for which output changes by a smaller proportion than inputs.

Constant returns to scale are easily explained. One would expect that two workers, who are equally skilled and use identical capital (machines) would be able to produce twice as much as one worker using one unit of capital. However, increasing or decreasing returns to scale are also possible. The explanation most often given for the existence of increasing returns to scale is that, as the scale of production increases, the firm is able to exploit technological advantages of mass production. As the scale of production increases, division and specialization of the inputs can take place. For example, each worker can be assigned to perform a specific task rather than multiple ones in the production process. Hence, workers can become more efficient in the single task they perform resulting in higher productivity and increasing returns to scale.

Some physical properties of capital (machinery, equipment) can also lead to increasing returns to scale. Doubling the diameter of a water or natural-gas pipeline more than doubles the flow of water or natural gas. Doubling the weight of a ship, for example an oil tanker, more that doubles the capacity of the ship (this explains why oil tankers are always as large as technically possible).

Decreasing returns to scale are usually associated with managerial diseconomies. As the scale of production increases it becomes more difficult to manage the firm efficiently and coordinate the various activities of the firm. Assuming that the firm faces fixed input prices for all of its inputs, constant returns to scale means that the per-unit cost (average cost) of output remains unchanged as output is increased.

Increasing returns to scale implies that the per-unit cost decreases as output increases, and decreasing returns to scale would result in increased per-unit cost as output increases. Hence, economies of scale determine the slope of the long-run average cost curve of the firm. The long-run average cost curve will be decreasing if there are increasing returns to scale, constant if there are constant returns to scale, and increasing if there are decreasing returns to scale. It is not uncommon that the forces for increasing and decreasing returns to scale operate together, implying that a firm's technology may exhibit increasing returns to scale for some output levels and constant or decreasing returns to scale for others.

Empirical studies indicate that, in many manufacturing industries in the UNITED STATES, the long-run average cost curve is approximately U-shaped with a flat bottom over a large range of output levels, indicating that in most industries, economies of scale are relatively quickly exhausted, and constant returns to scale or near constant returns to scale prevail over a large range of output levels. Of course, firms would not consistently produce an output level at which decreasing returns to scale are present. The output level, or the output levels, at which the long-run average cost curve reaches a minimum is called the minimum efficient scale. The smaller the minimum efficient scale relative to the size of the market, the larger the number of firms that can operate efficiently in the industry.

Empirical findings indicate many industries are characterized by a flat bottom, long-run average cost curve. This provides, therefore, an explanation of why, in a number of industries, relatively small firms are able to coexist with large firms. If, for example, the minimum efficient scale is 10 percent of the size of the market, and the long-run average cost curve has a flat bottom up to 80 percent of the size of the market, then any number of firms between 2 and 10 would be efficient. Both constant returns to scale and decreasing returns to scale are consistent with COMPETITION.

However, if we seek everywhere increasing returns to scale, or increasing returns to scale at the relevant output level, then efficiency requires production by a single firm. Industries for which this is the case are called natural monopolies. Public utilities are often cited as examples of natural monopolies.

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Economist, The

ONE OF THE MORE INFLUENTIAL periodicals of the modern era, *The Economist* has for more than 150 years combined financial and statistical information with outspoken political commentary and advocacy. It is especially notable for the consistency of its editorial stance, which has been characterized by admirers as an unwavering commitment to the telling of uncomfortable truths, and by critics as tirelessness in the defense of the interests of the wealthy and powerful. Most would agree, though, that *The Economist* (along with a few other periodicals) is a steadfast advocate of capitalism, albeit in many guises, over the decades.

The Economist was launched in August, 1843, by James Wilson, a Quaker hat-maker from Scotland. Its purpose was to promote the classical free-trade doctrines of Adam SMITH, David RICARDO, Jean-Baptiste Say and Thomas Tooke, and more particularly to campaign against the agricultural tariffs, or Corn Laws, whose abolition had become the object of a middle-class LAISSEZ-FAIRE crusade in the early 1840s. Although the infant *Economist* remained formally independent of the Anti-

Corn Law League, the nationwide pressure group whose mouthpiece it effectively became, its survival during its earliest years was made possible only by subventions from the League. Paradoxically, the repeal of the Corn Laws in 1846 and the consequent dissolution of the Anti-Corn Law League the following year helped to secure *The Economist*'s future: with the discontinuance of the League's own house organ, Wilson's magazine stood alone as the most prominent free-trade journal in circulation. From mid-century, its financial future was no longer in doubt.

So successful did *The Economist* become that it helped launch the political career of its founder. The vehemence of its defense of laissez-faire principles, demonstrated most notably in its opposition to the extension of state aid to the starving people of Ireland during the catastrophic famine of 1845–51, brought Wilson to the attention of the leaders of the Whig Party. In 1847, through the intervention of his patron and financial supporter, the third Earl of Radnor, Wilson was elected as a member of Parliament—ironically, in light of his editorial fulminations against electoral corruption, for the borough of Westbury. Beyond his unsuccessful campaigns against railway regulation (it was, he contended, no part of the government's duty to prevent competing railway companies from constructing as many lines between the same two points as they wished) and the act revising the charter of the Bank of England, Wilson left little mark either as a parliamentary performer or during his tenure as financial secretary to the Treasury.

Wilson's political career, on the other hand, had a definite and deleterious impact upon *The Economist*. Criticized during its first years for following too faithfully the line of the Anti-Corn Law League, it now became little more than a vehicle for promoting the interests of Wilson and his colleagues in the Whig Party. (An unhealthily intimate relationship could also be discerned in the opposite sense, one example being the appointment of *The Economist*'s assistant editor, William Greg, to a lucrative government sinecure.) The journal was elevated above mere partisan propaganda, however, by the caliber of its writers, most notably the idiosyncratic socialist Thomas HODGSKIN, the youthful Herbert SPENCER, and above all the effervescent, opinionated and eminently quotable banker Walter Bagehot, who became Wilson's son-in-law in 1858 and, following the former's death two years later, *The Economist*'s editor.

Bagehot's 16-year stewardship of the paper has often been considered *The Economist*'s golden age. Broad in his interests, the new editor elevated the journal from a partisan organ to the status of required reading for the business community, both in Britain and overseas. His own contributions, while often ill-informed or naïve—he wrote trenchantly in support of the Confederacy during the AMERICAN CIVIL WAR, and against the extension of the franchise to the potentially "dangerous" artisan classes at home—were never dull. His death in 1877 deprived *The Economist* of much of its sparkle, though the tendency toward conservatism in a political as well as an ideological sense, which had been evident during his stint in the editor's chair, became more pronounced under his successors.

The Economist's rightward tilt reached its greatest extent in the last quarter of the 19th century. Always deeply marked by Victorian hibernophobia and critical of most efforts to conciliate the "Celtic" Irish rather than coerce them into obedience, *The Economist* broke publicly with the liberal prime minister, William Gladstone, over his support for local autonomy, or Home Rule, in Ireland. By the turn of the century, the journal had become the firm advocate of a policy of imperial domination tempered by parsimony; the denial of the parliamentary vote to women; and the reversal of Irish land reform. Fortunately for both *The Economist*'s credibility and its marketability, this drift toward *Diehardism avant la lettre* was arrested under the editorship of F.W. Hirst, who took up the reins in 1907. An unsuccessful liberal parliamentary candidate, Hirst shared some of his predecessors' prejudices, most notably over the issue of women's suffrage; but his expansion of the staff and his recruitment of a group of talented young writers helped to reverse *The Economist*'s incipient ossification, and ensured that in the future it would not stray too far from the central ground of British politics.

The outbreak of WORLD WAR I, indeed, found *The Economist* uncharacteristically occupying a position normally associated with the Left. Opposed both to the conflict itself, in which he could see no valid issue justifying British involvement, and to the undermining of cherished civil liberties by wartime emergency regulations, Hirst used the columns of his paper to conduct an outspoken campaign against the introduction, for the first time in British history, of compulsory military service. Such views were increasingly out of step with public opinion; and in 1916, Hirst was compelled to resign by the Board of Trustees, composed of James Wilson's descendants, in whose hands overall direction of the journal lay. Thenceforward, *The Economist*'s opinions on the war remained entirely conventional, although upon the defeat of Germany it distinguished itself by criticizing the economic provisions of the Treaty of Versailles and speaking warmly of John Maynard KEYNES' *Economic Consequences of the Peace*.

Between the world wars, *The Economist* was transformed from a family trust to a modern journal run on commercial lines. In 1926, a limited-liability company, The Economist Newspaper Ltd., was set up to purchase the title from the Wilson family on behalf of a consortium of business, media, and political interests. An independent board of notables was created to ensure the paper's editorial independence. Almost as important to its continued viability, however, had been the recruitment five years earlier of Walter (subsequently Lord) Layton as editor. The most distinguished holder of the position since Walter Bagehot, Layton came to *The Economist* with an impressive background in academic, governmental, and political life. Under his direction, The Economist Intelligence Branch (subsequently renamed The Economist Intelligence Unit) was launched, to provide expert statistical and financial information to individuals and businesses. Other innovations included the publication of detailed country and subject supplements; a redesigned layout including the use of color; and the upgrading of the journal's statistical section.

Layton's international reputation—before taking over the editorship, he had held an important position on the staff of the League of Nations—enhanced *The Economist*'s standing overseas; and although the circulation figures were not notably enhanced as a result, the journal came to be regarded abroad—in much the same manner as *The Times*—as reflecting the outlook of the British policy-making elite. In these years, *The Economist* became a truly international journal, half of each issue being sold outside the UNITED KINGDOM.

Notwithstanding the galaxy of journalistic talent Layton was able to attract—most conspicuous among whom were Arnold Toynbee, Aylmer Vallance, Harry Hodson and Douglas Jay—the 1930s cannot be said to have been *The Economist*'s finest hour. Although the readability of the paper was vastly improved in these years, its editor's consciousness that he was presiding over what was now regarded as a national institution meant that there was little place for adventurousness or iconoclasm in its columns. During one of the most turbulent and dangerous eras in British history, readers of *The Economist* more often than not were presented with little more than cleverly written expressions of conventional wisdom. Particularly unfortunate, all the more so in light of the general excellence of its reportage, was its response to the rise of National Socialist GERMANY. While the journal's editorial line was consistently anti-Nazi, and often insightful as to the dangers Fascist expansionism posed to the democracies of Europe, it lacked the courage of its own convictions. Thus, while correctly identifying the Rhineland crisis as presenting "the choice between a risk of war now, at our time, and a certainty of war later, at Herr Hitler's time" (March 14, 1936), it contrived to find a third way between these uncomfortable alternatives with an appeal to Hitler to voluntarily withdraw his troops. Nor were *The Economist*'s readers assisted in forming a correct appreciation of the seriousness of the Nazi threat by its frequent assertions that Hitler's departures from orthodox free-trade principles were certain to result in the eventual collapse of the German economy. The paper's grim verdict on the aftermath of the Munich debacle—"We are starting on a desperate effort to ensure by arms a safety which a little courage and a little foresight at any time in these tragic years would have protected from all danger" (October 15, 1938) was double-edged: it could itself have been accused of having exhibited the latter but not the former.

Layton's replacement in 1938 by 30-year-old Geoffrey Crowther completed the process of modernization that had been under way since Hirst's time. Obliged by the exigencies of wartime to give up many of its male staffers to military or government service, *The Economist,* for the first time, admitted a significant cadre of women to its inner circles. The distinguished economist Barbara Ward (subsequently Baroness Jackson) served as foreign editor; others who wrote regularly included Margaret Cruikshank and Margaret Stewart. (To this day, a higher proportion of women is to be found among *The Economist*'s staff than among its readership.) Under Crowther, too, the modern *Economist* acquired its characteristic tone of witty and astringent self-assurance, that to some readers has seemed to smack of the arrogant and cocksure. In part, this was the consequence of a recruitment policy oriented increasingly toward the hiring of recent graduates of the ancient universities rather than professional journalists. As one of their number, Sarah Hogg, has observed, "not the least of *The Economist*'s successful peculiarities has been the magisterial tone sounded by generations of thirtysomethings." But the journal's retention of the Victorian convention of not disclosing the identity of contributors also lent its coverage of events an Olympian quality, which the not-infrequent failure of its predictions to materialize did little to diminish.

Since the 1960s, *The Economist* has striven to extend its global reach. It has experienced mixed success. An attempt in 1967 to launch a Spanish-language edition aimed at Latin America proved a costly failure. The production of a series of confidential briefing papers, entitled *Foreign Reports*, also dates from this time, although as Ruth Dudley Edwards notes, the new offshoot had to surmount "a period when it looked rather like a propaganda sheet for the CIA." Partly through ideological conviction, and partly with one eye upon the crucial North American market, the post-World War II *Economist* has, in fact, been generally supportive of the foreign policy of successive U.S. governments. It was one of the few British journals of opinion to support the United States throughout the VIETNAM WAR, and also firmly backed the campaign against left-wing guerrillas in Nicaragua and El Salvador in the early 1980s; Operation Desert Storm in 1991; and military action to deprive Iraq of weapons of mass destruction in 2002-03. Its Cold Warrior credentials have, however, occasionally been dented—most embarrassingly by its employment of the notorious Soviet spy H.A.R. "Kim" Philby as Middle East correspondent in the early 1960s.

At the turn of the century, *The Economist* is as much a mid-Atlantic periodical as a British one. With weekly sales of 700,000 (80 percent outside the UK), the journal has never been more widely read. This unprecedented commercial success ought not necessarily to be taken as evidence of a corresponding growth in influence, especially as its focus has become more diffuse, both geographically and thematically. No longer a significant publisher of statistical data, which is readily available from other sources, *The Economist* is valued by its international readership largely for its synopses of complex current issues. Nonetheless, the journal has never been content merely to publish compilations of useful information: as a "three-decker pulpit" for the broadcasting of free-market principles, it has remained true to the missionary ideals of its founder.

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Edison, Thomas Alva (1847–1931)

A PROLIFIC AMERICAN INVENTOR who established the foundation for modern communications, Thomas Edison was born in Milan, Ohio, and died in Orange, New Jersey.

Edison changed the way that people live and work by improving or inventing a host of devices including the stock ticker, telegraph, telephone, electric light, electric pen, motion picture, phonograph, and storage battery. As much of an entrepreneur and industrialist as a man of science, he focused on products that were readily marketable.

Edison began life as the last child of a middle-class family. His father was a shopkeeper and land speculator. His mother, a former schoolteacher, taught her youngest at home when the inquisitive boy proved unable to adjust to the rote learning style of the local school. Typical for the day, his formal education ended at 12 when he took a job with the railroad. Edison used his free time to conduct experiments, read extensively, and showed an entrepreneurial spirit at an early age when he organized a sales force of other boys to sell produce and newspapers. Excited by the opportunity to use scientific machinery, Edison accepted a job as a telegraph operator in 1862.

The telegraph would introduce Edison to the powers of electricity. A telegraph sent messages by translating letters into short or long breaks in the flow of an electrical current. Although in demand for his ability to receive high-speed messages, Edison was not a particularly good employee. He roamed around the country in search of work as employer after employer fired him for unauthorized experimentation with the office equipment and occasional careless disregard for his telegraph duties. Edison's experiences with the telegraph sparked his scientific curiosity and opened the door to broader inquiries about electricity and electromagnetism.

In 1869, Edison became a full-time inventor. To succeed, he needed to combine business acumen with inventive skills as he discovered with his very first device. Edison developed the electrographic vote recorder to instantly log a yea or nay by means of a button. He thought that elected officials would be eager to buy it, then discovered that no one wanted it. In the future, Edison would locate a market before devoting resources to an invention. His next product, the 1869 stock ticker would improve on the current version by printing the letters of the alphabet as well as figures. It became a reliable moneymaker because of high demand.

Edison emerged as a successful inventor and manufacturer by combining finance, management, and marketing skills with technological improvements, new designs, and new products. He settled in New Jersey, in large part because the environs offered inexpensive land and easy access to the massive test market and commercial network of New York City. Journalists from New York were always welcome in Edison's laboratory for the free publicity that they provided, while venture capitalists from the city would supply funds for experimentation, testing, and development thereby dividing the risk of product launching.

Once Edison established his process of invention, he developed new products at an astonishing rate. As he famously stated, he aimed to produce a minor invention every ten days and a big creation every six months. In 1872, he received 38 patents just for new models or new parts of his stock ticker. In 1873, he earned an additional 25 patents, including several for wholly original inventions. Edison eventually held 1,093 patents, the largest number issued to one person by the U.S. Patent Office. Many of these inventions made their way into the marketplace.

The danger in being so prolific lay in Edison's inability to fully develop all of his inventions. The 1877 electric pen, which later developed into the mimeograph machine, was sold to another businessman because Edison lacked the time to effectively market and fully develop it. He observed radio waves in his lab, but failed to pursue this basis of the electronics industry because of the pressure of creating of other products.

By the 1870s, Edison had become a major industrialist. Most of his products were aimed at the business sector because large companies demanded high efficiency and could afford the capital expense of Edison's goods. When Edison discovered recorded sound and began to envision products that capitalized on the discovery, he did not consider the entertainment possibilities of the phonograph. This 1877 invention would be sold as an office and educational aid. Although the phonograph had a home use, Edison believed that the best profits could be found in other markets. He would always focus on volume sales.

Edison located his Menlo Park (1876–81) and West Orange (1887–1957) laboratories in New Jersey as the largest private laboratories in the world, where he could work on several projects at once, thereby ensuring momentum and thinly spreading the risk of failure. The Wizard of Menlo Park, as Edison become known, focused his research efforts on products with the potential for immediate impact. This strategy would lead Edison to his most famous accomplishment: providing electric power to all of New York City.

Edison decided to enter the business of electric lighting because he could deliver good service at competitive rates to areas of dense population. The development of a commercially practical incandescent lighting system, including the lamp, electric generator, and distribution system, proved enormously complex. The completion of the project in 1881 brought Edison worldwide acclaim as well as a profitable new line.

At the start of the 20th century, Edison increasingly preferred to maintain market share rather than develop new inventions. His last major creation was a 1910 storage battery aimed to power automobiles. With Edison's methods superseded by the systematized operations of firms like Bell Laboratories, his company entered a period of decline.

Edison contributed to the material progress of the world by creating products of enduring utility. As an inventor who became a major industrialist through superb management and marketing skills, he established a model for future industrial laboratories.

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education

THE ACQUISITION OF knowledge and skills, education is considered by many to be an important determinant of worker productivity, standards of living, and long-term economic growth. Economists treat the decision to purchase an education as an investment decision rather than a consumption decision because the benefits of education are long-lasting and usually result in greater productivity and improved earnings.

An investment in education is referred to as an investment in human capital. As with any investment decision, the benefits must be weighed against the costs to determine if the investment is worthwhile. Education produces a stream of future expected benefits in the form of enhanced earnings; in theory these future benefits can be estimated and put into present value terms. The costs of education include both the explicit costs such as tuition and books and the implicit costs resulting from sacrificed earnings while in school. To the extent that a potential student expects to earn more as a result of graduating from college, for example, such an investment makes sense as long as the present value of the future dollars the student expects to earn (in excess of what would have been earned without the degree) exceed the present value of the cost of education. Of course, some pursue knowledge for it's own sake, without regard to monetary payoff, so the investment model does not completely explain the decision-making process, only the pecuniary aspects.

Education of the labor force. Adam SMITH labeled education the principal cause of the various talents observable in men, and went on to explain how different talents command different wages. Modern ECONOMETRIC models developed to explain wage differentials show that an important reason for these differentials is educational attainment. That is, with other things constant, a person with many years of schooling earns a higher wage than a person with few years of schooling. Herbert Stein and Murray Foss find that "the increased education of the labor force has been an important source of growth in output since at least the early part of the 20th century."

The synthesis of education and technology continues to increase worker productivity into the 21st century.

They report that the percentage of the labor force between the ages of 25 and 64 who had not obtained a high school diploma fell from 38 percent in 1969 to only 11 percent in 1993, while the percentage of the same group who had obtained a college degree rose from 14 percent in 1969 to 27 percent in 1993. This remarkable increase in educational attainment went hand in hand with increases in worker productivity and, according to the Bureau of Labor Statistics, about one-sixth of the increase in output per hour was due to increased educational attainment.

The most common belief among researchers appears to be that a more-educated worker can perform better, can perform more jobs, and is more capable of taking advantage of the best job opportunities, hence the observed relationship between educational attainment and output. Challenging the assumption that education necessarily causes workers to be more productive, A. Michael SPENCE developed signaling theory, the notion that employers use educational attainment as a signal of the individual's inherent ability. The reasoning behind this theory is that each person possesses abilities, but in order to demonstrate these abilities to potential employers, the person must acquire educational credentials. Employers then screen applicants according to educational attainment, proceeding under the assumption that a person with the right skill set for the job will have been able to, for example, graduate from college. According to this theory, educational attainment enables a person to prove the abilities they already possessed, leading to a good match in the job market.

The major criticism of this model is that formal schooling is a very expensive method of signaling productivity, so it would be in everyone's best interest to find a cheaper method, such as pre-employment testing. In a study involving 1,300 FORD MOTOR COMPANY employees, D.A. Wise finds that schooling affects career salary growth, implying that educational attainment is more than just an initial signal used for the hiring process.

Investing in education. The widely-held belief that investing in education will pay off in terms of higher lifetime earnings explains why many individuals choose to invest in education, but why does society make such a substantial investment in education? In many modern societies, some amount of education is both mandatory and free, in the sense that the costs are covered by taxpayers. Higher education is also heavily subsidized, so that for many students the biggest cost of attending college is the opportunity cost, or the earnings foregone during those years when the bulk of the student's time is devoted to study rather than earning an income. To some, public support of education is a method of improving the efficiency of a market economy by correcting an externality or market failure. To others, subsidizing education is justified on equity grounds rather than on efficiency grounds. Giving each person the opportunity to acquire an education promotes a more equitable distribution of income in this view.

Consumption of a good provides benefits directly to the consumer, but in some cases, consumption of a good can provide benefits to others. When non-consumers benefit, the good is said to generate positive external benefits and is used as an example of a positive or beneficial externality or spillover benefit. If there are spillover benefits, then the marginal social benefit of consuming an additional unit of the good exceeds the marginal private benefit. A free-market equilibrium is achieved when the marginal private benefit of consuming one more unit of the good equals the marginal cost of providing one more unit of the good. The free market equilibrium quantity is considered inefficiently low when there are positive external benefits because the marginal social benefit exceeds the marginal cost at the free market equilibrium quantity.

From society's perspective, it is efficient to continue providing and consuming the good up to the point where the marginal social benefit equals the marginal cost, but this efficient amount will likely not be reached without some government interference in free markets. In this framework, there is a potential efficiency gain if government subsidizes education enough to move the quantity of education consumed from the free-market equilibrium quantity to the socially efficient quantity. Harvey S. Rosen points out that we do far more than merely subsidizing education in order to achieve a socially efficient outcome when we make public education both free and compulsory. Thus, the explanation for public education is probably based partly on efficiency and partly on equity considerations. Many hold an egalitarian view that each person is entitled to a good education.

Because we invest so much in education, both as individuals and as a society, we are naturally very interested in knowing whether and how much increased expenditure on education leads to an improved educational outcome. This relationship is very difficult to test because it is hard to measure educational outcome. Studies have attempted to do so using test scores, attendance records, dropout rates, or continuation rates to higher levels of schooling, and labor market outcomes. Eric Hanushek surveyed hundreds of attempts to estimate the relationship between educational inputs and outcomes, concluding that there is virtually no relationship between expenditure on inputs and the quality of education. The research indicates that, although clearly some schools and teachers are more effective than others, we cannot predict which will be most effective based on cost or level of expenditure. For example, experienced teachers generally earn more than inexperienced teachers, but there is little or no correlation between years of teacher experience and test scores. Thus, we may be spending more to retain experienced teachers, but having a more experienced teacher cannot by itself guarantee that a student will achieve a higher score on a skills-based test.

If greater expenditure on education fails to produce higher test scores, most people will nevertheless support additional public expenditure on education provided it results in improved earnings. James HECKMAN estimates that a 10 percent increase in educational expenditure raises earnings by about 1 or 2 percent. It is up to society to determine whether this payoff justifies increased expenditure. Heckman also finds that educational investments made in early childhood improve later performance by children from low-income families, suggesting that the larger issue may not be how much we spend on education, but how we allocate our education dollars.

Support for public expenditure on education is weakened by such well-publicized facts as falling SAT scores since the 1960s, despite increased expenditure per pupil from $3,796 (in 1998 dollars) in 1970 to $6,576 (in 1998 dollars) in 1990, according to the U.S. Census Bureau. There is a growing perception that public schools are less effective than private schools, that spending more on public schools will have little or no payoff, and that a drastic change in how we provide public education is needed. These perceptions have led many to consider a major reform involving private school vouchers, following a plan proposed by Milton FRIEDMAN in 1962.

Private and public education. The general idea behind a voucher plan is to place the money provided by government to pay for education in the hands of families rather than using these dollars to directly pay the costs of providing a public education. Education subsidies in the form of vouchers can be used by families to purchase the best education available, so a family need not simply accept the education provided by the nearest public school. Allowing families to make the choice could force schools to compete with one another to attract students, resulting in competition-induced improvements in overall quality. There are many concerns about how such a system could be managed to, for example, avoid discrimination, guarantee that teachers have acceptable credentials, avoid a constitutional conflict if education vouchers are used to pay tuition at religious schools, and ensure that families have sufficient information to make good choices.

Thomas J. Nechyba cites the well-known argument that a private-school voucher plan, by promoting choice and introducing greater competition among schools, could improve the quality of education. His model supports the belief that the quality of public school education will decline as high-ability students move into private schools, and it is as yet unknown whether the competition-induced increases in performance by public schools can offset this decline. A great deal of additional research is needed to resolve these issues; without more evidence it is unlikely that political support for education vouchers will grow.

In the extreme, a voucher system could completely eliminate the distinction between a public school and a private school, essentially turning all schools into private schools competing for education vouchers and private money. The critical issue concerns just how much of an improvement in quality we could expect if we made such a radical change in our method of subsidizing education. Critics of education vouchers argue that it would be virtually impossible to return to the present system of public education if we made such a radical change and then decided we were not happy with the results.

There are a large number of issues yet to be resolved in the field of education. Many of these are addressed by Jack L. Nelson, Kenneth Carlson, and Stuart Palonsky. Should spending taxpayer dollars on education be different in different school districts? Many states have enacted measures to equalize school finance, often under court order to do so. How should we approach the issue of integration, which continues to be a concern despite the fact that segregation levels are at their lowest point since roughly 1920, according to the 2000 census? Should schools focus on teaching the basics, or should the goal be to develop critical thinking skills? Standardized tests are administered to students with increasing frequency, often affecting funding, and seem to focus more on skills assessment now than on memorization of facts. Should there be a national curriculum, or should local government decide what constitutes knowledge for their students? Should schools educate for technological competence? Should business have more influence on schools to ensure that students are taught employable skills and work values? Should gifted students be identified and separated from the mainstream, leaving other students feeling ordinary? The Montessori philosophy holds that each student should be treated as a gifted student with unlimited potential and many parents have begun to protest the segregation of a select few students into gifted classes.

There are many issues involving education that may never be resolved to everyone's satisfaction. As time goes on, there is perhaps much more that each child needs to be taught in order to succeed, and there is so much information at our fingertips that the prospect of internalizing even small bits of the sum of human knowledge can be daunting. There is little doubt that education will continue to be a primary determinant of productivity, living standards, and economic growth, so we all have a vital interest in solving the problems that now exist and preparing to solve the problems of the future.

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Egypt

ONE OF THE OLDEST cornucopias of civilization, Egypt has, for many years, reflected an economy based on internal and external upheavals, and its place in a growing commercial world. The current economy is no exception. In the wake of overtaxed resources and stressed personal incomes, the government has worked to structure economic reform and maintain an ongoing investment to keep its place in the global marketplace.

At the turn of the second millennium, Egypt, long considered a poor country, has displayed stable economic growth. The bureaucracy has slimmed somewhat while activities in the agricultural, textile, and mining arenas continue to dominate the country's industry. The government at Cairo has managed to weaken inflation, slash budget deficits, and strategically strengthen its foreign reserve power.

Still, there are remaining problems to dampen an altogether optimistic outlook for the first decade of the 2000s. For one, lower foreign-exchange earnings since the 1990s trimmed the monetary value of the Egyptian pound, and have caused periodic dollar shortages.

The overpopulation factor, still growing, cannot be ignored. (2002 estimates discover a populace of more than 70 million.) As well, tourism—a main economic commodity that was just beginning to show appreciation despite the area's political and religious bloodletting—has once again fallen, this time plummeting after terrorist-incited international events, such as an attack on tourists in Luxor near the famous Pyramids (October 1997) and a surprise attack on American soil by Islamic fundamentalists (September 2001).

Agriculture remains a strong component of Egypt's economy. Manufacturing, too, continues to roll on a stable plan, being controlled by a public sector that also runs most of the heavy-industry environment. Trade and investment have been partially liberalized, along with the relaxation of certain price controls and reduced subsidies. Construction, mandatory services of a non-financial genre, and internal marketing are largely private. Output of Egypt's GROSS NATIONAL PRODUCT (GNP) is, therefore, climbing at a rate that places Egypt second among the Arab countries, just behind SAUDI ARABIA.

Examining composition by economic factor, recent figures released (2001) state that agriculture comprises 14 percent; manufacturing/industry some 30 percent, and services the final 56 percent of the country's economy.

Import and export both remain busy and have harvested relationships with other countries. Import of commodities from GERMANY, ITALY, FRANCE, the UNITED STATES, Asia and the Middle East coincides with an equally rapid exportation of commodities to ITALY, GERMANY, the UNITED KINGDOM, the United States, Middle East and Asia. Growth rate of the GROSS DOMESTIC PRODUCT (GDP) is 2.5 percent with a per capita purchasing power parity of $3,700.

In AGRICULTURE, an industry that brings in about 18 percent of the GNP, major crops are cotton, wheat, maize and rice, other outputs being sugarcane, corn, barley, millet, onions, figs and potatoes. Forty percent of Egypt's population is engaged in farming; most of the farming takes place in a highly cultivated area of 2.5 million hectares, or 6 million acres, within the fertile

Nile River Valley and Nile Delta. The Aswan High Dam, which has controlled the flow of the Nile waters to keep the soil rich, is largely responsible for the fertility garnered. Lately, certain new farms, large and small, are being developed elsewhere to yield produce. More and more farms, especially the larger ones, are beginning to produce livestock—specifically, cows, chickens, and water buffaloes.

Egypt's mining industry shows no signs of slowing. Principal minerals are iron, salt, phosphates, gypsum, manganese, limestone and gold. Cairo, in the northeast of the country, and Alexandria, in the northwest, are the main industrial centers. Processing plants in Port Said and along the Nile produce chemicals, fertilizers, clothing, and construction materials.

Petroleum and natural gas (most of it derived from the northeast part of the country in the Gulf of Suez area) account for 7 percent of the GDP (according to fiscal year 2000 estimates). Crude oil channeled primarily from the Gulf of Suez and the western desert earned $16 per barrel, some $2.6 billion in the year 2000. With some decline in production, 2001 figures indicate a minor decrease.

Output of natural gas is on the increase, however. With its partner, the kingdom of Jordan, Egypt planned on a June, 2003, completion of the Eastern Gas Company to export natural gas to Jordan.

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Eisenhower, Dwight D. (1890–1969)

EVEN BEFORE BECOMING president, Dwight David Eisenhower was one of the most important world figures, having led the Allied forces to victory in Europe in WORLD WAR II. Some historians concluded that he was an uninvolved occupant of the White House, but recently declassified documents establish that he was very much in control of his administration, and his ranking by historians has risen accordingly.

Ike, a nickname he obtained as a child, was born at Denison, Texas, the third son of hardworking Mennonite parents. The following year, the family moved to his beloved Abilene, Kansas, where he experienced an idyllic small-town childhood among sturdy mid-western farmers and shopkeepers.

Admitted to West Point in 1911, he was successful at football until sidelined by a knee injury. He graduated in 1915 and won recognition for his wartime training skills during WORLD WAR I. In the 1920s, he served in the Panama Canal Zone before graduating first in his class from the prestigious Army War College in 1926, and went to France to prepare a study of the World War I battlefields, there gaining invaluable knowledge of the European terrain. In the 1930s, he joined the staff of the flamboyant General Douglas MACARTHUR in Washington and the Philippines. He was promoted to colonel and then major general in the early 1940s. At the start of World War II, he demonstrated superior organizational and war strategy skill as assistant chief of staff under army Chief of Staff George C. Marshall.

In June 1942, Eisenhower was named commander of American forces in Europe and thereafter placed in command of the Allies' offensive in North Africa. By June 6, 1944, he was Supreme Commander of the Allied expeditionary force landing at Normandy. During his planning and execution of the D-Day invasion, he showed political finesse in keeping his generals of various nations united in strategic purpose. "Ike" swiftly became a household word and America's greatest military hero of the war. After the liberation of Europe, as chief of staff, he directed the military occupation of GERMANY and demobilization, and then retired from the army as a five-star general in 1948. After a brief tenure as president of Columbia University, he agreed to assume supreme command of NATO forces at the request of President Harry TRUMAN in 1950.

As early as 1948, leaders from both major parties tired to induce Eisenhower to run for the presidency under their banner. Even Truman made an effort on behalf of the Democrats, but Ike determined that he was a Republican. He thought the Democrats too weak in containing international communism and agreed with the Republicans' traditional view of limited government. He also wanted to save the GOP from its isolationist wing. Furthermore, the Republican Party had lost five consecutive presidential elections, causing some to fear for the viability of the two-party system.

After outmaneuvering conservative Senator Robert Taft, he was nominated on the first ballot at the Republican National Convention. With his popularity, larger-than-life persona, the slogan "I like Ike," and effective use of the new medium of television, Eisenhower and his running mate, Richard NIXON, defeated the cerebral Democratic nominee Adlai Stevenson with 442 electoral votes to 89. Four years later, he would trounce Stevenson again with an electoral total of 457 to 73.

Throughout the 1950s, as polls repeatedly indicated, the president, and government in general, enjoyed especially high levels of trust. Elvis Presley and Ike became the positive and popular personifications of the era. This popularity resulted partly from Eisenhower's reassuring, fatherly presence in the nervous, early years of the Cold War. Nevertheless, his personal popularity did not translate into Republican victories in congressional races. The Democrats took control of Congress in 1954, holding it for the rest of his presidency and beyond. Yet despite divided government, Eisenhower's domestic and economic achievements were substantial.

Although an economic conservative, who signed three balanced budgets, Eisenhower was a pragmatist in domestic matters. Therefore, even though favoring private enterprise involvement over solely government-run government projects, he accepted Franklin ROOSEVELT's NEW DEAL programs as here to stay.

However, he demanded efficiency and military-style responsiveness and accountability from officials and agencies. On the legislative front, be obtained pro-business tax reform, was the first president to give air and water pollution serious attention, expanded social security and unemployment coverage, passed a school building program, and created the federal interstate highway system, an unprecedented and massive construction project of incalculable and perpetual benefit for the economy. During his administration, American productivity increased almost 25 percent, family income went up 15 percent, credit was easily obtainable, and consumer spending was heavy. Hence, the president's chief economic concern was not economic growth, but keeping inflation in check. Like Franklin Roosevelt, he preferred to deal with cyclical business downturns with economic stimulus measures.

Although criticized by some historians for not placing civil rights high on his agenda, in 1954, he decisively sent federal troops to Little Rock, Arkansas, to enforce court-ordered desegregation of public schools. In 1957, he approved the first civil rights measure to be passed by Congress in 82 years and secured adoption of the Civil Rights Act of 1960, that provided for sanctions against officials who hindered the registration and voting of African-Americans. Although faulted for not openly confronting Joseph McCarthy, a demagogic Wisconsin senator leading a witch-hunt against communism in America, Eisenhower correctly predicted that McCarthy would self-destruct, and worked behind the scenes to discredit the senator. He eventually directed executive branch officials not to cooperate with McCarthy's congressional investigations.

Under Eisenhower, the United States aggressively promoted democracy and capitalism around the world, both overtly and covertly. He increased civil and military foreign aid, actively participated in the UNITED NATIONS, worked to prevent nuclear proliferation, and traveled the world extensively. He ended the fighting in Korea, and strove to reach arms control agreements with the SOVIET UNION, until his efforts at détente were derailed in 1960 by the downing of an American U-2 spy plane over Soviet territory. Eisenhower boldly forced a ceasefire during the Suez crisis, resulting in preservation of Egyptian nationalization of the canal. Although keeping a strong defense, as he left the presidency, he warned Americans of the dangers of "unwarranted influence, whether sought or unsought, by the military-industrial complex."

Eisenhower retired to Gettysburg, Pennsylvania, with his wife Mamie. After a long history of heart problems, he died and was laid to rest in a chapel next to his boyhood home in Abilene. Justice William O. Douglas wrote: "His smile and simple frontier approach to complex problems made him as American as apple pie."

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El Paso Corporation

RANKED NUMBER 17 on the 2002 Fortune 500 list of the largest global companies, the El Paso Corporation was North America's leading provider of natural gas and related services.

The company was founded in 1928 by Houston attorney Paul Kayser to supply fuel to El Paso, Texas. Initially, El Paso Natural Gas (as the company was then known) concentrated on natural gas delivery via pipelines until 1947, when their customer base ranged from California to West Virginia. After expanding into hydrocarbon production and oil refinery, El Paso Corporation focused on fuel transportation in the 1980s and aggressively pursued partnerships with and acquisitions of competing natural gas corporations in 1996. Also during this time, El Paso largely concentrated on energy trading, both domestically and overseas.

2002 was a troubled year for the El Paso Corporation. After El Paso's stock collapsed, dropping in value from $45 to $7 per share, the company was sued by Oscar Wyatt, founder of the 2000 El Paso-acquired oil company Coastal Corp. Among Wyatt's suit claims are that El Paso artificially inflated its revenues with bogus energy trades. El Paso was also under investigation by the SECURITIES & EXCHANGE COMMISSION (SEC), the Federal Energy Regulatory Commission, and a federal grand jury for illegal business practices in 2002–03.

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employee benefits

IN MODERN MARKET ECONOMIES the total compensation that workers receive often significantly exceeds their wage or salary payments. This additional compensation is generally called "fringe benefits." In the UNITED STATES, fringe benefit payments largely consist of four kinds of benefits. One important category is government-mandated benefits such as Social Security, unemployment payments, and workers' compensation for on-the-job injuries. In addition, fringe benefits include a range of private benefit categories, the three most important being retirement plans, insurance (medical, dental, life), and paid time off from work (vacations, holidays, sick leave).

These four general categories each represent between 6.1 percent and 6.5 percent of total worker compensation. Today, the average yearly cost of fringe benefits to employers is approximately $15,000 per person that represents roughly 27 percent of total wage and salary compensation in the United States. The proportion of fringe benefits relative to total compensation varies greatly across industries and occupations. For example, the fringe benefit proportion is larger in high-paying relative to low-paying industries, in goods-producing relative to service industries, and blue-collar relative to white-collar occupations.

In any discussion of worker compensation a basic question that arises is why do workers choose to take part of their compensation in the form of fringe benefits instead of a direct cash payment? Should not a rational worker prefer a cash payment of a dollar that can be spent as the worker sees fit rather than a dollar of, say, health insurance? The answer is that fringe benefits are the result of certain institutional features in the economy, in the American context the most important being the tax treatment of fringe benefit payments. Specifically, workers reap large tax advantages from fringe benefits because fringe-benefit payments are entirely untaxed.

Fringe benefits in lieu of wage payments also offer significant gains to employers. First, firms benefit because some employer tax liabilities rise with higher wage and salary payments. For example, every dollar saved in wages lowers an employer's Social Security taxes by 7.65 cents. In addition, fringe benefits such as private pensions and health insurance help induce workers to stay with a firm, thus reducing employee turnover costs. Finally, employers generally receive lower rates on employee benefits such as health or life insurance due to scale economies.

Causes of fringe-benefit growth. Since WORLD WAR II, fringe benefits have increased significantly. In 1929, they represented less than 3 percent of total compensation, by 2003 they represented approximately 27 percent. The basic economic force driving this growth has been the growing tax advantages of fringe-benefit payments to both employees and employers. To begin, high inflation rates increasingly pushed wage earners into higher and higher tax brackets. For example, in 1961 only 10

For most Americans, the most important employee benefit (or fringe benefit) is employer-sponsored health insurance.

percent of taxpayers were in a tax bracket exceeding 22 percent but by 1979, this increased to more than 35 percent of taxpayers. Moreover, the Social Security payroll tax increased from 4 percent in 1955 to 15.3 percent by 1990. Finally, the costs to recruit and train new workers have risen steadily over time. All of the above factors have lowered the cost of fringe benefits to both employers and employees, and induced them to opt for a larger fraction of total compensation in the form of fringe-benefit payments.

The growing significance of fringe benefits has increasingly linked these benefits to important labor-market outcomes. During the 20th century, a dramatic change in U.S. labor supply occurred. The average workweek declined from approximately 53 hours in 1900, essentially a six-day workweek of nine hours per day, to approximately 38 hours by 1970. Most of the decline, however, occurred between 1900 and 1945 with a much slower decline in the postwar period. One likely explanation involves the large increase in fringe benefits in the form of paid time off for vacations, illness, and holidays. In brief, the apparent slowdown in the growth of leisure time may simply be a statistical artifact arising from the increasing gap between the number of paid hours of work and the actual hours of work. Specifically, before 1940 paid vacations and holidays were largely unheard of whereas by 1977, the average American worker enjoyed nine paid holidays and almost two weeks of paid vacation.

An even more fundamental economic question involving fringe benefits concerns one of the central tenets of neoclassical ECONOMIC THEORY. According to the neoclassical theory of distribution, the factors of production in a capitalist economy receive income payments equal to their (marginal) productivity. With respect to labor, neoclassical theory asserts that wages, meaning total labor compensation, will equal labor productivity. Or, in a dynamic context, the increases in worker productivity will result in proportionate increases in (inflation-adjusted) wages.

In recent years, however, many journalistic reports have appeared claiming that wages for American workers increasingly fail to correspond to worker productivity. For example, one widespread report in the popular press stated that between 1982 and 1995 worker productivity had increased over 21 percent, while wages (adjusted for inflation) had risen only 7.4 percent. Such comparisons are often seriously misleading for several reasons. First, sometimes an unrepresentative base year is used. Second, an accurate measure of real, or inflation-adjusted wages, requires use of an appropriate price index. A third key deficiency of many wage-productivity comparisons is the failure to account for fringe benefits as part of total labor compensation. Popular writers generally cite data on direct wage payments only, and often for a rather narrow class of labor such as "nonsupervisory manufacturing workers."

Some economists believe, when measured correctly over the long run, the growth rate of a broad measure of worker compensation (including all workers engaged in the business sector) and the growth of worker productivity shows these to be effectively equal, as predicted by neoclassical theory. Specifically, between 1950 and 1995, real hourly output of American workers rose 144.7 percent while real hourly compensation increased 144.2 percent.

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employment theory

SINCE THE MID-19TH CENTURY, the capitalist market economies have experienced significant economic growth. That is, over time production and income per person or household have risen. For example, from 1870 to the present, the UNITED STATES has experienced an average increase in per capita income of 1.8 percent per year.

Consequently, the bundle of goods and services that the average worker or family can buy today is more than 10 times higher than in 1870. The long-run rise in the standard of living, however, has not occurred without major fluctuations in production, incomes, and employment. Indeed, since 1870 the United States has experienced 10 significant decreases in the level of national production or GROSS DOMESTIC PRODUCT (GDP).

Severe downturns occurred in the early 1890s, in 1907, at the end of WORLD WAR I, and in the mid-1970s as a result of the world ENERGY crisis. Of course, the most severe downturn was the world-wide Great DEPRESSION of the 1930s. The United States entered the Great Depression in the fall of 1929 and by 1933, the level of U.S. national production had fallen by one-third and unemployment had risen up to 19 percent. The U.S. economy did not fully recover from the Great Depression until after WORLD WAR II. Clearly, the Great Depression was a horrendous waste of economic resources. Production, not undertaken because of idle factories and unemployed workers, is lost forever. Moreover, the Great Depression visited great personal costs on individual workers and their families because of increased poverty, ill health, alcoholism, marital strife, and divorce. Clearly, a precise understanding of the causes of economic downturns under capitalism is of great importance.

Causes of economic fluctuations. The causes of economic fluctuations in capitalist market economies and what potential government policies, if any, are capable of lessening their severity has long been one of the most controversial subjects in economic theory. Historically, economists, and others, have advanced many alternative theories to explain fluctuations in national production and employment. Some economists have argued that a capitalist economy has strong tendencies toward full employment unless struck by shocks such as wars and political instability. Others have argued that RECESSIONS (mild economic downturns) or depressions (severe economic downturns) are largely a monetary phenomenon created by an insufficient supply of money to support a full-employment level of national production. Economic historians have often focused on the impact of product innovations as a source of booms and busts in market economies. Included here are major technological innovations such as the steam engine, the RAILROAD, the harnessing of electricity as a power source, the AUTOMOBILE, and most recently, the telecommunications and COMPUTER revolutions.

Moreover, one prominent neoclassical economist, William Stanley JEVONS, suggested that economic fluctuations were largely related to the 11-year cycle of sunspots. The connection here is that sunspots, actually solar magnetic storms, were argued to have a major adverse effect on the earth's climate. In turn, the subsequent disruption of agricultural production was then argued to spread to the economy in general. Finally, many contemporary economists have stressed that recessions and depressions are largely linked to decreases in total spending in the economy (aggregate demand), especially from sharp declines in business investment spending (i.e., spending on production plants, machinery, and equipment) and/or spending on a country's exports.

Let us then turn to a concise description and evaluation of key theories of fluctuations in national production and employment. The historical evolution of employment theory is stressed here. In this regard, Stanley L. Brue and Jacob Oser note: "New scholarship in economics normally is connected to a previous body of thought, and while it may alter or transform the older tradition, it rarely replaces it."

Employment theory: the classical school. The father of the modern discipline of economics, Adam SMITH, was the leader of what has come to be called the classical school. Other prominent members of this 18th- and 19th-century school of thought include David RICARDO, Thomas MALTHUS, and John Stuart MILL. A fundamental belief of most classical economists was that a capitalist market economy would lead to a steady economic development and a rising level of national production and employment. In their view, a market economy has a strong tendency to fully employ all workers. In short, no tendency exists for involuntary unemployment.

The fundamental basis for this belief was known as SAY'S LAW of Markets. In essence, Say's Law asserts that "supply creates its own demand." In other words, every dollar of production generates a dollar of income to someone in the economy. Thus, there is always sufficient income created to buy whatever output is produced in a market economy. This is essentially true. But even some classical economists, for example, Malthus, were skeptical that Say's Law always ensured full employment. Does a dollar of income generated in some time period always result in a dollar of spending in that time period? Do not households and firms save a part of their income? Will not the leakage of saving out of the economy's income-expenditure stream imply that a dollar of production and income need not generate a dollar of effective demand, that is, spending in the marketplace? And if so, excess production and unemployment would result, certainly in the short run.

The classical school had two basic answers to the questions noted above. First, classical economists argued that both saving and business investment are largely determined by the INTEREST RATE and that changes in the interest rate will prevent any major deficiency in total spending (aggregate demand) in the economy. For example, assume that in a given year households begin to save more of their income. The increased supply of saving was asserted to cause the interest rate to fall. In turn, this would induce business firms to borrow these savings and increase their spending on plants and machinery. Consequently, it was believed that, via interest-rate adjustments, every dollar of saving would be injected back into the economy's income-expenditure stream in the form of business-investment spending.

Classical economists bolstered their arguments concerning full employment by asserting that if unemployment did emerge, such unemployment would be very brief. In their view, any surplus of labor (unemployment) would quickly cause wages to fall, thus inducing firms to hire all workers willing to work at the prevailing market wage.

Although the classical theory of employment was strongly challenged by many critics of capitalism during the 19th and early 20th centuries, it effectively remained the dominant view until undermined by the world-wide Great Depression and the elegant and rigorous presentation of a dramatically different theory of employment by British economist John Maynard KEYNES.

Employment theory: the Keynesian view. In his book *The General Theory of Employment, Interest, and Money* (1936), Keynes successfully challenged the classical orthodoxy and revolutionized thinking about the workings of the national (macro) economy. Keynes rejected Say's Law and the existence of the alleged automatic adjustment mechanisms.

First, he strongly challenged the view that saving and investment flows would be kept in balance by interest-rate adjustments. In essence, Keynes rejected the classical assumption that the interest rate was the primary determinant of both saving and business investment. Rather, he argued, the amount of household saving in a given year primarily depends on the household's current-year income.

On the other hand, the amount of business-investment spending in a given year depends largely on the many factors that influence the expected future profitability of new plants and machinery. Consequently, from this perspective there is no reason to believe that every dollar leaking out of the income-expenditure stream in the form of saving will be quickly returned in the form of business-investment spending. Moreover, Keynes argued that wage-cuts throughout the economy would fail to return the economy to full employment. Keynes argued here that classical theory was guilty of a basic logical error, namely, what is valid with respect to one firm in isolation may not be valid when applied to all firms across the economy. That is, if one firm faces falling wages, while prices and wages are stable across the economy, then the particular firm has a clear incentive to hire more workers. But if all firms experience falling wages, then firms in general will experience falling demand and prices for their products, and will have little or no incentive to hire additional workers.

Consequently, Keynes believed the classical theory to be fundamentally wrong. In essence, Keynes stood classical theory on its head. Instead of beginning with the idea that "supply creates its own demand," Keynes argued that the fundamental perspective should be that total spending in the economy (aggregate demand) determines supply, that is, the level of national production and employment in a given time period. Concomitantly, Keynes recognized that a fundamental assumption underpinning classical theory was the assumption of perfect wage-price flexibility in the economy. In the long run, this may be a good assumption. In the short run, however, and given the institutional and structural features of capitalist economies of the 1930s, Keynes argued that one should see wages and prices as more or less fixed. As a consequence, Keynes recognized that without price adjustments possible in the short run, changes in aggregate demand would lead to quantity adjustments in terms of production and employment.

Moreover, assuming a world of fixed prices, even small changes in aggregate demand would become magnified over time via what has become known as the Keynesian multiplier process. In brief, the logic of the Keynesian multiplier is as follows. An increase, say, in business investment of $10 billion will generate over time more than a $10 billion in increase in aggregate demand and national production. Why? $10 billion more business-investment spending will increase aggregate demand and national production by $10 billion. This is the initial and direct result. But in an economy with unemployed resources and fixed prices and wages, the increase in national production is not limited to the $10 billion initial increase in business-investment spending. The increase of $10 billion in national production generates $10 billion more in income to resource suppliers throughout the economy. They, in turn, spend a fraction of the increase in income and save the remainder. The increase in consumer spending, however, again raises aggregate demand and national production, but by some fraction of the initial increase. And again, the increase in national production generates additional income and the process continues on. Of course, with the leakage of saving out of the income-expenditure stream at each round of the multiplier process, the process does not continue forever. However, Keynesian economists tend to believe that for every dollar increase in, say, business investment or government spending, aggregate demand and national production will be multiplied several times.

Likewise, a large multiplier effect suggests to them that a market economy will be extremely susceptible to downturns in aggregate demand, as even small decreases in business investment, consumer spending, and/or export spending will drive down national production substantially, leading to high unemployment. Since Keynesian economists believe there are no automatic adjustment mechanisms that will return the economy to full employment, it follows that the insufficiency of aggregate demand can and should be remedied by expansionary stabilization policies. The two basic stabilization policies are FISCAL POLICY (changes in government spending and taxes) and MONETARY POLICY (changes in the money supply). Keynesian economists have tended to strongly favor expansionary fiscal policy, in particular, increases in government expenditures.

Employment theory: monetarism and the new classical economics. Without a doubt, Keynesian economic theory has made a lasting contribution to understanding the causes of fluctuations in national production and employment. Nevertheless, changes in the structure and institutions of modern market economies as well as advances in economic research have led to significant modification of Keynesian theory.

Beginning in the early 1950s, a key competitor to Keynesian orthodoxy emerged.

Led by Professor Milton FRIEDMAN of the University of Chicago, this challenge to Keynesian economics came to be labeled MONETARISM. In 1976, Friedman was awarded the Nobel Prize in Economics, largely for his work in developing the modern quantity theory of money. In distinct contrast to Keynesian theory that tends to downplay the influence of changes in the money supply on aggregate demand, output, and prices, the modern quantity theory asserts a strong and direct link. Monetarists thus place much greater emphasis on monetary relative to fiscal policy as a stabilization policy instrument.

In addition, monetarists believe that Keynesian theory tends to greatly exaggerate the multiplier effect induced by expansionary fiscal policy via deficit financing. Monetarists maintain that there is a strong crowding-out effect that greatly reduces the size of the Keynesian multiplier. For example, assume that Congress increases government spending on public infrastructure and must finance this increased spending by borrowing. In turn, the increased borrowing by the government is asserted to raise the interest rate, thus depressing or crowding-out interest-sensitive business spending, as well as spending on houses and big-ticket consumer durables (e.g., cars). In theory, the presence of a crowding-out effect implies that the expansionary impact of, say, an increase in government spending is offset in whole or part.

Another line of monetarist attack is to argue that a market economy is much more stable than that predicted by Keynesian theory. Again, a key reason that Keynesian theory predicts a large multiplier effect is the assumption that households will spend a high proportion (i.e., 90 percent or more) of any change in their current-year income. Friedman and other economists (including Albert Ando and Franco MODIGLIANI) developed theories where consumer or household spending is related largely to a long-run measure of income labeled permanent or lifetime income. If, in fact, consumer expenditures are tied more to lifetime income, as opposed to current-year income, then changes in current-year income have greatly reduced impact on current-year consumer spending. In short, in such a world the strength of the multiplier process would be substantially reduced and fluctuations in business investment, export spending, and so on, would not result in major fluctuations in national production and employment.

Finally, since the mid-1970s a major new school of thought has asserted itself. This school is often labeled the new classical economics. Most new classical economists hold two fundamental views of the modern market economy. First, they assert that modern market economies such as the United States exhibit strong competition in most markets and that prices and wages are highly flexible, even over a very few years. Second, they tend to believe that economic agents—consumers, workers, managers, etc.—are rational and make their decisions about future values of economic variables by incorporating all available current and past information.

That is, economic agents are assumed to be much more forward-looking than assumed by previous theory that was grounded, often implicitly, on the idea that people formed their predictions of future economic variables by looking only at the past, what is called "adaptive expectations." The new theory, rational expectations theory, was developed by Nobel laureate Robert LUCAS of the University of Chicago. A key implication of new classical assumptions of highly flexible prices and rational expectations held by economic decision-makers is that the modern market economy adjusts much more rapidly to various kinds of shocks, economic or political. Consequently, the ability of public policies to improve the short-run performance of a market economy via active stabilization is viewed by new classical economists as greatly circumscribed.

Finally, in addition to the above theoretical considerations, most economists of whatever school recognize that major structural and institutional changes have occurred in market economies since the Great Depression. Many of the changes work to reduce the instability of a market economy. One major institutional change has been the growth of the modern welfare state. The modern welfare state has several features that, to a degree at least, automatically regulate aggregate demand, and in the process, tend to stabilize the economy. For example, assume that the economy begins to slide into a recession. As production and incomes fall, tax revenues from income, payroll, and sales taxes fall, thus supporting after-tax incomes. At the same time, rising unemployment results in a rise in unemployment insurance payments, food stamps, welfare assistance, and so on. Clearly, these so-called automatic stabilizers have greatly helped to lessen fluctuations in national production and employment.

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energy

FOSSIL FUELS—COAL, OIL, and natural gas—supply about 85 percent of primary energy consumption in the UNITED STATES. Coal provides approximately 54 percent of the U.S. electricity supply. Oil is used primarily for transportation fuels, but also for power production, for heat and as a feedstock for chemicals. The United States imports over half of the oil it uses. Natural gas (NG) is a relatively clean-burning fossil fuel, used mostly for space- and water-heating in buildings and running industrial processes. The new trend in small-scale, gas-turbine power plants has increased the demand for NG.

In the production of electricity, no new nuclear fission power plants have been built in the United States since the 1970s. Some plants were abandoned before startup, and others were taken out of production.

Renewable (naturally replenished) energy offers alternatives to both traditional fossil fuels and nuclear power. Biomass, solar, wind turbine, geothermal, hydroelectric, and hydrogen energy sources are among the many considered.

The rise of capitalism echoes the exponential rise in energy consumption, especially of electricity, in the United States.

The development of capitalism echoes the rise of energy business: The five largest oil companies operating today in the United States control roughly 61 percent of the domestic retail gasoline market, 47 percent of the domestic oil refinery market, and 41 percent of domestic oil exploration and production. The five corporations are: EXXON-MOBIL, BP Amoco-Arco, Chevron-Texaco, Phillips-Tosco, and Marathon. These five corporations control 15 percent of the world's oil production.

The structure of the petroleum industry, internal to the United States, has also been changing. Smaller companies have gained a larger role in the development of U.S. oil and gas resources. The share of production from non-majors (independent oil and gas producers, pipeline companies, foreign-based companies, and a variety of other companies) has been generally increasing since 1986. These smaller companies tend to drill smaller fields and have faster depletion rates than the majors. However, with access to advanced technologies, the smaller companies have been able to reduce their finding costs to levels comparable to those of the majors.

The U.S. NG pipeline network has grown extensively over the past decade to meet the increasing demand for NG as a fuel and for transportation of the commodity. In addition to physically expanding the network, the companies engaged in NG pipeline transportation have also transformed the ways in which they transact business, while being consolidated into a smaller number of corporate entities through mergers and acquisitions. While the U.S. NG pipeline industry has undergone a major restructuring during the past decade, it has not been fully deregulated. Although NG pipelines can no longer buy and sell gas, many aspects of their operations and business practices are still subject to regulatory oversight. For instance, the Federal Energy Regulatory Commission (FERC) still determines a company's rate-setting methods, sets rules on business practices, and has approval authority on the building of new pipelines and the expansion of existing ones. Pipelines that are not governed by the FERC are regulated by state authorities.

The upward growth trend in coal production began in 1961. The growth during the 1990s included a strike-related downturn in production in 1993, and regional contrasts in production patterns. From 1986 to 1997, coal production increased by 22 percent, while the number of operating coal mines in the country declined by 59 percent, from 4,424 in 1986 to 1,828 in 1997. Coal prices decreased by 45 percent in real dollar terms. Significant adaptations supporting these inter-related trends include: increased average mine size; shutting down less competitive properties; concentration of productive capacity among fewer, large companies; significant gains in coal industry productivity; and fiscal discipline imposed by vigorous competition.

The U.S. electric power industry is changing to be more competitive. In some states, retail electricity customers can now choose their electricity-generation (power production itself, not transmission and distribution) company. New computerized wholesale electricity-trading markets are now operating in many regions of the country. The number of independent power producers and power marketers competing in these new retail and wholesale power markets has increased substantially over the past few years. However, a power crisis in California in 2001 showed that there are some definite kinks in the operation of this new de-regulated industry.

The major energy-using economic sectors are industry, transportation, residential/commercial, and agriculture. Agriculture is generally small, 2 to 5 percent of total energy use. In industrialized countries, the "Big 3 Sectors" are about even. In developing countries, industry uses most of the energy. Worldwide, the distribution is approximately: industry 40 percent; transportation 20 percent; and residential/commercial 40 percent.

Energy production is not environmentally friendly. When fossil fuels and biomass energy sources are combusted, or oxidized, among the probable by-products are carbon dioxide, sulfur dioxide, and small particles. The first has been scientifically linked with global warming, and the second and third with respiratory ailments. Nuclear power plants, barring accidents, give off relatively little radioactivity. Spent nuclear fuel storage is a problem due to the high radioactivity and long half-lives of the elements. Large hydroelectric dams disrupt natural habitats downstream, and displace people in areas flooded to create huge artificial lakes. Geothermal steam may include contaminants. It is difficult to find noxious by-products of wind and solar energy.

Scientists are mostly in agreement that energy use is a contributor to the Greenhouse Effect, a term that refers to the rising temperature of the Earth's atmosphere. Due to greenhouse gases, the atmosphere absorbs more infrared energy than it re-radiates to space, resulting in a net increase in surface temperature. A small rise in temperature can induce many other changes, for example, in sea level, cloud cover and wind patterns.

Energy policy is often directed at: exploration for, and development of, energy resources; research on, and development of, technologies that produce or use energy products; economic incentives for adjusting energy-related behavior according to social priorities; and legal restrictions on the supply of, and/or demand for, energy.

In 2001, U.S. national energy policy contained the following actions: direct federal agencies to conserve energy use at their facilities, especially during periods of peak demand; increase funding for renewable energy and energy-efficiency research and development programs

Nuclear power plants producing electricity remain a controversial energy source in most Western countries.

that are performance-based and cost-shared; create an income tax credit for the purchase of hybrid and fuel-cell vehicles; extend the Department of Energy's "Energy Star" efficiency program to include schools, retail buildings, health-care facilities, and homes; fund the federal government's Intelligent Transportation Systems Program—the fuel cell-powered transit bus program, and the clean buses program; and provide a tax incentive and streamline regulations to accelerate the development of clean combined-heat-and-power technology.

The debate goes on as to whether energy is a "special" commodity, and as such, needs government intervention to have smoothly functioning markets. On the one hand, there are a federal Department of Energy and numerous regulatory agencies. On the other hand, many of the traditionally regulated markets are being opened up to competition. The best compromise will inevitably contain elements of both.

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Engel, Ernst (1821–96)

BORN IN DRESDEN, GERMANY, Ernst Engel received early training at a mining academy in Germany and, in 1847 went to study at the École des Mînes in Paris, FRANCE, where he came under the influence of Frédéric Le Play, one of the founding fathers of quantitative socioeconomic research. During a subsequent stay in BELGIUM, he became acquainted with Adolphe Quételet and was strongly impressed by his faith in the possibility of discovering quantitative social laws based on statistical regularities.

Upon his return to Germany, Engel took up statistics as a profession. He became director of the statistical bureaus of the Kingdom of Saxony (1850–58) and Prussia (from 1861 until his retirement in 1882) and taught statistics at the University of Berlin. He was also a co-founder of the Verein für Sozialpolitik, a research association set up in 1872 by a group of reform-minded social scientists, journalists, and public officials to promote empirical investigations of economic and social conditions. This institution has remained the leading association of economists in Germany until the present day.

Engel made a number of significant contributions to social science. He conducted the first empirical study of a demand curve. He pioneered the method of household expenditure diaries, evaluating the spending records of German housewives. In his little book of 1883, *The Economic Value of Man*, Engel defined what is now known as an equivalent measurement scale, to give appropriate weights to persons of different ages and sexes. In order to compare families of different sizes, he took the average consumption of an infant as unity and added a tenth for each year of growth until 20 years for females and 25 years for males. This unit of consumption was called a "quet" in honor of Quételet. Engel's methodology and substantive findings have influenced socioeconomic researchers from Lujo Brentano and Ferdinand Tönnies in Germany to Maurice Halbwachs in France and Carroll D. Wright in the United States.

Engel is best known for his studies of changes in expenditure patterns of households as incomes change. What is now called Engel's Law, first formulated in 1857, states that, with given tastes or preferences, the proportion of income spent on food diminishes as incomes increase. Based on a budget study of 153 Belgian families, Engel derived the following generalizations:

1. the percentage spent on food decreases as income rises
2. the percentage spent on housing stays about the same
3. the percentage spent on clothing stays the same (or increases)
4. the percentage spent on luxury items increases.

Income-expenditure curves of this sort are now called Engel Curves. From such curves it is possible to obtain income elasticities, showing the ratio of percentage change in expenditure on a consumption item to a percentage change in income.

Income-expenditure elasticities according to Engel's Law would be expected to be something like this: food – inelastic ($e < 1$); housing – unitary elastic ($e = 1$); clothing – unitary elastic ($e = 1$) or elastic ($e > 1$); and luxuries – elastic ($e > 1$).

If the quantity demanded increases proportionally with income (and the Engel Curve is upward-sloping), the good is a normal good. If demand rises proportionally more than income, the good is a luxury good. Otherwise (if the Engel Curve is downward-sloping), the good is an inferior (or necessary) good.

The economist Henrik Houthakker stated that, "Of all the empirical regularities observed in economic data, Engel's Law is probably the best established." In fact, numerous empirical studies carried out in many countries have found the percentage of expenditure for basic necessities of life decreasing, and that for all other consumption goods increasing, as income levels increase. The Law has attained importance in development economics. Poor countries spend much more of their GROSS DOMESTIC PRODUCT (GDP) on food than rich ones. While the proportion is around 10 percent in the United States, it can be over 50 percent in least-developed countries.

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Engels, Friedrich (1820–95)

A PHILOSOPHER AND SOCIOLOGIST, most well known as Karl MARX's faithful lifetime friend and ally, Friedrich Engels was born in Barmen as the eldest son of a successful German industrialist.

Engels' father was a well-to-do manufacturer and also a staunch Protestant. He tried to raise his son in the same creed, but young Engels showed his resilience very early. In his early 20s, he became a follower of the left wing of the Hegelian philosophy. His philosophical and political pamphlets were applauded in radical circles. He also wrote *Condition of the Working Classes in England* (1844), a credible piece of factual research nourished by direct observation and highly praised by Marx.

Engels met Marx in Paris, and the two men became close friends. Engels shared Marx's views on capitalism and after their first meeting he wrote that there was virtually "complete agreement in all theoretical fields." In 1846, socialists in England held a conference in London where they formed the Communist League. Engels attended as a delegate and took part in developing a strategy of action. In 1848, he and Marx wrote a pamphlet for the organization, the famous *Communist Manifesto*. In this brochure, Marx and Engels present their vision of history and social progress as driven by the "development of productive forces." At each stage of this development there are two main classes, defined by their relationship to the ownership of the means of production, whose struggle for economic and political power shapes social institutions and other non-economic parts of human life. The *Communist Manifesto* gives an account of the achievements of capitalism that is nothing short of glowing ("the bourgeoisie, during its rule of scarce one hundred years, has created more massive and more colossal productive forces than have all preceding generations together").

Marx and Engels go on to assert, however, that the very progress capitalism had achieved in freeing the development of productive forces from the fetters of the past, would lead to an increasing conflict between the bourgeoisie and proletariat. The proletariat, which in the dialectic vision of the class struggle is the progressive class under capitalism, the *Communist Manifesto* predicted, would win in this struggle and establish a new classless society with unlimited potential for economic development. Paradoxically, according to some experts, the prediction itself largely turned out to be true for advanced industrialized nations, although it happened without the proletarian revolution and in a way that was generally incompatible with the logic of class struggle envisioned by Marx and Engels.

After being expelled from several European countries for his involvement in the revolutionary movement, Marx finally settled in London in 1849 and had no source of income; Engels went back to work for his father in Germany in order to support Marx and his family. Engels continued his fairly successful business career together with revolutionary activities until 1869, when he retired from business to solely serve the cause of Marxist socialism for the rest of his life. His most significant work during these years until his death in 1895 was to edit and publish the two last volumes of *Capital* that Marx left unfinished. In particular, Engels was left to struggle with the so-called transformation problem between the first and the third volumes of *Capital*.

According to Marx's theory of surplus value, the basis for capitalist profits should be proportional to the amount of living labor employed. But in reality, more mechanized processes that employ more capital goods and less labor tend to earn the same rate of profit on total capital invested as do the less mechanized processes. This implies that surplus value is not a function of labor employed alone.

The solution, apparently outlined by Marx himself and refined and published by Engels, basically amounts to changing the logic of analysis in the first volume in favor of a different logic of analysis in the third volume. Engels' preoccupation with this problem might have been in part responsible for his not noticing new trends of thought in economics that had emerged by that time (in particular, he "did not notice" Alfred MARSHALL's *Principles of Economics* published in 1890). All this contributed to the increased isolation of Marxism and especially of its communist wing from subsequent progress in mainstream economics and social thought.

After the death of Marx in 1883, Engels, in his own words, had to play the first fiddle for the first time. He did it through his writings that suggested the "orthodox" ways of interpreting Marx and through advising numerous newly emerging Marxist groups in various countries. Sometimes Engels tried to serve as a moderating influence, raising his voice against extreme emphasis on revolutionary violence. He could not, however, prevent the message of Marx ending up as the basis for the Leninist-Stalinist orthodoxy, shaping some of the most oppressive totalitarian regimes of the 20th century. Engels died in 1895 long before it all happened, but his name, just as the name of Marx, cannot be disassociated from that tragic history.

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English Civil War

PART OF A LARGER STRUGGLE over the constitution of England's government, the English Civil War lasted from 1642 to 1649. The war was set against the background of the reigns of two Stuart kings, James I (1603–25) and Charles I (1625–49), who sought to expand the power of the English monarchy at the expense of the Parliament.

Charles I wanted Parliament to approve the levying of taxes to pay for the increased costs of government and the King's foreign policy endeavors, that included a costly war with Spain. Parliament refused to agree to the increased taxes. In fact, in 1628 its lower body, the House of Commons, passed the Petition of Right, which made it illegal to enact taxes without the consent of Parliament.

Charles had no intention of granting so much power to Parliament, for he sought to govern according to the divine right of kings, whereby he viewed himself as responsible only to God for his actions. From 1629 to 1640, he refused to call another Parliament and set out to rule on his own, raising taxes on his own authority. The most noteworthy fiscal act was his extension of the collection of Ship Money, a form of revenue designed to pay for the country's navy and defense. Traditionally, this tax had been imposed on coastal ports involved in shipping. Charles began to collect Ship Money from across England, including towns and counties in the interior. His actions sparked opposition not only because of their economic impact, but also because they infringed on traditional local rights.

Charles' religious policies also alienated important segments of the population and eventually brought a further clash involving the issue of taxation. In the mid-1500s the Protestant Reformation began to challenge the Anglican Church, the national church of England, that no longer accepted the authority of the Pope of Rome but still maintained many traditional Roman Catholic rites and doctrines, including the authority of bishops.

These challenges came primarily from the Calvinist forms of the Protestant belief. Scotland adhered to a Calvinist reform called Presbyterianism (from the word *presbyter*, in this sense meaning minister or elder). Presbyterians generally sought to eliminate the role and power of bishops in the church. They also advocated a simpler ritual. In these ways any return to the Catholic or Anglican traditions—that maintained a strong role for bishops and more elaborate ritual—was a threat to the Calvinist reforms. England's Puritans shared such Calvinist beliefs with the Scottish Presbyterians; it is no accident that North America was colonized by many of these religious reformers in the 1600s as they sought liberty in the New World to build their lives according to their beliefs, free from the volatile mix of politics, religion, and war in 17th-century England and Scotland.

Charles' religious policies alienated the Presbyterians in Scotland as well as the Puritans in England, many of whom were gentry and members of Parliament. Although the Stuarts were a Scottish line of royalty, it must be remembered that the monarchs of Europe were intermarried and brought with them the influences not necessarily of the lands they ruled, but of the environment and family in which they were raised. Charles' grandmother, Mary Queen of Scots, had important family ties to French royalty and Catholicism. When Charles became king, his actions confirmed the fears of reformers that he wanted to suppress the influence of Puritans and Presbyterians.

Charles married Henrietta Maria, a Catholic and sister of King Louis XIII of FRANCE. Also, under Charles the leading bishop in England, the Archbishop of Canterbury, sought to introduce more ritual into church life. When Charles tried to impose the Anglican *Book of Common Prayer* on the Scottish Presbyterians, the Scots rebelled.

Charles needed more revenue in order to suppress this uprising; to do this he was compelled to convene another Parliament in 1640. This assembly, known as the "Long" Parliament because it lasted, in various forms, until 1660, did not support the king. In fact, it severely restricted his power and brought to a head the dispute over royal authority. The Long Parliament not only prohibited taxes that were imposed without its consent, but also abolished those taxes, such as Ship Money, that had been levied by the king alone. It also eliminated the Star Chamber (named because it convened in a room decorated with stars), which was a council set up by King Henry VII a century earlier, because it adjudicated without a jury and represented royal authority. The Parliament also passed the Triennial Act, which called for parliaments to meet at least once every three years with or without royal consent. The Long Parliament, however, became divided over religious policy when its more radical Puritan members sought to eliminate bishops from the church and to establish a Presbyterian order. When Charles tried to arrest the radicals, England found itself in civil war.

The Royalists (also called Cavaliers), supporters of the king, were opposed by the Parliamentarians (whom the Royalists derisively called Roundheads because of the short hair that they wore). The Parliamentarians were victorious in the first phase of the war, which lasted from 1642 to 1646. They were aided by Scotland, which supported the Calvinist cause. Moreover, in 1645 the Parliamentarians created what is known as the New Model Army, which fought with a religious zeal driven by the radical Puritans. King Charles surrendered to the

Parliamentarians in 1646, but a new phase of the war began in 1648 when Charles escaped.

That same year Charles was captured again. The Parliamentarians' leader Oliver Cromwell (1599–1658), dismissed all but 53 members of the House of Commons (it had begun in 1640 with about 500), leaving what is known as the Rump Parliament. Cromwell, a Puritan and a member of the Long Parliament, was the head of a mounted regiment that he had formed (called the Ironsides) and a leader of the New Model Army. The dismissal purged Parliament of the more conservative Presbyterians, who wanted to establish a state church, in favor of the more radical Independents, who helped institute a policy of religious toleration for all—except for Unitarians, atheists, Roman Catholics, and staunch Anglicans.

The Rump Parliament tried and convicted the king of treason, beheading him on January 30, 1649. Even by 17th-century standards of violence and punishment, this was a shocking step to many people in Europe, for the members of the Rump Parliament had become regicides. The original dispute over royal power reached a conclusion that suppressed the power of kings completely: in 1649, Cromwell proclaimed the creation of an English republic, or Commonwealth, with himself as Lord Protector. The Commonwealth ruled on the basis of the Instrument of Government, the only time that England has had a written constitution. Cromwell found it difficult to rule, and the one-time defender of the rights of Parliament dispersed the remaining Rump Parliament in 1653. Thereafter, he ruled not through cooperation with the gentry, but as a dictator by military force.

The policies of religious toleration and the unprecedented involvement of common people in English political life aided the emergence of a variety of groups, many of which Cromwell suppressed. The most well-known groups were the Diggers (who repudiated private ownership of property and occupied common lands), the Levellers (who advocated a democratic republic, a written constitution, and a natural right to suffrage), the Fifth Monarchy Men (an extremist millenarian sect), and the Quakers. Cromwell died in 1658, naming his son as his successor. But England wearied of the arbitrariness of rule under the Commonwealth, and restored the monarchy in 1660 when Charles' son, Charles II, took the throne after an 11-year exile.

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ENI

THE ENTE NAZIONALE IDROCARBURI (National Hydrocarbon Board) was established in 1953 to promote and develop ITALY's energy sector at a time when the country was completely unable to satisfy the increasing demand. Under the direction of Enrico Mattei (1906–62), ENI created new forms of contracts designed to improve the relationships between Italy and countries producing oil. These innovative contracts allowed local governments to participate more significantly in the management of oil concessions, leading to the producers' complete control of their resources.

Because of his views on the producers' role, Mattei often clashed with big corporations such as Esso (now ExxonMobil) and Shell and his death remains one of many Italian business mysteries. In addition to this foreign action, Mattei successfully persuaded Italy's industry to convert to natural gas since this was the country's main source of energy. ENI's PRIVATIZATION began in 1995, and approximately 70 percent of the company's activities now comprise international markets. In 2002, ENI ranked as the 71st largest company in the world with more than $44 billion in revenue.

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Enron

FORMED IN 1985, ENRON WAS the result of the merging of Houston Natural Gas and InterNorth. At the time of merger, the primary business of the newly formed company was the distribution of natural gas through interstate pipelines. The company experienced a phenomenal growth as a result of its expansion into electricity production and distribution, and trading commodities globally. In December 2001, the company filed for bankruptcy under Chapter 11 (reorganization) so that it could be protected from creditors' claims.

In just 15 years, Enron grew from nowhere to be America's seventh largest company, employing 21,000 people in more than 40 countries. At its peak, Enron's worth was estimated at about $70 billion and its shares traded at $90 per share. Enron's bankruptcy has been described as the second largest bankruptcy in the world history (after WorldCom). The rise and fall of Enron attracted widespread attention from academics, news media, stock exchanges, and regulatory agencies including the SECURITIES AND EXCHANGE COMMISSION (SEC), lawmakers, and also from the general public. What went wrong? What lessons can be learned and what are its implications on securities laws, accounting practices, campaign contributions reforms, and lobbying practices? Enron's story is now included as a topic of discussion in the auditing classes required for undergraduate and graduate level accounting students at many business schools throughout the country.

After its formation in 1985, Enron continued to build power plants and operate gas lines, but it became better known for its unique and creative trading businesses. After energy deregulation, the profit margin for Enron decreased suddenly and it started looking for other businesses. First it started buying and selling gas and electricity futures. It then introduced a new concept in commodities trading business. It created new markets for such "new commodities" as broadcast time for advertisers, weather futures, and internet bandwidth.

In order to finance its expansion, the company needed money from stockholders as well as from creditors. Enron created other companies and then established over 12 partnerships with the newly created corporations. Using and manipulating the complicated accounting rules to its advantage, it was successful in hiding loans that were primarily meant for Enron but concealed through these partnerships. Using this "off balance sheets financing," Enron was successful in concealing these loans and related interest charges. Expenses were understated by not reporting them properly while revenues were overstated by including sales to companies related to Enron. Top management was paid excessive salaries, bonuses, and other benefits. The problems resulting from its aggressive accounting practices eventually started to surface.

In October 2001, Enron reported its first quarterly loss in four years. In November 2001, it admitted to have overstated its earnings back to 1997 by about $600 million. Shares prices plunged to $4 per share, and its bonds that were issued to creditors officially became junk. On December 2, 2001, Enron applied for bankruptcy protection.

In the middle of all this, its auditors, Arthur Anderson, came under tremendous criticism from shareholders and employees of the company as well as from media, governmental, and regulatory agencies. They all wondered why the auditors did not catch this wrongdoing? The U.S. Justice Department charged Anderson for not following the Generally Accepted Auditing Standards and obstructing justice. The obstruction of justice charge mainly resulted from shredding the important audit-related documents after a court subpoenaed them.

The thousands of shareholders who saw their investment value drain down to zero are the primary people affected by Enron's collapse. Then, there are the thousands of employees who not only lost their jobs, but also saw the value of their pension funds plunge, as most of them had a significant portion of their retirement funds invested in Enron's stock. Other victims of Enron include financial institutions that lent money to the company; bondholders who loaned money to the company hoping to receive a decent return on their loans; the accounting profession, whose public credibility was damaged; and the stock market in general, because public trust in financial reporting was jeopardized.

As a result of the Enron situation, as well as other companies in similar straits, many accounting reforms were instituted both by the accounting profession as well as by lawmakers. In January 2002, the Sarbanes-Oxley Act, designed to raise standards of corporate accountability and prevent wrongdoing, was passed by the U.S. Congress.

The Act restricts consulting work that auditors perform for their publicly traded audit clients. It enforces new quality standards for the auditing firms and addresses such issues as the independence of the auditor, conflict of interest, and reinforces a public company's audit committees.

The 2002 law also requires a public company to assume more responsibility for the numbers in financial reports. It requires the CHIEF EXECUTIVE OFFICER (CEO) and the CHIEF FINANCIAL OFFICER (CFO) of these companies to attach a statement with the financial statements certifying the appropriateness of the financial statements and disclosures contained in the financial and reports submitted by them. It also embodies such issues as personal loans to officers, insider trading, etc.

Finally, the Sarbanes-Oxley Act imposes severe penalties in the case of misrepresentations and material inaccuracies included in financial and other reports.

The American Institute of Certified Public Accountants has issued exposure drafts of seven new auditing standards and invited discussion on them. Furthermore, on January 22, 2003, the SEC approved rules to implement the independence of auditors and other provisions of Sarbanes-Oxley Act.

Enron's financial calamity has had longer-term effects as well: Investors, in general, are expected to be more cautious and diligent about investing in any company, and to do the necessary analysis, research, and other homework before making their investment decisions.

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enterprise

PERHAPS DESCRIBED AS entrepreneurial projects that redirect human activity, enterprises take place within markets and organizations. ENTREPRENEURs undertake enterprises to replace existing states of affairs that they perceive with preferred alternatives that they imagine. Planning an enterprise means deciding between different means to achieve preferred ends. Such PLANNING takes place among many people, each with their own plans, and within existing institutions. The undertaking of an enterprise, in turn, alters the environment that it enters.

There are two main types of economic enterprises. Free market, or private enterprise aims toward profit through voluntary trade. Political enterprises make use of governmental agencies to affect wealth transfers. These two different types of enterprise yield distinct results, for those who implement and react to entrepreneurial action.

The planning of an enterprise takes place in four steps. Entrepreneurs gather data, perform calculations of value, execute their plans, and monitor results to detect and correct errors. The simultaneous coordination of many different plans requires that each incorporate into their plans all relevant data from other plans. Entrepreneurs acquire data for their enterprises through COMPETITION, and while competition informs and leads to coordination, its self-serving nature leads some to doubt its desirability.

Though entrepreneurs conduct private enterprise to earn profit, they benefit consumers in the process. This notion might seem odd, but since entrepreneurs must attract consumers to gain market share, they will serve consumer interests as an unintended consequence of pursuing their own selfish ambitions. As Adam SMITH put it, "It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their advantages."

The price system. The free enterprise system enables many businesses to coordinate their activities among each other. The price system, under free enterprise, works as a communications network and to inform sellers what buyers want most and least. They also inform buyers which products draw upon scarce resources the most, and therefore require the greatest conservation. Excessively high prices leave businesses with too many products and too few customers. This puts pressure on businesses to cut prices.

Conversely, excessively low prices leave markets with too many buyers for too few products. This prompts entrepreneurs to increase prices. In competitive markets, price adjustments lead to the greatest number of feasible trades and improve the allocation of resources.

The free enterprise system enables the decentralized planning of production. Prices inform and coordinate the activities of many independent individuals. Through competition, the plans of many adjust into a coherent set of plans for production based on specialization and division of labor. Price and quantity adjustments in markets reflect the reactions of consumers and entrepreneurs to each other's actions. Self-serving behavior in competitive markets leads to the unintended consequence of cooperation in planning production. The obvious lure of profits and subtle workings of the competitive free enterprise system create a cooperative order throughout society.

Entrepreneurs improve economic efficiency by being alert to profit opportunities. They notice a lower-cost means of satisfying consumer demand can earn higher profits, at least temporarily. Absent barriers to implementing more efficient means, others will emulate these methods. This emulation increases competition, reduces prices, and drives profitability down to competitive levels. By noticing better ways of serving customers, alert entrepreneurs improve economic efficiency while earning profit.

Free enterprise is an adaptive and innovative system. Organizational, legal, product, and technological innovations alter the outcomes of production and commerce. By adopting more productive or lower-cost methods businesses increase their odds of surviving competition. Free enterprise works as a natural selection process to weed out inferior products, technologies, strategies, and institutions.

Evolution of enterprise. This selection process applies to the evolution of business organization. Organizational innovations work to reduce costs and increase productivity. Business organizations exist because the costs in using markets sometimes exceed administrative costs in business. Entrepreneurs can hire consultants and independent contractors out of markets, or can organize firms with regular employees. By hiring consultants and independent contractors, entrepreneurs save on the cost of monitoring regular employees. On the other hand, contracting for temporary specialists entails its own costs. As market conditions change, entrepreneurs continually adapt the organization of their businesses.

Much of the pressure for reforming businesses comes from financial markets. The corporate form of ownership enables owners to delegate responsibility to managers. This also poses an informational problem. Corporate officers can abuse their authority at the expense of shareholders. As CHIEF EXECUTIVE OFFICER of RJR Nabisco, Ross Johnson spent corporate money lavishly on himself and others in this company. His management resulted in a low stock price, and an opportunity to change the management. Johnson attempted a leveraged buyout, but failed. Had Johnson succeeded, he would have been saddled with a large debt load that would have restricted him from wasting company funds. The new owners did assume a massive debt load. The result of this buy-out was that ownership became more concentrated, and the financing of this ownership shifted to debt.

Private institutions evolve and adapt to minimize many kinds of problems. The financial structure and internal organization of business, integration of industry, and terms of legal contracts all change as market conditions change. If businesses have trouble contracting with each other across stages of production, they can integrate vertically or laterally. In addition to organizational innovations, private enterprise often generates technological and product innovation.

Innovative enterprises. Combinations of different types of innovations sometimes produce unusual enterprises that produce surprising results. Tom Bourland launched one example of an unusual enterprise as a wildlife manager for 1.2 million acres of land for International Paper (IP). Bourland founded the company's Wildlife and Recreation program and began charging fees to hunters and campers. Once IP began earning profit from this new source, it changed its methods for harvesting trees in ways that increased the animal population and better preserved forests. By noticing a profit opportunity, Bourland changed IP's business practices in a way that simultaneously increased profits and addressed the concerns of conservationalists.

Hugh Macrae established a private network of hiking trails on Grandfather Mountain in North Carolina. This enterprise began in 1885, and has continued for more than a century. Over time, some changes have come: Macrae's descendents widened a horse trail to permit access by cars. Some of the scenic and environmental properties of this area came under threat by a federal highway project promoted by Franklin Delano ROOSEVELT. The owners managed to alter these plans, to preserve the scenic and ecological properties of the land. Some people are quick to criticize entrepreneurial capitalism for promoting environmental degradation. It is important to note that business enterprise aims toward what people value. Since many do value natural scenes and ecology, enterprises can earn profits in preserving nature.

John David ROCKEFELLER revolutionized the energy industry with a series of technological and organizational innovations. During the 19th century, many people used whale-oil lamps for light. Rockefeller set up kerosene refineries that provided a cheaper source of light for consumers, and also averted the imminent extinction of whales.

Rockefeller competed aggressively for market share and entered the kerosene market faced with a selling price of over $1 per gallon. Through vigorous competition, he pushed this price down by 90 percent, and earned a fortune for himself in the process. He was able to reduce his prices because innovations reduced his average costs from 3 cents to 0.29 cents per gallon. Rockefeller reduced his costs in many ways; one was to produce products he needed within his own organization whenever outsiders charged too much. Rockefeller built his own barrels, self-insured his business, and installed plumbing using people inside his own organization. Rockefeller also negotiated low rail rates for shipping his oil and bought out competitors. By buying out competitors, he ended inefficient procedures in these companies, and integrated their more cost-effective practices into his own.

Political enterprises. Political enterprises also aim toward profit and alter the economic environment. Political entrepreneurs lobby the government for income transfers, and there are many ways of affecting such transfers.

So long as new sellers can enter a market, incumbent sellers will lose market share if they raise prices above competitive levels. Legal entry barriers to a market are necessary for a single incumbent seller to sell as a monopolist, or several sellers to organize as and sell as a CARTEL. Legal entry barriers to markets enable entrepreneurs to raise prices and increase profits.

In a competitive political environment, entrepreneurs will bid away the expected gains from monopoly privilege. Such political enterprises not only reduce total market sales, they expend resources on a wasteful competition for special privileges.

The explicit purpose of antitrust laws is to reign in the excesses of private enterprise. Available data on industries initially accused of monopolistic pricing show that they increased output and reduced prices faster than in the rest of the economy. These companies acquired higher market share through superior efficiency and price-cutting, not through market power.

Antitrust laws have been used against companies that win market share through superior efficiency. ALCOA gained a high percentage of the primary market for aluminum. The judge in this case criticized ALCOA for doubling and redoubling its' capacity. The price of aluminum was $5 per pound in 1887, but fell to 50 cents in 1899, 38 cents in 1910, 22 cents in 1937, and 15 cents in 1941. Since output rose and prices fell in this market, it seems clear that ALCOA won market share through improved efficiency.

Entrepreneurs who fail in economic enterprises sometimes turn to seeking profit through political enterprise. Since political enterprises often restrict competition, raise prices, and lower output, it is often at odds with economic enterprises.

Other methods of transferring include lobbying for subsidies or regulations and initiating lawsuits. There may be circumstances that warrant transfers, but it is important to note that enterprises that transfer existing wealth do not create new wealth. Since all enterprises expend resources, purely redistributive enterprises reduce total wealth.

Enterprise can be either productive or wasteful. Within the context of secure property rights and voluntary trade, private enterprise is a competitive and creative process that drives the evolution of organizations, products, and technology. In contrast, political enterprise is a process by which a privileged few benefit from restricted trade and forced transfers.

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entrepreneur

ALTHOUGH THE LATE 1990s cult of the business executive faded within a few years, the activities of entrepreneurs and their firms continue to represent a significant salient feature of modern capitalism in the eyes of even the casual observer of contemporary economic matters. Accordingly, it is somewhat puzzling for the beginning student of economics to find hardly any reference to entrepreneurship in an introductory textbook. This absence is due to the fact that the traditional analysis of markets emphasizes how firms choose their optimal course of action in response to a set of given and understood data. As William Baumol remarked more than three decades ago, the model describes the domain of business decision-making by reference to a class of well-defined problems "which need no entrepreneur for their solution."

The lack of emphasis on the role of entrepreneurship stems also from the practice of approaching the study of markets by focusing on the concept of perfect COMPETITION. While this is an important intellectual exercise, the realities of modern capitalist economies cannot be assimilated to the perfectly competitive economy of the textbook variety. Accounts of the defining institutional features of capitalist market economies and of the latter's long-term economic performance have to be sought elsewhere. Any historical or institutional account of the successes of capitalistic economies will pay only scant attention to the efficiency of perfectly competitive markets, and place entrepreneurs at or near center stage, delving into the transformations wrought on production and business activities by innovative firms over the last two centuries or so.

It will focus on factors like the dramatic changes in the market for automobiles that resulted from the strategy pursued by Henry FORD, or the concert of industrial and financial tactics adopted by the robber barons who dominated American capitalism at the end of the 19th century. Rather than illustrating the good deeds of Adam SMITH's invisible hand guiding the market economy, these accounts will detail the good and bad deeds of many visible hands, pursuing their own interests, propelling industries forward, and resisting adverse changes. These visible hands capture the role of entrepreneurship under capitalism.

Entrepreneurs and capitalism. The concept of entrepreneurship is central to accounts of capitalist development that emphasize its revolutionary nature and the pervasive impact of change on economic decisions. In this connection, entrepreneurship ought to be distinguished on a conceptual level from management or administration. The distinctive feature of entrepreneurial activity is that it focuses on carrying out something new and untried, on being first to exploit a possibly fleeting opportunity for personal gain. On the contrary, administration is concerned with the management of known and predictable processes, whose ends and means are well understood. Furthermore, it would be a mistake to identify the entrepreneur with the owner of the resources that are mobilized in order to carry out the entrepreneurial activity.

The requirement that entrepreneurial acts be distinguished by an element of novelty carries the implication that their outcome cannot be predicted reliably. Accordingly, it is common to characterize the entrepreneur as an individual bearing a risk of a rather special quality of his or her own volition, a conduct that is motivated by the expectation of personal gain. Within the context of business activities, entrepreneurship manifests itself in a variety of guises, including but not limited to the introduction of new products or new organizational practices.

Inasmuch as the lure of personal profit is the relevant inducement, it follows clearly that although customarily associated with the conduct of business, entrepreneurship can be exercised in any domain of human activity where novel opportunities for profit can be identified and pursued. Instances of these opportunities are the potential profits from arbitrage created by changes in prices for goods at different locations. Accordingly, an entrepreneur could benefit from his or her knowledge of such opportunities by buying goods at the low-price location and selling goods at the high-price location (note that these actions will reduce future arbitrage profits by reducing the price differential).

The role of the entrepreneur. The early analysis of capitalist market economies by the likes of Smith and other 19th-century economists clearly accounted for the profit motive of business, but their concept of entrepreneur or undertaker was typically defined as the individual responsible for organizing production. While useful for distinguishing it from the owner of capital, this definition of entrepreneurship blurs into that of management, and unlike the modern usage of the term, it does not emphasize the innovative nature of entrepreneurial activities, or its risk. The role of the entrepreneur as innovator receives a more emphatic discussion in Karl MARX's analysis of capitalist development. Marx describes the capitalist's pursuit of increased surplus value as occurring through the introduction of improved methods of production. Successful innovation of this sort rewards the capitalist entrepreneur with an increase in profits, at least until the new method of production becomes commonplace among other capitalists in the trade.

The role of entrepreneurial activity in sustaining the change of capitalist production methods, receives a more thorough analysis in the work of Joseph A. SCHUMPETER, an Austrian economist whose admiration for the achievements of capitalism was overwhelmingly based on its ability to sustain economic change. He argued:

> Capitalism, then, is by nature a form or method of economic change and not only never is but never can be stationary. And this evolutionary character of the capitalist process is not merely due to the fact that economic life goes on in a social and natural environment which changes and by its change alters the data of economic action; this fact is important and these changes (wars, revolutions, and so on) often condition industrial change, but they are not its prime movers. The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers' goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates.

Entrepreneurs are identified by their function, described as "to reform or revolutionize the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way." Schumpeter clearly distinguishes the act of invention from that of innovation, the latter only being the province of the entrepreneur. While inventions could create unexploited opportunities for profiting from innovation, the inventor need not be either aware of them or capable of pursuing them effectively. On the other hand, the specialized focus of entrepreneurial activity is to scan the business environment for profit opportunities and to undertake the actions necessary to realize them. Accordingly, the successful entrepreneur primarily relies on his or her skills at acquiring and interpreting information and formulating conjectures about technological and market conditions. Further, a successful entrepreneur has to get things done and therefore needs personal qualities of leadership and self-confidence in order to overcome hurdles of different kinds.

An important element of Schumpeter's ideas is the belief that entrepreneurs carry out the important social function of promoting economic development even while pursuing innovative success for their own personal profit. Though the latter is largely the result of the monopolistic conditions created by innovation, Schumpeter understood these conditions to be temporary, and in any event a more desirable state of affairs from the viewpoint of social welfare than a world of perfect competition without innovation. The activities of imitators would progressively reduce the profits accruing to any innovator through the competitive mechanism, while subsequent innovations could recreate monopoly conditions, altering the structure of industries and forcing competitors to fight for their survival. The continuing efforts of entrepreneurs are therefore crucial for fueling the process of creative destruction that in Schumpeter's mind keeps the capitalist engine running.

In practice, Schumpeter observed a considerable change in the identity of the real-world actors who succeeded in carrying out the entrepreneurial function. While his early views on the matter underscore the individualistic nature of entrepreneurial activity, later in his life, Schumpeter witnessed the widespread rise to industrial dominance of large corporations whose innovative successes were increasingly based on continuing investment in research and development activities.

This development was part of broader organizational transformations in the nature of the business enterprises of modern capitalist systems. Small owner-managed firms had increasingly given way in industry after industry to firms whose activity was coordinated by hierarchies of professional managers, a transition that has been argued by Alfred Chandler to demarcate the end of the era of personal capitalism and the dawn of managerial capitalism. Differences among economists in the interpretation of these transformations focus on the social function of entrepreneurs and their future prospects.

Schumpeter interpreted the professionalization of business management as indicative that planning routines were beginning to encroach upon the domain of entrepreneurial activity and rapidly eroding its social value:

> For, on the one hand, it is much easier now than it has been in the past to do things that lie outside familiar routine—innovation itself is being reduced to routine. Technological progress is increasingly becoming the business of teams of trained specialists who turn out what is required and make it work in predictable ways. The romance of earlier commercial adventure is rapidly wearing away, because so many more things can be strictly calculated that had of old to be visualized in a flash of genius.

Schumpeter predicted, then, that entrepreneurs would soon cease to be necessary to keep the capitalist engine running. Furthermore, he associated the declining importance of entrepreneurial activity with the demise of capitalism itself as a form of economic change. Although coming to this conclusion from a rather different angle than Marx, Schumpeter predicted that capitalism would be supplanted by a socialist order dominated by large bureaucratic enterprises routinely pursuing innovation, whose management would become a matter of current administration. In spite of Schumpeter's erroneous predictions, attention should be called to the fact that he considered entrepreneurs to be an essential aspect of capitalist economies. Their pursuit of profit opportunities through innovation was the most important trait of competitive process in markets, a process that he considered to be a long distance from the textbook model of perfect competition.

Social value. Unlike Schumpeter, Thorstein VEBLEN reflected upon the transformation of industrial enterprise as sanctioning the subordination of the industrial activity (the machine process), whose commitment to the production of goods contributed to the social product, to the principles of business enterprise. The latter he considered to be directed to the accumulation of wealth as a result of arbitrage between purchase and sale prices. The subordination of industrial firms to the principles of business realized by the large corporations propelled the businessman or entrepreneur to a position of greater control over the economic welfare of the community. Contrary to Schumpeter's belief in the social value of the entrepreneurial function, Veblen characterizes the relationship between the interests of the entrepreneur and that of the community's welfare as antagonistic:

> The economic welfare of the community at large is best served by a facile and uninterrupted interplay of the various processes which make up the industrial system at large; but the pecuniary interests of the businessmen in whose hands lies the discretion in the matter are not necessarily best served by an unbroken maintenance of the industrial balance. Especially is this true as regards those greater businessmen whose interests are very extensive.

Furthermore, contrary to Schumpeter, who regarded the changes in industrial activity wrought by innovative entrepreneurs to actuate a socially beneficial process of creative destruction, Veblen considered the changes incidental to the businessman's pursuit of his own pecuniary gain to be on the whole hostile to the interests of the community:

> To the businessman who aims at a differential gain arising out of interstitial adjustments or disturbances of the industrial system, it is not a material question whether his operations have an immediate furthering or hindering effect upon the system at large. The end is pecuniary gain, the means is disturbance of the industrial system. . . . His gains (or losses) are related to the magnitude of the disturbances that take place, rather than to their bearing upon the welfare of the community.

The outcome of this management of industrial affairs through pecuniary transactions, therefore, has been to dissociate the interests of those men who exercise the discretion from the interests of the community.

Neither the growing size of the corporate enterprise of the early 20th century, nor its progressive bureaucratization led American economist Frank KNIGHT to believe that the scope for entrepreneurial activity, and its economic and social value, were waning. Knight considered entrepreneurship to be primarily concerned with decision-making under conditions of uncertainty that make the task of predicting the consequences of business actions especially difficult. The transformation of business firms could be interpreted accordingly as the evolution of social arrangements for dealing with the presence of business risk, a risk associated with "the exercise of judgment in the making of decisions by the business man," that is, to entrepreneurial activity.

Whereas insurance firms can achieve predictability of outcomes by pooling independent risks, business risks weighing on the prospects of an enterprise cannot be so reduced according to Knight because of the MORAL HAZARD involved in insuring an entrepreneur against the consequences of the exercise of his own judgment.

Knight perceives the entrepreneur himself to be the party who can best undertake the pooling of business risks associated with his own judgment by expanding his control over an increasing range of decisions. Thus, instead of reducing the scope for entrepreneurial decision-making, the large enterprise provides the institutional vehicle for increasing the scope of operations and the range of decisions placed under the control of a single entrepreneur.

In Knight's view, the emergence of corporations controlled by entrepreneurial managers represents an effective institutional response to the presence of uncertainty in economic affairs. Drawing an important distinction between quantifiable risk and uncertainty, he argues that uncertainty thus exerts a fourfold tendency to select men and specialize functions:

1. an adaptation of men to occupations on the basis of kind of knowledge and judgment
2. a similar selection on the basis of degree of foresight, for some lines of activity call for this endowment in a very different degree from others
3. a specialization within productive groups, the individuals with superior managerial ability (foresight and capacity of ruling others) being placed in control of the group and the others working under their direction
4. those with confidence in their judgment and disposition to "back it up" in action specialize in risk taking.

These selection forces and the specialization of productive roles manifest themselves in the emergence of managerial entrepreneurs who specialize in the exercise of judgment and the taking of the attendant business risks. The difference between Schumpeter's and Knight's positions on the future of entrepreneurship hinged on the question of whether or not innovation would become routinized as a result of the growth of large industrial enterprises. The subsequent history of capitalist economies has sided with Knight on this matter. Entrepreneurship continues to play an important role in fostering innovation and there is hardly any evidence to support the notion that innovation has been routinized.

The fallacy of the Schumpeterian prophecy is likely due to his unnecessarily belittling view of planning activities and his underlying assumption that the growing sophistication of scientific and technological knowledge would have eliminated uncertainty from the business decisions that are the realm of entrepreneurial activity. Schumpeter conjures up a historical path of development along which the uncertainty surrounding economic decisions, which promotes and rewards entrepreneurial activity in the capitalist stage, will slowly vanish. As human knowledge, particularly scientific and technological, accumulates and reduces the impact of uncertainty on economic organization, business decisions become increasingly of the planning variety, heralding the beginning of a socialist stage of economic development.

In contrast to the Schumpeterian view, the Austrian economist Friedrich von HAYEK regarded planning as an activity requiring continuous adaptations to unpredictable changes in economic conditions. How effectively these adaptations will be made is at once an important determinant of social welfare and an important outcome of the economic organization of society, a central concern for Hayek and for the AUSTRIAN SCHOOL economists, more generally. From this vantage point, Hayek judged the decentralized decision-making typical of a market economy to be an effective organizational principle because each individual is motivated by the incentive of personal gain to behave in ways that foster efficient adaptations of society's economic plan to changes in economic conditions.

The gist of this invisible-hand-like argument is that changes in economic conditions have two kinds of consequences. First, they require that the economy-wide allocation of resources be adapted. Second, they create profit opportunities for those individuals who learn about the changes in economic conditions before the relevant adaptations have occurred. Since knowledge about changes is fragmented among many individuals and across different locations, decentralized decision-making induces the better-informed individuals to act in entrepreneurial fashion upon the emerging opportunities for profits. By doing so, they foster the efficient adaptations in the allocation of resources. Therefore, a fundamental aspect of entrepreneurship is the identification and exploitation of profit opportunities on the basis of superior knowledge.

Decision-making. If economic change and the fragmentation of knowledge about it are the basis for entrepreneurial decision-making, there is no reason to confine the latter's domain to technological or organizational innovation, or even just to business activity. Borrowing Geoffrey Hodgson's words (*Economics and Evolution*, 1994), Hayek's "molecular view of the modern economy in terms of entrepreneurial individuals" who exercise their judgment for the pursuit of personal gain, suggests that the institutional structure of the economy plays a critical role in determining the domain of entrepreneurship in different societies or at different times in history.

By recognizing the variety of purposes to which entrepreneurial judgment can be directed, these views are remarkably sophisticated and of phenomenal interest for anyone interested in interpreting and understanding the role of entrepreneurship in the contemporary organization of industry.

Entrepreneurs are "persons who are ingenious and creative in finding ways that add to their own wealth, power, and prestige," whose activities cannot be automatically considered as performing a valuable social function. Although the Schumpeterian view emphasizes the productive value of entrepreneurial activities aimed at the introduction of new technologies or new organizational practices, or the opening up of new markets, and so on, entrepreneurial judgment and efforts can be directed to individually profitable activities that are unproductive or even destructive of social value, as Veblen noticed at the dawn of the 20th century. The potential for conflict between the motives of individual entrepreneurs and broader social economic goals affects different societies in varying degrees and with different outcomes, as social, political, and economic institutions determine whether and how that potential is transformed into actual conflict. Thus, while in some countries the problem of unproductive and destructive entrepreneurship resurfaces only from time to time, and with relatively modest effects on social well being, in others it is endemic and plays an important role in explaining their difficulties in experiencing sustained economic development.

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equilibrium, partial/general

EQUILIBRIUM, ACCORDING TO Webster's *New Twentieth Century Dictionary*, is defined as "an even balance." In economics, this refers to a balancing between the desire of consumers to pay lower prices and producers to receive higher prices for various quantities of goods and services.

In a single market, say the unleaded 87-octane gasoline market, the quantity level at which consumers are willing to pay what producers will accept is an equilibrium quantity level. The price at which this happens is an equilibrium price. The equilibrium is called a partial equilibrium because the influences of the variables in all other markets are neutralized.

When equilibrium happens in all markets for goods and services simultaneously, it is called a general equilibrium. The variables in each market affect the activity in all markets. Economists have labored long and hard to show the existence and stability of both partial and general equilibrium under various simplifying assumptions. General equilibrium is the truer picture, but it is more difficult to specify and numerically compute. While this is true at a single point in time, the difficulty increases further when equilibrium systems are tracked over time.

General equilibrium. General equilibrium (hereafter, GE) analysis tries to give an understanding of the economy as a whole using a microeconomic or bottom-up approach. It starts with individual buyers and sellers in each particular market. GE models typically represent a collection of different goods and services markets, each good and service defined by a fixed level of quality. In a free-market economy, the prices and quantities of all goods and services are related to each other, albeit by decentralized decisions. Determining the equilibrium price-quantity pair of any one good or service would require information on the prices and quantities of all of the thousands of different goods and services that are available. A daunting task, to put it mildly.

Adam SMITH (1723–1790), a Scottish philosopher and the "father" of modern economics, portrayed an implicit GE framework in *The Wealth of Nations*: individuals, in pursuing their own self-interests, will generate the maximum general welfare of society as if guided by an invisible hand.

Leon WALRAS (1834–1910), a French engineer-economist, is widely regarded as the "father" of formal GE theory. He showed that under certain restrictive assumptions, the equilibrium prices and quantities for all goods and services in an economy could conceptually be determined as the solution to a series of simultaneous equations. Walras set forth the (then) new marginalist or neoclassical theory in a formal GE setting. The innovation of the approach to GE theory of the Belgium-born, Italian engineer-economist-sociologist, Vilfredo Pareto (1848–1923), was its focus on individual optimizing behavior in a price-taking, multi-market framework. He also discussed the social efficiency that results from independent decentralized decision making. Pareto justified the price-taking aspect of the theory on the basis of the impossibility of market manipulation by any individual, in a sufficiently complex economy. Mathematically, however, Pareto assumed that the functions involved were differentiable. Differentiability means that the analyst is able to compute the first (slope) and second (slope of the slope) derivatives of these functions. The Paretian model differs from the Walrasian model in that the "tastes-and-obstacles" structure of the former replaces the "demand-and-supply" functions of the latter.

Economics in the post-WORLD WAR II period retained the tastes-and-obstacles optimization structure of the Paretian system, but it essentially avoided its differentiability assumptions and effectively reproduced the same results without it. Seminal works of this period were those of Nobel Prize winners, Kenneth ARROW and Gerard DEBREU, in the 1950s. The question of whether their reliance on convexity (the property of a set of points that a line drawn between any two points on its boundary lies entirely in the set) is more "general" is a thorny issue.

Some economists and many non-economists criticize the intense mathematics that has been used to refine GE models in the decades following the early Arrow-Debreu formulations as being mere mental gymnastics with no hope of application. Mathematical economists argue that basic research on models such as these puts specific applications into broader perspective, and therefore, is important. The debate continues.

Modern GE models are typically complex, require strong assumptions, and are fed into computers to achieve numerical solutions. Wassily LEONTIEF created a particular type of quasi-GE model, input-output analysis. I-O analysis was partly inspired by the Walrasian analysis of GE via inter-industry flows. Each output is a linear "recipe" of all other outputs in the economy. The output of each industry in the solution of these simultaneous linear equations must cover all other industry demands and the demand of final users. I-O analysis has been a mainstay of economic policy and planning throughout the world for the past half-century. Computable GE models of economic systems need to make restrictions often similar to I-O analysis on the underlying mathematical functions. Herbert Scarf is generally thought to be the first pioneer in the use of these models in the 1960s.

Partial equilibrium. Alfred MARSHALL (1842–1924) used the partial equilibrium (PE) approach to analyze a single generic market. He devised the most famous model used in economics, the demand and supply ("scissors") model. Marshall postulated that when the expenditure on the good or service under study is a small portion of a consumer's total expenditure, only a small fraction of any additional dollar of wealth will be spent on this good or service.

Also, with similarly small substitution effects, or the changes in quantity that result from changes in the price of one good or service relative to others, the small size of the market under study leads the prices of other goods to be approximately unaffected by changes in this market. The advent of the PE approach brought with it the use of the Latin phrase, *ceteris paribus*, interpreted as "other things remaining equal."

In PE analysis, the determination of the equilibrium price-quantity pair for a good or service is simplified by just looking at the price of one good, and assuming that prices and quantities of all other goods and services remain constant. Partial equilibrium analysis is usually considered adequate when the item to be analyzed is fairly insignificant when compared to the economy as a whole.

However, with appropriate assumptions, economists can apply PE analysis to any market. PE models of markets, or of systems of related markets, determine prices, outputs, profits and other variables of interest adhering to the assumption that there are no feedback effects from these endogenous magnitudes to the underlying demand or cost curves that are specified in advance. An individual's wealth (the value of the assets that he or she owns) is often treated as exogenous (outside of the model) in partial equilibrium theory.

Market failure. Though GE is almost always a more theoretically correct approach than PE, the GE model that is based on the assumption of perfect COMPETITION theoretically breaks down in some cases. In other cases, this assumption precludes its applicability to various real-world situations.

Certain phenomena that occur in the real world cause theoretical trouble for the elegant GE models. They are known as sources of market failure. The market failure due to incomplete information is discussed below under Disequilibrium Economics. Externalities are costs or benefits arising from production or consumption that directly affect third parties. They are not recognized by markets. The presence of externalities often precludes the theoretical solution to GE models by making the equations interdependent. A monopoly is a firm that solely produces a particular good or service and has leverage over the price or quantity of that good or service. There is no supply curve in a monopoly market, and the marginal cost pricing of perfect competition is violated. GE models often are not applicable in the presence of a monopoly.

In the case of a (pure) public good, if one person or organization provides a good or service, then everyone else in a relevant group can use that good or service without paying for it (non-excludability), and that use will not diminish the use of anyone else (non-rivalry). The presence of public goods links the functions of the individuals, and demand is often under-revealed due to the free-rider problem. These phenomena cause trouble for the strict GE models. The theory of the second best deals with how an economy can reach its best allocation of resources in the presence of these sources of market failure. While a theoretical representation is sometimes possible, the computational difficulties are often insurmountable.

Disequilibrium economics. Carl MENGER (1840–1921), "father" of the AUSTRIAN SCHOOL of economics, is thought to have lead the discussion on the difference between equilibrium theory and what goes on in the real world. Among the component assumptions of perfect competition underlying GE and PE theory are perfect information and perfect mobility of economic agents.

There has been a growing trend in the economics literature to look at markets as dynamic processes instead of static objects. In the absence of perfect information, economic players may undertake search behavior to find an optimal price, or a certain quantity or quality of a good or service, in a geographical region. Less than perfect mobility may occur when a lucrative job opens up in another city for one spouse, while the other just found a lucrative job in the present city. The first spouse may not make the move, and the job may go unfilled. Equilibrium theory allows for no such complications.

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equity

IN ITS ONE-DIMENSIONAL accounting definition, equity equals assets minus liabilities, in which case shareholders' equity, net worth, and book value are all synonymous. Is that all there is to equity?

No, equity is, in fact, the backbone of a company's balance sheet as well as the designation for an individual's net worth. In the corporate classification, equity is detailed on a business enterprise's balance sheet and is part of the "right side of the balance sheet." It is what remains after assets and liabilities are netted. Therefore, equity is what the shareholders own, as opposed to what is owed. It is applied in the same sense as household equity, where a homeowner's equity is the difference between what a property is worth and what the owner owes on that property.

When we speak of equity most people think of homes. Without a doubt, many who own a home may have a good percentage of their total net worth in that property. The equity in the home is the difference between the fair market value of the property and the amount owed on the mortgage (the liability). The equity is built up not only by payments to principal of the mortgage, but by appreciation as well; how much the price or worth of a home increases over the years

The concept of corporate equity is quite similar, though it has scores of more complicated components. First, there is ownership interest in a corporation, which is in the form of capital stock—both common and preferred. Shareholders holding common stock receive voting rights and dividends in the case of payouts, but end up at the bottom of the hierarchy for the receipt of corporate assets in the case of liquidation. The other type of capital stock is preferred stock, and preferred stockholders are exactly that: they may receive identifiable dividends before any common shareholders receive them, and in the event of liquidation, preferred shareholders take precedence over common stockholders. There can be numerous categories of preferred stock, but further categorization has no bearing on the overall integrity of equity.

Another component of equity is retained earnings, the earnings that are retained by the corporation. Earnings may be retained to pay dividends to shareholders or to pay off debt, or the money may be earmarked for specific purpose such as in the case of restricted retained earnings. Additionally, since both common and preferred stock are carried at par value on a corporation's balance sheet, additional paid-in capital represents amounts received in excess of the par or stated value of the shares sold. Sometimes, simplified financial statements will not separate the stock value from the excess amounts paid in, but instead will lump together all amounts that stockholders have paid into the company in exchange for stock under paid-in capital.

So then, does equity just sit out there as the lingering end to an equation, or does it have a more significant representation overall?

Shareholder equity is representative of a measured amount of funds and it is never a residual amount. The true measurement of equity (outside of the balance sheet accounting equation) is not as simple as assets minus liabilities. Thus, equity is more accurately measured as the sum of paid-in capital (stock at par value, and any excess over that value) and earnings retained by the corporation.

One mistake that is often made is thinking that all equity represents a claim. Although preferred stock may represent a claim above that of the common shareholder, the equity of a common shareholder is not a claim against any assets of the corporation. That is because, as a rule, a company's balance sheet reflects its book value as opposed to its fair-market value. The left side of the balance sheet is represented by assets, which are at cost and not fair value, except for certain kinds of marketable securities. Consequently, since the right side of the balance sheet—with liabilities and equity—balances to the left side, there is no monetary amount embodied by the shareholders' claim. In any case, if a business is liquidated, the sale price rarely will equal its book value.

The conventional balance sheet measurement of equity does not tell us all we need to know about it, for there are many measurements of performance that the professional analyst or investor uses in order to determine whether or not a corporation has a good grasp on the maintenance of equity. For example, equity turnover is calculated by dividing a company's annual sales by the average stockholders' equity. This essentially calculates the return on equity and thus quantifies how well a company is using its equity to generate revenue. The analyst also looks at the equity multiplier, wherein assets are divided by the total common stockholders' equity as a way to measure leverage, or how much a company is relying on debt to finance its asset base.

So indeed, equity is at the nucleus of a corporation's (or an individual's) financial strength. Bear in mind that a profitable enterprise operates over the long run to earn a satisfactory return on its investment, and the higher the income, the more positive the flow into the company's equity accounts. And the bottom line is that a corporation has to maintain its equity, otherwise it goes bankrupt.

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Estonia

THE REPUBLIC OF ESTONIA is bordered by RUSSIA, LATVIA, the Gulf of Finland, and the Baltic Sea. With a population of 1.41 million (2002), Estonia gained its independence in 1918 after being ruled by a series of governments dominated by DENMARK, SWEDEN, GERMANY, and Russia. In 1940, the country was subjugated by the UNION OF SOVIET SOCIALIST REPUBLICS and forced into its ranks. Estonia regained its independence when the Soviet Union broke apart in 1991, and since 1994 Estonia has been developing a capitalist economy and nurturing political associations with the rest of the world.

Estonia is a parliamentary republic divided into 15 counties with a GROSS NATIONAL PRODUCT (GNP) in 2001 of approximately $14.3 billion. As a member of the WORLD TRADE ORGANIZATION (WTO), the country was expected to formally join the EUROPEAN UNION in 2004. Estonia's primary industries are engineering, electronics, wood and wood products, and textiles. Its major commodity is focused in the labor and services categories of the economy, with 69 percent of the labor force composed of service-oriented positions. It is no surprise then that some of its most dominant industries are transit, information technology, and telecommunications.

By joining the North Atlantic Treaty Organization (NATO) in March, 2004, Estonia established the political and military stability it needs to foster economic growth. As with its Baltic neighbors, Latvia and LITHUANIA, Estonia looks to its NATO, EU, and WTO memberships as catalysts for capitalistic success.

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ethics

CAPITALISM IS INVOLVED with ethics in three major ways:

1. certain moral behaviors make capitalism possible
2. the values conducive to capitalism may come into conflict with other moral values
3. questions about how the world works can become conflated with moral issues leading to acrimonious debates and bad policy.

Moral behaviors make capitalism possible. Max Weber advanced the proposition that moral values shape economic life in *The Protestant Ethic and the Spirit of Capitalism*. More recently, in *The Fatal Conceit,* Friedrich von HAYEK argued that civilization depends on moral values; morals are not the product of reason; and living in civilization produces conflicts for people.

Hayek's notion of civilization is the "extended order." This is in contrast with the tribal order that he considers to be "natural," that is, the way people ended up as a result of biological evolution. The extended order depends on markets for its organization. Exchange permits specialization, which allows great productivity in the use of resources. This allows population growth, which has resulted in the predominance of the extended order over tribal organization.

Exchange depends on private property rights. Exchange outside of the natural tribe depends on the cessation of hostility to outsiders. This requires a suppression of the natural tribal instincts of people. In the tribe, property is communal. Tribes have solidarity within, but view foreigners as enemies.

In Hayek's analysis morals are neither the product of instinct nor reason. This goes against much of traditional moral philosophy, as well as against sociobiology. Sociobiologists have attempted to show that altruistic behaviors, such as childcare, can be explained as a product of natural selection. Hayek does not reject this explanation for some of the behaviors we call moral; however, wolves also behave altruistically toward fellow pack members. Hayek does not want to use the term "moral" for instinctive impulses. He reserves it for rules such as respecting property, being civil to non-tribe members, and various sexual restrictions. These are not instinctive. They must be taught. They are taught by rote during childhood so that they become virtually indistinguishable from instincts.

While one may come to see reasons for morals later in life, they are not passed on by an appeal to the intellect. This illuminates the role of institutions such as families, churches, and schools as bearers of civilization. If most citizens do not abide by these rules, police and courts cannot regulate people's behavior sufficiently to defend civilization.

The behavioral restraints that make civilization possible feel oppressive to individual citizens. Being naturally tribal, many people feel unsatisfied by "mass culture." The yearning for tribal solidarity leads them to seek identity in traditional cultures and in invented tribes oriented around specialized interests and activities. It also leads to political calls for collectivism, which almost always implies weakening private property rights.

Rather than being progressive, Hayek sees this as an atavistic animal impulse, as quaint as a war dance. At worst, requiring decisions about resource use to be communally approved could destroy the intricate market web that permits us to enjoy the benefits of specialized knowledge without personally having to possess that knowledge. If this were to happen, it is doubtful that present levels of population could be sustained.

Capitalism and conflicting values. In *Systems of Survival,* Jane Jacobs, like Hayek, views morals as products of evolution, but she differentiates between two major systems, which she calls "syndromes." These are the evolutionary result of two ways of making a living: taking and trading. The guardian syndrome developed from the activities of seizing, defending, and administering territory. It is the traditional moral system of the aristocracy. Among the 15 values that Jacobs associates with the guardians are: disdain for commerce, obedience and discipline, adherence to tradition, ostentatious display of status, and dispensing largesse.

The commercial syndrome is associated with trade. It is the middle-class value system. Within it, it is morally desirable to: get things through trading rather than force, respect contracts rather than hierarchies, be inventive and open to new ideas, and to be thrifty. There may be a third syndrome. The largesse of the aristocrats toward peasants creates expectations. Demands that corporations "give back to the community" or that elected officials must "take care of the working man" suggest a "peasant syndrome" that is the symbiotic counterpart of the guardian syndrome.

Jacobs argues that both moral systems are necessary for civilization. The existence of commerce depends on the guardians establishing and defending property rights. The guardians need the innovativeness and productivity of commerce for plentiful food and advanced weapons and equipment. Problems arise two ways. First, when the two systems mix they can produce "monstrous hybrids," such as police or judges selling their services or employees of a firm who, out of loyalty, turn a blind eye to fraud or theft. Second, a good deal of apparently irresolvable controversy results from clashes of values from the two systems.

Alasdair MacIntyre argues that many modern ethical disputes are irresolvable, because the values and principles that we have inherited are disconnected fragments of ethical systems that were originally embedded in now defunct cultures. It is as though we were trying to do science after a Dark Age with nothing to instruct us but single, half-charred pages and torn sections of books. This is one reason why the values that engender capitalism come into conflict with other values.

Among the legal, technical, and cultural changes that allowed capitalism to develop were the secularization of European society and the emergence of the middle class as a political and economic power. Modern cosmopolitan citizens have been influenced by a wide array of cultural, class, and religious backgrounds. While they may agree broadly about which moral values are desirable, there are great differences about what precisely are the meaning and significance of those values, and about their relative priority when they come into conflict with other things that are important. What follows is a brief discussion of some of the values that figure most prominently in connection to capitalism: prosperity, liberty, equality, and democracy.

Most things that people want to do require material means. Prosperity is simply having the means to accomplish one's goals. Aristotle cautioned that one should not confuse the means to a good life with a good life itself. This presumably is the underlying basis for much of the scorn directed at "materialism." Are very many people materialistic in this sense? Are "materialists" mindlessly trying to acquire things, or are they attempting to achieve goals, such as power, status, high self-esteem, security, or being loved? The critic may disapprove of these goals, or may think it fruitless to try to reach them by these means. The disapproval would be more accurately aimed at the goals or at the faulty reasoning than at a mythical quest for material things.

For Adam SMITH material prosperity had moral significance. Smith thought that poverty was a major cause of evil. In his *Theory of Moral Sentiments*, Smith explained the capacity for moral judgment as residing in an impartial spectator within us who judged our actions according to whether others would be sympathetic to them or not. This, Smith thought, was universal. The particular content of the spectator's judgment, however, was culturally determined. Cultures with a history of extreme poverty developed an indifference to suffering, their own and that of others, long after their material circumstances changed and this trait ceased to have survival value.

Smith's *The Wealth of Nations* is an important contribution to the literature of classical liberalism, not to be confused with the late 20th-century American variety. Classical liberalism is a political philosophy that places emphasis on individual liberty. To the classical liberals, "liberty" meant negative liberty. Rights are closely associated with liberty, in that they articulate what one is actually free to do. Freedom of speech in the negative sense means that others are obligated not to punish you for voicing unpopular opinions. The negativity is the nature of the obligation implied by such a right. Other people must not do something. If, on the other hand, freedom of speech were construed to mean that one is entitled to time on television, or that people had to listen, this would be a positive liberty. If one asserts that people have rights to adequate food, housing, or medical care, these are positive rights.

Historically, one of the most important rights asserted by classical liberals such as John LOCKE, was private property. Having property rights over something means not only that one can possess something, but also that one can determine the use of it, and transfer these rights to others. Private property rights are a foundation of a market system. Knowing that such rights are secure, stable, and well defined allows people to exert productive efforts on the things they own with the expectation that they will reap the rewards. Why make long-lasting improvements to the soil, for example, if your land is subject to capricious confiscation by the authorities? Positive rights typically conflict with the right to private property. A right to adequate nutrition implies that someone else has an obligation to provide food.

Locke thought that unequal distribution of wealth was an inevitable consequence of private property and the use of money. Differing talents, degrees of ambition, and luck would cause differing success in accumulation. Locke thought this was justified since by agreeing to the use of money, people had agreed to the results.

Robert Nozick argues that inequality results from liberty. Even if everyone were given equal shares of the national income, people's individual preferences would cause them to spend this in different ways, for example, paying to see talented basketball players, that would cause the distribution of wealth to end up unequal.

The UNITED STATES *Declaration of Independence* proclaims that all men are created equal as a self-evident truth. Since people are obviously unequal in many ways, in what way was this meant? In the historical context in which it was written, the assertion of equality was in opposition to a European background of institutionalized privilege. It meant that people were equal in some moral or religious sense.

In attempting to implement this as a feature of political and civil life, one thing equality might mean is equal opportunity. People should be allowed to advance according to their performance, regardless of various accidents of birth. Lack of belief that opportunities really can be equal has led to some demands for equal results. The questions do not end here, however, because one must specify what exactly is supposed to be equal. Should it be money incomes, or physical quantities of things, or should it be happiness?

Democracy literally means "government by the people." What this definition practically implies is less than clear. Does it mean that decisions require unanimity, majority, or plurality? What, if any, are the limits of democratic power? Who are the people? Must they be males, adults, Caucasians, property owners, literate, and citizens? Since the collapse of eastern European communism in 1989, various forms of liberal democratic capitalism have become the predominant mode of economic and political organization. This is often referred to as "democracy." Since liberalism restrains the power of governments to interfere with individual liberties, and capitalism requires stable, secure property rights, this usage suggests that when people say "democracy," they are thinking of a form that is restricted by a constitution.

While liberalism in the classical sense is historically closely connected to capitalism, the compatibility of capitalism and democracy has been more tenuous. Lord J.E.E.D. Acton points out that the great gift of the ancient Greeks was not democracy, but the lesson that democracy needs to be restrained. Aristotle said that democracies are usually unable to resist the temptation to use the power of government to redistribute the wealth from the few to the many. In response, the rich organize to protect themselves leading perhaps to tyranny. This seems consistent with a pattern that occurred many times in the 20th century in Latin America. Capitalism depends on private property rights. People with little or no property may not view the defense of property as the most essential function of government.

Joseph SCHUMPETER saw a different way that democracy would threaten capitalism. He thought that the entrepreneurs, whose innovative spirit was vital to capitalism, came from the aristocracy. Administering a business after it matures is different from sensing an opportunity and creating a business to profit from it. As capitalism matured, Schumpeter thought that it would come to be dominated by mature businesses run by conservative bureaucrats. In a democratic system these corporate types would prevail. They would see no reason why an economy cannot be administered by a bureaucracy just like a large corporation. Thus, the success of capitalism would lead to SOCIALISM.

One way that capitalism is democratic is that resources are directed according to how consumers vote with their dollars. Sellers supply what people are willing to pay for. This is sometimes a source of tension. While the market system is responsible for average people enjoying unparalleled material wealth, it is in the form of cheeseburgers, mindless television shows, and sport utility vehicles rather than healthful vegetarian cuisine, Shakespeare, and emission-free electric cars.

Liberty, in the negative sense, is compatible, probably necessary for prosperity. Attempts to enforce material equality conflict with the right to private property, and therefore threaten prosperity. Democracy can be hostile to capitalism. Which of these is more important? If MacIntyre is correct, it may be impossible to settle such questions through reasoned argument. Isaiah Berlin sees danger in the belief that all good things must be capable of being brought into a "single harmony of truths." Following close behind is the belief that those who are privy to this truth should command those who are not. This was a driving force in the "isms" that were responsible for the convulsions of the 20th century. Tolerant societies based on the understanding that people have different goals in life and different moral priorities may be truer to the actual condition of the modern cosmopolitan world. Such pluralistic societies allow individuals the freedom to work out their own solutions, which may be the best we can hope for.

Moral issues conflated with questions about how the world works. Public debates over economic issues, especially concerning government policy, often find arguments over ethical values entangled with questions about how the world works. This can make such debates bitter when they come to be perceived as matters of good versus evil. It can also result in bad public policy if moral indignation overwhelms economic understanding.

A key point made by Smith, one that remains central to economists' understanding of the world, is that individual pursuit of self-interest can produce a desirable social outcome. According to Smith the self-interested individual is:

> . . . led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for society that it was no part of it. By pursuing his own interest he frequently promotes that of society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the public good.

One frequently hears references, in public debates over contentious policy issues, to the motives of the actors: "Greedy multinational corporations move production overseas to cut labor costs." "Drug companies are making obscene profits from peoples' illness." If results matter, and if a market system really works like an "invisible hand," then people's motives might be irrelevant.

Economists often distinguish between positive and normative statements. A positive statement is an assertion of the truthfulness or falseness of an economic theory or fact. "Demand curves have negative slope" or "U.S. GDP rose 3 percent last year" are examples of positive economic statements. A normative statement is one that contains an assertion of ethical desirability, for example: "Everyone should earn enough to enjoy a decent standard of living." Differences over positive questions can, in principle if not always in practice, be settled by logic or observation. It is not entirely clear whether disputes over fundamental ethical values can be resolved by reason or evidence, without a crucial element of religious faith or something serving that function.

Milton FRIEDMAN once claimed that disagreements about public policy issues stem mainly from differing predicted effects of policies, not from "fundamental differences in basic values." Consider an issue such as the use of child labor in Third World factories to make athletic clothing for the rich world. Discussions about matters like this are often acrimonious because of a perceived unethical element. Children belong in school. Greedy corporations are exploiting them. Following closely behind is often a demand for action, perhaps a boycott or a law. The unintended results of these well-intended actions may be to harm the people they are designed to help. Boycotting clothing made by child labor might cause these children to lose their relatively desirable jobs working for multinational corporations. The alternative may be scavenging or prostitution. People opposing boycotts, or legal trade restrictions on clothing made using child labor, are not necessarily motivated by profits or indifferent to harsh conditions. They may think such measures will do more harm than good.

This is not to say that well-intended actions always produce bad results. But it does argue that policies and actions based only on moral indignation, in the absence of factual and contextual knowledge, can backfire. Economic analysis can help to clarify the actual choices and their costs and benefits.

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Ethiopia

LOCATED IN THE HORN of Africa, Ethiopia is not only one of the oldest independent countries in Africa, it is also one of the oldest countries in the world. According to legend, the Queen of Sheba and the son of King Solomon founded the Ethiopian Empire. Ethiopia originally was a Christian country but Islam was introduced in the 7th century and grew rapidly. As a result, the country was cut off from European Christendom. The Portuguese attempted to re-convert Ethiopians to Christianity, leading to conflict and contributed to Ethiopia's isolationism until the mid-19th century. During the late 1930s and into WORLD WAR II, Ethiopia was invaded by the Italian Fascists. Ethiopia's emperor, Haile Selassie was forced into exile in England and did not return until 1941. In 1974, after a period of civil unrest, Selassie was deposed and a socialist government was installed. Pursuing communist policies, Ethiopia became a close allay of the SOVIET UNION and enjoyed economic support from the superpower.

But by the late 1970s and into the 1980s, a succession of droughts, famine, and insurrections led to the collapse of the government. A constitution was adopted in 1994 and in 1995 a federal republican government was elected. A long and bloody war (more than 80,000 dead) with Eritrea did not end until 2000. This conflict destroyed Ethiopia's mainly agricultural economy, and it remains one of the least developed countries in the world. Relying on massive food imports, Ethiopia had a GROSS DOMESTIC PRODUCT (GDP) of $46 billion with a population of 67.6 million in 2002.

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euro

SINCE JANUARY 1, 1999, the world has witnessed one of the most profound and far-reaching economic events of modern history. The EUROPEAN UNION (EU) launched the final stage of Economic and Monetary Union (EMU), thereby creating a new trans-European currency: the euro, adopted by 11 Member States on that day.

The 11 Member States were BELGIUM, GERMANY, SPAIN, FRANCE, IRELAND, ITALY, LUXEMBOURG, the NETHERLANDS, AUSTRIA, PORTUGAL, and Finland. GREECE became the 12th Member State to adopt the euro when the new euro banknotes and coins were introduced, and the euro became a physical reality across Europe, on January 1, 2002. Among the remaining Member States, Great Britain and Denmark chose not to participate. SWEDEN was not eligible because it had not been part of the European Monetary System.

The name, euro, was chosen by the European heads of state or government at the European Council meeting in Madrid in December 1995. The official abbreviation for the euro is EUR, and the sign or symbol for the new single currency is €. It looks like an E with two clearly marked, horizontal parallel lines across it, and was inspired by the Greek letter *epsilon*, in reference to the cradle of European civilization and to the first letter of the word Europe. The parallel lines represent the stability of the euro.

Why did the European Union create the euro? EMU is best understood as one component of the broader process of European political integration that began in the early 1950s. To this day, the legacy of armed conflict in Europe plays a crucial role in the process of European integration.

The greatest misconception about the euro is that it is fundamentally an economic project. In fact, the euro is an intensely political initiative that has been deeply entangled in European history for many years. Put simply, the euro has evolved as an essential step toward the ultimate goal of ever-closer political integration first outlined in the 1958 Treaty of Rome. The language of subsequent treaties makes it clear that the euro's introduction is based on far more than calculations of economic pros and cons.

Although the euro is the "child" of a wide range of political agenda, ambitious economic goals have played an important, if secondary, role since the very beginning. Clearly, political solidarity in Europe would hardly be furthered if the euro's creators believed that the new currency rested on a feeble economic footing. In fact, in the midst of political diversity, high-minded economic objectives have emerged as the most common answers to the "Why did they do this?" question. According to the Werner Report in 1970, in which EMU was first formally proposed: "Monetary union will make it possible to ensure growth and stability within the Community and reinforce the contribution it can make to economic and monetary equilibrium in the world and make it a pillar of stability." The 1992 Treaty on European Union itself cited: "the raising of the standard of living and the quality of life, and economic and social cohesion and solidarity among Member States" as its central goal.

Benefit of the euro. The euro's core economic benefits are direct, and include: the elimination of the need to exchange currencies of EMU members (this has been estimated to save as much as $30 billion per year); the elimination of excessive volatility among EMU currencies (fluctuations will only occur between the euro and the DOLLAR, the YEN, and the currencies of non-EMU nations); more rapid economic and financial integration among EMU members; a EUROPEAN CENTRAL BANK (ECB) that may conduct a more expansionary monetary policy than the generally restrictive one practically imposed in the past by the Bundesbank on the other EMU members; and greater economic discipline for countries, such as Italy and Greece, that seemed unwilling or unable to put their economic house in order without externally imposed conditions.

Other benefits of the euro for the EMU members are: moving away from the use of the dollar as an international currency (which currently confers about $8-10 billion in benefits to the United States, and the expectation is that the euro could provide similar benefits to the euro area); the reduced cost of borrowing in international financial markets (it has been estimated that the U.S. cost of borrowing on international financial markets is about 25-50 basis points lower than it would have been if the dollar were not used as an international currency, for a total saving of about $10 billion, and the expectation is that the euro area could gain as much); and last but not least, the increased economic and political importance that the EU will acquire in international affairs.

Problem with the euro. The most serious unresolved problem that the establishment of an ECB and the euro may create is how EMU Member States will respond to asymmetric economic shocks. It is almost inevitable that a large and diverse single currency-area face periodic asymmetric shocks that will affect various member nations differently and drive their economies out of alignment. In such a case, there is practically nothing that a nation so adversely affected can do. The nation cannot use its own monetary policy to overcome its particular problem, and EMU fiscal discipline would prevent it in the first place.

A single currency works well in the United States because if a region suffers an asymmetric shock, workers move quickly and in great numbers toward areas of

The symbol for the euro was inspired by the Greek letter epsilon*; the parallel lines represent stability.*

the nation with greater employment opportunities. This escape hatch is not generally available in Europe to the same extent as in the United States. In fact, the Organization for Economic Cooperation and Development (1986) and the European Commission (1990) found that labor mobility among EMU members is from two to three times lower than among U.S. regions because of language barriers, inflexible housing markets, and labor markets that remain regulated.

In addition to much greater regional and occupational labor mobility in the United States there is a great deal of federal fiscal redistribution in favor of the adversely affected region. In the euro area, on the other hand, fiscal redistribution cannot be of much help because the EMU budget is only about 1 percent of the EMU's GDP, and more than half of it is devoted to its Common Agricultural Policy. Furthermore, real wages are also somewhat more flexible downward in the United States than in the euro area. None of these escape valves are available to an EMU member adversely affected by a negative asymmetric shock. In fact, the difference in unemployment rates among EMU member nations is much higher than among U.S. regions.

There is also the question of the effectiveness of a euro-wide monetary policy on the various EMU members, although most economists believe that greater economic and financial integration enhances the effectiveness of the common monetary policy in member nations.

The impact of euro on business environments worldwide. Euro exchange rates set the tone for trade relations with euro areas, and businesses and investors worldwide are anxious to know whether the euro will be stronger or weaker than the national currencies that preceded it. When the euro is weak (meaning it trades at low levels against foreign currencies like the U.S. dollar), consumers pay lower prices for products imported from the euro zone. Non-European products can even be paid out of their own markets amid a deluge of cheap euro-area imports. When the euro is too weak, it sparks inflation and makes foreign borrowing by European firms and governments extremely expensive, thus destabilizing business environments. Alternatively, if the euro is strong, the export industries so crucial to European economic growth suffer, because non-euro area countries have to pay more to buy euro-denominated products. Simultaneously, euro-zone imports increase, galvanizing production in the region's main trading partners. The euro's stability, therefore, is at least as important as its strength, because a chronically unstable currency is the scourge of economic growth and investment. Unstable currencies rattle trade-dependent economies, destroy investments, and fracture business environments.

The strength of the euro is determined by a variety of factors. These include: the general level of economic and political stability; fiscal stability; the current account balance; INFLATION and INTEREST RATES; and the euro's use as an international reserve currency. As the euro transforms the area from 12 small, open nations, into one large, closed economy, the ECB might be likely to adopt a policy of benign neglect toward other currencies like the U.S. dollar. This may ultimately result in volatility similar to that seen in U.S. dollar markets.

The euro has become an important international reserve currency, not least by virtue of the fact that all previous euro-zone currencies, regardless of where they were held, converted into euros. It is highly unlikely, however, that the euro will pose a serious worldwide challenge to the U.S. dollar in the near future.

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European Central Bank

AN INDEPENDENT, SUPRANATIONAL central bank established in 1998, the European Central Bank (ECB) replaced the European Monetary Institute (EMI). Its headquarters are in Frankfurt, GERMANY. It implements MONETARY POLICY in the EURO area as recommended by the European System of Central Banks (ESCB). The ESCB is made of the ECB and the national central banks (NCB) of all EUROPEAN UNION (EU) member states and its primary objective is to maintain price stability. For all practical purposes, the ECB is the core of the ESCB (with the right to issue euros), and it implements the ESCB policies either itself or through the NCBs.

The ESCB, and hence the ECB, are charged to support the recommended economic policies in the European Union and to ensure the uninterrupted operation of the free and open market system. Additional tasks cover a wide range, from conducting foreign-exchange operations and managing foreign reserves of the EU member states, to promoting measures that guarantee smooth operation of the payments system. According to the Maastricht Treaty, which established the EU, the NCBs have been mandated to contribute foreign exchange reserves proportionate to their shares in the subscribed capital of the ECB. Eighty-five percent of the contributions were made in U.S. dollars and Japanese YEN, and the rest in gold. In return each contributing country was credited with a claim in euro equivalent. These reserves, amounting to €50 billion by January 4, 1999, provided the ECB its initial foreign exchange reserves to manage the euro.

The decision-making bodies of the ECB, which govern the ESCB, are the Governing Council and the Executive Board. The Governing Council is composed of the members of the Executive Board and the governors of the NCBs in the Euro area, each member with one vote. The Executive Board is composed of the President, the Vice-President, and four additional members. The Executive Board members are appointed for a non-renewable eight-year term, in order to free it from political pressure and to ensure independence and autonomy. The members are required to be of high professional status in international finance and banking, and are expected to be in common accord with the member state governments.

A third transitory decision-making body is the General Council. Its existence is the result of the fact that there are European Union countries that are not members of the euro area, and there are tasks previously performed by the EMI that need to be performed by the ECB. Thus the president and the vice-president of the ECB and the governors of all the central banks in the European Union constitute the General Council. The council's primary responsibility is to advise the process of fixing the exchange rates of the currencies of non-euro members.

The main responsibilities of the Governing Council are to formulate the monetary policy of the euro area by making decisions regarding monetary targets, major interest rates, and the supply of foreign exchange reserves in the ESCB. The Governing Council authorizes the issue of banknotes and coins within the euro area by the ECB and the NCBs. The Executive Board of the ECB is responsible for carrying out the policies decided by the Governing Council. The NCBs are an integral part of the ESCB and hence are expected to comply with the instructions of the ECB.

In addition to the supervision of the financial system in the euro area, the ECB implements the recommended monetary policies. The two major monetary-policy tools available to the ECB (and to the NCBs) are open market and credit operations and minimum reserves. The open market and credit operations refer to the purchase and/or sales, in the spot and forward markets, of financial claims and instruments. The purchase of financial claims and instruments indicates an increase in the money supply (expansionary monetary policy).

The sales of the financial claims and instruments, on the other hand, indicate a decrease in the money supply (contractionary monetary policy). The ECB can also implement monetary policy by changing the reserves, which the credit institutions are required to hold with the ECB and the NCBs. A decrease in the required reserves would mean the credit institutions would give more credits and the money supply would increase; an increase in the required reserve ratio would lower the money supply. Empowering the ECB with the right to levy financial sanctions in the case of non-compliance ensures compliance with its monetary policy.

Furthermore, the ECB (and the NCBs) can buy and sell foreign exchange, as well as foreign exchange denominated assets, in order to assure the smooth operation of the international payments system inside and outside the Euro area.

The ECB's firm commitment to price stability, and hence its emphasis on controlling monetary growth, have been the focus of a wide range of criticisms. A major argument has been that zealous dedication to keep inflation low leads to high unemployment and eventually to the erosion of labor's economic and social rights in Europe. A tight monetary policy, it is argued, would raise unemployment significantly, forcing the labor market to agree to lower wages and lower economic and social status.

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European Union

A GROUP OF EUROPEAN countries that have integrated many of their economic activities and policy decisions, the European Union (EU) is the most comprehensive initiative of economic regional integration to date. As of January, 2003, the EU economy had almost the size of the UNITED STATES economy, and was already the world's major trading power.

The members of the EU have shared, since its inception, free internal trade and common customs duties and procedures. The free internal trade, as predicted, has induced significant trade growth among EU members. Until recently, these were probably the most prominent characteristics of the arrangement. Now, of a similar magnitude, the members also share a common currency: the EURO, used since 1999 for financial transactions and in circulation since January, 2002. Three EU members (DENMARK, SWEDEN, and the UNITED KINGDOM) have not yet adopted the euro as of early 2003, however.

The euro represented the consolidation of an evolving process of monetary and exchange rates coordination that began in 1979 with the European Monetary System (EMS). The EMS arose as a response to the economic instability that followed the breakdown of the BRETTON WOODS system in the early 1970s. Although the EMS worked similarly to Bretton Woods, inasmuch as the main goal in both cases was to limit exchange rates fluctuations, EMS was more flexible and was, naturally, restricted to the European countries.

The EMS worked well for more than 10 years, but in the early 1990s the increased financial volatility in world markets almost broke it down. By then, it became clear that the system would remain sustainable only if it were deepened. The choices were two: to eliminate monetary coordination altogether or to implement it fully. The second option was chosen and the EU members created the EUROPEAN CENTRAL BANK, with the goal of unifying monetary policy and creating a common currency. The choice was manifested in the Treaty of Maastricht (1992), establishing the timetable toward a single currency, and determining targets to be achieved by each EU member in terms of price and exchange rate stability, interest rates volatility, and budget deficits and public debt levels.

The deepening of integration that occurred with the introduction of the euro is expected to further increase trade and growth in Europe. As suggested in a study by Frankel and Rose (2002), belonging to a currency union tends to triple a country's trade with the other currency union members. Moreover, they find that each 3 percent increase in a country's overall trade induces a 1 percent increase in its per capita income. According to their estimates, the EU has therefore much to gain with the euro.

The EU has not always been as large and as integrated as it is now, however. It began as a much more modest initiative in the late 1940s aimed at integrating the coal and steel markets of its initial members: FRANCE, ITALY, (West) GERMANY, BELGIUM, LUXEMBOURG, and the NETHERLANDS. The initiative evolved to become a full customs union with the signature of the Treaty of Rome in 1957, which established the European Economic Community (EEC), the EU predecessor, in the following year. The initial goal was to create a common market, as well as to integrate the members' agricultural, transport and commercial policies. Some observers argue, however, that the EEC's primary motivation was not really economic, but political, aimed at reducing the threat of future military conflicts in Europe.

From 1957 to today's currency union, the European integration process intensified gradually. Perhaps the clearest signal of the continuity of the process has been the membership evolution. The first expansion took place in 1973, with Denmark, IRELAND, and the United Kingdom joining. This first enlargement was accompanied by a deepening of integration, with some social and environmental regulations being added to the responsibility of the Community.

During the 1980s, three southern European countries were incorporated: GREECE in 1981, plus PORTUGAL and SPAIN in 1986. Finally, in 1995, three other nations obtained membership: AUSTRIA, FINLAND and SWEDEN. Just before this last expansion, the European single market came into effect in January, 1993, allowing goods and services, and also people and capital to move freely across the member countries.

It is noteworthy that six of the current members—Austria, Denmark, Finland, Portugal, Sweden and the United Kingdom—were previous participants of another, shallower, European integration initiative, the European Free Trade Association (EFTA), created in 1960. Progressively, however, the more deeply integrated arrangement in the European continent attracted most of the EFTA members.

In addition to the 15 full members (2003), the EU also has numerous free trade agreements with third countries. These include bilateral agreements with all EFTA members and with most central and eastern European, northern African, Middle Eastern, and Mediterranean countries. There are other agreements under negotiation as well, for instance with SOUTH AFRICA and with Mercosur, the southern Latin America regional bloc.

Perhaps even more significant are the EU projects of enlargement. In early 2003, negotiations for membership were under way with 13 central and eastern European countries, likely to be fully incorporated into the union in 2004. TURKEY, a candidate in 2003, will be the first Middle Eastern/Muslim/Asian country in the union if admitted. This new accession wave is likely to transform the EU into the largest economy in the world and one of its most populous, aggregating over half a billion consumers.

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exchange rates

THE GLOBALIZATION OF the economic world forces us to recognize that few companies operate without dealing in other currencies. They may owe suppliers, sell products, or get or pay dividends or interest to owners or lenders in other countries. This exposure to foreign currencies introduces a special problem when making a financial FORECAST: exchange rates.

An exchange rate is simply a price. In other words, prices as we normally understand the term are themselves exchange rates: the price of a book, for example in the UNITED STATES, is the exchange rate between a particular good (the book) and DOLLARs. Suppose that it is quoted as $50, which means a book sells for $50, or can be bought at that price. It changes hands at an exchange rate of 1 book equals $50.

As far as the bookseller is concerned, that means "money can be bought" at the rate of $50 per book. From the bookseller's point of view, the price of $1 is 1/50th of a copy of this book. If its price were $55, the shop would only need to supply 1/55th of a copy in order to earn a dollar. Therefore, a rise in the price of the book, from $50 to $55, is the same as a fall in the price of money, from 1/50th to 1/55th of a book.

In the same way, an exchange rate of US$1.00= A$1.79 means that the price of an Australian dollar in U.S. currency is US$(1/1.79)=US$0.56. To an Australian, a U.S. dollar costs A$1.79. In general, the exchange rate of currency A in terms of currency B is the number of units of B needed to buy a unit of A. Therefore, an exchange rate can be defined as the price paid in domestic money to acquire one unit of a foreign money; the rate at which the money of one nation is exchanged for the money of another nation.

But money has not always been the currency of choice in history. For example, in Newfoundland's history, actual cash was scarce. The only medium of exchange for the great majority of Newfoundlanders for food, clothing, and other necessities was dried cod fish, which has often been referred to as "Newfoundland currency." The merchants carried out their business on what was known as the credit or truck system. They outfitted the fishermen in the spring, for which the fishermen paid with dried fish in the fall.

In the late 1700s, with the increase in population, coin became more common. It consisted mainly of British currency, but coins of other countries were also in circulation. As well, notes valued from five pounds to five shillings were available. Large transactions between firms were usually covered by Bills of Exchange, transferred from one firm to another in much the same way as banknotes are exchanged today.

Determinants of exchange rates. There are two different theories about what governs exchange rates: one theory proposes that it is relative purchasing power; the other that it is INTEREST RATES. The purchasing power theory suggests that exchange rates make the cost of goods the same in both countries in a free-trade world. If difference in the price of the same good offered in the two countries exists, someone will see the potential to profit and take that opportunity: they will buy the good at the lower price and offer it to buyers in the country where the good is commanding the higher price. This process is called arbitrage, and those acting on price differences are called arbitrageurs. Theoretically, exchange rates change only when there is a change in the rates of inflation in the two countries.

The purchasing power theory makes sense, but it does not take into account differences in actual costs of buying, moving the product, and reselling it, or any barriers to arbitrage created by the two countries. Because the purchasing power theory does not explain what actually occurs in the world very well, another theory was then developed.

This theory, called interest-rate parity, suggests that differences in interest rates, and changes in these differences, are at the heart of exchange rates. Theoretically, exchange rates make the real returns in the two countries the same: If real rates, the rates after subtracting the rate of inflation in each country from the nominal interest rate, are not the same, the potential exists to make a profit, and an arbitrageur will move in, take the profit, and make the expected real return the same. The mechanism to make the rates the same is the exchange rate between the two countries. Arbitrageurs move out of the currency of the country with the lower real rate of return, and thus create a demand for that currency. An increased demand for a currency puts pressure on the exchange rate, and it changes.

In fact, exchange rates are determined by a combination of such things as the differences in real interest rates, relative inflation, growth rates in available income, and perceptions about political and economic risk in the two countries.

Exchange rate systems. The post-WORLD WAR II history of the evolutionary development of currency systems has experienced two major phases, the first being the fixed-rate era known as BRETTON WOODS regime, that broke down in 1971, and the floating-rate period since then.

The world of international economic policy making at the end of World War II was dominated by two preoccupations: first, to facilitate the reconstruction of European economies, and second, if possible, to prevent a return to the competitive devaluations and protectionism that had characterized the 1930s. To that end, the British and American governments established the INTERNATIONAL MONETARY FUND (IMF), which was intended to police a system of fixed-exchange rates known universally as the Bretton Woods system, after the small New Hampshire ski resort where the agreement was signed in 1944. Under the Bretton Woods system, countries undertook two major commitments: first to maintain convertibility and second, to preserve a fixed exchange rate until unambiguous evidence of "fundamental disequilibrium" appeared, at which point they were expected to devalue or revalue, as the case may be, in other words, announce a new (fixed) parity.

Convertibility turned out to be more a pious intention than a realistic objective; it was always more honored in the breach than the observance, with only the United States among the major economic powers ever permitting full freedom of capital movements.

The use of the U.S. dollar as a key currency in the Bretton Woods system created a dilemma. Chronic deficits in the U.S. balance of payments raised doubts about the continued convertibility of the dollar into gold and, therefore, the status of the dollar as a key currency was also doubted, but such deficits were required to increase international reserves. Sharp increases in the U.S. deficit in 1971 forced the abandonment of dollar convertibility into gold, shattering the Bretton Woods system.

Thus, a floating exchange rate was allowed, where the rates at which national currencies exchange for one another are determined by demand and supply of national currencies in foreign-exchange markets. One currency can depreciate or appreciate relative to another country's currency. When the dollar price of pounds increases, for example, from US$2 for £1 to US$3 for £1, we say that the value of the dollar has depreciated relative to the pound.

More generally, exchange-rate depreciation means that it takes more units of a country's currency (in this case U.S. dollars) to buy a single unit of some foreign currency (in this case British pounds sterling). Conversely, exchange-rate appreciation means that it takes fewer units of a country's currency to buy a single unit of some foreign currency. Some exchange rates are fixed: that is, the rate of exchange is set relative to some other currency, often the U.S. dollar. Fixed currency relationships can be changed by a country's governing body, usually its central bank.

For reasons that are not yet very clear, floating rates have proved extremely volatile, with violent short-term fluctuations and longer-run swings to apparent over- and under-valuation characterizing all the major currencies, including the U.S. dollar. Among the features of the international financial scene in recent years have been: the U.S. "twin deficit" problem, two OPEC (ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES) oil shocks in the 1970s and a steeply falling oil price in the 1980s, a gathering crisis in international and U.S .domestic debt, the rapidly increasing importance of Japan and concomitant decline in the relative weight of the United States in world markets—all accompanied by an unprecedented degree of volatility and rapid innovation, both in the technology of executing transactions and in the range of financial instruments actually traded.

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export and import

EXPORT IS A TERM USED for GOODS and services that are produced domestically but sold to another country or countries, while import is a term that denotes goods and services purchased from other country. Thus, export and import represent the exchange of goods and services between one country and another. This exchange, also known as international trade, occurs due to the non-availability of goods and services in a country and differences in cost production between countries.

Import and export are integral components of trade balance and, consequently, balance of payments. Trade surplus occurs when export proceeds are greater than import expenditures, while trade deficit emerges when domestic spending on foreign goods exceeds foreign purchases of domestically produced goods. However, regardless of whether countries run short-run trade deficits or surpluses, economists generally agree that international trade increases the economic welfare of trading countries as well as the world economy by broadening the range of goods and services available for consumption.

Specialized exports and imports. The differences in cost of production originate in the unequal endowment in resources required for the production in goods and services. The availability of certain types and quantities of raw materials, skill and size of labor force, the stock of capital and institutions differ among countries and play a pivotal role in determining the cost of production. Adam SMITH advanced the concept of absolute advantage by which countries should engage in trade of goods and services if foreign goods could be obtained with less resources than it would take to produce the respective goods and services domestically.

This would lead to the specialization in production of goods and services in which the country would have an absolute cost advantage. David RICARDO showed that countries would benefit from trade even if one country produced all of goods and services more expensively than the other country. According to his theory of comparative advantage, the gains from trade would materialize if relative costs of production of the different commodities were favorable, i.e. only comparative advantage would be required. Every nation must have a relative edge in efficiency in certain activities. Consequently, specialization would channel resources into the activities which countries have the most advantages or the least disadvantages for them, thus fostering international exchange of goods and services.

Modern economists further refined Ricardo's argument. The Hecksher-Ohlin-Samuelson theorem claims that countries will tend to export commodities that require more resources of which country is relatively well endowed. The theorem states that the main source of comparative advantage arises from the different relative factor endowments of the countries trading. This inevitably leads to the further specialization, increase of production and the enlargement of the markets, and some say, in turn, calls for arguments for removing all trade restrictions, or obstacles to FREE TRADE.

The debate between proponents of free trade and government control over foreign trade is as old as classical economics. The first proponents of free trade condemned the mercantilist point of view that trade deficits should be avoided. While mercantilists believed that the wealth of a nation was measured by the amount of gold that it amassed, and that the principal source of gold is export of commodities, Smith emphasized that what matters is not a stock of gold, but productivity—the ability to continuously lower the cost of production of goods and services. However, free trade advocates suffered a major setback in the Great DEPRESSION in the 1930s when economic protectionism became a dominant trend in the international trade.

Protectionism. The main feature of protectionism was the introduction of trade barriers such as TARIFFS and QUOTAS. A tariff is a tax levied on imported goods and services. Tariffs may take the form of a certain percentage of value, so-called *ad valorem* tariffs; an amount per unit, also known as a specific tariff; or a compound tariff, which represents a combination of *ad valorem* and specific tariffs.

Container shipping has become a predominant cargo transfer process for international export and import.

The main rationale for introducing tariffs may span from simply raising the government revenue to conducting a particular economic policy. For a long time, the "infant industry" argument was a main vehicle behind introduction of tariffs. According to this argument, the introduction of tariffs was justified on the grounds that a new industry may be unable to withstand foreign competition during its infancy. Tariffs are intended to shelter an industry below optimum size and protection should be in place until the potential comparative advantage of the industry is realized.

The other rationales for introducing tariffs as an instrument of economic policy include: a) protection of strategically important industries; b) reduction of overall import level by making them more expensive relative to domestic production; c) prevention of dumping practices by raising the import prices of the dumped commodity to its economic level; d) reciprocity, that is retaliation against restrictive measures imposed by other countries.

Quotas are imposed limits on the quantity of goods produced or purchased. Import quotas are used to curtail or restrict the purchase of foreign commodities, while export quotas have been used to maximize the export revenue stream to countries producing primary products by restricting supply. The major disadvantage of quotas relative to tariffs is that quotas do not produce tariff revenue.

There are other sorts of non-tariff barriers besides quotas. The most popular among those is the voluntary export restraint, a mechanism by which an exporter voluntarily limits its quantity of exports, often under threat of tougher protective measures. Another popular form of non-tariff trade barriers is the legal requirements that artificially favor domestic operations.

Following the surge of protectionism in the 1930s the popularity of free trade argument was revived after World War II. The GENERAL AGREEMENT ON TRADE AND TARIFFS (GATT) was signed in 1947 and entered into effect on January 1, 1948. GATT was a multilateral trade agreement that set out the rules for international trade. The agreement called for the expansion of multilateral trade with gradual elimination of tariffs and other barriers to trade. Following the initial meeting in Geneva there were eight rounds of negotiations, including Kennedy round (1964–67), the Tokyo round (1973–79), ending with the Uruguay round (1986–93).

The Uruguay round reaffirmed the free-trade principles and focused on non-tariff trade barriers such as agricultural export subsidies, restriction on trade in banking, insurance, transport, and restrictions on foreign direct investment. The conclusion of the Uruguay round led to the establishment of the WORLD TRADE ORGANIZATION (WTO) in 1995. The WTO replaced GATT and provided the resources and the legal status for the resolution of trade disputes. It effectively introduced the monitoring and policing of multilateral trading system by imposing trade sanctions against a member country which refused to accept the WTO ruling over a trade dispute. In 2003, there were more than 130 countries who were members of the WTO.

There is also an increase in number of custom unions and free trade areas. A custom union represents a union of two or more countries within which trade restrictions are abolished but a common external tariff is established and applied against non-members. The EUROPEAN UNION, Mercosur, Caribbean Community and Common Market (CARICOM) are custom unions. A free trade area is a loose association of countries within which tariffs and other trade restrictions are removed. However, unlike a custom union in which member countries have a concerted commercial policy, each member country in free trade area retains its independent international trade policy with regard to countries outside the association. North American Free Trade Agreement (NAFTA), Latin American Integration Association (LAIA), and Association of South East Asian Nations are free trade areas.

Economic development. International trade, that is export and import, can also be analyzed within the framework of economic development. The expansion of an economy is often constrained by the country's balance of payments. In order to obtain sufficient foreign exchange, a country either can boost its exports, a principal foreign currency generator, or it needs to limit its imports, which are a major source of foreign expenditure. When the boost of exports becomes a principal strategy, economists characterize this path of development as an export-led growth or export-promotion. In the 1950s and early 1960s, ITALY and West GERMANY pursued export-led growth through the devaluation of the national currencies, which made their exports more competitive due to the lower prices. JAPAN and FRANCE, on the other hand, had chosen completely different growth strategies. Both countries protected domestic markets and used the expansion within the home markets as catalyst for the capture of foreign markets. Following the path of French and Japanese experience, Latin American economies became a cornerstone of import substitution strategy.

The import-substitution strategy in Latin America, however, was not successful. The initial growth in domestic production of consumer goods was followed by the rapid increase of imports of machinery and investment goods. Protected domestic industry was relatively inefficient and unable to compete on international markets. The particular problems arose when import substitution was relied on for a protracted period of time and extended to capital-extensive industries. The inefficiency of capital-intensive sectors spilled over to export sectors and severely limited economic growth and the development potential of several Latin American economies. The success of Japan and France and the problems encountered in Latin America led to the conclusion that import-substitution strategy can be pursued for a limited period of time in carefully chosen sectors. The protection, limited in time, can be provided only in those sectors in which firms could become competitive in the world markets.

The limits of import-substitution strategy prompted several developing countries to pursue an alternative development path. HONG KONG, South KOREA, SINGAPORE, and TAIWAN were among the first developing countries that followed the path of export-promotion, that is, the development of industries whose main markets are overseas. The success of export-promotion strategy rests upon relying on the most abundant production factors and diversification and expansion of non-traditional exports. The successful export-promotion strategy requires a number of supportive government policies such as competitive exchange-rate policy, deregulation of private industries, maintenance of infrastructure and transportation facilities, and reduction of overall rate of protection.

The role of export and import in the development of the world economy has steadily increased. Over the past 50 years, international trade has grown at annual rate of 6 percent, about 50 percent more than world output.

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externalities

AN EXTERNALITY EXISTS WHEN the actions of one agent (an individual or firm) affect the welfare of another agent. The term "externality" is derived from the fact that costs imposed on others are external to the decision-maker.

Externalities may be pecuniary or non-pecuniary. A pecuniary externality occurs when the actions of an agent affect the welfare of another through prices; for example, if a large number of immigrants join the labor force of a small town, the outward shift in labor supply will lower the market wage. Incumbent workers are worse off because of this wage reduction, but no inefficiency has resulted.

Non-pecuniary externalities, which do not operate through prices, do cause inefficiency; the remainder of this article refers exclusively to non-pecuniary externalities. An example of a non-pecuniary externality is the burning of coal by electricity-generation plants that results in the emission of sulfur dioxide, which causes acid rain, which damages property, the environment, and individuals' health. When deciding how much electricity to produce, the plant does not take into account the costs it imposes on others through acid rain; as a result, too much electricity is produced from a societal perspective.

Externalities may be either positive or negative, and result from either production or consumption. The previous example of a coal-fired power plant causing costly acid rain illustrates a negative externality in production. The presence of a negative externality in production implies that social costs exceed the private costs of production, with the result that a free market will produce a greater quantity than is socially optimal. A dual positive externality in production is generated when a farmer and beekeeper are located on adjacent properties; the farmer benefits from the beekeeper's production because the bees fertilize the farmer's crops and the beekeeper benefits from the farmer's production because the bees harvest pollen from the farmer's crops to make honey. A positive externality in production implies that social costs are less than the private costs of production, and as a result free markets will produce a smaller quantity than is optimal. Smoking cigarettes generates a negative externality in consumption; second-hand smoke worsens the health of those nearby; in such a case, social benefits are less than the private benefits of consumption, so private markets will result in a higher quantity consumed than is socially optimal. Using breath mints generates a positive externality in consumption for the opposite reason: those nearby are made better off. In this case, social benefits exceed the private benefits of consumption, so private markets will result in a smaller quantity consumed than is socially optimal.

Social welfare is maximized by a free market when the private costs and private benefits of agents (individuals and firms) are equal to social costs and social benefits. The theorem of the invisible hand states that under perfect competition, utility-maximizing behavior on the part of individuals combined with profit-maximizing behavior on the part of firms leads to an outcome in which no one can be made better off without making someone else worse off (PARETO OPTIMALITY). However, the presence of externalities invalidates this theorem because private costs do not equal social costs, and/or private benefits do not equal social benefits. In order to bring about the socially optimal levels of production and consumption, policymakers seek to "internalize" externalities; in other words, to force private decision-makers to take into account the costs or benefits they impose on others or in other words to set private costs and benefits equal to the social costs and benefits. There are several strategies available to policymakers for internalizing externalities.

A.C. Pigou suggested that externalities could be internalized through taxes (for negative externalities) or subsidies (for positive externalities), the exact amount of which would be set equal to the value of the externality. Examples of such taxes are effluent fees on pollution, designed to force polluters to take into account the costs their pollution imposes on others.

Policymakers can also use quantity regulation to force markets to exchange the socially optimal quantity, or pollution regulation to cap external costs at their socially optimal level. For example, the U.S. government has outlawed smoking in public places, and sets emissions standards that limit the amount of sulfur dioxide and nitrous oxide that firms may emit. A variation of this approach is for the government to allocate to firms permits to release a specific amount of pollutant, and allow a free trade in the permits; this results in the pollution level being reduced in the most efficient way, as firms that can reduce cheaply will do so and sell their pollution permits to other firms that could only reduce their pollution at great cost.

A limitation of each of these solutions is that policymakers must have detailed information on the extent of external costs and benefits, or the socially optimal quantity. In many cases policymakers lack this detailed information, making it difficult for them to maximize social welfare in markets with externalities.

Ronald COASE proposed an ingenious solution to the problem of externalities that does not require the government to have any information about the value of external costs or benefits or about the optimal quantity. In a seminal 1960 article entitled "The Problem of Social Cost," Coase showed that the problem of externalities stems from unassigned property rights. For example, no one possesses property rights to the air; if citizens had property rights to the air, they could deny firms the right to pollute the air, or they could allow firms to pollute in exchange for payments that at least covered the external costs of pollution.

On the other hand, if firms had the property rights to the air, they could demand payments from citizens in exchange for not exercising the right to pollute. Coase noted that the solution to the problem of externalities was to assign the previously unassigned property rights, and allow the relevant parties to negotiate over the transfer of the rights. Coase noted that as long as negotiations were costless, the efficient outcome would result. For example, assume that polluting the air is worth $100 million to a firm, but that the pollution causes $1 billion in damage. If the property right to the air is assigned to the firm, a mutually beneficial transaction is for citizens to pay the firm some sum over $100 million in exchange for the firm not polluting. On the other hand, if property rights to the air are assigned to citizens, the citizens can refuse to allow the firm to pollute; the firm is willing to offer up to $100 million for the right to pollute, but that is not enough to compensate citizens for the $1 billion in damages they would suffer.

The key insight of what is known as the Coase Theorem is that no matter who is assigned the property rights initially, through negotiation the efficient outcome will result because the property rights will end up owned by the party that values them most. An important caveat is that while efficiency is not affected by the initial allocation of property rights, equity is an issue; the property right is valuable and both parties would like to be awarded it. The Coase Theorem revolutionized legal thinking and is one of the foundations of the field of law and economics.

A gas station in New York is one of the 40,000 Exxon-Mobil outlets in 118 countries.

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ExxonMobil

SINCE THE LATE 19TH CENTURY, petroleum has gained popularity as an energy source: world crude oil production grew from 20 million tons a year in 1900 to 3 billion tons by 1980. The modern petroleum industry is characterized by a vertical value chain involving crude oil exploration and transportation (pipelines, tankers), and refining and marketing.

In the United States, the early petroleum industry was dominated by the Standard Oil company. From its beginnings in Ohio in 1865, John D. ROCKEFELLER's petroleum interests came to control approximately 90 percent of total U.S. refining capacity by the 1880s. After an ANTITRUST investigation in 1911, Standard Oil was split into 34 separate firms to encourage competition in refining and marketing.

Following WORLD WAR II, both Exxon (formerly Standard Oil of New Jersey) and Mobil (formerly Standard Oil of New York) were part of the so-called "Seven Sisters," which initially controlled the huge Middle Eastern reserves, until the rise of the ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES (OPEC) in the 1960s. Since then, changes in global crude oil supply conditions and in U.S. policy toward the petroleum industry have led to significant industry restructuring.

In 2001, ExxonMobil, formed by a $81 billion merger in 1998, was the world's largest private oil company by revenues), and ranked as the world's second largest company according to *Fortune* magazine. ExxonMobil is vertically integrated, as are the majority of its global competitors, operating in both "upstream" oil exploration and production and "downstream" refining and marketing. ExxonMobil has proven reserves of approximately 21.6 billion oil-equivalent barrels, and its refineries can handle more than 6 million barrels per day, supplying refined products to more than 40,000 service stations in 118 countries.

ExxonMobil remains in a very good position for exploration and production in the Gulf of Mexico, West Africa, the Caspian Sea, and the Middle East. Downstream, ExxonMobil Chemical is also one of the largest global petrochemical companies, manufacturing a wide range of petrochemical products, with a leading position in paraxylene and polyolefins.

In 2001, total revenue amounted to $213.5 billion, with net income of $15.3 billion (7.2 percent). Of total revenue, petroleum and natural gas accounted for $192.7 billion (90 percent), and chemicals for the remaining 10 percent. ExxonMobil executives propose that their superior resource base, their investment in new technologies, their operational efficiency and their degree of vertical integration will allow them to continue to remain the world's pre-eminent energy company through the 21st century.

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Faneuil, Peter (1700–43)

ONE OF AMERICA'S first capitalists, little is known about Peter Faneuil's formative years, but it is believed he was born in Germany, the son of French Huguenot parents. The family's crest, which appeared on its coat of arms, was a grasshopper—probably a symbol of a family of farmers. This same family, generations later, migrated to London, England, where a Faneuil descendant held a seat on the London Exchange. Purportedly, his residence sported a grasshopper weathervane.

The Faneuils, who moved to America in the late 1600s, also claimed a similar weathervane over their home in New Rochelle, in the then-British-owned colony of New York. When Faneuil relocated to Boston, Massachusetts, is unknown, but by his early adulthood he had become one of the more affluent shippers and traders in town. His major trade was most likely codfish, a prevalent export of the area, which merchants traded for molasses and rum from the West Indies.

Faneuil saw the need for a central marketplace to benefit the local farmers who sold their livestock to buyers. Having the finances to build it, he chose architect John Smibert and declared the building would be his gift to the city he loved. He chose as the ideal site the commercially busy Dock Square. However, citizens rejected his idea because, according to historians, "it would bring all merchants and townsmen together in one spot with horses, carts, livestock, and produce (to cause) downtown Boston congestion." But, after he announced that he would add a meeting room over the market—to keep the convergence of traders off the sidewalks—the city seemed greatly appeased.

When erected, Faneuil Hall bore a copper grasshopper weathervane. Under its roof, commerce thrived. That might be the end of the story, had it not been for the significant historical role the building was destined to play. By the 1760s, it quickly became the rendezvous place for the restless colonists opposing British King George's ever-expanding tax laws—such as the Sugar Tax of 1764 and the Stamp Act of 1765—unpopular decrees that eventually led to the AMERICAN REVOLUTIONARY WAR and independence. The meeting hall, on the second floor of the structure, was where John and Samuel ADAMS, Dr. Joseph Warren, and others planned

Quincy Market and Faneuil Hall now mark the Boston area where Peter Faneuil first had his central market.

their insurgence against England, including the revolt that became known as the Boston Tea Party, a few blocks from Faneuil Hall. Because of what took place under that grasshopper, Faneuil Hall is known today as the American "Cradle of Liberty."

After the Revolution, Faneuil Hall was expanded to better meet the commercial needs of the city. Architect Charles Bullfinch oversaw its refurbishment, a beautiful design maintained today and visible to thousands of sightseers annually.

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Fannie Mae

CREATED BY THE U.S. Congress in 1938, Fannie Mae (the Federal National Mortgage Association) is a corporation designed to promote home-ownership in the UNITED STATES. Fannie Mae does this by making funds available to institutions, such as banks, savings and loans, and mortgage companies, that then provide mortgages (promises that the homeowner will pay the holder of the mortgage a certain amount of money) to the general public. This steady source of funds from Fannie Mae to the lending institutions helps to keep mortgages more affordable and more widely available.

Originally establishing Fannie Mae as a federal agency, the federal government changed Fannie Mae's charter in 1968 to transform it into a stockholder-owned private corporation. In 1970, the federal government chartered Freddie Mac (the Federal Home Loan Mortgage Corporation), which is a very similar institution to Fannie Mae, thus creating competition in this particular market (the secondary market for mortgages). While essentially private corporations, both Fannie Mae and Freddie Mac have five members of their boards of directors appointed by the president of the United States.

Fannie Mae does not lend money directly to homebuyers. It is such institutions as mortgage companies, savings and loans, and commercial banks that lend money directly to individuals and families so that they can purchase a home. Once these institutions have created a mortgage they have two choices as to what to do with it. One, they can hold it in their portfolio, making money by collecting interest on it for the life of the mortgage. Or two, they can sell it and directly get cash or some other asset for the mortgage, rather than waiting for the interest to come in.

If they decide to sell their mortgages, they enter into what is called the secondary market. It is here that Fannie Mae (and other financial institutions) buys mortgages from the direct lenders. Fannie Mae either pays cash for the mortgages, which makes money immediately available to banks so that they can make more mortgages, or it issues mortgage-backed securities in exchange for pools (groups) of mortgages. These mortgage-backed securities are very liquid investments (almost like cash) for the banks and can be traded on Wall Street just like other securities. Either way, the direct lenders to the public acquire more funds to make more mortgages. It is in this way that Fannie Mae, through the secondary market, makes housing more affordable for the American public.

Fannie Mae is restricted by federal charter to buying residential mortgages within certain guidelines and limits. For example, the maximum limit for a one-family conventional loan that Fannie Mae was allowed to buy was, in 2003, $322,700. The loan limits are adjusted annually to reflect current market conditions. It is also directed by Congress to increase the availability and affordability of homeownership for low- to middle-income families.

In the multi-trillion dollar (of outstanding mortgage debt) HOUSING industry, Fannie Mae plays a large role, owning, or holding in trust, approximately 20 percent of all mortgages. In 2002 alone, it purchased (or guaranteed) $849 billion of mortgages, at a rate of over $2 billion every day of the year. Along with Freddie Mac, it has significant influence on homeownership in the United States.

The U.S. government decided long ago that it was desirable for Americans to live in homes that they owned themselves. So Fannie Mae, and later Freddie Mac, were established to help families pursue this particular facet of the "American Dream." Fannie Mae has been successful in this, and over the years it has helped finance purchases of homes for millions of families in the United States.

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fascism

SHORTLY AFTER WORLD WAR I, a new Italian political movement emerged under the former head of the

Italian Socialist Party, Benito Mussolini. It was known as Fascism, and won national attention by responding in kind to the violent tactics of Italy's revolutionary socialists and labor unions. Building on this success, Mussolini pressured King Victor Emmanuel to appoint him prime minister in 1922; he then moved toward dictatorship, banning all non-Fascist political parties by the late 1920s. The Fascists soon had many imitators around the world, most notably the National Socialist German Workers' Party under Adolf Hitler, prompting political analysts to transform the proper noun of "Fascism" into the generic concept of "fascism."

The extremism model versus the totalitarian model. The most popular interpretation of fascism is that it is "right-wing extremism," standing in diametric opposition to the "left-wing extremism" of communism. This is not only the leading theory among political moderates: It was also the official position of the Communist International, which in 1935 defined fascism as the "overt, terrorist dictatorship of the most reactionary, chauvinist and imperialist elements of finance capital." The problem with the extremism model is that fascism and communism are similar in some ways. Most tellingly, both advocated and imposed a significantly larger role for government in the economy, almost always seen as a "left-wing" position. This is frankly admitted by socialists like Carl Landauer:

> In a history of socialism, fascism deserves a place not only as the opponent which, for a time, threatened to obliterate the socialist movement. Fascism is connected with socialism by many crosscurrents, and the two movements have some roots in common, especially the dissatisfaction with the capitalist economy of the pre-1918 type. . . . Fascism was ready to use forms of economic organization first suggested by socialists—and very likely that use of socialistic forms would have increased if fascism had not all but destroyed itself in causing the Second World War.

An alternative account is that both fascism and communism are forms of totalitarianism. The greater the power of the state, the more totalitarian it is. Historian Richard Pipes provides the canonical inventory: "an official, all-embracing ideology; a single party of the elect headed by a 'leader' and dominating the state; police terror; the ruling party's command of the means of communication and the armed forces; central command of the economy." The Soviet Union under Josef Stalin approximates the totalitarian pole, a pole that Hitler's Germany neared by the end of the war. The LAISSEZ-FAIRE minimal state stands at the opposite end of the spectrum.

Fascism as national socialism. The most substantive objection to the totalitarian model is that fascists and communists have usually been violent enemies. How can they be ideological neighbors? What this question forgets is the old saying that "the heretic is worse than the infidel." Mussolini, Hitler, and other fascist leaders broadly accepted the economic outlook of their socialist rivals. But they split on the question of nationalism. Orthodox Marxism insisted that the fate of the nation was not of paramount interest to workers. Socialists were therefore obliged to oppose their own country's war efforts, and scorn the false god of patriotism.

The fascists took the opposite view. Only a deluded zealot could deny that the fate of Italy mattered for Italian workers. Just as members of the same economic class have interests in common, so do inhabitants of the same country. More importantly, ordinary people are highly susceptible to patriotic exhortations. Any political movement that hopes to succeed needs to integrate such feelings into its programs, not belittle them. Fascists accordingly replaced veneration of "the workers" with a fanatical devotion to "the nation," and concluded that Marxists were traitors.

Mussolini's transition from orthodox Marxism to fascism is a matter of public record. He rose to the highest level of the Italian Socialist Party, becoming the editor of its newspaper in 1912. By April 1914 he was, "in the judgment of sympathizers and opponents alike, the dictator of the Socialist Party," according to historian James A. Gregor. Vladimir Lenin himself publicly praised his radicalism. Yet Mussolini chaffed under his colleagues' internationalist scruples. He broke party discipline by advocating war against the Central Powers, and was expelled from the Socialist Party. Mussolini then opened a new newspaper, the *People of Italy*, to promote a synthesis of nationalism and socialism. Gregor explains:

> Mussolini insisted that the only socialism that would be viable in the twentieth century would be a socialism prepared to identify itself with the nation. . . . The commitment to national tasks involved fundamental common interests uniting all the special economic and parochial interests of the nation. . . . Mussolini's argument effectively identified traditional socialism as both antinational and antisocialist.

Hitler, in contrast, was never a Marxist; their "unpatriotic outlook" repelled him from the start. Yet he eagerly accepted the socialist label, even though it raised suspicions that "we were nothing but a species of Marxism. . . . For to this very day these scatterbrains have not understood the difference between socialism and Marxism," Hitler wrote. That difference is nationalism. Hitler hated the Marxists not for their economics, but because they "stabbed Germany in the back" during World War I with their revolutionary activities.

Indeed, he repeatedly claims that Marxism is pro-capitalist; it seeks "only to break the people's national and patriotic backbone and make them ripe for the slave's yoke of international capital and its masters, the Jews." For Hitler, preserving "the economic independence of the nation" from "the international stock exchange" is of paramount importance.

Fascist economic policies involved extensive government regulation, expansive public works, and generous social programs. Such policies had clear precedents in socialist legislation, but the fascists gave them a nationalist rationale: to heal internal class divisions, move towards economic autarchy, and prepare for war. As Hitler explained:

> The task of the state toward capital was comparatively simple and clear: it only had to make certain that capital remain the handmaiden of the state and not fancy itself the mistress of the nation. This point of view could then be defined between two restrictive limits: preservation of a solvent, national, and independent economy on the one hand, assurance of the social rights of workers on the other.

Fascists avoided the radical socialist policies of economy-wide nationalization of industry and collectivization of agriculture. But this deviation from orthodox Marxism was hardly unique to fascism: given these policies' devastating effect in the Soviet Union, most socialists wanted to avoid them. Historian Hermann Rauschning explains:

> Hitler had no intention, like Russia, of "liquidating" the possessing class. On the contrary, he would compel it to contribute by its abilities towards the building up of the new order. He could not afford to allow Germany to vegetate for years, as Russia had done, in famine and misery. Besides, the present owners of property would be grateful that their lives had been spared. They would be dependent and in a condition of permanent fear of worse things to come.

Economic policy under Italian fascism. Fascism reigned in Italy for over two decades. During the early years, the influence of national socialist doctrine on actual economic policy was relatively mild. Government's share of gross domestic product declined from 1922–26, as Italian industry recovered from post-World War I turmoil, though the depression restored it to earlier levels. Italian policy came into closer accord with national socialist ideology in the mid-1930s. Public works, state-enforced cartels, and welfare spending expanded significantly. The state bought assets of failing banks and corporations, eventually owning most of the banking sector and "a greater portion of the national economy than in any other nation-state west of the Soviet Union," Stanley Payne explains in his *History of Fascism, 1914–1945*.

The 1935 conquest of Ethiopia pushed ITALY farther down the fascist road. Government spending rose to fund the war, then went even higher to pay for public works in the new colony. International sanctions to protest the war lasted only three months, but Mussolini used them to permanently reduce Italian dependence on foreign markets. The nationalization bent of fascist economic policy peaked in the last three years of World War II, when Mussolini became the semi-puppet ruler of German-occupied Italy. Mussolini then sought "revenge against the bourgeoisie and the rightist elite whom he believed had thwarted Fascism," Payne says, by subjecting industry to heavy government and worker control.

Economic policy under German National Socialism. The Nazis were far quicker to expand the role of government and cut ties with the world economy. In the first four years of their rule, the annual increase in real private consumption was 2.4 percent, versus an astronomical 19.7 percent for public consumption. Rearmament had priority, but real non-military government spending grew at an annual rate of 5.3 percent, according to economist Avraham Barkai. In spite of the rapid economic recovery, Nazi trade policy pushed imports below their depression levels, particularly in agriculture. Regulation expanded throughout the economy. Author David Schoenbaum provides a good summary:

> Wages, prices, working conditions, allocation of materials: none of these was left to managerial decision, let alone to the market. . . . Investment was controlled, occupational freedom was dead, prices were fixed. . . . Business, particularly big business, declined or flourished in direct proportion to its willingness to collaborate.

Unemployment rapidly fell during Hitler's early years, and his military buildup enjoyed most of the credit. But Nazi labor policy suggests a different mechanism: Wage ceilings and prohibition of militant union activity led to a significant reduction in workers' share of national income, making businesses much more eager to employ them.

WORLD WAR II brought more radical economic changes. The Nazis instituted state slavery, forcing millions of foreigners into involuntary, and often deadly, servitude. As the war progressed, Germany moved close to full fascism, ultimately conscripting women, the elderly, and even children for economic or military service.

Fascisms: divergence and convergence. In spite of the parallels, almost all observers acknowledge major differences between Italian Fascism and German National Socialism. Italian Fascism was far less murderous and militarily aggressive, and moderately less collectivist and internally repressive. Though Mussolini openly described his regime as "totalitarian" by 1925, his practice fell short of his rhetoric.

Furthermore, while Hitler borrowed many ideas from Mussolini, the fateful obsession with *Lebensraum*, or "living space," was unique to Nazism. Hitler was convinced that Germany was doomed to Malthusian starvation unless it could acquire more land: "The National Socialist movement must strive to eliminate the disproportion between our population and our area—viewing this latter as a source of food as well as a basis for power politics," Hitler wrote.

In spite of its superficial appeal, Hitler maintained that peaceful international commerce was shortsighted. He also rejected overseas colonization, arguing that other imperial powers had already occupied the areas "suited for settlement by Europeans." Therefore the only remaining option was "acquisition of new land in Europe itself," particularly in Russia. Hitler provides few specifics about the fate of the current occupants of his prospective conquests, but his subtext is genocidal. However paranoid Hitler's land fetish seems, his foolhardy sneak attack on the USSR suggests that he was sincere.

Conclusion. Since the end of World War II, "fascism" has been a term of abuse, automatically equated with whatever politics one happens to oppose. To understand fascism, we must study its theory and practice during the inter-war period, when millions openly accepted the label. Fascism was a Marxist heresy, a synthesis of socialism and nationalism. It made socialist ideas palatable to a broader audience by abandoning divisive class struggle in favor of unifying national struggle. Unlike modern democratic socialists, the fascists favored a large government role in alliance with corporate capital in the economy, but pragmatically distanced themselves from frightening Leninist measures like out-right expropriation.

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Federal Reserve

THE FEDERAL RESERVE is the central bank of the United States. It was established through the Federal Reserve Act of 1913, in which the U.S. Congress attempted to create a safe, flexible, and stable monetary system. This Act was in response to the Panic of 1907 when many banks failed. Claiming that he knew nothing about economics, President Theodore ROOSEVELT left it to Congress to develop the new monetary institution. A *New York Times* poll of 90 members of Congress found that some wanted individual banks to issue notes, others favored a central bank, and still others supported issuing emergency currency in limited amounts. No one was definite on how to achieve any of these goals. By 1913, Congress agreed on the new Federal Reserve Act and left it to President Woodrow WILSON to implement its provisions. The Federal Reserve began operation on November 16, 1914.

Twelve Federal Reserve Districts were established, located in New York, Chicago, San Francisco, Philadelphia, Boston, Cleveland, St. Louis, Kansas City, Atlanta, Richmond, Dallas, and Minneapolis. The districts were chosen to best represent the population base at the beginning of the 20th century. Each of the 12 district banks is responsible for oversight of member banks within its district, and each member bank has its own Board of Directors that serves local business and economic interests. Paper money is issued under the authority of the Federal Reserve and is "legal tender for all debts, public and private."

The Federal Reserve Act of 1913 also extended the provision of the Aldrich-Vreeland Act of 1908, which permitted national currency associations to issue emergency currency, until June 30, 1915. This action provided the government with the power to handle the monetary crisis that resulted when WORLD WAR I broke out in Europe in 1914. By August, $208,810,790 of emergency notes had been issued, and World War I changed the entire future of the Federal Reserve system.

As the Federal Reserve system, popularly known as "the Fed," developed, its major duty evolved into overseeing the monetary policies of the United States by controlling the nation's supply of reserve money and overseeing the central supply of money and credit. The Fed can "tighten" the flow of money and credit when the economy is good or expand it when the economy is in crisis. One way that it exercises this power is through the 12-member Federal Open Market Committee, which buys and sells government securities and which can change the discount rate paid to the Federal Reserve by member banks who borrow money.

When these banks borrow from the Federal Reserve, it increases the amount of money paid to the United States government because the Federal Reserve is self-supporting, and all profits over a basic amount are paid into the U.S. Treasury. For example, in 2001, the Federal Reserve paid $27.14 billion to the government. Additional revenue is received from member banks through interest on government securities and service fees charged by the Federal Reserve. Critics of the Federal Reserve system claim that its policies are often short-sighted, and some go so far as to blame the Fed for the Great DEPRESSION. Supporters claim that the Federal Reserve has helped the United States to become a major economic power.

The Federal Reserve also supervises and regulates the banking industry, protects the credit rights of consumers, and provides support to government, the public, and American and foreign financial institutions. While the president of the United States has appointment power over major Federal Reserve officials and Congress has oversight powers, the Federal Reserve is an independent governmental body. The governing body of the entire Federal Reserve System is the Board of Governors. Seven governors are appointed by the president and confirmed by the Senate for 14-year staggered terms that may not be repeated. This means that every two years new appointments are made to the Board. Since the remaining members stay on the Board, Federal Reserve policy tends to remain stable when an election changes the party of the president.

The Chair and the Vice Chair of the Board of Governors are appointed by the president from among board members and confirmed by the Senate, but they serve four-year unlimited terms. In its early days, the Federal Reserve was often pressured by the president to further his own economic goals, but after 1951 the relationship developed into voluntary cooperation. The Chair of the Federal Reserve may remain in office even when an election changes the political party of the president, as was the case with Alan GREENSPAN, who remained Chair between the administrations of Bill CLINTON and George H. BUSH.

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Federal Trade Commission

AN INDEPENDENT AGENCY of the UNITED STATES, the Federal Trade Commission (FTC) was created in 1914. It consists of five commissioners appointed by the U.S. president with the advice and consent of the U.S. Senate. The commissioners serve staggered seven-year terms. No more than three commissioners can be from the same political party. The FTC has both rule-making authority as well as enforcement authority. When the FTC promulgates a rule pursuant to its statutory mandate, the rule has the force and effect of law.

The major grant of power to the FTC is contained in Section 5 of the Federal Trade Commission Act of 1914. This section prohibits "unfair methods of competition" as well as "unfair or deceptive acts or practices." The FTC has both consumer protection obligations and ANTITRUST enforcement powers. It also enforces a number of other consumer protection statutes either by itself or in conjunction with other federal agencies.

The broad legislative mandate of the FTC is in large part due to the history of government regulation of business in the late 19th and early 20th centuries. Congress enacted the Sherman Antitrust Act in 1890 in an attempt to eliminate monopolization and restraints of trade. The Sherman Act was a product of an era in which so-called robber barons and various big business trusts dominated American business. Subsequent interpretations of the Sherman Act by the U.S. Supreme Court severely restricted the reach of the Act. At the same time, large businesses were being created by way of mergers and stock acquisitions. These mergers were not subject to Sherman Act jurisdiction in most cases.

Congress viewed competition as the best means to advance consumer welfare and the economy. Monopolies and other accompanying restrictive business practices were viewed as antithetical to individual initiative, independence, and responsibility. Meanwhile, at the beginning of the 20th century, a consumer protection movement began to take hold in the United States. Certain business practices were viewed as unfair, including fraudulent, misleading and deceptive representations in advertising and marketing.

Structure of the FTC. In addition to the commission, the FTC consists of three bureaus and various regional offices. The Bureau of Competition is the antitrust arm of the FTC. Its purpose is to prevent business practices that restrain competition, such as monopolization and anti-competitive mergers. This bureau conducts investigations of individual companies, litigates cases before administrative law judges and federal courts, and engages in business and consumer education.

The Bureau of Consumer Protection is designed to protect consumers from unfair, deceptive, and fraudulent practices. The bureau enforces a number of specific consumer protection laws enacted by Congress, trade regulation rules promulgated by the FTC, and the general provisions of the FTC Act as they relate to consumer protection. The bureau conducts investigations of individual companies, engages in various law enforcement sweeps in cooperation with other federal agencies, litigates cases before administrative law judges and federal courts, and engages in business and consumer education. This bureau also conducts studies to evaluate the impact of proposed actions on consumer and consumer protection.

The Bureau of Economics provides economic analysis and support to both antitrust and consumer protection casework and rule making. It analyzes the impact of government regulations on competition and consumers, and provides various federal agencies and departments with economic studies of various markets and industries.

The FTC is geographically divided into seven regions with offices in major cities. These offices conduct investigations and litigation under the supervision of the Bureaus of Competition and Consumer Protection. They also provide advice to state and local officials on the implications of various proposed actions, provide outreach services to consumers and businesses, coordinate activities with state and local officials, and sponsor seminars for consumers, small businesses, and local authorities.

The FTC also maintains mission support offices, which include Administrative Law Judges, an Executive Director, a General Counsel, an Inspector General, a Secretary, and Legislative and Public Affairs offices.

Statutes enforced by the FTC. The FTC is responsible for enforcing a number of federal statutes in addition to the FTC Act itself. The FTC has specific authority regarding credit and credit practices under the Truth in Lending Act, the Fair Credit Billing Act, the Fair Credit Reporting Act, the Equal Credit Opportunity Act, the Consumer Leasing Act, and the Fair Debt Collection Practices Act. It regulates false advertising of food, drugs, and cosmetics under the Wheeler-Lea Act of 1938. It has regulatory, investigatory and reporting authority under the Public Health Cigarette Smoking Act of 1969 and the Comprehensive Smokeless Tobacco Health Education Act of 1986. Various fair packaging and labeling acts give the FTC broad authority to avoid misrepresentation in the sale of consumer goods.

Privacy and consumer information concerns led Congress to give the FTC expanded authority to protect consumers and their information. Included are the Telemarketing and Consumer Fraud and Abuse Prevention Act of 1994, the Children's Online Privacy Protection Act of 1998, the Identity Theft Assumption and Deterrence Act of 1998, and the Gramm-Leach-Bliley Act of 1999 regarding personal financial information.

Consumer protection under Section 5 of the FTC Act. The FTC Act prohibits unfair or deceptive acts or practices, and has established different standards for unfair and for deceptive practices: A representation, omission, or practice is deceptive if it is likely to mislead consumers acting reasonably under the circumstances of a particular case; and it is material in the sense that it is likely to affect consumers' conduct or decisions with respect to the product or service in issue. The FTC has issued its own Federal Trade Commission Policy Statement on Deception to clarify its standards on this issue.

Unfairness was defined by Congress in a 1994 amendment to Section 5 of the FTC Act. An act or practice is unfair if the injury it causes or is likely to cause to consumers is substantial; not outweighed by countervailing benefits to consumers or to competition; and not reasonably avoidable by consumers themselves.

The FTC has issued policy statements and guides for specific areas. These include advertising, substantiation in advertising, bait advertising, deceptive pricing, use of the word "free," endorsements and testimonials, dietary supplements, eye-care surgery, food advertising, jewelry, furniture, and vocational and distance-education schools. These are in addition to the more general policy statements on deception and unfairness. The FTC also issues informational publications for both consumers and businesses with a view to educating people on their rights and obligations under the FTC Act.

Consumers and competitors do not have standing to sue under the FTC Act. Only the FTC can bring an action to enforce the statute. Because it has limited resources, the FTC normally investigates only matters of national concern and matters involving health and safety, as opposed to local matters or issues having only minor economic impacts. After conducting an investigation, the FTC staff makes a recommendation to the Commission to either close a case, settle a case, or proceed with a formal complaint. If a formal complaint is issued, the case is heard in a trial before an administrative law judge. The decision of the administrative law judge can be reviewed by the full Commission or it can be allowed to become a final decision. Appeals from a final decision are to the U.S. Circuit Court of Appeals and then to the U.S. Supreme Court.

The FTC can impose a range of civil penalties. A cease-and-desist order will require a business to stop a practice, provide substantiation for a claim, report periodically to the FTC about substantiation or other matters, and pay a fine up to $11,000 per day under the current version of the statute. The FTC can order corrective advertising as well as imposing other civil penalties in the form of consumer redress to people who purchased a product. This can result in the expenditure of millions of dollars.

The FTC enforcement of antitrust laws. The FTC has indirect authority to enforce the Sherman Act since, as the courts have held, any act or practice which violates the Sherman Act is also an unfair method of competition violating Section 5 of the FTC Act. The FTC has direct enforcement powers under the Clayton Antitrust Act to prohibit acquisitions, which may substantially lessen competition or tend to create a monopoly, as well as Clayton Act prohibitions on tying and exclusive dealing arrangements. Companies are required to file pre-merger notifications with the FTC and the Justice Department for transactions that satisfy certain thresholds under the Hart-Scott-Rodino Act amendments to the Clayton Act. The FTC also enforces the Robinson Patman Act, which prohibits certain forms of price discrimination that may lessen competition. Most of the FTC authority in this area is shared with the Antitrust Division of the Department of Justice.

The FTC administers only civil penalties for antitrust law violations. Included in these penalties are cease-and-desist orders, injunctions prohibiting mergers and acquisitions, and monetary penalties. In some cases the monetary penalties can be substantial. Criminal violations of the antitrust laws must be prosecuted by the Department of Justice.

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federalism

FISCAL FEDERALISM is a decentralized system of government with taxation and fiscal responsibilities vested in both central and lower levels of government. The UNITED STATES has a federal system of government. In this system, there are many civil units with power to raise revenues and provide local services. Three levels of government consist of the federal, state, and local jurisdictions, which include counties, cities and towns, and smaller civil divisions such as villages and special districts with less than 1,000 residents.

The three basic functions of these governments are: the establishment of property right and regulation of private actions; determination of provisions of goods and services including national defense, homeland security, education, roads and health; and redistribution of income. State and local governments determine the provision of local services and their revenue needs.

These activities influence the economic decisions of the individuals and businesses and the course of the economy. Government employs about one fifth of the work force and constitutes nearly 25 percent of the GROSS DOMESTIC PRODUCT (GDP). In recent years, the share of the state and local governments has risen steadily. State governments spent $1.1 trillion in fiscal year 2000, exceeding the $1 trillion mark for the first time in U.S. history. Their revenues exceeded $1.3 trillion in the same year. Intergovernmental revenues totaled $274 billion or 22 percent, most of which came from the federal government. State and local governments employed more than 15 million full-time equivalent workers in 2000.

The decentralized system of government raises some important and interesting questions regarding relegation of responsibilities among these levels of government. In general, in a decentralized system citizens can influence the outcome of the political process according to their preferences for the level of government services and ways for raising revenues to pay for them. A major implication and consequence of this multilevel fiscal system is that when benefits are spatially separated, services are provided by separate units. Consequently, these units differ in size and fiscal capacity. Allowing for differences in taste and capacity to pay, people with similar incomes and tastes tend to live in the same jurisdictions. However, higher-income people have a tendency to move away from lower-income communities and the lower-income people to follow them.

Economic theory provides some insight into the consequences of alternative means of providing government services. Usually, public services are provided and financed in line with their relevant benefit regions. For that reason, the federal government provides services that are collectively consumed at the national level such as national defense and homeland security. It is clear that all citizens benefit from these services. On the other hand, state and local governments provide services such as education, police and fire protection, streetlights, and refuse removal. These services are spatially limited to the local residents.

The means of financing government services vary with local desires. Communities with strong preferences for certain programs can differ substantially in their menu of services and respective taxes. However, these decisions are not totally independent from those in other communities. Individuals search for the communities that best match their preferred level of services and corresponding tax liabilities. In the other words, they "vote with their feet." Thus, if a community decides to tax the rich more heavily than the poor and the middle-income, it most likely will erode its tax base as the rich leave and the poor and the middle-class move in.

Allowing diversity and differences in taste assures more flexibility and more choice and improved efficiency in allocation of resources according to citizens' tastes. However, it raises important concerns regarding inequities arising from differing fiscal capacities.

Variation in fiscal capacity among state and local governments requires special fiscal arrangements for coordination of services and expenditures among communities for various reasons. The higher level of governments may need to correct spillover of benefits, may want to advance an activity with social merit by providing a subsidy, and to some extent equalize the fiscal position of the lower-income jurisdictions, among other goals. The federal government provides grants to states for various purposes.

In 2001, per capita federal aid to state and local governments ranged from a maximum of more than $3,800 (for Alaska) to a minimum of $700 (for Nevada).

States also make grants to their own local subdivisions. Most of state grants are provided to reduce the effect of differences in sizes of the jurisdictions. States subsidize localities for education, public welfare and highway spending.

The globalization of the world economy has already altered the federal systems and has set the stage for new international institutions. For example, "Europe 1992" eliminated trade barriers among the European Community member states and established a central government authority. Originally, Alexis de Tocqueville, the French philosopher incorporated the U.S. federal experience into European thought particularly in Germany and France. He regarded the American decentralized form of government essential for a liberal and democratic society while he raised concern about its future.

The need to link separate communities in order to achieve common objectives is an old concept. Alliances of Greek city-states or mediaeval Italian towns were short-term alliance of this type. However, more permanent unions were less common and generally had weak central authorities. In the United States, the states originally formed a loose relationship with the Confederation—a weak central government. In 1789, that system was replaced by a new constitution, creating the modern United States and its current system of federalism. Alexander HAMILTON, John Jay, and James MADISON argued in favor of ratifying the federal constitution in the Federalist Papers.

As de Tocqueville expected, the future of American federalism remains uncertain. A ranking and comparison of key U.S. intergovernmental events, 1960–80 and 1980–95 has found that the role of the federal government in intergovernmental affairs has diminished. These trends will remain influential in forming the future of the decentralized system in the United States and in the emerging global economy.

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feudalism

MOST SPECIFICALLY, feudalism is a term designating the predominant system of political organization of the European Middle Ages, arising in the wake of the disintegration of the Roman Empire after the 5th century. A vassal or political subordinate pledged fealty and military support to a political superior, his liege lord, in a ceremony that involved swearing fidelity and the performance of homage; in turn, the lord granted the vassal a "fief" or "feudum" (sometimes called a "benefice" in early sources), a coercive monopoly on the piece of territory he governed.

The parties to this arrangement are called "feudatories." The vassal could, in turn, subdivide his own fief. Thus, one individual could be a vassal to several lords. Feudalism should be seen as a complex, interlocking series of local arrangements. The vassal's obligations might include military service, garrison or court duty, relief (a tax on the hereditary status of the fief), aid (a system of extraordinary levies for particular circumstances), and hospitality. The liege pledged protection and justice for the vassal. This system, as a functioning means of government, peaked in the 12th and 13th centuries and was in decay by the late 15th century, giving rise especially in England to a decadent form called "bastard feudalism" in which the private armies of feudal peers vied for power. The period at the end of the 15th century saw the turn from feudal to absolutist monarchies, but important aspects of feudalism as a political arrangement persisted widely in continental Europe until the FRENCH REVOLUTION (1789), and its ceremonial vestiges are still apparent in those nations that retain a monarch, most notably in England. Originally, the term "feudal" described only the relationship between the noble and knightly or "armigerous" castes (those with a claim on a coat of arms). Feudal monarchies are characterized by the fragmentation of power and strong nobility (as opposed to absolutist monarchies, which seek centralized power and a weak nobility).

Feudal economics. The historian Georges Duby convincingly distinguished between feudalism as an economic system and as a political arrangement. In contemporary parlance, however, feudalism is frequently conflated with or understood to mean the manorial or seigniorial system, a system of land tenure that was the fundamental economic arrangement of medieval society after the early Middle Ages. It persisted formally and informally in parts of western Europe through 1789 and in Europe east of the Elbe River until 1848 or beyond.

In the manorial system, that had its roots in the large landed estates of the later Roman Empire, a local lord, typically a minor knight, but sometimes an abbot, managed the labor of local inhabitants, who would have been slaves in the Roman Empire, but whose status had been converted to that of a quasi-emancipation known as serfdom. They could no longer be purchased, but were still bound to remain on the land and obey the commands of the lord. The lord extracted rent from the tenants for land they tended, usually in the form of labor services. These inhabitants, frequently serfs, also cultivated the lord's land (the "demesne") and allowed his animals to graze on the common land. Peasants also paid taxes in kind for consumption of local resources (firewood or game) or use of common machinery (a portion of the flour from wheat ground in the manorial mill). Two primary organizational forms of seigneurialism were found in Europe: "Gutsherrschaft" east of the Elbe, in which the demesne comprised the largest portion of cultivated land, and "Grundherrschaft" in the west, where most land was cultivated by individual tenants. After the 12th century, most western European serfs could convert their labor obligations to fixed money rents and become free "villeins"; this system of emancipation was not possible in eastern Europe, where there were few individual tenants, and here, serfdom persisted much longer. The so-called disintegration of the manor in western Europe was typically favored by both peasants and lords. Peasants achieved greater freedom, particularly from hated labor obligations, and lords were rewarded with a cash payment and freed from paternalistic obligation to their tenants.

Although the terminology for describing the manorial system was derived from the European context and historians became increasingly ambivalent about its usefulness by the 1960s, Marc Bloch's use of the word "feudal" to describe a particular type of society has been expanded to explain arrangements in other parts of the world in other chronological phases (especially Japan, China, India, Latin America and Africa) despite the opposition of specialists to the designation in these contexts.

The arguments of Karl MARX regarding the historical stages of economic development made such usages common. For Marx, feudalism was an intermediate pre-requisite stage on the way to capitalism, in that the landlord did not completely control the means of production (as the capitalist later would), but could still appropriate the product. In this view, feudalism was challenged by the growth of trade and resulting markets for manufactured goods, which the feudal economy could not satisfy, both because seigneurs were primarily focused on political aims and not on standard-of-living issues, and because guild structure limited production to keep prices high. Because of these initial changes, capitalist production grew up around the feudal system, eventually causing landlords to orient themselves toward profit. Ultimately, then, they seek to enclose the common land of the manor in order to pursue profits, driving peasants off the land and into cities and providing the basis of the urban proletariat that will staff emergent capitalist factories.

Feudalism today. In most common usage today, feudal relations are found to occur whenever tenants pay rents to a monopolistic landlord class (the "seigneurie") that retains the non-economic coercive powers necessary to continue the subordination of the tenants, most typical as the economic mode of agrarian societies. The status of the peasants as serfs may be formally or informally codified. Arguably, this use of the term is most convincing to Marxist historians who understand the rise of free-wage labor from the decay of the manorial system, along with changes in the dominant mode of production, as the fundamental process that permitted capitalism to triumph. Similar assumptions, albeit from a different political perspective, underlay most of modernization theory as it developed after the 1950s.

A number of responses to such thinking emerged in the 1970s and 1980s. One of the most popular, DEPENDENCY THEORY, questioned the assumption that modern, industrialized capitalism was the most desirable end of economic development, and envisioned an alternative view of history in which Latin American arrangements were not viewed as anachronistic. These arguments have been confused by the multi-layered nature of much Third World economic activity; in Latin America, for instance, "feudal" features, such as the hierarchical organization of agrarian production in mines, workshops, plantations and haciendas, have co-existed from the beginning with capitalist commerce, wage labor and capital investment. In the wake of modernization theory, a number of creative attempts have been made to try to explain the persistence of feudal features in emergent or full-blown capitalist economies.

The most well known of these is the world-systems theory of Immanuel Wallerstein. According to this view, history should not be written from the perspective of the nation or region, but from a viewpoint that embraces different world areas organized economically: the most influential area is termed the "core," and areas with less political, economic, and social power are termed the "periphery." In this view, in the transition to the modern world, the core nations were those that most effectively navigated the transition from feudalism to capitalism, not only by giving rise to systems of wage-labor that replaced feudal arrangements, but also by developing effective mechanisms of labor control and strong coercive state apparatuses that defended and regulated these elements. Peripheral areas of the world that persisted in earlier means of production (either forced labor, as in the case of much of Latin America, or sharecropping, serfdom, or slavery) were forced into this position by the core powers so that the flow of resources and capital to the core powers could continue uninterruptedly. Critics of this system have argued that viewing the world economy as a system arranged by the core powers for their own benefit does not account for the constraints placed by indigenous history and circumstance.

"Feudal" continues to be a pejorative description from the modern perspective, and the debates of how allegedly feudal economies transformed themselves to capitalist production continue to be important as many seek the solutions to the economic problems of the Third World.

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Fiat

EVER SINCE JULY 11, 1899, when the *Società Anonima Fabbrica Italiana di Automobili-Torino* was formed, Fiat and the family that manages it, the Agnellis, have played a crucial part both in the development of Italian capitalism, and on the stage of Italian politics. Italian governments have always been more than willing to help out the Turin car industry both financially and politically.

The first car to be produced was a 4-horsepower engine capable of about 23 miles per hour, built by 150 workers. Other models soon followed and Fiat began to mass-produce cars and to expand to European and American markets. During the company's first 10 years, Fiat also diversified into the production of trucks, buses, trams, and marine and aero engines, and became involved in racing. With the rise to power of FASCISM in the late 1920s, Fiat had to stop its international expansion and focus on the domestic market. The most famous models of these years were the 508 Balilla (whose name paid homage to Benito Mussolini's dictatorship, meaning young fascist), first produced in 1932, and the 500 Topolino (1936), the smallest mass-produced car in the world at the time. In 1937, the famous Mirafiori plant started production, employing 22,000 workers.

The history of Fiat, after WORLD WAR II, is marked in equal measure by economic successes and severe financial crises. In the immediate postwar years, Fiat benefited from the financial aid of the MARSHALL PLAN and, under the leadership of Vittorio Valletta, was able to reconstruct its plants and launch new models such as the popular Fiat 500 and Fiat 600. In the late 1950s and in the 1960s, the Turin car industry exploited the years of Italian economic growth and expanded its domestic and international markets. The 1970s, on the contrary, were marked by social unrest and Fiat was shaken by workers' demonstrations supported by the major opposition party, the Italian Communist Party. This decade of turmoil and demands for fairer treatment of workers ended in 1980 with the March of the 40,000, a demonstration of white-collar professionals demanding an end to the workers' protests.

At the beginning of the new millennium, with the death of its charismatic president (and senator of the Italian Republic), Gianni Agnelli, Fiat faced new challenges. Despite the wealth of new models put on the market in the 1990s, the sales of the Turin-based group have diminished considerably and the partnership established with America's GENERAL MOTORS has only partially recovered financial losses. The group has also been at the center of several legal investigations for political corruption in Operation "Clean Hands" (*Mani Pulite*), a reform movement that swept away many of Italy's ruling politicians. Still, in 2002, Fiat ranked as the 49th largest company in the world with revenues of nearly $52 billion.

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Fillmore, Millard (1800–74)

THE 13TH PRESIDENT of the UNITED STATES, Millard Fillmore was born in Cayuga County, New York. He had no formal education, but was tutored by a young teacher, Abigail Powers, whom he later married. As a young adult Fillmore moved to Buffalo where he was admitted to the Bar in 1823. He began his political career helping to organize the Antimasonic Party and served in the state legislature (1829–31), where he worked for the abolition of imprisonment for debt. In 1832, he was elected to the U.S. Congress, but as the Antimasonic Party fell apart, Fillmore did not seek re-election in 1834. Two years later he successfully ran as a Whig candidate for Congress and was subsequently re-elected three more times.

In Congress, Fillmore supported strong protectionist legislation, including the Whig Tariff of 1842. He also supported the anti-slavery faction of the Whig Party but tended to take moderate positions, believing that while slavery was evil, its existence in the American South was guaranteed by the U.S. Constitution.

In 1848, Fillmore received the party's nomination for vice president, balancing the Whig Party ticket of presidential nominee, Southern slave-owner Zachary TAYLOR.

When Taylor died suddenly in 1850, Fillmore became president and acted to resolve the growing crisis over the expansion of slavery by supporting the Compromise of 1850. Part of the Compromise was the infamous Fugitive Slave Act, which required Northern states to assist in the recapture of escaped slaves and their return to the South.

Although a supporter of high tariffs, Fillmore also supported foreign trade. He sent Commodore Perry to open trade relations with JAPAN and signed commercial treaties with many other countries. Moreover, he supported a failed effort to build a canal connecting the Atlantic and Pacific oceans through Nicaragua.

Fillmore was in favor of improvements to the nation's transportation infrastructure, such as canals and RAILROADS. Reduced transportation costs allowed him to sign into law a significant reduction in postal rates.

During his three years in office, the federal budget remained under $50 million, with budget surpluses of about $4 million each year.

Fillmore's support for the Compromise of 1850 so outraged abolitionists that the party's anti-slavery faction withheld its support at the 1852 convention, costing him the nomination. Four years later Fillmore accepted the presidential nomination of the American Party (the "Know-Nothings"), a strong anti-Catholic, anti-foreigner party. Fillmore, however, focused on the need for national unity. He lost overwhelmingly.

During the AMERICAN CIVIL WAR, Fillmore remained loyal to the Union, but strongly opposed many of President Abraham LINCOLN's wartime policies, including emancipation of the slaves. After the war, Fillmore supported President Andrew JOHNSON's conciliatory approach to Reconstruction and tended to support Democratic Party policies.

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film and film industry

AS FYODOR DOSTOYEVSKY and Emile Zola wrote masterpiece novels about wealth and poverty in the 19th century, filmmakers throughout the world in the 20th century have created movies about work, money, financial empires, class conflicts, and other facets of capitalism. Feature films do not pretend to depict reality exactly as it is; these works are points of view, visions, social constructions, subjective representations of a specific context, as seen by artists, recreated by directors, scriptwriters, and actors. But many people use selected elements they see in movies as references about the way they behave, talk, see others, and represent other nations and foreign cultures. Therefore, films shouldn't be separated from their social, cultural, historical, and economic contexts.

For example, at any point, Soviet films produced under Josef Stalin were quite different from Hollywood movies, even during the same period. But oddly, it was easier to see a Hollywood film in the Soviet Union than to watch a Soviet movie in the UNITED STATES, anytime in 20th century. This raises the question of film distribution (discussed in the second part of this article). This entry will present a few examples of films using elements about capitalism, plus an overview of the film industry seen as a capitalist, sometimes monopolistic system.

Films about labor and capital. Even in the age of silent movies, class conflicts were represented in a masterly fashion in some feature films. The most perfect and unequalled example is probably Fritz Lang's *Metropolis* (1927). In a gigantic city of the future (inspired by Lang's first vision of New York City from 1924), a powerful man (Fredersen, the living symbol of the capitalist) rules masses of workers that are submitted as slaves to the machine's infernal cycles and cadences.

A young pacifist, Maria, tries to hold back rebellion among exhausted workers, but the insensitive master learns of her actions and sends a replicate robot to secretly replace the pacifist. The human-like robot raises a revolt that destroys the workers' city, but those lives are saved by the real Maria. This metaphoric story shows the conflicts between workers and leaders, but also contemporary themes such as the fear of machines, robots that can take humans' places, union assemblies, and in a way, aspects of industrial relations. This German film became popular again in 1984 when it was colorized, reedited and distributed from the United States with its new rock soundtrack. The original silent (and longer) version remains more difficult to find in video stores, mainly for distribution reasons.

Many other film classics could be mentioned. In the Soviet Union, director Serguey Eisenstein created his first film, *Strike* (1924), which showed a rebellion among workers who were manipulated and punished during a strike. After the silent era, French film *A nous la liberté* (1931), directed by René Clair, presents a hobo who becomes the owner of a big firm. When he retires, he gives his enterprise to its employees. Clearly influenced by Clair's previous film, Charles Chaplin's *Modern Times* (1936) is perhaps the most famous, although not the first film about capitalism, with assembly lines, machines, bosses, economic crisis, workers' demonstrations, and strikes.

Another French film, *Le roman d'un tricheur* (Sacha Guitry, 1936), shows the story of an elegant man who became rich in casinos by cheating. His life was centered on his fascination with gambling.

Orson Welles's *Citizen Kane* (1941) is a sly presentation of the life of millionaire William Randolph Hearst and his affair with actress Marion Davies. We see the rise and fall of a narcissus businessman, who successfully buys newspapers, builds an empire, and therefore tries to control people's opinions.

A rather melodramatic masterpiece is *Bicycle Thief* (1948), the great Italian film directed by Vittorio De Sica that won many awards. After WORLD WAR II, a poor unemployed man needs a bicycle in order to get his first job in two years. After many sacrifices, he buys a bicycle but it soon gets stolen. The police can't help him so he tries to save his job by looking for the thief. As a last resource, he steals a bicycle and is arrested. Hollywood proposed Cary Grant for the leading role, but De Sica preferred to choose an unknown worker to obtain more realism.

Perhaps the most eloquent film about capitalism was praised in the 1960 Moscow Film Festival; it is a Japanese drama without dialogue, titled *The Island* (1960), directed by Kaneto Shindo. It is the strongest example of the criticisms of capitalism: a couple of poor laborers, with their two sons, live and work endlessly on a farm they don't own on a dry island. One day, when they capture a big fish, they sell it alive to a restaurant in the city, instead of cooking it. They buy clothes for the children with the money they earned. The scene when they respectfully offer all their harvest to their landlord is eloquent.

During the 1970s, many films dealt with union issues, such as an Italian drama, *The Working Class Goes to Heaven* (1971), written and directed by Elio Petri, and the American film *Norma Rae* (1979), directed by Martin Ritt, with Sally Field. Another American movie titled *Wall Street* (by Oliver Stone, 1987) was adapted from Kenneth Lipper's book. It showed a case of insider trading (an intentional tort) with a corrupted broker. On a more sarcastic note, *Roger and Me* (1990), directed by Michael Moore, is an unusual documentary about a man (the filmmaker) who tries to meet General Motors' chairman of the board to discuss why 35,000 workers in Flint, Michigan, were fired. The powerful boss remains unreachable, almost an abstraction.

As for comedies, the film *Tommy Boy* (P. Segal, 1995) shows how complicated it is for a son to succeed his father at the head of a big enterprise. Woody Allen's *Small Time Crooks* (2000) depicts a funny case of an unwanted success-story. Three criminals prepare a strategy to attack a bank; they slyly hide their plans by opening a little bakery commerce as a facade. But their honest business becomes a huge success while their crime strategy fails.

The film industry. The film industry, especially in the United States, is an aggressive universe. As Douglas Gomery explains, movies can sometimes be lucrative but they are always expensive to produce. Half of their budget usually goes to advertising and promotion. The American film industry has globalized since the 1920s, forming a group usually known as the majors, a group in competition with virtually all other film producers in the world. These seven major producers and distributors of motion picture and television programs are: Metro-Goldwyn-Mayer; Paramount Pictures Corporation; Walt Disney Company; Twentieth Century Fox Film Corp.; Universal Studios; Sony Pictures Entertainment; and Warner Bros., now part of AOL-Time Warner. These companies are represented by the Motion Picture Association of America (MPAA), one of the most powerful private organizations in the world.

The dominant American film industry has been criticized over the years. As opposed to most democratic countries, the U.S. film market (in theaters as well as on television) seems to be, in the main, closed to foreign productions; it has been described by American scholar Janet Wasko as "a more or less closed market through a form of de facto protectionism."

Capitalist extremes and excesses seem to characterize much of the motion pictures industry. In the American domestic market (that includes CANADA as well as the United States), the majors consider any other producer or distributor as a competitor. Producers share agreement exclusivities with specific distributors and exhibitors. This explains why foreign films are rarely offered on the big screens in movie theaters. According to American scholar Thomas Guback, "Market concentration and anti-competitive behavior are not unique to the motion picture business, although its history demonstrates how those conditions have characterized the industry." Guback adds: "In reality, the choice reduces itself, not to MONOPOLY or COMPETITION, but to monopoly, shared monopoly, or OLIGOPOLY. When that happens, rationalizations and legitimizations appear that either excuse monopoly or invent competition where it does not exist."

This dominant situation also repeats itself in many foreign countries. An illegal practice in the United States, block-booking, is often imposed on foreign exhibitors; this means they have to rent and schedule unwanted movies in order to obtain the few they really want. As scholar Ian Jarvie has explained, countries that would want to object to the American film presence have been threatened with a boycott menace; such was the case for a few months in England in 1948. It stopped when the UK film industry began to flourish again, during that U.S. boycott. In another article, Guback concludes about the Hollywood's world reputation: "American films and American companies are dominant, not because of the natural operation of marketplace forces, but because the marketplace has been made to operate in their favor."

People unaware of these sociological factors and economic structures often believe that American films are more visible or more popular because they are better, or because audiences would prefer them. This impression appears to be wrong. In fact, film domination can be explained in economic terms. Since this dominant position of the U. S. film industry has taken place for many generations, most American audiences wouldn't rapidly have the openness and curiosity to watch many foreign films. "Public taste in films has been formed and cultivated for decades by vertically integrated industry in which majors showed their films in their own theaters, and these acquired patterns of preference persist."

With a few exceptions, American audiences (of both movies and general television) are not exposed to foreign cultural products. They only see foreign universes through the lenses of American filmmakers. "Audiences can only be formed for films that are effectively available to them. The free-choice argument is no more than the myth of the consumer sovereignty which masks the demand created by film-distributing companies through massive advertising and promotion," explains author Pendakur Manjunath. The impact of this situation, which is perpetuated in many countries, is a feeble cultural diversity and a lack of dynamism in many cinematic arts.

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finance

FINANCE IS A SUB-FIELD of economics that studies financial markets, financial instruments, and financial institutions. The basic function of the financial system is to intermediate financial funds between the net lenders and net borrowers. Net lenders lack sufficiently productive investment opportunities themselves, possess financial wealth, and thus are net savers. Net borrowers lack sufficient funds to undertake their productive investment opportunities, and thus are net spenders. Savers, spenders, and financial intermediaries are the main participants in financial markets. The financial intermediaries sit in between the savers and end-users of these financial funds, and facilitate exchange.

Financial markets include STOCK EXCHANGES, BOND markets, money markets, and foreign-exchange markets.

Financial intermediaries include deposit-taking banking institutions, investment banks, and venture capital firms. If funds directly flow from savers to end-users through financial markets, this is referred to as direct finance, and if they flow from savers to end-users through financial intermediaries, this is referred to as indirect finance. For instance, buying shares in a publicly traded company through a stockbroker is a form of direct finance, and buying shares in a mutual fund, which may in turn buy shares in a publicly traded company, is a form of indirect finance. Financial markets and intermediaries play several very important roles in capitalist economies. First, they help allocate resources towards their most efficient uses. Firms with the most productive investment opportunities do not necessarily possess undistributed profits that are sufficient to pay for the project. Financial markets help identify such projects, assess their relative profitability, and ultimately fund them. Second, financial markets help allocate resources over time. In the absence of direct or indirect finance, firms, households, and governments would have been required to spend out of their current incomes only. Financial markets allow households to borrow against their future income (in credit markets), firms to raise capital against their future profits (in equity markets), and governments to issue bills and bonds against their future revenues (in debt markets).

Third, financial markets enable participants to exchange risks, and therefore help share risks more efficiently.

Indicators of economic development. All of these basic functions of financial markets and intermediaries have long been recognized as important indicators of economic development. At least since Joseph SCHUMPETER (1951), many economists have argued that a well-functioning, mature financial system is an important determinant of economic growth. Many development economists have, for example, observed that restrictive regulations (financial repression) on financial markets can hinder economic growth by discouraging savings and allocating resources toward unproductive uses. These restrictions have included foreign-exchange controls, and interest-rate ceilings on demand deposits paid by banking institutions. Binding interest-rate ceilings either reduce the incentives to save, and thus curtail the amount of funds available for end-users, or encourage different (and less productive) forms of saving, such as in the form of precious metals.

Since the early 1990s, there has been a worldwide tendency toward liberalizing financial markets in an attempt to put finance at the service of economic growth and development. While the economic consequences of financial repression for economic development appear to be rather uncontroversial, there has been some disagreement over the desirable speed and form of financial liberalization and de-regulation in both developed and developing countries. For example, countries that have liberalized their financial markets seem to become vulnerable to currency and banking crises. At least for the banking sector, one of the determinants of crisis subsequent to liberalization is whether there exists effective banking regulation and supervision. When financial liberalization takes place within a "weak" institutional environment, it tends to result in costly bank failures, financial turmoil, and economic recessions. As well, a gradual approach to liberalization tends to reduce the likelihood of crisis.

Why does financial liberalization lead to costly outcomes? The reason is that inappropriate institutional arrangements exacerbate some of the basic problems that are inherent in finance and financial markets. The identification, analysis, and assessment of such basic problems, which essentially give rise to the discipline of finance and financial economics, extend beyond the narrower analysis of banking and financial crises. The two most basic issues underlying finance are asymmetric information and pricing of risk. The first issue is very relevant for the study of financial institutions, and the second is crucial for the study of financial instruments.

Theory of finance. One of the premises of the theory of finance is that informational problems give rise to financial institutions that attempt to mitigate these problems. The problems originate from the prevalence of asymmetric information, whereby one of the parties to a financial contract commands more or better information about the possible outcomes of the contract. Consider, for example, a bank loan. Deposit-taking banks intermediate between depositors (net savers) and firms (net spenders), and this intermediation typically takes the form of a loan contract. The contract stipulates the amount of the loan (principal), the maturity date, and the interest payment dates and amounts. The difference between the interest received from the loan and the interest paid to the depositors is the net revenue of the bank. The bank faces a default risk. Part of this default risk is related to asymmetric information because the borrowers typically have superior information regarding their project and their own abilities than the bank. In the presence of asymmetric information the bank will only have imperfect ways of distinguishing between the "good" and the "bad" projects (borrowers).

Asymmetric information leads to two separate problems, adverse selection and MORAL HAZARD. Adverse selection, in the case of a loan contract, suggests that a higher interest rate would only attract riskier investment projects (with possibly higher expected returns). This increases the bank's loan portfolio because as the interest rate rises, low risk-low return borrowers will be discouraged, potentially leaving those borrowers with no intentions to pay their loans back. Thus, adverse selection refers to the situation in which a bank's own actions increase the default risk it faces before the transaction occurs.

Moral hazard, in the context of a bank loan, corresponds to riskier behavior by the borrower after the bank extends a loan. Banks typically have imperfect ability to monitor and control the actions of the borrowers. Further, once the loan is disbursed the borrower may have incentives to shirk, or undertake riskier and undesirable activities. Thus, the actions of the borrower increase the default risk that the bank faces after the transaction occurs.

Moral hazard and adverse selection, within the broader theme of asymmetric information, have proven to be very useful concepts in analyzing and understanding the functioning of financial markets, financial instruments, and institutions. For example, asymmetric information helps us understand why debt or equity financing may be more attractive for certain firms. Small firms tend to use debt financing, such as bank loans, more heavily than equity financing, which gives shareholders claims over the firm's profits and net assets. The reason is that small firms are relatively less well known, and savers may have more difficulty assessing the viability of the firm's business, but may be in a better position to value its fixed assets and collateral. Given such informational problems, and given that shareholders are residual claimants, net savers may prefer debt financing over equity financing. Thus, informational issues determine the method of financing.

Such informational issues also have implications for the theory of corporate finance, which otherwise views the choice between debt and equity financing as irrelevant for the value of the firm. This is the celebrated irrelevance result of Franco MODIGLIANI and Merton C. MILLER (1958), and has since then been revisited by applying the tools of asymmetric information.

Asymmetric information. Similar problems related to asymmetric information help in understanding why certain financial intermediaries, and banks, in particular, do exist at all. Reliable and useful information is crucial for savers who would like to minimize their losses for a given level of risk. To this end, they search for, and evaluate different investment projects that are potentially profitable. And, if a project is promising, they have to write a contract with the borrower. Once the contract is written, they have to monitor the actions of the borrower to ensure that the loan is used for the appropriate project. However, information gathering and processing, writing contracts, and auditing are all costly, especially for small lenders. Banks can reduce these costs if they:

1. Gather and process information, and avoid duplication by otherwise unrelated depositors
2. Build expertise in writing contracts and reduce transactions costs
3. Act as a delegated monitor on behalf of the depositors.

However, large savers may themselves fulfill these functions at low costs, and may prefer direct finance. As well, even small savers may have less difficulty in obtaining and processing reliable information about big firms. Consequently, bank financing may be more suitable for small firms with limited credit history. Overall, issues related to information help explain why direct and indirect finance can coexist, despite the fact that ultimately they both serve the same function.

Indeed, although their basic function is the same, and they try to solve identical problems, financial intermediation and institutions have evolved very differently in different countries. For instance, as of 1995, in the United States, bank loans accounted for only 17 percent of the total credit market debt by companies, whereas in GERMANY it was 66 percent, and in JAPAN 60 percent. Clearly, in the United States, banks play a much smaller role in intermediation. Also, although banks are practically prohibited from holding equity shares in non-bank firms, German and Japanese banks hold (as of 1995) about 10–15 percent of the outstanding corporate equity. Further, American companies rely much more on direct finance to raise capital compared to their counterparts in Germany and Japan. In the United States, 54 percent of total credit market debt was intermediated in 1995, and in contrast it was 74 percent in Germany and 77 percent in Japan.

Why do such differences arise? Legal environments within which financial institutions operate differ across countries, and these differences are partly responsible for these outcomes. However, some of these legal institutions are themselves products of the past, and have themselves been influenced by financial and banking sector developments. For example, despite their similarities in their economic structures and legal environments, CANADA had only one bank failure throughout the 20th century, while the United States experienced numerous banking crises (especially during the early 1930s). These events have, in turn, shaped the financial legislation and current financial institutions in the two countries in different ways. With the internationalization of finance, cross-country differences in financial institutions and their roles in the economy may disappear over time, but it is worth noting that both legal and financial institutions tend to evolve with tremendous inertia.

Regardless of contemporary cross-country differences in the relative significance of direct versus indirect finance, well-developed financial markets in individual countries tend to offer very similar products or instruments to net savers, spenders, and intermediaries. These instruments range from rather mundane debt contracts such as loans from financial intermediaries, short-term bills and long-term bonds to more complex and exotic DERIVATIVE securities such as options, futures, and swaps. Some of these products fulfill the traditional function of financial markets, and transfer funds from net savers to net spenders.

Risk traders. Recently, however, most of the growth in volume of trade and advances in financial innovations have taken place in markets, which exchange contracts that help insure against certain risks. In fact, the spectrum of products available appears to be limited only by the imagination of the market participants and their willingness to write contracts that trade these risks. Sometimes alternative instruments are available to insure against a given risk, which are traded in different markets. For instance, wheat farmers, who wish to reduce the price risk they face, can sell their crop in the futures market before the harvest, and secure themselves a price. Commodity exchanges specialize in public trading of such (standardized) instruments (e.g., futures). Many more such products are also traded in the "over-the-counter" markets where financial institutions offer custom-tailored products (e.g., forwards). There are also dealer markets in which only members (such as large banks) trade large volumes of financial assets (foreign exchange) and instruments (swaps).

As in the case of financial intermediaries which attempt to address asymmetric information problems, financial markets in general tackle one fundamental problem: How to price risk? All financial instruments that are traded in financial markets carry risks. These risks range from the traditional default risk to price risk associated with individual commodities or assets. In all cases, the risks arise because there is fundamental uncertainty about the underlying commodity or asset's future value. The wheat farmer, for example, by selling his crop in the futures market, downloads the price risk to the other party. Hence the farmer should be willing to pay a price for selling the risk. Similarly, share prices should reflect the buyers' willingness to pay today for the present value of future dividends and capital gains. Asset-pricing studies how these shares are priced and future earnings are discounted. These pricing issues are studied in financial economics.

In the last 30 years, perhaps no sub-field of economics other than finance has experienced such an explosion of theoretical and applied research. This is partly because modern finance, with its emphasis on information economics and uncertainty, is a relatively young field. Partly, however, this growth reflects the symbiosis between the academic research and practical applications that is unparalleled in other fields.

The impact of academic research on certain financial markets has been phenomenal. For instance, the Black-Scholes-Merton formula (1973) for pricing an option has arguably been the single most important factor for the rapid increase in trading and much wider use of options contracts. The discovery of this formula allowed risks associated with options contracts to be priced very accurately and by using information that is available at low cost. It also led to the introduction of a range of products that have considerably expanded the eventualities that can be insured against. Although the support for research in financial economics is sometimes at the whims of the markets, and likewise the interest in research in finance appears to be cyclical, it promises to be an exciting field to study in the years to come.

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financial institutions

FINANCIAL INSTITUTIONS, or financial intermediaries, are major participants in organized financial markets. They provide indirect finance through the services of an institutional "middle-man" that channels funds from savers to those who ultimately make capital investment. The principal reason for the existence of financial institutions is the fact that financial markets are imperfect; that is, securities buyers and sellers do not have full access to information.

The main problems arising from asymmetric information are adverse selection and MORAL HAZARD. Adverse selection refers to the potential for the least creditworthy borrowers to be the most likely to seek to issue financial instruments, while moral hazard pertains to the possibility that an initially creditworthy borrower may undertake actions that reduce his creditworthiness after receiving funds from a lender. Financial institutions are needed to resolve the problems caused by market imperfections.

Another reason for the existence of financial intermediaries is the existence of economies of scale, or reduction in average operating costs that can be achieved by pooling savings together and spreading management costs across many people. Financial institutions seek customers, both lenders and borrowers, by differentiating and advertising financial products. These products can be differentiated, either by PRICE (i.e., INTEREST RATE) or by variations in maturities fees, and auxiliary services. The non-price differentiation is especially important when interest rates are regulated and/or fixed by tacit or explicit collusion.

Balancing funds and credit. Financial intermediaries balance the demand for CREDIT with their available funds by adjusting interest rates and terms of loans. Borrowers are often classified in terms of risk and charged rates according to their classification. Financial firms produce financial services and include depository and non-depository institutions. Depository institutions consist of commercial banks, savings institutions, and credit unions. The non-depository institutions include finance companies, mutual funds, securities firms, insurance companies, and pension funds.

The depositary institution accepts deposits from surplus units and provides credit to deficit units through loans and purchases of securities. Depositary institutions are a major and the most popular type of financial intermediary. Commercial banks are the most dominant depositary institution.

Banks originated in the earliest civilizations as depositors for gold and silver. These institutions evolved into merchant banking firms and ultimately to modern banks. Commercial banks issue checking deposits and specialize in making loans, and they collect information about creditworthiness of individuals and businesses that desire loans. The principal assets of commercial banks are various loans, i.e., commercial loans, consumer loans, interbank loans, investment in securities, eurodollar loans, repurchase agreements, real estate loans, and fixed assets. The main liabilities of commercial banks include various deposits, such as transaction deposits, saving deposits, time deposits and money market deposits, borrowing from other banks, including borrowing from the Federal Reserve banks, eurodollar borrowings, and repurchase agreements.

The major sources of revenue for banks are interest revenues on loans and securities. They incur costs in the form of deposit interest expense, real resource costs incurred in providing deposit-related services, and real resources costs incurred in extending and monitoring loans.

Commercial banks serve both the private and public sectors since households, businesses, and government agencies utilize their services. There are currently more than 8,000 commercial banks in the United States. Banks are regulated to enhance safety and soundness of the financial system without hampering efficiency. Regulation focuses on six criteria: capital, asset quality, management, earnings, liquidity, and sensitivity to financial market conditions.

Saving institutions also known as thrift institutions include saving and loan associations (S&Ls), which are the dominant type, and savings banks. Some thrift operations are independent financial institutions, while others are subsidiaries of financial conglomerates. Saving institutions can be either stock-owned or owned by depositors (mutual). While most of the savings institutions are mutual, many of them shift their ownership structure from depositors to shareholders, which allow them to obtain additional capital by issuing stock. In addition, stock-owned institutions provide their owners greater potential to benefit from their performance. This, however, makes stock-owned institutions more susceptible to takeovers, while it is virtually impossible to take a control of a mutual institution.

The main sources of funds for savings institutions are deposits, borrowed funds, and CAPITAL. Unlike the commercial banks, which concentrate on commercial loans, savings and loan associations traditionally have specialized in extending mortgage loans to individuals who wish to purchase homes. The vast majority of the mortgages originated are for homes with only 10 percent being designated for commercial properties. Savings banks are similar to savings and loans although they have more diversified uses of funds.

A credit union is a depository institution that accepts deposits and makes loans to only a closed group of individuals. These institutions are nonprofit and they restrict their business to the credit-union members. Credit unions specialize in making consumer loans and use most of their funds to provide loans to their members.

Federal regulation. The federal regulation of depositary institution in the United States started with the Banking Act of 1933 and the formation of the Federal Deposit Insurance Corporation, which supervised the nation's taxpayer-guaranteed deposit insurance system for commercial banks and saving institutions. In 1999, Congress passed the Financial Service Modernization Act of 1999, which allowed for direct competition between depositary and non-depositary financial institutions. Traditional rationales for government regulation of depositary financial institutions include a) maintaining depositary institution liquidity, b) assuring bank solvency by limiting failures, c) promoting an efficient financial system, and d) protecting customers.

Non-depositary institutions generate funds from sources other than deposits. Finance companies specialize in making loans to relatively high-risk individuals and businesses. While the functions of finance companies overlap with the functions of depository institutions, the finance companies concentrate on a different segment of financial market. Consumer finance companies concentrate on providing direct loans to consumers, while sales finance companies concentrate on purchasing credit contracts from retailers and dealers. The major sources of funds for finance companies are loans from banks, commercial papers, deposits, bonds, and capital. Finance companies use funds for consumer loans, business loans and leasing as well as real estate loans. They compete with savings institutions in providing consumer loans, and succeed in increasing their market share when savings institutions experience financial problems.

Insurance companies specialize in trying to limit the adverse-selection and moral-hazard problems. There are two basic kinds of insurance companies. Life insurance companies charge premiums for policies that insure people against the financial consequences associated with death. They offer special financial instruments known as annuities. These instruments guarantee the holder fixed or variable payments at some future date. Property and casualty insurers insure risk relating to property damage and liabilities originating from by injuries or deaths by accidents or adverse natural events. Insurance companies invest the proceeds received from selling insurance in stocks and bonds, and their overall performance is linked to the performance of the stocks and bonds in which they invest.

Pension funds are institutions that specialize in managing funds that individuals save for retirement. The pension funds create financial instruments known as pension annuities, which are similar to the annuities offered by life insurance companies. However, unlike the life insurance annuities, the pension annuities apply only to the future event of retirement. The principal reasons for people using pension funds instead of saving on their own is asymmetric information; that is, the fact that those who operate pension funds may be better informed about financial markets than individual savers. In addition, many people would find monitoring their financial instruments very costly on a day-by-day basis and they would rather entrust the management of the respective instruments to pension funds.

Mutual funds are the dominant non-depositary financial institution. They sell shares to surplus units and use the funds received to purchase a portfolio of securities. Investment companies operate mutual funds. Mutual funds concentrate their investment either in capital market securities, such as stock and bonds, or money market securities. The latter are known as money market mutual funds. Mutual funds became very popular during the 1970s and 1980s when the assets held in these funds grew over 60 times initial levels. In 2003, more than 7,000 mutual funds were in operation.

Securities firms primarily provide brokerage and investment banking services. In addition, these firms often act as dealers and as advisors on mergers and other forms of corporate restructuring. Their principal sources of funds are insurance premiums and earnings from investments, while the main uses of funds are purchases of long-term government and corporate securities.

The regulation of financial institutions has been reduced and managers have been granted more flexibility to offer services that could increase cash flow and value. Deregulation allowed financial institutions more opportunities to capitalize on economies of scale. The consolidation of commercial banks resulted in the higher volume of services produced and lowered the average cost of providing the respective service. The reduction of regulation has prompted mergers of commercial banks and savings institutions, securities firms, finance companies, mutual funds, and insurance companies. These financial conglomerates enable customers to obtain all of their financial services from a single financial institution.

The global expansion of financial institutions is another dominant trend. Commercial banks and insurance companies have expanded globally through international mergers. An international merger between financial institutions enables the merged company to offer the services of both entities to all customers. The rationales for international financial intermediation are the same as the justification for domestic intermediation.

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financial statement

A FINANCIAL STATEMENT is a report that summarizes the financial condition of an entity. The entity may be an individual, partnership, or business organization. There are actually a number of different types of financial statements including, but not limited to, the balance sheet, the income statement, and the statement of cash flows.

The balance sheet is a snapshot that basically summarizes asset, liabilities and net worth at some point in time. A company's total assets is the value of all it owns including cash, inventories, land, plant, and equipment. Total liabilities is the total amount the company owes others, that is, owes to creditors, including the pensions owed to retired employees. The balance sheet should give a good financial picture indicating assets owned and liabilities owed.

An accounting identity implies that assets must equal liabilities plus net worth. Thus, net worth provides information as to what the firm is currently worth. It also provides information as to the size of the company. Note that items are generally reported on the balance sheet at historical cost. A balance sheet is also referred to as a statement of financial position. A consolidated balance sheet includes figures for all subsidiaries.

The income statement summarizes income and expenses and may also summarize retained earnings in the case of a corporation and capital accounts in the case of a partnership. This profit and loss statement provides details as to a firm's or organization's financial operations over a specific period of time, for example, a year. The statement will include a reporting of net profit or loss for the particular period. It will include an accounting of revenues, costs, and expenses for this period of time. Note that items on the income statement are usually reported on an accrual basis, meaning that they are recorded when expenses are accrued or revenue is earned and not when they are paid or received.

The income statement is sometimes referred to as a statement of operation or profit and loss statement. In a company's annual report, the income statement gives the cumulative earnings and profitability resulting from the previous year's operations. It is in this statement that the company reports total income as well as the cost of sales. Thus, it is the income statement that provides information as to whether the firm was profitable or not.

The statement of cash flows records the comings and goings of cash at the firm. Simply defined, CASH FLOW is net income less noncash revenues plus depreciation and any other items charged to reserves that were not actually paid out in dollars. Thus, the statement of cash flows differs from the income statement and the balance sheet in that the latter two statements record items on an accrual basis. There are several sections of the statement of cash flows. One section reports the activities of the firm that are related to the generation of income and include income, expenses, and changes in working capital items. This section is aptly called cash flows from operating activities. Another section reports cash flows that arise from the purchase or sale of physical assets or long-term financial assets. Note that long-term financial assets are generally not as liquid as cash and are therefore not cash equivalent. An asset that is cash equivalent is generally considered to be as safe and as liquid as cash itself. Loosely speaking, these are assets with a maturity of three months or less such as Treasury bills, short-term certificates of deposit, and money-market funds. The cash flow that is related to the raising of funds from investors and the returns to investors is summarized in the section referred to as cash flows from financing activities.

Typically, a balance sheet, an income statement, and a statement of cash flows comprise important financial statements for a firm and are used to evaluate the condition and performance of the firm. These statements are typically included in a company's annual report as well. The financial statement may thus be used to evaluate the historical or past performance of the firm and enables an assessment of the firm's strong points as well as weak points. In fact, other common financial statements include a statement of stockholder's equity and a statement of changes in financial positions. The former may provide information about the firm's debt and whether it is retaining profits. The latter statement gives information on whether working capital is increasing or decreasing. Thus, financial statements provide a basis for analyzing a company and providing tools for proper planning.

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Finland

AT ONE TIME an exclusively agricultural country known for its crops, forests, and fishing, Finland has become industrialized. In reviewing the decades following WORLD WAR II, a war that put Finland face to face with a near state of ruin, the nation has steadily progressed toward joining a more global economic environment.

Finland's strategy has been to address concerns over a lack of balanced trade and the worries of high inflation and unemployment. By the mid-1960s, 20 years after the war ended, the majority of Finns worked in one of many major industries. And the shift continues today, away from farming and agriculture. Manufacturing, trade, and transportation now dominate the country's economy.

Finland's economy is based on free market principles, its capital output relatively parallel with its European neighbors, FRANCE, GERMANY, and the UNITED KINGDOM. Its main sector, manufacturing, involves the production of steel and iron, metal products, petroleum, ships, machinery, chemicals, clothing, and electronics. Of this latter industry, manufacturing cellular phones is a booming industry in Finland, and has high growth projections into the 21st century.

A member of the EUROPEAN UNION (EU) since 1995, and one of the first to adopt the EURO currency, Finland's principal trade partners include Germany, Great Britain, JAPAN, RUSSIA, SWEDEN, and the UNITED STATES. Transportation equipment, ships, clothing, and food are Finland's chief exports.

Agriculture, though no longer the mainstay, maintains a prestige of its own in the form of livestock (poultry, hogs, sheep, cattle, and reindeer) and hay, barley, wheat, and potatoes. Its timber industry, which has always been one of Europe's largest, has not given up that honor. Daily, shippers send Finnish wood and paper products throughout the world.

Despite a jump in unemployment, late 2002 statistics indicate a stable economic future. With a GROSS DOMESTIC PRODUCT (GDP) of $133.5 billion, and a population of just over 5.1 million, Finland has matched per capita income with its Western European counterparts.

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fiscal policy

FISCAL POLICY IS concerned with government purchases, TAXES, and transfer payments. Economists generally agree that fiscal policy has important effects on the economy. Fiscal policy can change the course of the economy through changes in spending and taxes. Policymakers may help restore the economy to its full potential when output falls below the full-employment level. An increase in government expenditures affects the aggregate spending and brings it to a new level. A tax cut increases consumers' disposable income, leading to more aggregate spending. Both changes stimulate the economy and move it closer to a full-employment level of output.

The difference between taxes and spending fiscal policies lies in their relative effect on the economy. A $100 increase in government purchases is a direct addition to spending. Whereas, the same amount of tax cut to individuals can induce additional consumption expenditures. Through these channels, governments can counteract any spending shocks. In reality, these processes are often slow and difficult to synchronize with what the economy needs at the time.

Fiscal-policy instruments can be slow for several reasons. Usually, implementation of a fiscal change may take several months. The legislative process alone could take many months or even longer to adopt a policy. In the United States, a tax bill originates in the House of Representatives and then goes to the Senate.

Usually, this political process is complex. Taxes usually change distribution of income and therefore the cost of a tax cut and its benefits affects different groups of individuals differently. Each party tries to please its constituency. Legislators could drag on arguments for changes in the tax bill. After the House resolves the representatives' differences the bill goes to the Senate. The Senate usually modifies the bill and sends it to the conference committee to resolve the differences. Then the bill goes to the president who would either sign it into a law or veto it. Even if the president approves the bill, the implementation phase of the law and the time necessary for its effect on the deriving sectors of the economy delay the effect on the aggregate economy. And if the president vetoes the bill, the process can add many additional months to this delay. Depending on the extent of the downturn, the policy may by then have unintended adverse effects on the course of the economy.

Any change in government spending or transfers could be as lengthy as a tax change. Consequently, a fiscal stimulus could take effect long after the economy has recovered. In that case, the policy would destabilize the economy and move it in the wrong direction.

Furthermore, effective fiscal-policy instruments should be countercyclical and thus temporary. Yet, the reality is different. Reversing taxes and government expenditures or transfer payments are politically very difficult. In the past, many temporary tax changes have become permanent. The public is never happy to lose a tax cut. And the government is usually reluctant to reverse a tax increase that provides revenues for a program.

Similarly, new government expenditures are likely to become permanent because the public is never happy to lose its benefits.

Another important consideration is the interaction of fiscal policy and monetary policy. Some economists believe that even if the government tried to stabilize the economy with fiscal-policy instruments, the FEDERAL RESERVE could counteract it through the monetary channels. The Federal Reserve affects the course of the economy through the monetary policy instruments to keep the economy as close as possible to its potential level. They could perceive a fiscal policy change as another shock and try to counteract it. For example, if the government cuts taxes to expand the output, the Fed could counteract it by a contractionary move to reduce output.

Furthermore, a restrictive monetary policy could more than offset the expansionary effects of fiscal policy, or vise versa, and pull the economy in the opposite direction. Yet, the two policies could work in the same direction. For example, a tax cut accompanied with lower short-term interest rates will stimulate the economy through fiscal and monetary channels to boost spending, which in turn boosts output. Monetary and fiscal polices are both instruments for promoting economic growth.

In recent years, the federal budget deficit has been the subject of a lively debate in the political arena and in academe. Government may be forced to incur debt to stabilize the economy and promote growth. Borrowing is an alternative to current taxation as a mean of financing government expenditures. A budget deficit is the excess of government outlays compared to its receipts from tax revenues, fees, and charges. Since 1970, federal government outlays have exceeded receipts for most years. And they have increased as a percentage of GROSS NATIONAL PRODUCT (GDP). As a result, interest payments on these loans have constituted an increasing share of the federal expenditures. In 1985, Congress adopted the Gramm-Rudman-Hollings Act to establish a plan for reducing the federal budget deficit. The Budget Enforcement Act of 1990 was passed to enforce the Gramm-Rudman-Hollings Act. Its enactment set new rules and put a cap on defense and international and domestic spending and required a new budget process: "pay-as-you-go" system for new programs and tax cuts. This act aimed to reduce the budget deficit significantly.

The budget imbalances reflect the level of economic activity as well as the structural imbalances between revenues and expenditures. Thus, the federal budget deficit can be divided into a cyclical component and a structural component. The fluctuations in economic activity associated with BUSINESS CYCLES affect the size of the federal budget deficit substantially. The Office of Management and Budget estimated in 1989 that each one percentage point decrease in the growth rates of real GROSS NATIONAL PRODUCT (GNP) and a one percentage point of unemployment would increase the federal budget deficit by $7.7 billions in that year. The high-employment budget deficit has on average been less than two percent of GNP in most years.

It is clear that fiscal policy can be used to fight recession and inflation. However, some changes in government receipts and expenditures reflect discretionary changes in the laws that govern fiscal policy. Changes in the levels of these items can also result automatically from changes in economic conditions—real output, unemployment, and the price level. In general, when the economic activity rises, government receipts rise and expenditures fall.

In recent years, attention has also turned to the long-term effects of taxes on economic growth. While the current reform agenda revolves around the tax base, the rates, and tax deductions and exemptions, a great deal of debate looms around the effect of taxation on savings, investment, and international market conditions and their impacts on domestic economic goals and objectives for growth

Slogans such as "No New Taxes" or "Balance the Budget" are to get the attention of voters. These are simple messages that ignore the seriousness of economic policy. If we decide to devote more resources to improving public health and social security, national defense, and homeland security, and to protect our environment, or to other problems markets cannot solve, we need to accept their opportunity cost. Some economists believe that "fiscal policy echoes the thunder of world history."

The government today has the responsibility to control financial panics and prevent depressions. The government has also the ability to minimize the ups and downs of the business cycles to prevent high levels of unemployment and to promote long-term economic growth. Taxes and expenditures are extremely powerful instruments for social changes.

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Fisher, Irving (1867–1947)

"THE GREATEST OF America's scientific economists up to our own day" (according to Joseph SCHUMPETER in 1948) is probably best known for being wrong.

In the summer of 1929 Fisher stated, in his nationally syndicated weekly newspaper column, that he believed the economy had hit a new plateau, and that increases in productivity would ensure a bright macroeconomic future. In October of that same year, the Great DEPRESSION wiped out his own fortune (his inventions had made him a millionaire) and the fortunes of his countrymen. Fisher's attempt to "talk up" the market would stalk him to his end. It is an unfortunate way for this great economist to be remembered, since he made important contributions to nearly every discipline of economic theory.

His dissertation on mathematical economics, *Mathematical Investigations in the Theory of Value and Prices* (1892), was hailed by Paul SAMUELSON as "the greatest doctoral dissertation in economics ever written." He was an important early advocate of the marginalist position in MICROECONOMICS, and of an extremely sophisticated version of the Quantity Theory of Money in MACROECONOMICS.

His disquisitions upon the *Theory of Interest* (1930) and *The Purchasing Power of Money* (1911) underlie modern theories of intertemporal choice and the making of index numbers. Economists still refer to the "Fisher Equation" wherein the real interest rate equals the nominal rate minus the inflation rate (approximately). His econometric investigations (he was a founder and the first president of the Econometric Society) and data collection, that he personally financed, helped every economist to understand macroeconomic fluctuations. As a public intellectual, Fisher crusaded for a consumption tax, advances in public health (including universal health insurance), Prohibition, eugenics ("race hygiene"), and world peace.

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Fisk, James Jr. (1835–72)

AN AMERICAN RAILROAD magnate notorious for his corrupt business practices, Jim Fisk was born in Pownal, Vermont and died in New York City. Fisk joined the Jordan Marsh Company in 1860 as a wholesale salesman, where he secured large government textile orders by distributing cash to legislators, and acquired scarce cotton for the company by smuggling it out of the Confederacy during the AMERICAN CIVIL WAR. Bought out in 1864, Fisk next made a fortune by selling Confederate bonds short in England before news of the South's defeat spread widely. By 1867, he was a millionaire living in New York City. Rotund, bejeweled, and with a scandalous personal life, Fisk cut a colorful figure.

Joining with Daniel Drew and Jay GOULD to oppose Cornelius VANDERBILT for control of the Erie Railroad, Fisk became managing director of the line in 1868. When Vanderbilt began buying Erie stock, the trio issued new stock. Vanderbilt replied with a contempt of court order that forced the group to flee to New Jersey to avoid arrest. To get back into New York, they bribed the New York state legislature to pass legislation legalizing their stock over-issue. Although a popular and profitable RAILROAD, the Erie never paid a dividend because Fisk kept it in debt to finance his lavish lifestyle and manipulations. Besides engaging in insider trading, he bribed legislators and judges to gain competitive advantages. Fisk died at the hands of a rival for his mistress's affections.

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Fogel, Robert (1926–)

WINNER OF 1993 Nobel Prize in Economics (jointly with Douglass NORTH), Robert Fogel was cited by the Nobel Committee for "renewed" research in economic history by rigorously "applying economic theory and quantitative methods in order to explain economic and institutional change." The prize endorsed the "cliometric" revolution that transformed the practice of economic history beginning in the late 1950s. "Cliometrics" takes its name by adding the suffix "metrics" (to measure) to "Clio" (the Greek Muse of history). The essence of cliometrics is to unite economic theory with measurement to explain history. Fogel did more to advance the cliometric approach than anyone else.

Fogel attended Cornell University, where he majored in history with an economics minor and became president of the campus branch of American Youth for Democracy, a communist organization. After graduating in 1948, he became a professional organizer for the Communist Party.

But, in 1956, Fogel enrolled in Columbia University's graduate economics program and gave up his radicalism. At this time, economic historians were beginning to take an increasingly quantitative approach that made use of explicit mathematical economic models. Fogel was a pioneer, using these methods in his master's thesis, which studied the land grants given to the Union Pacific Railroad. After teaching at the University of Rochester, Fogel accepted an appointment at the University of Chicago, where he spent the bulk of his career, aside from a six-year move to Harvard from 1975–81.

Fogel's first major book, *Railroads and American Economic Growth* (1964), tested economic historian W.W. Rostow's thesis that RAILROADs had propelled the entire American economy to "take-off" into sustained economic growth. His "counterfactual" argument shocked traditional historians, because the model involved rewriting history to create a larger canal network that would have been built in the absence of railroads. Despite considerable initial skepticism and numerous attempts at refutation, Fogel successfully convinced the vast majority of historians that railroads were *not* indispensable to 19th-century American economic growth.

Fogel's best-known and most controversial book (written with Stanley Engerman), *Time on the Cross: The Economics of American Negro Slavery*, won the 1975 Bancroft Prize and was widely discussed in the press and on television. After demonstrating that slavery was profitable and prospering on the eve of the Civil War, it boldly argued that the material standards of living of American slaves were higher than many had thought, and that slave plantations were considerably more efficient than Northern farms and free Southern farms at turning the inputs of LAND, LABOR, and CAPITAL into output and revenue.

Many critics questioned these statistical findings, and many objected that the book viewed SLAVERY from the slaveowners' perspective—without condemning the institution's immorality. Fogel took these comments to heart and his sequel, *Without Consent or Contract* (1989), included lengthy treatments of abolitionism and the political realignment of the 1850s, which led to the downfall of American slavery. Most economic historians now accept the conclusion that slave agriculture was more efficient, but opinions are divided on the material conditions of slaves.

Fogel's most recent path-breaking research project examines historical links among the economy, nutrition, health, and mortality.

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Ford Motor Company

CELEBRATING ITS 100th anniversary on June 16, 2003, Ford Motor Company was founded by Henry FORD along with 11 investors. In 1919, the original investors and other stockholders were bought out, making the Ford family the sole owners of the company, and opening the door to expansion without resistance. Today, Ford employs 350,000 people around the world.

In 1956, Ford had its Initial Public Offering, selling 10.2 million shares—the largest IPO in United States history at the time, and leaving family ownership at 22 percent. Diversification followed the IPO, including creating Ford Credit, its leasing arm, in 1959. Ford further diversified in 1987, buying the Hertz Corporation and moving into the rental car market. The company addressed its need for quality parts and distribution by acquiring Electric Autolite Company in 1961, which evolved into Ford's Motorcraft brand of manufacturing and distribution in 1972. Further, beginning in 1991, Ford offered automotive service to its Ford, Lincoln, and Mercury brands through its Quality Care service at its dealerships.

Ford's history of development and diversification clearly paid off in the early 1990s. In 1993, five of the top eight selling vehicles in the United States were Ford products.

To ensure its continued success in the future, Ford merged its North American and European operations and moved to a global management team in 1995.

Product innovations, acquisitions and mergers also comprise Ford's history, particularly since the late 1970s. An early merger occurred in the mid-1940s, when Ford merged its Mercury and Lincoln brands for a 10-year period. Today, the brands are independent within the Ford family of products. Beginning with its 25 percent equity interest of Mazda in 1979, less than 10 years later, Ford became the majority owner of Aston Martin Lagonda, Ltd., in 1987 and bought all outstanding stock in 1994. In between its initial acquisition and full ownership of Aston Martin, Ford acquired Jaguar in 1990. Keeping strides at the same time with innovation, in 1992, the Ford F-Series trucks held the top spot in U.S. vehicle sales for the 10th year in a row.

Ford targeted the mid-size family car as a strategic cornerstone of worldwide development in 1988, introducing the same vehicle with different names domestically and abroad, known in the United States as the Ford Contour and Mercury Mistique and as the Mondeo in Taiwan, Europe, and the Middle East. The addition of Volvo to the Ford family came in 1999, at an acquisition price of $6.45 billion. Land Rover is the latest addition to the Ford portfolio of vehicles.

Ford posted revenues of $162.4 billion in 2001, with Ford Financial Services (Ford Credit and the Hertz

Corporation) accounting for $30.9 billion of the revenue stream. Ford sold 6,991,000 vehicles in 2001, a 5.8 percent decrease from 2000, posted its first quarterly loss in 10 years, and consequently reduced its annual common and Class B stock dividends from 60 to 40 cents in 2002. On the positive side, Ford boosted research investment in 2001 to $7.4 billion and ranked second worldwide in Group Market Share, trailing General Motors by 2.2 percent.

Ford is engaged in RESEARCH AND DEVELOPMENT (R&D) projects that are examining the use of hydrogen fuels. One project aims to put experimental fuel-cell powered vehicles on the road (in California) while another project is aimed at exploring alternatives to imported oil as a long-run strategy.

As Henry Ford's great grandson, Bill Ford Jr., leads the company into the future, he hopes to turn the company back toward the greatness and profitability it once enjoyed. In 2002, Ford has managed to cut costs and post a small profit. But, it's no easy time in the automobile industry. Competitiveness is at an all time high, both from domestic and foreign competitors. Price wars are stiff, with manufacturers competing on rebate and free financing offers. While the future of Ford is unclear, its current CEO is dedicated to upholding the family name.

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Ford, Gerald R. (1913–)

BORN IN OMAHA, Nebraska, and christened Leslie King, Jr., Gerald R. Ford became the 38th president of the UNITED STATES. His parents were divorced when he was two and his mother remarried. He took the name of his stepfather, Gerald R. Ford, and grew up in Grand Rapids, Michigan.

Ford attended the University of Michigan where he studied economics and political science and played center on two national-championship football teams. Graduating from Yale University in 1941 with a law degree, Ford was subsequently admitted to the Michigan Bar.

During WORLD WAR II, Ford served four years in the U.S. Navy. After practicing law for several years, he ran for U.S. Congress in 1948. In 1963, while still a Republican congressman he was named by President Lyndon JOHNSON to the Warren Commission investigating the assassination of President John F. KENNEDY.

Ford described himself as "a moderate on domestic issues, a conservative in fiscal affairs, and a dyed-in-the-wool internationalist." He supported U.S. actions in the VIETNAM WAR and kept a low profile on civil rights issues. Elected by his colleagues in 1965 as House of Representatives minority leader, Ford served 25 years in the House before he was nominated by President Richard NIXON in 1973 to the office of vice president under the provision of the 25th Amendment upon the resignation of Spiro T. Agnew.

When Nixon resigned on August 9, 1974, Ford was sworn in as president saying that "our long national nightmare is over." President Ford was the first non-elected vice-president and president in U.S. history. During his time in office he tried to restore public confidence in the national leadership and in the institutions of government. Ford's "honeymoon" with Congress and the pubic ended on September 8, 1974, when he pardoned Nixon. Ford always felt that the nation was still consumed by Nixon and the Watergate scandal, and that without a presidential pardon, the nation would never heal.

Ford's first year in office was dominated by severe economic problems, including both inflation and recession. Unemployment was over 9 percent, new housing starts were at their lowest in years, new-car sales were down sharply, and inflation was at 12 percent. In foreign policy, American prestige was at an all-time low: the Vietnam War ended in 1975 with the collapse of South Vietnam and the evacuation of American citizens. When Ford ran for election to the presidency, he first had to campaign against Ronald Reagan for the Republican nomination. Ford won the nomination and selected Senator Robert Dole of Kansas as his running mate. Still dealing with the fallout of his Nixon pardon, a slow economic recovery, and an upstart Democratic candidate named Jimmy CARTER, Ford lost the presidential election of 1976.

Most historians credit Ford as a decent and honest man who entered into the office of president under unusual and difficult circumstances, a president whose integrity went far toward healing the wounds of Watergate. In economic terms, he inherited a crippled economy but was unable to reverse the ravages of inflation and unemployment. Tip O'Neill, the Democratic Speaker of the House of Representatives, in his memoirs said about Ford: "God has been good to America, especially during difficult times. . . . he gave us Gerald Ford—the right man at the right time who was able to put our nation back together again. Nothing like Watergate had ever happened before in our history, but we came out of it strong and free, and the transition from Nixon's administration to Ford's was a thing of awe and dignity."

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Ford, Henry (1863–1947)

AN AMERICAN INNOVATOR in the automobile industry, Henry Ford's production techniques became standardized throughout the manufacturing world in the early 20th century. The FORD MOTOR COMPANY, which he founded in 1903, was the largest automobile manufacturer in the world in the 1910s and 1920s with over 15 million Model T Fords sold between 1908 and 1927. With the announcement of a "Five Dollar Day" in 1914, Ford also popularized the idea of mass-production workers as consumers. The company was eclipsed by General Motors after 1930, but the Ford Motor Company remained the second-largest auto maker at the time of Ford's death in 1947.

Ford was the oldest surviving son of William Ford, who emigrated from Ireland in the 1840s, and Mary (Litigot) Ford. The Fords settled in the farming community of Dearborn, just west of Detroit, Michigan, and Henry Ford was born there on July 30, 1863. Before establishing his own farm holdings in Dearborn, William Ford worked as a railroad carpenter. His son inherited his mechanical aptitude and as a child earned money by repairing neighbors' watches.

Inspired by the sight of a steam-driven engine that could be used for threshing or sawing, Ford moved to Detroit when he was 16 years old to work in the Flower and Brothers Machine Shop. He remained in Detroit until 1882, working for three years at the Detroit Dry Dock Company's engine works. Ford then returned to Dearborn and worked for the Westinghouse Company as a repairman of their steam engines in southern Michigan for the next decade. After Ford married Clara Bryant on April 11, 1888, the couple settled on an 8-acre farm in Dearborn. By the time their only child, Edsel, was born in 1893, the Fords had moved back to Detroit, where Henry became the chief engineer of the Detroit Illuminating Company.

Always fascinated by engine design and application, Ford experimented with gasoline-powered internal combustion engines throughout the 1890s. On June 4, 1896, Ford and a group of friends tested their first automobile, comprised of two bicycles harnessed together and powered by a gas engine. After testing a number of prototypes over the next three years, Ford and a group of investors established the Detroit Automobile Company in August 1899. The company lasted just over a year before closing, the fate of most of the thousands of automobile ventures that were started during the era. Ford attracted new investors in the Henry Ford Motor Company after winning an auto race in Grosse Pointe, Michigan, in October 1901. Ford left the company within a year after a series of arguments with its principal investors; under a new name, the Cadillac Corporation, the company eventually became the luxury division of Ford's chief rival, General Motors.

On June 16, 1903, Ford incorporated the Ford Motor Company with its principal assembly plant on Mack Avenue in Detroit. The Ford Model A—a moderately priced automobile featuring an innovative, vertically operating engine with cylinders that gave more power with less friction—was an instant success with 658 cars sold in its first season. In 1907, countering conventional wisdom in the industry, Ford decided to concentrate on lower-priced automobiles with the Model N, starting at $700. The decision led Ford to a million-dollar profit that year, with 8,243 Model N automobiles sold for gross revenues of over $4.7 million. Sales of the Model N increased to 10,000 in 1908. Despite refinements in his Mack Avenue assembly lines, Ford could not keep up with demand.

Ford's new factory in Highland Park, Michigan, opened in December 1909, as a state-of-the-art manufacturing facility. Each step in the production process was routinized through the intensive use of machinery that deskilled the labor process. The mechanization of production, standardization of the components, and constant planning and refining of the manufacturing process came to be known as "Fordism." Yet Fordism went far beyond the factory-shop floor. In order to combat the high absenteeism and turnover that Highland Park's never-ending assembly lines produced—in 1913, the annual turnover rate of the plant's labor force was 380 percent, with 10 percent of workers being absent on any given day—Ford announced an incentive pay plan in January, 1914, heralded as a "Five-Dollar Day." In actuality, the plan retained the basic daily wage rate of $2.34 for an eight-hour day, with profit-sharing incentives making up the difference. As an essential part of Fordism, the higher-wage rates recognized that mass-production workers were to be transformed into consumers of mass-production items, including automobiles.

The Ford Motor Company was the pre-eminent automobile manufacturer in the world during the first quarter of the 20th century: between 1908 and 1927, the Ford Motor Company sold over 15 million Model T automobiles. By 1930, however, General Motors had surpassed Ford by offering annual style updates and credit-purchasing options on its cars, two actions that

Henry Ford resisted. Ford's outside interests, including the sponsorship of a "Peace Ship" to negotiate an end to World War I and his ownership of an openly anti-Semitic newspaper, the *Dearborn Independent,* added to the company's loss of dominance in its market.

Ford was also plunged into controversy over the use of brutal and illegal tactics to keep labor unions out of his factories in the 1930s, including the infamous Battle of the Overpass outside of the company's River Rouge plant on May 26, 1937. Several union organizers were beaten and the event tarnished Ford's reputation as a down-to-earth man of integrity. Ford finally signed a collective bargaining agreement with the United Automobiles Workers union in June, 1941, after all of the other major automobile manufacturers had done so.

Ford had ceded some managerial control of the Ford Motor Corporation to his son, Edsel, in the 1930s, although he continually frustrated his son's attempts to modernize the company's administrative and marketing procedures. Tensions between father and son led to Edsel Ford's premature death in 1943, which forced his father to resume leadership of the company even though he had not fully recovered from a stroke suffered five years earlier. In 1945, Ford's grandson, Henry Ford II, assumed the presidency of the company. On April 7, 1947, Henry Ford died in Dearborn at his Fair Lane estate, a site adjacent to the Greenfield Village historical site and museum that he had established in 1928.

Although the Ford Motor Company had declined somewhat since its heydays in the 1910s and 1920s, it remained the second-largest automobile maker in the world at the time of its founder's death. The production techniques and higher wages that Ford pioneered had also become standardized throughout the automotive sector and in many other mass-production industries as well.

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forecast

A FORECAST IS AN educated guess about the future, usually made in order to guide decisions in a variety of fields including business, economics, finance, marketing, and government. They are made by and used by both the private and public sectors.

Typically, there is a forecast object—what is going to be forecast. It may be sales, prices, GROSS DOMESTIC PRODUCT (GDP), growth rates, etc. Once chosen, modern forecasting usually involves the statistical analysis of data and a projection, perhaps into the future, of what is a likely outcome. A good forecasting model produces forecasts that are statistically close to the actual outcome.

To the extent that the forecast of some object differs from the actual outcome, there is a forecast error. For example, consider a simple forecasting model that predicts tomorrow's numerical value of the DOW JONES Industrial Average, a common stock price index, will be equal to today's value. If today the Dow Jones Industrial Average were at 9,000 points then this simple forecast model indicates that tomorrow it will also be at 9,000. That is, the expected value of the Dow Jones index is 9,000. Of course, anyone who follows the financial news will know that the stock market may go up or down from one day to the next.

Thus, the forecast is likely to have an error associated with it. If the value tomorrow actually turns out to 9,500, then the forecast error is simply the difference between the actual value (9,500) and the forecast (9,000) or 500 points. One may be able to improve the performance of the forecasting model, in the sense of reducing the size of the forecast error, by including other information into the model. The essence of forecasting is to construct the best-fitting, best-performing models at lowest cost. There are a variety of measures of model performance, however, and the size of the forecast error is just one of them.

In general, though, a good forecast will perform well by some standard and will utilize relevant and available information. The form of the forecasting model may become quite complex and may involve the use of sophisticated statistical techniques. However, all forecasts typically attempt to predict the value of something (i.e., the object) given limited information and rely on data and observations to do so. A forecast may even be augmented with subjective information as well.

In any case, models that use only one variable as a predictor are said to be univariate in nature while models that incorporate more than one variable are multivariate. Generally speaking, a forecast is a predicted value of some object and is made knowing that there is an error associated with it. Thus, a forecast is not written in stone, but instead should be used as one tool for making better decisions.

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Fortis

WITH MAIN OFFICES located in Brussels, BELGIUM, Fortis is an international financial services provider active in the fields of insurance, banking, and investments. The company ranks among the top 20 of Europe's most influential financial investors.

Known as the "Muscles from Brussels" for its aggressive role in the insurance and banking sectors, Fortis sells life and non-life insurance, such as health, auto, and fire, through independent agents and brokers, financial planners, and through the company's Fortis Bank branches.

Fortis Bank offers consumer and commercial banking services, asset management, private banking, investment banking, access to financial markets, and other financial services.

Within its home market of the Benelux countries—Belgium, the NETHERLANDS, and LUXEMBOURG—Fortis enjoys a vanguard position, serving corporate and public clients. Outside its geographic home market, Fortis focuses on selected banking and insurance segments most in demand.

Fortis' commercial growth has been a barometer to watch as it consistently ranks in the top 100 of *Fortune* magazine's lists of largest companies in the world, coming in at number 85 in 2002 with just over $40 billion in revenue. Financial targets for the company include growth of net operating profit per share of at least 12 percent, and return on equity of at least 15 percent.

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France Telecom

WITH A WORKFORCE of more than 200,000, a client base of 92 million, France Telecom is definitely one of the world's telecommunications industry giants. France Telecom and its subsidiaries provide a range of services to residential, professional, and large-business customers, primarily in FRANCE.

To call France Telecom a "telephone company" would be to underestimate its magnitude—as well as its strategic plans. In a market under full development and often chaotic, the group has set its sights on becoming a principal European player. With 56 million direct subscribers in more than 75 countries, and 206,000 service customers, France Telecom has also expanded with a wider range of products and services to fit a larger customer base. These include local telephone service, long distance, data transmission, mobile phone service, multimedia products, cable television, internet services, and audiovisual diffusion.

The mobile phones division serves 17.8 million clients in its native France and 12.5 million throughout the UNITED KINGDOM. This division manages the company's entire mobile telephone business—from conception of services and installation to network maintenance and commercialization.

The internet division manages public internet access—including network, cable, and satellite—in France, SPAIN, BELGIUM, the NETHERLANDS, and MOROCCO (through access provider Wanadoo).

A division called Fixed-Line Services and Distribution France monitors product and service marketing for telephone service and supplies. It also governs France Telecom's 700 "boutiques," where, across Europe, the company's phone-associated products are sold over the counter.

Corporate Solutions helps medium-sized and multinational clients in 220 countries manage their telecommunications needs. Handling the majority of consulting is subsidiary Equant, which promotes applicable sales solutions. The central function of the RESEARCH AND DEVELOPMENT (R&D) and Information Technology (IT) branches—which are interrelated—is to maintain and keep current the company's information systems technology. Supervising national and international networks for the entire product line is the Networks and Operators division. Comprising this branch are French Long Distance and Telecom Marine (dedicated to underwater networks).

The origins of France Telecom date back to the WORLD WAR II years, when the government foresaw the need of advanced telephone communications. The National Center for Telecommunication Research, created in 1944, monitored the upgrading of the phone system over the next 26 years until a department, entitled Head of Telecommunications, took over the reins of the industry. Renamed France Telecom in 1988, it became the country's autonomous provider of service.

France Telecom enjoyed a prosperous 2002 with consolidated revenues of 46.6 billion EUROs (up almost nine percent from the previous year) and an operating income of 6.8 billion euros (up 31 percent).

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France

IN EXAMINING THE history of capitalism in France, it is worth looking at the subject chronologically, while addressing certain common themes that are pertinent to the French case across time. Such themes, which relate more broadly to debates on capitalism, include the role of the state in capitalist development, the social costs and gains of capitalism, the role of empires in the development of European capitalism, and the connection between the capitalist economy and the modern nation state.

Before the Revolution. In etymological terms, France was the origin of capitalism, even if its economy was rather less developed in a modern, capitalist sense than that of England and Holland in the 18th century, when the term *capitaliste* begins to be applied by French writers to that class of the rising bourgeoisie who preferred to invest spare capital in risk-based trading and industrial ventures, rather than in the traditional solidity of land that was preferred by the French aristocracy. The term originally had negative connotations, in that it was used by "old money" as means of expressing distaste for the recklessness and lack of class of bourgeois *arrivistes* whose attitudes toward wealth and the ideal society posed something of a threat to the entrenched power of the French aristocracy.

Those aristocrats, and the French monarchy at its apex, presided over a stagnant economy with low rates of growth, little innovation in either agricultural or industrial spheres, weak trading links, and a poorly developed banking sector. The emphasis upon continuity and tradition in the French system contrasted markedly with that of rival European powers such as the UNITED KINGDOM and the NETHERLANDS that were building national wealth and empires upon dynamic, post-feudal, increasingly urban, economies driven by powerful middle classes. Yet even while France, the pre-eminent political power in 18th-century Europe, seemed to lose that status through its relative economic under-performance, some structural and economic changes were taking place on a localized level across the country.

As Roger Price notes, the period 1730–50 saw a growth in France's population, in prices, and in internal trade, and at this time it is arguable that a process of proto-industrialization (akin to that which preceded the English INDUSTRIAL REVOLUTION) was taking place with piecework being farmed out to cheap, rural labor, rising commercial profits, the development of better transport networks, and increasing mechanization. Such change was not immediately obvious, because it was piecemeal and slow, but that seemed to be the French way in such matters. Even today, France's modern economic history is not at all spectacular, yet its economy has always been among the six largest in the world.

The fact that France has always managed to slowly reposition its economy so that it maintained its relative strength has generated a considerable literature on the French Paradox, for in many ways it does seem strange that a country with a very weak economic base before the 1840s, a large peasantry until the 20th century, and a lack of economic dynamism among politicians or entrepreneurs, should perform so well in the long term. It has been suggested that it was precisely the persistent comparison between industrializing England and stagnant France in the later 18th century that forms the basis of the assumption that France suffered from a structurally weak economy.

France 1789–1848. There seems little doubt that the French Revolutions of 1789 and 1793 altered the structures of French politics and society in a way that served as a necessary precondition for 19th-century economic growth. Even if the "Bourgeois Revolution" did not finally end monarchic rule in France, or introduce much democracy, it brought to an end the absolute monarchy of the *Ancien Régime* and the anachronistic notions of national economic development that had prevailed under that system. Napoleon Bonaparte was able to institutionalize some of the principles of the Revolution, while pursuing his own militaristic aims, through a reorganization of government, the civil service, and the legal system. Crucially, these reforms increased the role of the bourgeoisie in public life. That rise was clear in the Revolution of 1830 when Charles X, the quasi-absolute monarch of the Restoration, was forced to cede power to the rival royal house of Orléans, which was more willing to accommodate the voice of the Parisian bourgeoisie in political decision-making.

The year 1830 also saw the French conquest of Algeria, which marked the beginning of France's acquisition of its modern empire. That empire was to play a major role in the development of French capitalism, for like other European powers, the French were to rely on their colonies as sources of cheap labor and raw materi-

Paris, the French capital, is the seat of an economy that consistently ranks as the sixth-largest in the world.

als, and as protected markets for exports from France. That economic historians now doubt the efficiency of such trading systems when applying cost-benefit analyses to modern imperialism is immaterial, for the key point is that French capitalism was based on an imperial system that was itself an outgrowth of the French Revolutionary notion of national superiority, and of the moral value of the export of French ideas and rule.

While the period 1830–48 did not see the most dynamic phase of French industrial growth, it was the moment when key industries such as the railways came into being, and with them came a particular cultural aspect of French capitalism which was the technocratic compromise between the state and private interests. When railways were invented and first developed in England, a vigorous debate began in France on how a national rail network should be developed. On one side of the debate was an unusual alliance of right-wing nationalists and the political left, who argued that the state had to take responsibility for the development of railways in France (either for reasons of national security, or because state control of economic development was a fundamentally good thing), while on the other were the bourgeois free-marketeers who advocated the private development of rail in France, and liberals who claimed that state subsidies for rail would act as a form of double taxation on the poorer social classes.

The state's compromise solution, in this case, was for it to develop the railway network, and to lease out the right to run rail services to private concessions (and to allow them to develop secondary rail routes). This effectively created a state-sanctioned OLIGOPOLY in the market, and it is perhaps not surprising that there was considerable interpenetration of business and political spheres at this time, with similar oligopolies being created in other sectors such as banking and department stores. This cartelization reflected a more general French belief in the importance of protection within the national market, at the expense of free-market competition.

Although such policies are clearly inefficient in terms of orthodox economics, and certainly in terms of modern neo-liberalism, they have achieved convincing results in France. They also played their part in the development of a society in which power is concentrated in the hands of a politico-economic elite, and where the development of a culture of rights was notoriously slower to come into being than in comparable European states.

France 1848–1914. The period between the revolutions of 1848 and the WORLD WAR I was crucial in terms of the development of the modern French state and its capitalist economy. Many of the structural features of the French economy emerged in the period 1848–70, and the grounds of modern French Republican politics were formed in the nascent Third Republic. This was a period in which Karl MARX was greatly interested in France, and with good reason, for an archetypal capitalist state was coming into being, though it is interesting to note that Marx felt that the Commune of 1871—the last major, radical challenge to that state—was inadvisable given France's developmental level. Later writers have identified the Commune as the last moment of resistance to both the state-private economic compromise of burgeoning French capitalism, and to the Third Republic's political compromise between the forces of tradition and the moderate heirs to the Revolution of 1789.

The great changes of the period, and their human consequences, are catalogued by cultural producers such as Emile Zola, whose *Rougon-Macquart* cycle charted, among other things, the development of the French railway network; the modernization of French agriculture; emigration to the cities; the development of trade unions; the growth of the Paris BOURSE and of popular share-ownership and speculation; the development of the north as a heavy-industrial heartland; the increasing and novel stress on investment and risk in the French economy; and the great growth of the French banking sector at this time.

Texts such as Zola's show us the changing moral world of French society as it rapidly became capitalist, and the speed and universality of change as all were exposed to the new forces changing French society. It is, as French historians have noted, no coincidence, that as a single national market emerged in France a new kind of government came after 1870 that stressed nationality above all else; a government that instituted a series of administrative reforms (especially in the spheres of education and language) and stressed the creation of a single, unified, manageable state. It should also not seem coincidental that this period of confident national growth marked the most rapid expansion of the French Empire. Structural weaknesses, however, remained in the French economy, as evinced by the less convincing performance of the French economy after 1870, but the contours of capitalist France had now been drawn.

France 1914–45. World War I, which of course took place primarily on French and Belgian soil, left France in an economically and demographically precarious position in the interwar years. France, like other major powers, suffered from the instability of the world economy with, in particular, periods of high inflation, a weakening currency, budget deficits, and, Poincaré aside, a political class that had little skill in economic affairs or inclination to reflate the economy. German reparations could not fully cover the cost of rebuilding France's industrial capacity, and when the DEPRESSION hit France, its effects were felt rather later and for rather longer than in other states. This difference, and the relatively low levels of unemployment in France in the 1930s, has traditionally been explained by the fact that France still had a much larger agricultural sector than comparable economies. The rural economy was able to take on many of the urban workers who had lost industrial jobs, or at the very least families were able to rely on networks of kin for food, but this undynamic agricultural sector was obviously not the route out of the Depression. France's eventual economic recovery came under the vigorously interventionist Popular Front government of 1936–38, though this experiment in popular socialism was ended by France's rapid defeat by the Germans in 1940.

France's wartime collaborationist government under Maréchal Pétain had a rather incoherent belief in both tradition and technocracy, claiming its National Revolution would return France to its best (rightist, rural) traditions, while revolutionizing French industry. Neither of these policy directions were realized, primarily because the French economy was subservient to the German war machine. Price notes that "By 1943, 15 percent of the agricultural and 40 percent of industrial output was exported to Germany, and paid for largely by the French themselves in the form of occupation costs." In addition, the French sent more than 680,000 workers to German factories.

France after 1945. In the aftermath of WORLD WAR II, along with France's crushing defeat in 1940 and the failure of collaboration, it was clear that new economic and political priorities would be set in 1945. In the economic sphere, Charles DE GAULLE's natural distaste for capitalism was shown in the NATIONALIZATION of key industries such as coal, banking, and leading manufacturers such as Renault cars, and a new mood emerged in which, as Price notes, "It had become necessary for the state to assume control of the 'levers of command' and direct investment not simply into reconstruction, but additionally into a program of social and economic modernization impelled by a now widely shared perception of France as a backward, archaic society."

The Fourth Republic inaugurated a period of great economic growth, with the period 1945–75 known as the *trente glorieuses*, in which technocratic state planning, backed initially by the MARSHALL PLAN, redeveloped the French economy, placing a great emphasis on new technologies and on the production of consumer goods for an increasingly affluent society.

French prosperity became increasingly linked to that of its neighbors through the European Economic Community, and as France decolonized, much greater emphasis was placed on trade with immediate European neighbors than had been the case earlier in the century. While French growth outpaced most of its European rivals, it was also clear that the new technocratic model, which was little more than the old state-private compromise of the railways in a new guise, did not address some of the principal structural weaknesses in the French economy.

In particular, unemployment has been stubbornly high in France since the 1980s and the French economic system remains one in which the benefits of growth are concentrated in particular areas, while other regions (such as the north) are in long-term decline. A progressive system of taxation removes some inequities, but there is a sense that the postwar French state and economy have nevertheless concentrated benefits and growth on the middle and upper classes. Periodic expressions of public anger (such as in the riots of 1968) are a reminder of this. As France has become more integrated into a European and global economy it has also become clear that French governments have much less latitude in imposing their own, particularly French, solutions to economic problems. This became abundantly clear in the early 1980s when President François Mitterrand was forced by global markets to first abandon his program of nationalization and state intervention; and to later actively reverse his strategy, thus becoming the socialist president who introduced privatization to France.

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franchising

IN THE *Webster's New World Dictionary of Media and Communications*, Richard Weiner defines a franchise as "a contractual agreement between a manufacturer, service organization, or other franchisers and independent businesspersons (franchisees) who purchase the right to own and operate a retail unit and/or to sell the franchised products or services."

Franchising depends upon a legal agreement, that can be seen symbolically as a sharing of reputations: the franchisee accepts to bring a high level of quality to his customers and promises to conform to the corporation's standard norms, and by doing so, benefits from a label's name, exclusive products, well-known logos, and large-scale advertising. In return, the franchisee hosts satisfied customers from previous experiences in other franchises; he helps the other members of the franchise by responding to the customers' needs and expectations. By doing so, he contributes to improve the corporation's reputation.

There are many kinds of franchising organizations. For instance, Yum! Brands Inc. operates 32,000 restaurants; their chains include Kentucky Fried Chicken, Pizza Hut, and Taco Bell; those three were spun off from Pepsi Cola Enterprises in the late 1990s. Also in the fast-food business, Wendy's International Inc. controls a system of fast-casual restaurants, with some 6000 Wendy's restaurants in operation in the United States and in 20 other countries; from that number, almost 5,000 Wendy's restaurants are franchisees while 1,300 others are operated by the company itself. In the hotel business, the Holiday Inn hotels and motels are mostly franchises.

In Canada, the hardware stores that are part of the chain Canadian Tire are also operated by franchisees. However, depending on circumstances, a store may decide at some point to disconnect itself from the group and to become independent, or even to join another group of franchisees; he has to abandon all the previous logos and promotional elements that used to identify his outlet as a member of the chain. As a notable exception in the food business, Darden Restaurants controls the Red Lobster Restaurants as well as the Olive Garden Restaurants, but none of their U.S. restaurants are franchises; more than 1,000 restaurants are therefore company-owned and the corporation is also partly controlled by General Mills.

Licensees are not franchisees but independent third parties, that operate under the terms of license agreements, known as a legal or official permission granted by a licensor to a licensee. Under negotiated and limited terms, a name, product, program, or other item may be licensed or sold for a specific period or under specific conditions.

Imagine that you're opening your own McDonald's. To do this, you have to buy a McDonald's franchise. In order to qualify for a conventional franchise, you have to have $175,000 (not borrowed). Your total costs to open the restaurant, however, will be anywhere from $430,000 to $750,000, which goes to paying for the building, equipment, etc. Forty percent of this cost has to be from your own (non-borrowed) funds.

You'll pay an initial franchise fee of $45,000 directly to McDonald's. The other costs go to suppliers, so this is the only upfront fee you pay to McDonald's. Then, you'll go through a rigorous nine-month training period where you'll learn about the McDonald's way of doing things—things like their standards for quality, service, value, formulas and specifications for menu items, their method of operation, and inventory control techniques. You'll have to agree to operate the restaurant from a single location, usually for 20 years, following their guidelines for decor, signage, layout and everything else that makes McDonald's McDonald's.

Once you've completed training and are ready to go, McDonald's will offer you a location they've already developed. The exterior of the building will be complete, but you will have to take care of interior additions such as kitchen equipment, seating, and landscaping. You'll get constant support from a McDonald's Field Consultant, who can advise you on details and will visit regularly. You'll pay McDonald's a monthly fee of 4 percent of your sales, and either a flat base rent or a percentage rent of at least 8.5 percent of your sales.

McDonald's, the epitome of capitalism. McDonald's *Summary Annual Report 2002* states that the whole network serves 46 million customers every day. With 30,000 quick-service restaurants in more than 100 countries, McDonald's has achieved more than a franchise system: it is as well a global concept of marketing, a kind of management school and an unquestionable symbol of capitalism. Apart from that huge network of franchisees, McDonald's also controls some 9,000 company-operated restaurants and some 4,000 affiliated restaurants, including U.S.-based partner brands such as Boston Market, Donatos Pizzeria, and Chipotle Mexican Grill.

In the United States, there are about 13,000 McDonald's restaurants. Although McDonald's is a publicly owned company whose 1.2 billion shares are negotiated on the NEW YORK STOCK EXCHANGE and can be bought by anyone, the corporation is often seen as one of the best-known symbols of the United States, along with other mega-corporations such as Coca-Cola, Ford, or Microsoft. Most McDonald's customers choose famous names and labels in order to get familiar formulas, guaranteed reliability, standard menus, predictable tastes, and also clean rest rooms, even in foreign countries. Sociologist Douglas Kellner explains that while in a McDonald's restaurant in downtown Taichung, Taiwan, he was amazed to see how Taiwanese youth had adopted McDonald's restaurants in an unusual way: "In search of a men's room, I noticed that the place was packed with students studying, young people talking, and couples coupling. My host said that in a crowded city, McDonald's was a good site for studying and socializing and obviously the locals were taking advantage of this. Obviously, the social purposes and functions were quite different there than in the U.S. McDonald's."

The much-publicized opening of the first McDonald's in Moscow, Russia, on January 31, 1990, was a cultural shock for Soviet consumers and a source of wry analysis for some Western commentators. The U.S. fast-food premiere near the Kremlin, once the bastion of communism, was a standard McDonald's restaurant like any other (managed by a Canadian entrepreneur), with the same standard menu. Soviet customers were surprised by McDonald's proven efficiency, the employees' smiles, and also were shocked by the high prices for meals.

Often criticized for its standardization processes, McDonald's has, however, inspired some sociologists who theorized about the globalizing consumer society in terms of the "McDonald-ization of society." Although American sociologist and author George Ritzer criticizes McDonald's food, that he perceives as saturated with salt, sugar, and fat, he nonetheless considers this ubiquitous concept as a modern example of Max Weber's rationalization theory. In fact, McDonald-ization is more than a social phenomena about labor, high scale production, and consumption in global capitalism. Douglas Kellner resumes Ritzer's McDonald-ization theory "as a set of processes geared at increasing efficiency, calculability, predictability, and control."

There are countless fast-food restaurant chains in the United States, but none is perhaps praised and criticized as much as McDonald's; this is sometimes the price to pay for fame. As a symbol of U.S. prosperity and a cultural icon, McDonald's has been the target of numerous anti-American demonstrations abroad, from people opposing the American, invasive cultural presence in certain foreign countries or protesting against allegations of hidden GMF (Genetically Modified Food) in corn and soy products.

The corporation has always responded to critics with an omnipresent advertising strategy and a strong social commitment in order to create a positive image of good corporate citizenship, and also by giving to countless charities and foundations. On the other side, McDonald's corporation has sometimes been the solvent victim of what could be seen as excessive exploitation from some unsatisfied customers, who, in some cases, picked up any excuse to ask for damages and financial compensation for incidents occurring outside McDonald's restaurants, such as coffee-burning, car-key losses, and even more surprising claims. What was called the Stella Liebeck Case in the 1990s ranks among the most famous ones: after being burned by McDonald's hot coffee while in a car, an elderly woman went to court against McDonald's; after a long mediated trial, she was awarded $160,000 in compensatory damages, and $480,000 in punitive damages.

Another much-publicized lawsuit was the "McDonald's fries" case when vegetarians' organizations were granted court approval and compensatory damages because the restaurant chain didn't specify that their french fries were sometimes made with beef fat and beef flavoring. Hindu groups also said they were offended, because of their religious diet, to eat beef without knowing it when ordering french fries, and asked for compensatory damages. According to CNN Money News, "McDonald's Corp. said it would pay $10 million to Hindu, vegetarian and other groups more than a year after a Seattle lawyer sued the fast-food chain, alleging it failed to disclose the use of beef flavoring in its french fries." Such lawsuits had moved on in the early 2000s to include claims that McDonald's was responsible for the growing epidemic of obesity in America's children. Clearly, success in the franchise business carries its own risks: As a franchisee, one carries all the positive and negative aspects of the parent corporation.

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Franklin, Benjamin (1706–90)

ONE OF THE MOST influential figures of American society in the 18th century, Benjamin Franklin helped shape the American way of life through his model of personal success and achievement, popularized in his famous *Autobiography*, written between 1771 and 1790. Published posthumously, the book has enjoyed a vast readership and, after no less than 400 editions over the last three centuries, it is still in print and tells the story of Franklin, the self-made man who emerged from obscurity to eminence. Franklin's rise to fame exemplified the American dream of individual success and social mobility. The 20th-century social theorist Max Weber has gone so far as to identify Franklin with the spirit of capitalism itself.

Franklin was born into a large family of 17 children. His parents considered sending him to the ministry but they could not afford to give him more than two years of elementary school. The young Franklin was apprenticed to his older brother James, a printer, as he was incredibly fond of reading. Yet, already at the age of 17, Franklin showed that individualist spirit for which he became famous. He left his brother and ran away to Philadelphia, the city where the secular and egalitarian values of the Enlightenment were beginning to flourish. There he helped to revitalize the *Pennsylvania Gazette* and, after marrying Deborah Read in 1729, he launched his famous publication *Poor Richard's Almanac* in 1732. The publication was a manual on how to get ahead in the world ("time is money" was one of its mottos) and, in two decades of publication, sales reached 10,000 copies every year, making it a phenomenal bestseller in the small literate population of the American colonies.

By 1757, Franklin had made a small fortune and, in addition to his economic successes, he had become widely known in American and European scientific circles for his reports of electrical experiments and theories. As a result, he was elected Fellow of the Royal Society of London in 1756 and important universities such as Harvard, Yale, William and Mary, St. Andrews, and Oxford awarded him honorary degrees. The latter part of Franklin's life saw him start a long career as a politician. He would be chief spokesman for the British colonies in debates with the British king's ministers about self-government, and would have a hand in the writing of the *Declaration of Independence*. Franklin also played a crucial and historical role in securing financial and military aid from FRANCE during the AMERICAN REVOLUTION. At the age of 81, Franklin was the oldest delegate at the Constitutional Convention in 1787, and presented an important motion concerning the election of representatives in proportion to the population and the election of two senators by each state. Just five months before his death, Franklin signed a public note as president of the Pennsylvania Society for Promoting the Abolition of Slavery, containing a national policy of emancipation.

Franklin is a transitional figure between Puritanism and the American Enlightenment and his journey from Puritan Boston to Philadelphia is symbolic of this transition. Franklin gave material grounding to the rhetoric of Puritanism, sharing its emphasis on regeneration but adopting a crucially different perspective. According to the Puritans, only God's grace could purge the self from evil, while Franklin believed that man was perfectly able to make himself good. His *Autobiography* is the applied illustration of the "bold and arduous project of arriving at moral perfection," documented by the famous charts of weeks and days. Franklin starts and ends each day with a self-questioning and an introspection typical of Puritans: "What good shall I do this day?" and "What good have I done today?"According to Franklin, doing good meant to become a useful citizen. As Kenneth Silverman points out, in Franklin's project "the fervent Puritan hope for self-transformation has become the American passion for self-improvement."

Franklin's *Autobiography* and his proverbs in *Poor Richard's Almanac* celebrate the strength of the American middle-class, its quest for progress and scientific knowledge and its unashamed search for personal wealth. Franklin's own story and maxims honor economic individualism and upward mobility. His autobiography traces Franklin's progress from his low beginnings and his obscure family to his international reputation through his strict work ethic: "I was seen at no places of idle diversion. I never went out a-fishing or shooting; a book, indeed, sometimes debauched me from my work; but that was seldom, snug and gave no scandal." In this characterization of Franklin's persona, there are nuances of the Puritan doctrine of the Calling, yet, as Silverman points out, the text "reverses the Puritan ethos. It praises not copying one's family, but surpassing it, not deferring to one's elders but outfoxing them, trusting and assigning authority not to others and to God but to oneself. . . . It remains the classic statement of the American dream of material success."

Franklin's detractors have focused precisely on his gospel of social mobility and have identified him with the greedy American capitalist spirit. These critiques have been as international as Franklin's career. William Carlos Williams' *In the American Grain* (1925) exposed Franklin's impact on the aggressively acquisitive mood in American society and D.H. Lawrence described him as "the first dummy American." Weber has taken Franklin's writings as documents of the capitalist spirit, which they contain "in almost classical purity." Weber quotes Franklin's proverbs according to which "time is money" and that "money is of the prolific, generating nature" and concludes that Franklin's philosophy is one of avarice. Its peculiar ethic, Weber argues, "appears to be the ideal of the honest man of recognized credit, and above all the idea of a duty of the individual toward the increase of his capital, which is assumed as an end in itself."

It is this attitude of "worldly asceticism," this accumulation of wealth "combined with the strict avoidance of all spontaneous enjoyment of life," which, to Weber, is responsible for the establishment of the "iron cage" where we are all confined. Franklin embodies the capitalist ethos which makes the accumulation of wealth an end in itself thus conferring to "material goods . . . an increasing and finally an inexorable power over the lives of men as at no previous period in history."

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free trade

ECONOMIST ADAM SMITH (1723–90) first championed free trade as a systematic economic theory in his book *Wealth of Nations* (1776). Smith's ideas ran counter to the prevailing economic theories of his day, particularly MERCANTILISM, or the governmental regulation of the economy. As a concept, free trade has been controversial ever since. Today, most professional economists support the notion, despite the frequent criticism it receives from political groups across the ideological spectrum.

Free trade does not have a single, unified definition, but generally refers to trade between nations without any artificial barriers put in place by the government. When each side is engaged in free trade, they face prices determined by the global marketplace. In practice, free trade allows nations to trade with one another without restrictions, giving every nation the right to EXPORT AND IMPORT goods priced at the discretion of the market. In contrast, governments opting to limit free trade place restrictive policies (such as TARIFFS) against imported goods to artificially favor products produced within the nation, therefore protecting its own producers and manufacturers from foreign competition.

Free trade may seem like a relatively straightforward idea, but it is a hot topic in today's global economy. Free trade is used to defend or punish a nation's trade policy and is also utilized as a diplomatic tool in determining relations between countries or blocks of countries. In these instances, free trade becomes a plank in the ideological battle between nations, and a fierce issue among a variety of activists within and outside a given country. At the heart of free trade is the notion that the open exchange of goods between nations is a favorable development and benefits the global economy.

Smith's framework. Smith outlined his thoughts about free trade in lectures at Glasgow University in the 1760s, building on the work of earlier economic thinkers. By the time *Wealth of Nations* was published, Smith developed the theory into a coherent framework. He felt Great Britain should be a free port with all duties and customs eradicated.

Smith described the objective of mercantilist policy to diminish as much as possible the importation of foreign commodities and to increase the exportation of domestically produced products and merchandise. He examined the "economy-wide" impact of tariffs on imports and concluded that such policies led to higher prices, monopolistic practices in the home market, laziness, and poor management.

The foundation of Smith's thoughts on free trade centered on each individual's natural right to participate in the economy. Citizens sought to improve their own station by providing goods and services to others. In turn, their efforts enhanced the national economy through an efficient allocation of resources. In this system, COMPETITION defined the economic marketplace, not the government.

In Smith's view, however, the government did have a place in the economy, primarily allowing the "invisible hand" of the market to run more efficiently. And, in some cases, tariffs were necessary, such as in supporting an industry essential for national defense.

Smith's call for free trade was not a ploy to win favor among England's merchants. He believed in free trade because he believed it would benefit common people the most. Dedicated to the market economy, Smith concluded that even the poor and politically inept could prosper in an open financial system. In contrast, Smith thought that a state-controlled economy only enabled those close to the leadership to thrive and become rich.

Smith criticized merchants who lobbied for trade restrictions and disparaged governments that gave in to such pressure. In his view, tariffs harmed consumers because domestic merchants raised prices without the competition from foreign manufacturers. He also blasted governments that enacted retaliatory tariffs, because justifying them was difficult and more a political ploy than sound economic theory.

Free trade post-Smith. Smith's *Wealth of Nations* had some immediate impact on economic thought, but it took about 25 years for it to be considered a landmark work. The classical economists of the 19th century favored free trade and advocated its adoption despite the political chaos across Europe. Following the Napoleonic War, Britain adopted free trade policies that stimulated tremendous growth in world trade through the early 20th century.

After America won independence from England, the new nation embraced Smith and free trade as a counter to the mother country's harsh mercantilist trade restrictions. The idea of free trade became part of the revolutionary cause in the new nation. While the newly formed United States enacted some tariffs to protect burgeoning industries from foreign competition, free trade reigned.

In 1817, British politician and economist David RICARDO (1772–1823) published *The Principles of Political Economy and Taxation*, which outlined the Law of Comparative Advantage. Ricardo used the law to demonstrate that global trade is mutually beneficial, even when one nation is more productive than another. Comparative advantage assumes that even the poorest nation will have an advantage in some area. When the two nations trade, it becomes a win-win situation because trading is economically efficient.

For example, if an American buys a British good with dollars, the British merchant is likely to buy an item with dollars, or trade those dollars for pounds. Both nations become wealthier because nations become wealthy by producing and consuming goods and services. The total output rises, which is good for both economies. Tariffs, however, constrict growth and are debilitating to the nation erecting them, since its citizens will not have access to cheaper goods, thus forcing them to buy artificially higher-priced merchandise from domestic manufacturers.

The Law of Comparative Advantage is more problematic in modern times, but it still has many followers. Critics say that one of the basic assumptions of the theory is that capital (money) is immobile, which is simply no longer true. GOODS, CAPITAL, and LABOR all freely move across international boundaries with little more than a touch of a keystroke or simple computer transactions.

Early 20th century. Free trade suffered a severe blow in the 1920s when John Maynard KEYNES—considered one of the most influential economists of all time—suggested that it was wise to use tariffs in some instances to increase output and employment. Although Keynes actually advocated a pragmatic free-trade philosophy, his retreat from the idea weakened its place among economists.

In the UNITED STATES, powerful business and labor groups lobbied Congress for highly protective tariffs, which they believed would protect the domestic economy from foreign competition, thus preserving American jobs and wages. Congress passed two harsh tariffs, the Fordney-McCumber (1922) and the Smoot-Hawley (1930) tariffs. Rather than strengthen the U.S. economy, these measures disrupted global trade and caused credit imbalances that contributed to the Great DEPRESSION. Other nations acted similarly and put up their own tariffs in the face of economic collapse, thus exacerbating the effects of the Depression.

The overwhelming destruction caused by two world wars, however, gave new momentum to the idea of free trade. Economic and political thinkers viewed global free trade as a means to restoring quality of life, particularly in areas suffering the most from the ravages of war. In certain nations across Europe, Japan, and parts of the Far East, people were starving. Given its economic strength, the United States was called upon to open its markets to the world. At the end of WORLD WAR II, the United States clearly dominated the world economy, owning half the supply of monetary gold and producing half the world's GROSS NATIONAL PRODUCT (GNP).

As a result, the United States and Great Britain led a delegation of 45 nations in an economic planning session at BRETTON WOODS (New Hampshire) in 1944 to set up the WORLD BANK, which would regulate the reconstruction of devastated nations and prod their economies back to life. In addition, they also established the INTERNATIONAL MONETARY FUND (IMF) to stabilize exchange rates and balance of payments. These organizations solidified the postwar economy, while also clearly confirming the supremacy of the United States and Western Europe in economic affairs. The next step was to formalize an agreement on free trade.

President Franklin D. ROOSEVELT and his successor, Harry TRUMAN, both supported the expansion of international trade. The breakdown of free trade in the early decades of the 20th century, they believed, led to the prolonged Depression and the rise of totalitarian dictatorships, resulting in debilitating warfare. The Bretton Woods conference solidified the idea that global economics would adhere to a capitalistic system of free trade of goods and money. Despite the support for an organization to regulate free trade at the executive level, early efforts to form an international trade organization (ITO) failed to be ratified in the United States. Government officials continued to push for trade agreements.

Late 20th century. In 1948, Truman forced the nation to adhere to the GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT) through executive agreement, which set up reciprocal trade between nations and had 23 initial participants. Immediately successful, the first round of GATT negotiations led to 45,000 tariff concessions. Later GATT talks further reduced trade barriers, eliminated discriminatory practices, and led to dispute resolution through mediation. From the birth of GATT to 1957, world trade jumped 77 percent, enabling western Europe and Japan to rebuild.

The recovery of GERMANY and JAPAN after the devastation of World War II (dubbed an "economic miracle" in the press) was directly attributed to the increased trade promoted by GATT. By the early 1950s, Japan and the European Common Market used U.S. economic assistance and the reduced tariffs negotiated in GATT talks to achieve economic growth rates that doubled increases in the United States. In 1964–67, the Kennedy Round, named in honor of the late president, achieved tariff cuts worth $40 billion.

The most ambitious free-trade talks took place during the Uruguay Round (1986–94). Both agriculture and service industries were discussed for the first time during the Uruguay Round. More importantly, the idea for the WORLD TRADE ORGANIZATION (WTO) took shape there. The first international trade organization to be ratified by the U.S. Congress (1996), the WTO subsumed GATT and became the primary authority governing free trade worldwide. The WTO has legal authority to settle disputes between nations. At the turn of the 21st century, 124 nations belonged to the WTO.

The WTO continued to evolve to include technologies that had a profound influence on the global economy. In 1997, 69 governments agreed to a policy regarding telecommunications services. The same year, 40 governments agreed to eliminate tariffs on information technology products, while 70 members set policies covering trade related to banking, insurance, securities, and financial information.

Large corporations have been the most ardent supporters of free trade in modern times. Corporate leaders argue that free trade increases wages and gives people access to more goods as markets expand. Critics, however, see free trade as a means of exporting manufacturing and production to areas where labor is least expensive and usurping the power of labor unions.

The North American Free Trade Agreement (NAFTA), a trilateral trade agreement between the United States, CANADA, and MEXICO is an example of the arguments for and against free trade. NAFTA talks began under President George H.W. BUSH, who later signed the treaty in late 1992. President Bill CLINTON then aggressively supported the agreement, later ratified in 1994. NAFTA gradually eliminated tariffs for the three, reduced barriers to trade and investment, and exempted corporations from many state, local, and national regulations. A panel of trade officials and lawyers from each country handles disputes in secret negotiations.

Large corporations in the three nations lobbied hard for NAFTA, arguing that it would spread prosperity. Opponents, however, questioned what the agreement would mean for workers, small businesses, and the environment. They viewed NAFTA as a way for corporations to outsource production to nations without strict labor laws or environmental protection.

The fierce debates over the ratification of NAFTA, however, pale in comparison with the storms of protest waged against the WTO. In 1999, when the organization attempted to launch a round of talks in Seattle, Washington, waves of protestors took to the streets calling for fair free trade between rich and poor nations. Critics of the WTO considered the organization a tool of wealthy Western nations to keep Third World nations dependent upon their goods. Suddenly, the WTO became the focal point for many activist groups, from labor unions to militant environmental groups. WTO negotiations in Doha, Qatar, two years later were more successful, but the gap between the rich and poor members still perplexes the organization.

Supporters of the WTO, in contrast, point to the substantial increases in world trade since the various organizations have been in place to regulate it. In the span between 1950 and 2000, total trade jumped 22 times it's previous level.

The present and future of free trade. President George W. BUSH unveiled an ambitious trade agenda early in his administration, including agreements with CHILE and SINGAPORE, the 35 democracies in the Western Hemisphere, and a global free-trade accord with the 144 nations of the WTO. Bush set off a wave of protest, however, when he pushed for unilateral authority to negotiate trade agreements without amendments (known as "fast track").

Nations will continue to argue for and against free trade and protectionist policies. Since World War II, the global economy has become increasingly important for nations of all sizes. Powerful countries, like the United States, have taken steps to formalize global trade, but these issues are burdened with controversy.

For example, China entered the WTO in December 2001, after 15 years of negotiations, despite the country's poor human rights record. The desire to gain access to the world's largest emerging economy by corporate and government officials offset the issues that confounded environmental and human-rights activists.

Historically, the idea of free trade in the United States has been used to justify many of the nation's political and diplomatic moves, such as the Open Door policy in China and the paternal control the nation has exerted over Central and South America for more than a century. In this light, free trade has been overlooked as an idea central to the American vision of supremacy in world affairs. In the United States and other democratic/capitalistic nations, free trade is no longer just an economic theory. Free trade is equated with freedom.

Thus, a country that does not permit or promote free trade is charged with denying its citizens with a basic human right.

Today, free trade is so closely linked to capitalism that its legitimacy can no longer be questioned, because casting doubt on free trade is akin to criticizing capitalism. The protestors who marched against the WTO in Seattle, for example, were roundly criticized in the media and denounced as anarchists and hooligans.

Free markets, competition, and private OWNERSHIP are ideas firmly rooted in the American psyche and have been spread worldwide. To "do business" with the United States, nations are encouraged to adopt the same beliefs in capitalism and its tenets.

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French Revolution

A SUCCESSION OF EVENTS (1789–99) known as the French Revolution temporarily replaced absolutist monarchy with a republic; hastened the dissolution of serfdom; gave birth to the modern concept of human rights; introduced LIBERALISM and nationalism; and, bequeathed a model of popular insurrection that inspired generations to come.

By the second half of the 18th century a series of costly wars had drained the treasury of the French monarchy that was detached from reality and largely inept to govern. Almost 50 percent of the tax revenue was earmarked for debt payments while 25 percent went to maintain the military, not leaving enough resources to run the country. The intervention in the AMERICAN REVOLUTION produced no material advantages that could have compensated for the military expenses.

The first two estates (or classes), the clergy and nobility, were tax-exempt despite being the largest landowners. The third estate (over 90 percent of the population), a diverse social group ranging from upwardly mobile bourgeoisie to unskilled day laborers and peasants, united only by legal status, and having no political voice, carried the tax burden. The rigid Old Regime, founded on the feudal orders from the Middle Ages, had become outdated and it ceased to correspond with social reality.

In 1877, Louis XVI called an Assembly of Notables to gain support for the introduction of general tax on all landed property. The disenchanted nobility, whose economic base was in a relative decline, refused to give up their privileges. Hoping for broad political reforms, the nobility forced Louis XVI to convene the Estates-General, the representative body of all three estates that had not met since 1614. The King acquiesced anticipating the radical but diverse third estate would make the clergy and nobility more tractable. Yet, the third estate, dominated by lawyers and parish priests, proved to be more homogenous than the first two internally divided estates.

The meeting of the Estates-General in May 1789 became deadlocked over the voting protocol because the third estate demanded representation equal to that of the clergy and nobility. Contemporary intellectuals supported the demands for change by arguing the third estate constituted the true strength of the French nation. The third estate seceded on June 17, 1789, called itself the National Assembly, and swore the Tennis Court Oath pledging not to disband until they had written a new constitution. Louis XVI reluctantly capitulated and allowed all three estates to meet to draft a new constitution.

The events took a violent turn on July 14, 1789, when a Parisian mob, angered by high bread prices and fearing Louis XVI would use force to disband the National Assembly, stormed the Bastille (the royal prison) in search for weapons and food. A great fear swept rural France as peasants burned chateaux and expelled the landowners. After abolishing feudalism, on August 26, 1789, the National Assembly enacted the Declaration of the Rights of Man and the Citizens.

The Constitution of 1791 established a moderate constitutional monarchy and enacted constructive reforms. Civil rights were granted to all citizens and the nobility was eliminated as a legally defined class. The patchwork of provinces was replaced with 83 departments, and a unified system of weights and measures was introduced. However, the action against the Catholic Church, the confiscation of property and giving the state control over the clergy, was denounced by the Papacy and even the peasantry considered it to be too radical.

Attempted foreign invasions, domestic insurrection, and the deteriorating economic situation split the revolutionary coalition between the radical Jacobins and the more moderate Girondins. Both factions wanted to defend the Revolution but disagreed on the means. The Jacobins' radicalism prevailed and they established a revolutionary Commune in Paris. A new National Convention, that vested executive power in the Committee of Public Safety composed of 12 men led by Maximilian Robespierre, was elected on a franchise of universal male suffrage to draft a new republican constitution and to abolish the monarchy. Louis XVI, who had tried to flee the country, was beheaded in January 1793, and France was proclaimed a republic.

Robespierre and the Committee of Public Safety established the Reign of Terror in 1793. This was an attempt to save the Revolution by introducing a planned economy, mass executions, and French nationalism. The Jacobins instituted the wildly unpopular military draft by arguing the French soldiers were fighting for the French nation not the monarchy. The Jacobins centralized the administration, and established revolutionary tribunals throughout the nation that guillotined the real and suspected enemies of the Revolution. The regime also mandated a new egalitarian dress code, created a new calendar, and established a new religion, the Cult of the Supreme Being.

The Thermidorean Reaction of July 1794, ended the Reign of Terror, which had its merits because it brought the inflation under control, generated a sense of national unity, and succeeded in holding revolutionary France together. Robespierre was executed, the Commune was disbanded, and the Committee of Public Safety was stripped of its powers and replaced by the Directory.

The period of the Directory marked a return of moderate constitutionalism of the early revolutionary period. Deputies were elected on the basis of wealth or service in the Republican army. Legislative authority was vested in two legislative bodies, the Council of Ancients and the Council of Five Hundred. Executive power was in the hands of a five-man Directory elected by the Council of Ancients from a list of candidates presented by the Council of Five Hundred. The Directory was never popular because it was autocratic.

Napoleon Bonaparte, a young successful general and a national hero, overthrew the Directory in 1799, established himself as a military dictator, and soon became as powerful as any absolute monarch France had ever seen.

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Frick, Henry Clay (1849–1919)

GROWING UP IN Westmoreland County, Pennsylvania, with limited formal education, Henry Clay Frick rose to become the largest producer of coke from coal, forming Frick & Company in 1871.

He began by buying out competitors during the Panic of 1873, and by age 30, he was a millionaire. Andrew CARNEGIE, a champion of the Bessemer process of steel making, which depended on coke, soon brought Frick into Carnegie Brothers Inc. to supply coke to his mills. Frick was given large holdings in Carnegie's company, and made chairman in 1889. He reorganized Carnegie into the world's largest coke and steel company by buying out competitors, acquiring railroad securities and, in the Lake Superior region, iron ore lands.

In keeping with Frick's strident vertical integration tactics, during the 1892 labor strike at the Homestead Works of Carnegie Steel Company, Frick took actions to eliminate the unions at the mills. Carnegie, who had given Frick orders to break the union, however, was in Europe when Frick reduced workers' wages, laid them off, hired strikebreakers, and used the Pinkerton detective agency to protect replacement workers. The violence and deaths that followed led to a major setback for the labor movement, and an assassination attempt on Frick from anarchist Alexander Berkmann.

Carnegie attempted to distance himself from Frick and the violence, and eventually Frick resigned from the company. Frick's entrepreneurial ventures continued in 1900 when he formed St. Clair Steel Company, with the largest coke works in the world. He directed the newly created United States Steel Corporation, and later invested in real estate in Pennsylvania and New York. In downtown Pittsburgh, Frick purchased the Frick building, William Penn Hotel, Union Arcade and Frick Annex and, to house his art collection a mansion in New York City. The mansion and art collection, a reflection of his appreciation for aesthetic values and the affection he held for his family, was willed to the public and opened as a museum in 1935.

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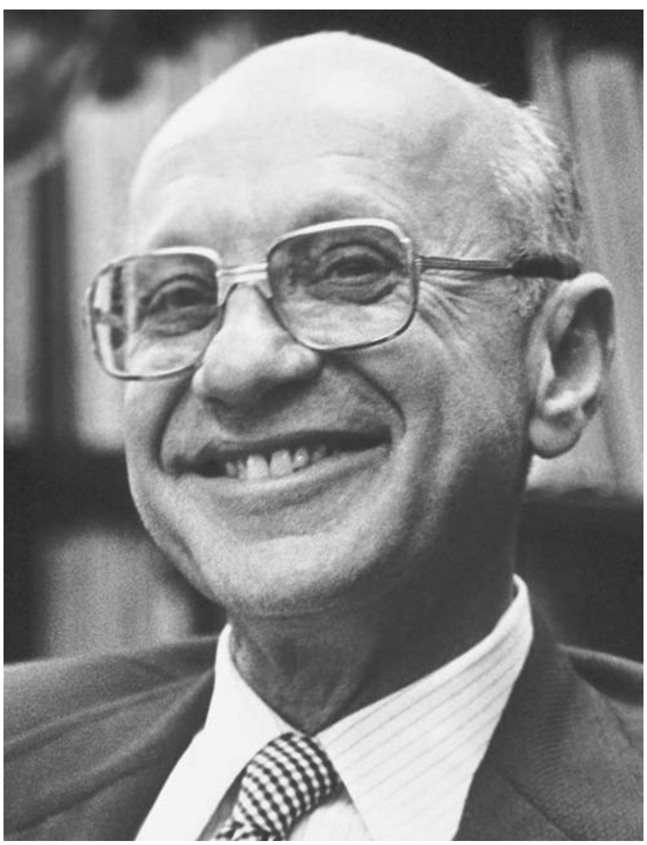
Friedman, Milton (1912–)

IN 1976, THE NOBEL PRIZE in Economics went to Milton Friedman, a well-known and well-respected economist, advocate and champion of individual freedom and LAISSEZ-FAIRE policies. For his award, the Nobel committee honored his "achievements in the fields of consumption analysis and monetary history and theory, and his demonstration of the complexity of the stabilization policy."

Regarded as the leader of the CHICAGO SCHOOL of monetary economics, or MONETARISM, Friedman has for many years stressed the importance of quantity of money as an instrument of government policy and as a determinant of BUSINESS CYCLES and INFLATION.



Milton Friedman, a proponent of monetarism, also stressed individual freedom and laissez-faire economics.

Mixing economics with his social views, he has long supported public policy that favors individual rights. Alongside his scientific work, he found time to write and co-author several books on this subject, produce an ongoing column for *Newsweek* magazine for 18 consecutive years, and host a television show, *Free To Choose*, for the Public Broadcasting System.

Friedman was the fourth and last son of poor immigrant parents living in Brooklyn, New York. Jeno Friedman and his wife Sarah (Landau), eked out a living for their family, eventually moving to Rahway, New Jersey, seeking better opportunity. While Sarah ran a tiny dry goods store, Jeno ventured through a number of menial jobs, but always managing to feed and clothe his family. The warm Friedman family atmosphere, despite tough times, never waned, Friedman remembered.

An excellent student throughout his years at Rahway Elementary School, Friedman desired a college degree. His mother agreed that he should better himself and, despite the fact that her husband Jeno had died and that it wouldn't be easy financially, she saw to it that her boy realized his dream. She, and her two daughters remaining at home, pitched in. Friedman entered Rutgers University in 1928, greatly assisted by a competitive scholarship. Before, during and after each semester, he waited tables, clerked, and picked up whatever job he could find to supplement tuition funds.

A mathematics major, he soon changed his objective when confronted by two particular professors who inadvertently changed his direction. Arthur F. Burns shaped his understanding of economic research and Homer Jones introduced him to rigorous economic theory, leaving their pupil captivated. It was on the latter's recommendation that, when Friedman graduated from Rutgers in 1932, the University of Chicago offered the eager young man a tuition scholarship to complete his postgraduate degree.

Friedman was off to Chicago. In his autobiography for the Nobel Committee, Friedman recalled that experience. "My first year in Chicago was, financially, my most difficult year; intellectually, it opened new worlds." There, he came in contact with a brilliant roster of economists and mathematicians, among them professors Jacob Viner and Lloyd Mints, who introduced him to a vibrant educational atmosphere from which, he added, "I never recovered."

During that period, 1932–34, Friedman happened to form another kind of relationship from which would be formed a lifelong partnership, with his future wife, Rose. "In the words of the fairy tale, we lived happily ever after," Friedman attests. "(Rose) has been an active partner in all my professional work ever since."

Fulfilling a yearlong fellowship at New York City's Columbia University—where he steeped himself in the complexities of mathematical economics—Friedman returned to Chicago in 1935 as research assistant to Professor Henry Schultz, recent author of the insightful *Theory* *and Measurement of Demand.* Invited to design a large consumer budget study sponsored by the National Resources Committee, Friedman headed to Washington, D.C. The assignment proved to be a fortuitous experience as it provided him with the fundamental component that later led to his *Theory of the Consumption Function*—and, thus, his Noble Prize three decades later.

Friedman's evolving work in consumption and its relation to income analysis continued to drive him through the following couple of years. He tossed concepts back and forth with his wife, as well as with two personal friends, Dorothy Brady and Margaret Reid, who at the time were involved in consumption studies of their own. He also put his knowledge to practical use, co-writing *Incomes from Independent Professional Practice* with Columbia University's Simon KUZNETS. The book, published in 1937, focuses on the results of their research on professional income.

The 1940s and 1950s kept Friedman progressive. During World War II, he worked on wartime tax policy for the U.S. Treasury and as a mathematical statistician for Columbia University. After the war, he rejoined the University of Chicago to teach economic theory. One highlight from the 1950s was his tenure as a Fulbright Visiting Professor at Cambridge University, where he interestingly found his views balanced between the conservative and liberal economists.

Throughout the 1960s, Friedman became increasingly prominent in the public arena, serving in 1964 as economic adviser to Barry Goldwater, then for Richard NIXON's presidential campaign. In the meantime, he continued to teach at the University of Chicago until his retirement in 1977. Still, he never retreated from the front lines. He vocally supported the development of international currency markets; he incited a campaign to enact constitutional restrictions on government spending and taxes; and he opposed President Bill CLINTON's strategy to nationalize health care.

President George W. BUSH recently presented Friedman with a Lifetime Achievement Award. In doing so, the president cited, "[He] has never claimed that free markets are perfect. Yet, he has demonstrated that even an imperfect market produces better results than arrogant experts and grasping bureaucrats."

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Frisch, Ragnar (1895–1973)

IN 1969, the Nobel Prize Committee presented its first-ever award for achievements in Economic Sciences. Sharing the honors were Ragnar Anton Kittil Frisch from Oslo, Norway, and Netherlands-born economist Jan TINBERGEN. Both men's accomplishments were impressive, for both had separately and individually developed and applied their own dynamic models for the analysis of economic processes. But, what makes Frisch especially noteworthy is that, while Tinbergen created an original macroeconomic model, it was Frisch who had developed the thought process of, and coined the phrase for, both MACROECONOMICS and MICROECONOMICS. The former refers to the study of aggregate economies, the latter to single firms and industries.

To Frisch, economics was an exact science, as firm and undeniable as the logic found under a microscope. Throughout his career, he insisted that what he called ECONOMETRICS be regarded as having "a relevance to concrete realities."

Born in Oslo, his father had predetermined that he would carry on the long lineage of the Frisch family gold and silverworks, an occupation that had maintained the Frisch ancestors since the days of Norwegian King Christian IV in the 1600s. To please the elder Frisch, the son began an apprenticeship in the traditional business, earning the title of goldsmith. But, Frisch's mother saw to it that he be given an opportunity to attend Oslo University to experience a broader lifestyle and, perhaps, find his personal calling.

"We perused the (college) catalogue and found that economics was the shortest and easiest study," Frisch later recollected. "That is the way it happened."

Evidently it was a perfect match. He obtained his degree in 1919 and traveled abroad to study economics and mathematics throughout Europe and the United States. Returning to Oslo, he earned a Ph.D. in mathematical statistics and won a teaching position with the university in 1925. Within six years he was appointed director of research at the university's newly completed Economic Research Institute. Today, that same center is renamed in Frisch's memory.

He remained with the university throughout his career, a popular lecturer and writer. His work on econometrics proved to be a fundamental contribution to the field of economics.

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THOUGH BASED in Tokyo, JAPAN, Fujitsu has operations worldwide and sells products ranging from air conditioners to telephone systems. Founded in 1935, Fujitsu has grown to become a global provider of customer-focused information technology and communications solutions. The corporation has claimed a commitment to step-ahead technology and hour-by-hour quality. Fujitsu's ingredients of success consist of "pace-setting technologies, high reliability/performance computing, and telecommunications platforms (supported by) a worldwide corps of systems and service experts."

Among its computer products are PCs, servers, peripherals, and software. The company's other lines include telecommunications network equipment, consumer electronics (especially televisions and car audio components), semiconductors, and information technology services (consulting, systems integration, and support). Fujitsu also owns Japan's top internet services provider, "Nifty."

Fujitsu's devotion to value-difference policies have generated what has become known as its "Lifecycle Solutions," a one-stop-shopping, customized, formatted continuum of strategic pursuits aimed at minimizing costs of their customers' operations. The package, flexible customer to customer, includes: complete hardware, software and infrastructure services; holistic solutions; integrated solutions; comprehensive solutions to increase productivity; and solutions concentrating on ensuring a competitive edge.

One of Fujitsu's most recent offerings is a business collaboration platform called "Interstage." It presents customers with the means to direct new business ventures by using Fujitsu's provision World Wide Web services that fuse with broadband internet technology. Recording $40 billion in revenue in 2002, Fujitsu ranked 88th on *Fortune* magazine's list of the largest companies in the world.

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functions of money

PRINCIPAL CAPABILITIES common to all generally accepted forms of MONEY that include medium of exchange, store of wealth, unit of account, and means of deferred payment are described as the functions of money. Some form of money has characterized nearly every civilization throughout history and continues to be a significant part of almost every culture in the world today. While the type of money may vary considerably throughout history and across the world, common features can be found.

Prior to money systems, societies relied primarily on BARTER to exchange with one another. The ability to barter was extremely important due to the fact that it made specialization and the division of labor possible. Without barter, individuals and societies would have had to remain self-sufficient making specialization, along with all of its benefits, impossible. As a method of exchange, however, barter exhibited several significant shortcomings. For one, barter required the double coincidence of wants, a condition relatively easy to achieve in a simple society but quite difficult in a rapidly developing economy. A large number of potential exchange rates along with issues of portability, divisibility, durability, measuring value and assessing quality were all problems that plagued barter systems and, in some cases, caused individuals to exchange far less than they would have had barter not been so cumbersome.

Over time, societies recognizing the benefits of exchange and the problems of barter began to adopt certain commodities to circulate as mediums of exchange. Cattle, skins, wheat, wampum, tobacco, and a variety of other items served as such media of exchange in colonial America. For example, rather than trading his shoes directly for cheese, a colonial shoemaker would sell his shoes for tobacco and then use the tobacco to buy cheese from the dairy farmer. This situation was far superior to that of direct barter for several reasons. First, by offering the dairy farmer tobacco rather than shoes, the shoemaker was able to overcome the potential problem of the double coincidence of wants. While the dairy farmer might already have a closet full of shoes and hence would be completely disinterested in obtaining any more, the dairy farmer would definitely be interested in acquiring tobacco, if for no other reason than because he could turn around easily and sell the tobacco to the bartender in exchange for a pint of whiskey

Without some generally accepted medium of exchange, in this case tobacco, the shoe salesman would have been unable to eat his cheese until he found a dairy farmer in need of shoes. Likewise, the dairy farmer would have had to do without his whiskey unless he could find a bartender in need of cheese. Because the dairy farmer and bartender knew they could exchange the tobacco for whatever products they desired, each was willing to accept the tobacco, not for immediate consumption, but as money—something that could be used to purchase goods and services. Having a generally accepted medium of exchange led to a tremendous increase in economic activity as it became much easier and much less costly to exchange.

Virtually everything could be, and in fact many things have been, used as money throughout history. Certain items, however, ultimately prevailed as common types of money, namely precious metals, coins, and eventually paper currency. Even so, one can still find examples of individuals using commodities as money (e.g., cigarettes in prisons and POW camps). Whether or not a commodity evolves into a generally accepted form of money depends on its ability to perform at least one of four functions: serve as an effective medium of exchange, store of wealth, unit of account, or means of deferred payment. To serve as a medium of exchange money must be widely accepted as payment for goods and services. Sellers must be willing to accept money in lieu of items as well as repayment of debt. One of the most significant benefits of having a universally recognized medium of exchange is that it reduces the problem of the double coincidence of wants.

This means more exchange, greater specialization, more economic activity and economic growth. Gresham's Law, while it does not disappear completely, becomes much less of an issue with a generally accepted medium of exchange particularly with coins and paper currency. Gresham's Law refers to the fact that, whenever possible, low rather than high quality commodities typically will be offered as payment for goods and services.

Having a relatively uniform medium of exchange reduces the probability of this occurring and increases the likelihood that individuals will exchange with one another.

Because most individuals do not spend all of their income at once, the ability to save or accumulate wealth is extremely important. Individuals throughout the years and across cultures can and have stored their wealth in a variety of different assets. Wealth in many ancient civilizations was measured by the number of cattle that an individual owned. Under MERCANTILISM, a nation's wealth was measured in terms of its accumulation of gold. Today real estate, rare artwork, and corporate jets are indications of wealth. When seeking a store of wealth, items with relatively stable values will be preferred to those whose future value is very uncertain. Common stores of wealth in the United States today include savings accounts, certificates of deposit (CDs), and money-market mutual funds, all of whose future values are known with relative certainty. There is little doubt that a $5,000 savings account, for example, will be worth $5,000 plus interest one, two, or ten years in the future. This, of course, ignores the effects of inflation as well as the possibility that this individual might not be able to retrieve the cash in her savings account should her bank become insolvent. The existence of the Federal Deposit Insurance Corporation (FDIC) makes the latter highly improbable.

Having money function as a store of wealth rather than individuals relying on tomatoes or sheep to accumulate wealth is essential in a capitalist economy because it makes possible and fosters saving. The ability to save is extremely important because it allows people to time their purchases better, thereby getting more satisfaction from their budgets, and it makes capital accumulation possible for those who want to spend more than their current incomes.

Closely related, the last two functions of money are intricately tied to money's ability to facilitate exchange. As a unit of account, money is used to assign values (i.e., PRICES) to goods and services. In the absence of a generally accepted form of money, as in a barter system, numerous exchange rates would exist as a cow, for example, might be worth 20,000 tomatoes, 500 chickens, 200 sweaters, or 50 cords of firewood. By adopting an official unit of account (e.g., the dollar in the United States), just one exchange rate would exist in the market, and that would be the dollar value of the cow. Transactions costs would be significantly reduced by use of a standard unit of account, and consequently individuals would be more likely to exchange with one another. By acting as a standard unit of account as well as a relatively stable store of wealth, money also typically operates as a means of deferred payment by which individuals can safely make arrangements to carry out transactions at a later date.

The ability of an item to perform at least one of these four functions contributes to its adoption as money. The official definitions of the money supply in the United States (M1, M2, and M3) include only those things that are commonly used as either a medium of exchange, store of wealth, unit of account, or means of deferred payment.

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G8 Summit

THE ANNUAL MEETINGS of the heads of state of the major industrial countries are referred to as the G8 Summits (well known as the G7 before RUSSIA counted as the eighth country). These forums provide leaders an opportunity to discuss domestic and/or international financial, economic, political issues of mutual interest, and corresponding policies.

In 1975, the heads of six industrial countries, namely the UNITED KINGDOM, FRANCE, GERMANY, ITALY, JAPAN, and the UNITED STATES met in Rambouillet, France, to discuss the effectiveness of their economic and financial policies and institutions in dealing with the economic conditions of the time.

The following year, CANADA joined the group at their meeting in Puerto Rico, and the so-called Group of Seven (G7) was formed. In 1977, the European Community (now the EUROPEAN UNION) became an observer at these meetings, and was allowed to participate in discussions. Russia was invited to join in political discussions in 1994, and was accepted as a full member of the forum in 1998. Thus the Group of Eight (G8) came into existence. Annual meetings of the G8 take place in the home country of its chair, which rotates among the heads of the state. Since 1998, the G8 summits have been preceded by meetings among foreign and finance ministers. The so-called "sherpas," trusted aides to the heads of states, prepare the agendas for the summits based on the discussions at these preliminary meetings. (The word sherpa originates with the mountain-dwelling people of Nepal and Sikkim who have an excellent reputation for trekking and leading.)

The major goals of the annual summits are to promote growth in the world economy and to maintain stability in the international financial markets. Over the years, however, the agendas of these meetings have expanded to include non-economic issues. The early 1970s were marked by an oil crisis resulting from an unprecedented increase in oil prices, the collapse of the BRETTON WOODS pegged exchange-rate system, and the simultaneous rise of INFLATION and UNEMPLOYMENT in major industrial countries. A second oil crisis in the late 1970s exacerbated these economic ills. It is therefore not surprising that the G7 annual meetings between 1976 and 1981 focused on economic issues such as growth, unemployment, oil prices, inflation, and exchange-rate stability.

The second cycle of the group's annual gatherings, between 1982–88, focused similarly on economic issues, but more on those with an international flavor as a result of the advent of GLOBALIZATION. Globalization, defined as internationalization of economic activity, has rendered economies more interdependent than ever before. The increased interdependence has also raised the potential that disturbances, especially financial disturbances, will spread rapidly among countries. Hence, the goal of summits shifted toward increasing cooperation among industrial countries to guarantee that the domestic and external markets would continue to function efficiently. Other issues that gained prominence throughout the second cycle included the Uruguay Round of trade negotiations, exchange-rate stability, agricultural policies, and debt relief after the world debt crisis of 1983.

At the same time, the summits incorporated discussions among leaders on contemporary non-economic issues, for example the Iran-Iraq war and the Chernobyl nuclear disaster. Political issues began to play an even more important role in the third cycle of meetings. During this time, the G7/G8 discussed the implications of the Tiananmen Square massacre in CHINA, the political transformation of Eastern Europe, war in Bosnia, genocide in Rwanda, political reforms in Russia, and human rights. They also discussed related economic issues such as debt-relief to developing countries, the formation of the WORLD TRADE ORGANIZATION (WTO), and the stability in the global economy.

The fourth, most recent, cycle (1996–2003) coincides with Russia's full membership to the summit. This fourth cycle is also marked by an increased interest from G8 leaders in international political and social issues. In addition to the usual concern with economic and financial stability in the rapidly globalizing environment, recent topics have included transnational organized crime, corruption, illicit drugs, terrorism, infectious diseases, arms control, democracy and human rights, global warming, landmines, food safety, biotechnology, the mapping of the human genome, the political situation in the Middle East, and social and economic challenges posed by the aging populations.

An area that has increasingly attracted the group's attention in this cycle is Africa. In 1996 in Lyon, France, the group formed the New Global Partnership for Development (NEPAD), recognizing that while development is ultimately the developing country's responsibility, industrial countries also should support their efforts and facilitate their transition and adjustment to the global market economy. Concern with Africa culminated at the 2002 Kananaskis, Canada, summit with the formation of the G8 Africa Action Plan to support the NEPAD. This plan commits the G8 members to increase aid especially to those African countries that have taken measures to reform their economic and political structures in line with the recommendations of NEPAD, and have taken the necessary initial steps to implement free market- and democracy-oriented policy measures.

The two other general areas that have gained prominence in the fourth cycle are debt relief and the environment. In Cologne, Germany, in 1999, the G8 launched the Cologne Debt Initiative to relieve the Heavily Indebted Poor Countries (HIPC) from their unsustainable heavy debt by increasing the official development assistance (ODA), on one hand, and by supporting efforts for economic and political democratization, on the other. These efforts to reduce poverty are also supplemented by the recommendation that developing countries liberalize their external sector, promote private investment, and increase overall investment outlays in health, education, and social programs to fight poverty.

While discussions concerning the environment have routinely been part of the G7/G8 summits, they have become significantly more detailed and substantive in the fourth cycle. With the Denver, Colorado summit in 1997, the group shifted its focus to sustainable development and protection of the environment. Specific topics included global warming, deforestation, safe water, sustainable use of oceans and seas, and desertification. A wide spectrum of policy recommendations was examined, ranging from cooperation between industrial and developing countries concerning green technology transfer, to the use of private sector based free-market reforms in solving environmental problems.

The diverse array of issues discussed at G7/G8 Summits demonstrates the flexibility of these meetings in incorporating pressing contemporary topics and problems into their agendas. On the other hand, the summits could be criticized for being too unfocused to succeed in implementing their policy recommendations. The exception to this criticism is the clear modern focus on globalization and its sustainability. In all the recent G7/G8 Summits, implicitly or explicitly, the leaders have promoted economic and financial stability and discussed coordinated measures to strengthen globalization. Trade and financial market liberalization, coupled with the emphasis on free markets and private investment, have been policy recommendations regarding almost every global economic issue.

The ANTI-GLOBALIZATION movement, including environmental non-governmental organizations (NGOs), church and labor groups, leftist political organizations, civil rights groups, students, and also anarchists, not only questions the legitimacy of G7/G8 Summits on the basis of their non-democratic composition, but also argues that free-market oriented globalization has left many economically disadvantaged groups outside of the process. Those left out are deprived of the benefits of globalization, reinforcing poverty and increasing economic inequality. Many within the anti-globalization movement regard the G7/G8 summits as forums where transnational corporations strengthen their global economic power by promoting neo-liberal policies via international financial institutions, the INTERNATIONAL MONETARY FUND (IMF), WORLD BANK, and the WTO.

Anti-globalization advocates ask for a limit to corporate power and thus a limit on the exploitation of labor, the economically disadvantaged, and the environment. Anti-globalization groups have actively demonstrated against the G8 Summits in recent years, in some cases more peacefully than in others. At the Genoa, Italy, summit in 2001, the police killed one demonstrator during protest violence.

In spite of these criticisms and its limited success, the G8 Summit continues; at the very least, it serves a purpose in bringing the major world leaders together and engaging them in a dialog about current economic, political, and social issues.

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Galbraith, John Kenneth (1908–)

PERHAPS THE MOST illuminating fact about John Kenneth Galbraith is that he started to write his classic book, *The Affluent Society* (1958), as a treatise on poverty. As he did more research, it dawned on him that the idea of affluence was more important for understanding post-WORLD WAR II American capitalism. He scrapped the original book, and, in the process created a revolution in economic thought about capitalism. Political economists before him, Thomas MALTHUS, David RICARDO, Karl MARX, believed in SCARCITY and an iron law of wages that doomed workers to starvation and misery. As Galbraith saw it, this presumption had to be thrown out if post-war capitalism were to be understood.

Before writing *The Affluent Society*, Galbraith had already been an active observer of, and participant in, modern capitalism. During the war, he worked for the Office of Price Administration (OPA), but was pushed out for his views on regulation. His first major work, *American Capitalism* (1952), published when he had become an economics professor at Harvard University. In the book, he explained that smaller firms were disappearing, being gobbled up by a "small number of corporations." Previous political economists such as Adam SMITH believed market competition ensured that no business would grow too strong. Thus, Galbraith's conclusions would seem to be gloomy, as he saw power concentrating in a smaller number of hands. But he assured his readers that countervailing power—the regulatory activities of government, the growth of labor unions, the rise of consumer groups, and even the mundane activities of chain stores and retail buyers—could check the growing power of corporations.

Galbraith did see an amassing of power in the hands of the American corporation, and he was one of the first economists to seriously study advertising and the rise of the CONSUMER culture. Delineating a "Dependence Effect," Galbraith argued that corporations created "needs" in order to nurture consumption for an abundant amount of goods. "If production is to increase," Galbraith explained, "the wants must be effectively contrived." Clearly, Galbraith did not care for the adverse impacts of the postwar economy. For example, he complained about the ugliness of billboards and the unnecessary waste of consumer culture. He consistently bemoaned the selfishness inherent in consumerism, as seen in his more recent work such as *The Culture of Contentment* (1992). But Galbraith's most important concern centered on how "private opulence," that is abundant consumer goods, existed alongside "public squalor."

Galbraith argued that as American corporations pumped out goods for private consumption, public goods such as schools fell into disrepair. He described how Americans bought efficient, comfortable cars but traveled on ugly highways into desiccated cities and polluted parks. In noting this contradiction, Galbraith made clear that he was a "liberal," someone who believed that public spending should make up for the shortcomings of capitalist markets. He called on governments to address the poverty that affluence failed to alleviate—especially that which resided in "rural and urban slums." Not surprisingly, Galbraith advised Adlai Stevenson, the Democratic Party contender for president during the 1950s, and then worked for John F. KENNEDY and Lyndon B. JOHNSON.

While he worried about the shortcomings of consumer capitalism, Galbraith continued to believe in self-correcting forces (countervailing power) and grew increasingly optimistic during the 1960s. In *The New Industrial State* (1967), he extended some earlier arguments he had made about a "new class" of employees in American corporations. Here Galbraith picked up on a long line of social thought, one that extended from the iconoclastic economic thinker Thorstein VEBLEN. Veblen recognized that as businesses grew in size, more managerial power was ceded to engineers and other professionals. Galbraith recognized that the number of white-collar employees had continued to grow since after World War II, further displacing the power of corporate chiefs and those who owned capital. For him, an "educational and scientific elite" played an increasing role in managing corporations. Being educated and critical-minded, this new class looked upon advertising with "disdain," as too manipulative for their ideals. Galbraith called this a paradox. He explained, "The economy for its success requires organized bamboozlement [through advertising]. At the same time it nurtures a growing class which feels itself superior to such bamboozlement and deplores it as intellectually corrupt." Thus, the possibilities for change—for emphasizing values other than consumption and private profit—resided within corporations.

Another source of optimism for Galbraith was the "technostructure," marking corporate life. He recognized that as corporations centralized their power and encouraged steady consumption on the part of increasing numbers of Americans (supported via advertising), they developed a massive bureaucratic infrastructure to manage these challenges. The modern corporation, for Galbraith, was "no longer subordinate to the market" celebrated by classical liberals like Smith. If anything, the corporation planned economic activities by projecting costs and manipulating needs to sustain itself. It became more reliant upon the federal government in the process, not only for such things as highways but for direct subsidies, as in the case of defense contracts. Though there was a pernicious side to all this, Galbraith believed it pointed to a more planned economy that might actually benefit Americans. The new class and its technostructure showed that corporate production was no longer haphazard but increasingly attuned to planning.

Of course, this optimism balanced itself against worries, not just about consumer culture but more mundane things like inflation. Galbraith believed inflation was a new type of problem endemic to postwar economic prosperity. As wages went up within an "affluent society," corporations raised prices. This "wage-price spiral" was especially evident in the highly unionized sector of the American economy (e.g., steel). Though trained as a Keynesian economist, Galbraith broke with certain Keynesian tenets. He argued, "The preoccupation of Keynesian economics with depression has meant that inflation control has been handled by improvisation."

Indeed, Galbraith rejected a tendency among some Keynesians to shy away from direct regulation of the economy (settling instead for occasional fiscal stimuli). Instead, Galbraith drew upon his own career at the OPA, arguing that a return to price control would probably be necessary to head off inflation. He illustrated that when government stopped using price control mechanisms in the wake of World War II, inflation shot up. Against more conservative critics, Galbraith asserted that price control could be used much more flexibly than it was during the war. Most importantly, he urged liberals to remain more open toward direct interventions in the economy to address inflation as well as other problems.

This is what made Galbraith a quintessential liberal in relation to modern capitalism. He believed in the regulatory power of government and wanted a much more vibrant public sector that could address issues of education, health, and income redistribution. Galbraith was politically active in the Democratic Party, but he became increasingly alienated due to the VIETNAM WAR. After 1968, he invested less and less time in politics. In 2003, he continued to write, in very accessible ways about difficult economic problems, but none of his more recent books reached the stature of *The Affluent Society*.

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gambling and lotteries

GAMBLING IS A HUGE business in the UNITED STATES and the rest of the world. While the dollar value of total gambling is difficult to measure because a significant portion of wagering, particularly sports betting, occurs illegally, the gross gambling revenue in the United States in 2000 was from various sources: card rooms, $884.6 million; casinos, $27.2 billion; charitable games and bingo, $2.4 billion; Native American reservations $12.2 billion; legal bookmaking (primarily sports betting), $125.9 million; lotteries, $17.6 billion; and pari-mutuel (including horse and dog racing), $3.8 billion; for a grand total of $63.3 billion.

As the term "gross gambling revenue" refers to total wagers less winnings, it substantially understates total funds wagered. For example, wagering in legal bookmaking totaled $2.3 billion in 2000 compared to gross gambling revenue of only 5 percent of this amount which represents the casinos' take. Similarly, a gambler may play dozens of hands of blackjack while ending up just breaking even. While hundreds of dollars of individual bets have been made, the gross gambling revenue from this gambler is zero.

Total wagering is, of course, much harder to measure, but is roughly twice the gross gambling revenue for lotteries, ten times gross gambling revenue for pari-mutuel betting, and roughly fifteen times gross gambling for casino and Indian gaming.

Commonly played games of chance come in many forms. Casino gambling includes table games such as roulette and craps, card games such as blackjack, the most popular casino card game in the United States, and baccarat, a popular French casino card game, and coin-operated slot machines and video slots. The payoffs from table games average about 98 percent of money wagered and slot machines vary between 90 percent and 98 percent. In the United States, as of 2001, 11 states had commercial gambling and another 23 had casinos operated by Native American tribes on reservations.

Another 40 states had state-run lotteries. These agencies typically offer a mix of instant-win scratch-off cards and online drawing games offering large prizes at large odds. Typical payoffs for state lotteries are among the lowest in the gambling industry, with returns averaging between 40 percent and 60 percent. Pari-mutuel gambling is offered at horse and dog racetracks in 41 states. Pari-mutuel betting, which averages a 90 percent return, is unique in that the amount of the prize won depends on the number of other bettors and winners. The house makes its profit by taking a portion of all bets placed known as the vigorish.

Sports betting in the United States is legal only in the state of Nevada, although it is estimated that illegal sports betting exceeds legal betting by a factor of 100. Sports bookies work to adjust the odds and payoffs so that an even amount of play enters in on each side of a bet, and then make their profit just as in pari-mutuel betting. Card rooms are offered by casinos to allow gamblers to play directly against other bettors. Again, the house simply retains a portion of all money wagered.

Lotteries and gambling have existed in many forms throughout history. Lotteries are mentioned in the Bible, the ancient Greeks, Romans, and Egyptians were known to have played dice, and the Hun Dynasty in CHINA created Keno in 100 B.C.E. to pay for defense. Privately run gambling houses have often been discouraged by governments that did not wish to allow competition with official sources of gambling that contributed to government revenue. The first legally recognized public gaming houses came about in the 17th century in ITALY, and the modern term, casino, derives from these "small houses" or *casini*. Lotteries were common in post-Renaissance Europe and spread to the New World with the European colonists. Lotteries were sponsored by such notable early Americans as Benjamin FRANKLIN, George WASHINGTON, and John HANCOCK to finance public expenditures, such as equipment for the Continental Army and Faneuil Hall in Boston. Harvard, Yale, Columbia, and Princeton, as well as other numerous churches and colleges all sponsored lotteries to raise funds for early construction.

Beginning in the 1820s, corruption in lotteries became widespread and, lacking effective means to regulate the industry, state governments began to ban lotteries. By 1878, all states except for Louisiana had banned the sale of lottery tickets. Casino gambling and card-playing remained popular through the western United States, but gradually states outlawed public gaming as well. In 1909, Nevada became the last state to outlaw casino gambling, and coupled with court decisions in 1905 that effectively ended the Louisiana Lottery, the United States entered a 20-year period of prohibition on all types of gambling.

Nevada re-legalized casinos in 1931, but its action was not followed by another state until New Jersey ratified gambling in Atlantic City in 1978. Racetracks, however, were re-established in 21 states during the 1930s, and many other states took small steps toward a general legalization of gambling by allowing small-stakes charitable gambling and bingo throughout the 1940s and 1950s. For example, nearly every state allowed the sale of raffle tickets to aid civic organizations. In 1964, New Hampshire introduced the first state-run lottery in 60 years and was slowly followed by other states, with a large number of states offering lotteries for the first time in the late 1980s. CANADA offered the first provincial lottery in Manitoba and Québec in 1970. In 1988, federal laws allowed increased cooperation among state lottery associations and the first large multi-state lottery, Powerball, was formed.

Gambling and lotteries are a $63 billion (or more) business—the size of a small nation's gross domestic product.

The gambling industry underwent a significant legal change in 1987 when the U.S. Supreme Court affirmed the right of Native American tribes to offer high-stakes gaming. This decision ushered in a wave of new casinos located on reservation lands. In response, many states legalized non-tribal casinos, although casino operation in these states was generally restricted to designated areas. For example, gambling in Illinois and Iowa was restricted to large riverboats, and gambling in Colorado, South Dakota, and Kansas was limited to historical areas such as Deadwood, Dodge City, and Cripple Creek. The historical capital of gambling, Las Vegas, responded to the increased competition for gambling dollars by building more and more lavish and extravagant casinos, and changing the image of the city from a gambler's paradise to a more family-oriented vacation destination. The latest innovation in the gaming trade has been the advent of a rapidly growing internet gambling industry.

Many groups look upon the gambling industry with disfavor for several reasons. First, many object to gambling on religious grounds. Both Islam and conservative Christianity place prohibitions on games of chance. Next, many argue that gambling preys upon the poor who may see a big payoff in the lottery or casino as their only ticket out of poverty. Gambling, as a large cash business, is also looked upon as a haven for money laundering. Until recently, Las Vegas was considered to have strong ties to organized-crime figures. Finally, many worry about the destructive effects of gambling on those with addiction problems.

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game theory

IT IS A RARE PERSON who has not had the experience of playing a game. However, most people do not analyze the structure of the game in terms of its basic elements: players, rules, strategies, timing, outcomes, and payoffs.

Game theory is a branch of mathematics with applications in computer science, economics, engineering, and other disciplines. Players can be nature itself, individuals, spouses, computers, sports clubs, regions, nations, and groups of nations. Rules may include a marriage contract, the three-second lane violation in basketball, and the Geneva Convention on armed forces engaged in warfare. Strategies can range from "increasing charitable donations for tax reduction purposes" to "using Agent Orange to defoliate Vietnamese jungles." Timing may involve who shoots first between two gunslingers, or waiting to ask Dad or Mom for the car keys until after they have eaten. Outcomes and payoffs can be different, but they both result from choosing strategies. Student X may have chosen the strategy of "studying instead of enjoying leisure" to obtain an SAT score of 1500 (outcome). The payoff is getting into a top-tier college. What is extremely attractive about game theory is its ability to be as general or specific as one needs it to be.

Modern game theory became a prominent branch of mathematics after the 1944 publication of *The Theory of Games and Economic Behavior* by John von Neumann and Oskar Morgenstern. This work contained the method for finding optimal solutions for two-person, zero-sum games.

A 2001 motion picture, *A Beautiful Mind*, popularized the life of John NASH. Around 1950, Nash developed a definition of an optimum outcome for multi-player games now known as the Nash Equilibrium. The concept was further refined by Reinhart SELTEN. These men were awarded the Nobel Prize in Economics in 1994 for their work on game theory, along with John HARSANYI. The latter had developed the analysis of games with incomplete information. The literature on game theory has blossomed in the past several decades, as have its applications to real-world problems.

Anatomy of a game. There are two distinct but related ways of describing a game mathematically. The extensive form is the most detailed way. It describes play by means of a game tree that explicitly indicates when players move, which moves are available, and what they know about the moves of other players and the "state of nature" when they move. Most importantly, it specifies the payoffs that players receive at the end of the game. Equilibria in such games are often attained by examining the payoffs at the right of the tree, and working one's way left to the choices that would have been made by each player to get there.

A "pure" strategy is a set of instructions. Generally, strategies are contingent responses. An alternative to the extensive form is the normal or strategic form. This is less detailed than the extensive form, specifying the list of strategies available to each player and the payoffs that accrue to each when the strategies meet. A game in normal form is specified by:

1. A set, I_n , of n players
2. Strategy sets, $S_1, S_2, ..., S_n$ for each player
3. Real-valued payoff functions, $M_i(s_1, s_2, ... s_n)$ for each player i, and strategies, s_i 0S_i, chosen by each.

A zero-sum game is one in which the total payoff to all players in the game adds to zero. In other words, each player benefits only at the expense of others. Chess and Poker are zero-sum games, because one wins exactly the amount one's opponents lose. Business, politics, and the Prisoners' Dilemma (next section), for example, are non-zero-sum games because some outcomes are good for all players or bad for all players.

It is easier, however, to analyze a zero-sum game, and it turns out to be possible to transform any game into a zero-sum game by adding an additional dummy player often called "the board," whose losses compensate for the players' winnings. A constant-sum game is a game in which for every combination of strategies the sum of the players' payoffs is the same. In the game of squash, the constant is 100.

A cooperative game is one in which the players may freely communicate among themselves before making game decisions and may make bargains to influence those decisions. Parker Brothers' Monopoly is a cooperative game, while the Prisoners' Dilemma is not. A complete-information game is a game in which each player has the same game-relevant information as every other player. Chess and the Prisoners' Dilemma are complete information games, while poker is not.

The Prisoners' Dilemma game. The normal form of a game is often given in matrix form. The table below is the normal form matrix for former Princeton Professor Albert Tucker's Prisoners' Dilemma game. In this game, the two players were partners in a crime and have been captured by the police. The police can prove that the two committed a minor crime, but cannot prove that they also committed a major crime. They need at least one confession for that. The payoffs in Table 1 are negative because they represent years in jail. If both prisoners choose "not confess," they both get one year in jail for the minor crime. If one confesses and the other doesn't, the confessor goes home and the non-confessor gets 8 years. If they both confess, they each get 5 years. Each suspect is placed in a separate room, and offered the opportunity to confess to the crime. The rows of the matrix correspond to the strategies of player 1. The columns are headed by the strategies for player 2. Each cell in the table gives the payoff to player 1 on the left and player 2 on the right. The total payoff to both players is "highest" if neither confesses and each receives only 1 year.

However, each player reasons as follows: if the other player does not confess, it is best for me to confess (0 instead of -1). If the other player does confess, it is also best for me to confess (-5 instead of -8). So no matter what either thinks the other player will do, it is best to confess. This is called a dominant strategy for each player. The theory predicts, therefore, that each player following her own self-interest will result in confessions by both players.

Each player choosing her dominant pure strategy will result in a Nash Equilibrium in this game. In a Nash Equilibrium, no player would want to change strategies from what she has already chosen. This result casts doubt on Adam SMITH's notion that the individual pursuit of self-interest will lead to the best outcome for the group.

Table 1: ***Prisoners' Dilemma***

	Player 2		
Player 1		not confess	confess
	not confess	-1, -1	-8, 0
	confess	0, -8	-5, -5

Some games do not have an equilibrium set of pure strategies, but may have an equilibrium in mixed strategies. A mixed strategy is a strategy that assigns a probability less than one to each of the pure strategies available to the player, with all probabilities adding to one. Of course, each pure strategy can be written as a mixed strategy with its own probability equal to one, and all other probabilities equal to zero. If $(s_1, s_2, \ldots, s_m)$ are *m* pure strategies a player can choose, and $(p_1, p_2, \ldots, p_m)$ are the probabilities assigned by the player to these strategies, then $(p_1*s_1 , p_2*s_2 , \ldots , p_m*s_m)$ is a mixed strategy. This complicates the payoffs that result from the use of strategies by each player and expected payoffs (payoffs weighted by probabilities) become relevant.

Even though it has an equilibrium in pure strategies, the Prisoners' Dilemma game, as shown in the table, can be used to illustrate the concepts of mixed strategy and expected payoff. If player 1 assigns a probability of .5 (the expected value of heads in, say, a fair coin toss) to each of "not confess" and "confess," then she creates a mixed strategy. If player 2 assigns .25 and .75 (by, say, spinning a needle over a 4-quadrant circle with 3 marked "confess") to "not confess" and "confess," then player 2 can expect a payoff of .25*[.5*(-1) + .5*(-8)] = .25*[-4.5] = -1.125 for choosing "not confess" and .75*[.5*(0) + .5*(-5)] = .75*[-2.5] = 1.875 for choosing "confess." The same process can be done for player 1.

Each player can have infinitely many mixed strategies, even when there is a finite number of pure strategies. Under certain mathematical conditions, it can be shown that a Nash Equilibrium in mixed strategies exists for games with a finite number of pure strategies. Equilibria in mixed strategies have come under attack as mixed strategies are thought not to be commonly used, and the assumption that each player guesses the other's probabilities is thought to be fairly far-fetched.

Games with coalition formation. Suppose that there are more than two players in a game. A coalition is a group of players that band together to obtain the benefits of coordinating strategies. There is the possibility that any two players may form a coalition against the third. As the number of players grows, the number of possible coalitions grows, but the costs of getting groups to coalesce may also increase. A game in characteristic function form involves a real-valued function defined over sets of players. It is called a "characteristic function" (hereafter, c.f.), and it assigns values in the game to various coalitions. A c.f., v, for a non-zero sum game with ν as the "empty" coalition, and R, S as two arbitrary non-overlapping coalitions, must satisfy:

4. $v(\nu) = 0$
5. $v\ (R\chi S) \exists v(R) + v(S)$.

Inequality 5) is known as the property of superadditivity, which means that the bigger coalition can get a payoff at least as big as the sum of the payoffs to the separate coalitions. An example of the superadditivity of payoffs to coalitions is labor unions in general. In most cases, the total wages paid to labor after negotiating as a coalition with management is greater than what each worker might have negotiated separately. The United Auto Workers and the Major League Baseball Players' Association are live examples of this.

The discussion of equilibria for games in characteristic function form quickly gets mathematically technical. Therefore, the interested reader is directed to the sources listed in the Bibliography at the end of this article.

The bargaining problem. Besides proposing an equilibrium for non-cooperative games, Nash addressed the same issue for cooperative games. Suppose that two players are at a status quo level of "well-offness" and can negotiate so that each would become better off. If u_i is the utility or well-offness level of player i, and d_i is the value of that well-offness in the status quo, then Nash proposed finding the best solution for both players simultaneously by maximizing the following function for players 1 and 2 over the set of possible outcomes:

6. $U = (u_1 - d_1)^*(u_2 - d_2)$.

Subtracting off the d-levels essentially eliminates any status quo bias in favor of one or the other, to assess what is the maximum improvement that can happen. The multiplicative nature of the function ties the well-offness of each to that of the other. For games with $n>2$ players, the function in 6) becomes the product of $(u_i - d_i)$ for all i.

Economics and the theory of games. As noted at the very outset, the real birth of the theory of games occurred in a book by a mathematician and an economist. The notions of self-interest, utility, and optimization created early links between game theory and economics. The key link is rationality, the attribute of people that guides them to do things in their own self-interest only if the perceived benefits exceed the perceived costs. Economics, especially in its neoclassical form, is based on the assumption that human beings, and the institutions they create, are absolutely rational in their economic choices. Specifically, the assumption is that each person or institution maximizes her or its rewards (e.g., profits, incomes, or subjective benefits) in the circumstances that she faces. The game theory framework is ideal for this. Perhaps the three most famous of the economics applications of game theory are the game formulation of equilibrium in a duopoly (two-firm) market devised by Augustin Cournot (1801–77), the game view of member producers deciding to cheat or not in a cartel (group of producers agreeing to coordinate economic decisions; e.g., OPEC), and a game formulation of an economy in which the core (a set allocations of resources that dominate all allocations in terms of the utility of each individual) is achievable through the coordination of competitive market prices. In some of these models, the strategies are not disjoint entities, but choices among infinitely many points on continuous functions.

Market failures such as the overexploitation of fisheries, global warming, and inadequate resources committed to research are additional examples of games. In this realm, the individual pursuing self-interest is pitted against the broader goals of society. Modern game theory texts are filled with examples like these, and game theory itself is also permeating texts in many other disciplines. Over time, the payoffs to this phenomenon will be revealed.

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gangsters

PERHAPS AN EXTREME example of criminal capitalism in modern times, gangsters have been present throughout human history. The best-known gangsters are the Mafia, whose groups date back to feudal times in Sicily, ITALY. Gangs of men were used to protect the estates of absentee landlords. As time progressed, the gangs evolved into criminal bands, and by the 19th century the mafia consisted of a criminal network that dominated Sicily. Toward the end of the 19th century, some members of the Mafia immigrated to the UNITED STATES and soon many were involved in American organized crime.

The term gangster can apply to any member of a criminal gang, yet it is most often used in connection with notorious leaders of organized crime. Some infamous criminals that come to mind are Al Capone and "Bugsy" Siegel. These high-profile men were part of the gangster's heyday in the United States during the 1920s.

In many ways, gangsters and the economic system of capitalism are intertwined. Gangsters have been portrayed as ruthless businessmen or cunning entrepreneurs. With the influx of new people to America during the late 19th and early 20th centuries, immigrants had to compete to survive. There was an unwritten message to new Americans that opportunities must be seized.

In the case of gangsters, these opportunities were seized using illegal means. Paying no heed to laws making their activities illegal, the gangsters of the day provided services for which customers were willing to pay. These "services" included gambling, prostitution, liquor, racketeering, and drugs.

Just one example of the quintessential gangster-capitalist is Al Capone. Born January 17, 1899, Alphonse Capone was the son of Italian immigrants who had come to America five years earlier to build new lives. Capone grew up in the streets of Brooklyn, New York, where he met his criminal mentor, Johnny Torrio. Torrio was a pioneer in the development of modern criminal enterprise: With his administrative and organizational talents he was able to transform crude racketeering into a form of corporate structure. As Torrio's business expanded and opportunities emerged, he took young Capone under his wing and guided him into a life of crime.

By 1921, Capone had advanced from Torrio's employee to his partner. He helped to manage, maintain, and control operations in illegal bootlegging, gambling, and prostitution. Capone and other gangsters were aided in their crimes by corrupt politicians. By buying off the politicians and law enforcement officers, gangsters were able to operate rather freely without concern of punishment.

By 1927, Capone was an extremely wealthy and powerful man. At the end of 1925, Torrio had retired leaving Capone his legacy of nightclubs, whorehouses, gambling joints, breweries, and speakeasies. With his power, Capone came to view himself as a hero to Italian immigrants. Indeed, his bootlegging operations alone employed thousands of people, many of whom were poor Italian natives desperate for work in America.

As Capone's wealth and power grew, so did the animosity of competing gangsters. One such rival was Bugs Moran. Capone decided to eliminate Moran as a threat and this decision led to the infamous Saint Valentine's Day Massacre. On February 14, 1929, Capone and his allies arranged the assassination of six of Moran's men using a cunning plan of trickery. Though the plan failed to kill Moran, it brought Capone to the nation's attention.

Soon enough Capone was cited as the public's number-one enemy by President Herbert HOOVER. Though government prosecutors had trouble finding evidence to support charges against Capone dealing with criminal activities, they did have another tactic with which to pursue him. In 1927, the U.S. Supreme Court ruled that bootleggers must report and pay income tax on their illegal bootlegging businesses. This ruling stated that even though reporting and paying tax on illegally gained revenues was self-incrimination, it was not unconstitutional. Thus, prosecutors could arrest and try Capone for tax evasion. On October 17, 1931, Capone was found guilty of some of the tax charges against him and he was sentenced to 11 years in a federal penitentiary.

The story of Al Capone is a tale that reflects the high point of the gangsters' glory days in America. When Prohibition was repealed in America in 1933 much of the capital and revenue of the gangsters was removed. Organized crime still exists in America but not in the spotlight as it did in the Prohibition era.

Since the dissolution of the SOVIET UNION, and the subsequent embrace of capitalism in the former communist republics, RUSSIA has become a prime location for organized crime. As Russia undergoes the transformation from a socialist economy to a capitalist economy, there are many overlapping and conflicting laws regarding the economy. There is confusion over which laws are valid when presidential decrees and parliamentary legislation conflict. Another factor is the overlapping jurisdictions of administrative offices. With all of this confusion, it is easy to see how organized crime can flourish. The public is willing to pay gangsters to ensure that their businesses can survive. It is hoped that as the Russian economy settles, and becomes more organized, the power of these modern gangsters will diminish.

Still, it seems that gangsters are an inevitable part of the growing pains as capitalist economies develop.

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Garfield, James (1831–81)

THE 20TH PRESIDENT of the UNITED STATES, James Abrams Garfield was born in Cuyahoga County, Ohio.

His father died when he was two, leaving his mother to raise five children with little money. At 16, Garfield began working on a canal barge, but after becoming sick, he decided to pursue an education. After graduating from Williams College in 1856, he became a college president, professor, and part-time preacher. He later studied law and joined the bar.

In 1858, Garfield was elected to the Ohio State Senate where he was a strong anti-slavery advocate and a vocal opponent of secession. He campaigned vigorously for Abraham LINCOLN in 1860. When the AMERICAN CIVIL WAR broke out, he helped recruit the 42nd Ohio Infantry and received a commission as a lieutenant colonel. A combination of his abilities, bravery, and good political connections allowed him to rise to major general. While serving in the field, his friends nominated him for Congress. He was elected to a seat in the U.S. House of Representatives in 1862. Despite his election, he remained in the field until Congress reconvened in late 1863.

Representative Garfield was a radical Republican. He supported strong protections for the freedmen and tough military measures to suppress the former rebels. He was one of the House leaders who successfully impeached President Andrew JOHNSON in 1868.

After the war, Garfield strongly supported moving the currency back to the specie standard. This meant that money would be backed by gold or silver, preventing currency inflation. This position was especially controversial in the west, where farmers hoped to escape their debts through high inflation. Garfield, however, viewed it as a moral issue, arguing that inflation was a form of legalized theft. He was also considered a moderate supporter of tariffs and civil service reform.

In 1872, Garfield was one of many Congressmen embarrassed by involvement in the Credit Mobilier scandal. Congressmen received stock and generous dividends from a railroad company that had been given lucrative government contracts. Although the scandal ended many political careers, Garfield's involvement was relatively minor and left him unscathed. He had also received other payments from government contractors while serving in the House, which, although legal at that time, seemed ethically questionable to many reformers.

Garfield sat on the election commission in 1876 that controversially awarded the presidency to Republican Rutherford B. HAYES.

In a special election in January, 1880, Garfield was elected to the U.S. Senate. But before he could take his seat, he went to the Republican Convention in support of John Sherman for president. The convention became deadlocked. In order to block an attempt by supporters of former President Ulysses GRANT to take the nomination, the other major candidates compromised by nominating a surprised Garfield on the 36th ballot.

After the election, there was an unusually large flurry of demands for patronage government jobs. Garfield had long been in favor of civil service reform, though he was not considered a particularly strong advocate. He spent much of his first months dealing with job controversies. In July 1881, a disgruntled (and probably insane) office seeker, named Charles Guiteau, shot the president in the back. Garfield lingered for months before dying in September. Outrage over the assassination resulted in the passage of the Pendleton Act in 1883, one of the first major legislative acts aimed at civil service reform.

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Gates, William Henry III (1955–)

BILL GATES IS THE CO-FOUNDER, chief software architect, chairman, and former CHIEF EXECUTIVE OFFICER of the MICROSOFT Corporation. Gates is reported to be the richest American in history, the richest person in the world, and has been called the most successful entrepreneur in history.

Born in Seattle, Washington, his parents sent young Gates, a precocious child and ravenous reader, to an intense college preparatory school that rented mainframe-computer time from Computer Center Corporation for its students. Gates became addicted to the machine, as was his new friend Paul Allen (with whom Gates would eventually form Microsoft). Gates, Allen, and some other friends formed a computer club that volunteered to fix programming bugs for the Computer Center Corporation in exchange for computer time, and later wrote a payroll program for another local company.

Gates was admitted to Harvard University in 1973 but spent more time playing with the university's computers than concentrating on his studies. When Allen (who followed Gates out to Massachusetts) found an advertisement for the Altair 8080, an assembly-required microcomputer, Gates and Allen wrote a BASIC (a programming language) program for the Altair and sold it to the company. Within a year, Gates had dropped out of Harvard and formed with Allen the Microsoft Corporation that, by 1978, had sales exceeding $1 million.

After a brief stay in Albuquerque, New Mexico, Microsoft moved to the outskirts of Seattle in 1979, partly because Gates wanted to be closer to his family. After Allen was diagnosed with Hodgkin's disease in 1982 and left the company, Gates took over sole control of Microsoft. The company's continuing success made Gates a billionaire by 1986; at only 31 years old, he was the youngest billionaire in history.

At Microsoft, Gates is notorious for his focus, his total awareness of his products, and his confrontational management style. Gates insists workers argue with each other to fully examine ideas, and he has been known to verbally attack employees if he feels they are not properly prepared. In the early days of Microsoft, when it was still a reasonably small company, Gates insisted all decisions come through him; he preferred an open management style to bureaucracy (which became unavoidable in light of the company's enormous growth rate). Even today, Gates prefers informal management and tries to keep the atmosphere at company headquarters informal.

When dealing with competing companies, however, Gates is often notoriously ruthless. When Microsoft contemplated entering the internet service market by buying America Online, Gates told AOL chairman Steve Case, "I can buy 20 percent of you or I can buy all of you, or I can go into this business myself and bury you." Gates has also been accused of obsessing over his competition (in particular the Apple Macintosh system).

In 1998, Gates relinquished the titles of president and chief executive officer at Microsoft to Steve Ballmer, a friend of Gates from Harvard hired for his management (rather than technical) prowess. By adopting the title of chief software architect, Gates announced, allowed him to focus on Microsoft's products and less on business operations. Industry critics speculated the move less reflected Gates's desire to concentrate on technology than on his unsuitability for corporate management.

Gates has long been driven by a vision of computers entering all aspects of people's lives. In the early days of Microsoft, the Gates-penned company motto was "A computer on every desktop and in every home." Since then, this vision has expanded to include software spreading beyond computers, into every aspect of a person's life. Gates engineered the development of WebTV in an attempt to bring the internet to people without computers, and is a fervent supporter of developing software to integrate home appliances and computers. Gates' Lake Washington estate embodies this omnipresence of technology approach, as it is used as a testing grounds for many Microsoft-constructed home automation products. Gates spelled out his visions of technology in two best-selling books: 1995's *The Road Ahead* and 1999's *Business @ the Speed of Thought*.

Gates has also been an active philanthropist from the early days of Microsoft. In 1984, Gates and Allen donated $2.2 million to their old prep school for a science and math center. Gates also donated the profits from both his books to charities supporting technology education. Gates has also supported computer-in-library programs and global health organizations with billions of dollars in donations. Gates is particularly interested in lowering the price and raising the availability of prescription drugs and vaccines, one of the key goals of his charity foundation.

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General Agreement on Tariffs and Trade (GATT)

GATT CAME INTO EXISTENCE on January 1, 1948, with 23 original members, in the aftermath of WORLD WAR II as part of an attempt by the victorious allies to structure an economic world order that would better suit the realities of post-world-war life. It was ended at the conclusion of the Uruguay Round of talks in 1994 to be replaced by the WORLD TRADE ORGANIZATION (WTO), by which time it had grown to over 125 members, regulated some 90 percent of international trade, and had succeeded in reducing average international trade tariffs from 40 percent to about 4 percent.

The period prior to WORLD WAR I had seen increasing GLOBALIZATION and liberalization of international trade in a world system featuring strong nation-state alliances buttressed by the colonization of much of the third world. However, the war itself and the settlement that followed it did much to destroy that system and the institutional replacement for international alliances—the League of Nations—was not strong enough to prevent nations relapsing increasingly into a series of protectionist measures that further diminished confidence, and then contributed to reduced economic growth.

The UNITED STATES, in particular, with a large domestic market and few overseas connections compared with European powers, favored an isolationist stance with a strong protectionist element that contributed significantly to the stock market crash of 1929 and the subsequent Great DEPRESSION. World War II provided a stimulus to the American economy such that at the conclusion of the fighting, the United States was recognized as the emergent world economic leader.

Postwar discussions of the shape and nature of an international economic order that would help prevent the same economic problems (stimulated by the work of John Maynard KEYNES), as well as contributing to maintaining international peace in the face of the Cold War, centered on the creation of three institutions—the WORLD BANK, the INTERNATIONAL MONETARY FUND (IMF), and the International Trade Organization (ITO). ITO was intended to be the body which would regulate international trade and ensure fair play. However, America was mindful of its economic strength, which it wished to deploy in bilateral rather than multilateral forums, and its strong balance of payments surplus, and Congress refused to approve the Treaty of Havana that would have confirmed membership in the ITO. As a result, the ITO plan was abandoned, since it would have been impossible to operate without the support of the United States. In its place, the GATT was born, as an interim institution that was never, in fact, succeeded by the UN-sponsored successor to ITO that had been expected.

The main purpose of the GATT was to hold a series of negotiations at which tariff rates could be agreed upon. The principles by which the GATT was to operate included non-discrimination, most favored nation (MFN) status, and reciprocity. The principle of non-discrimination means that goods, once they have passed beyond a country's borders, must be treated as if they were domestic goods and be free from any discrimination or bias. MFN status means that all parties bind themselves to the idea that treatment extended to one party must be extended to all other members of the agreement. Reciprocity means that a privilege such as reducing a tariff—which is not enforceable in a commercial treaty such as provided by the GATT—should also be granted by the receiving nation and, indeed, all other nations that are signatory to the agreement.

Since GATT had little in the way of full-time staff or resources to support its workings, negotiations were frequently lengthy and inconclusive. Although some headline agreements were reached, this was often largely because strong nations were able to exclude issues that appeared to be troublesome, and deal with weaker nations on a bilateral basis so that they could enforce terms that would have been recognized as unfair by the international community at large. Hence, agriculture, heavily subsidized in Europe and even more so in the United States, has been excluded from GATT discussions. Similarly, textiles and garment manufacturers, in which the developing world has long had a competitive advantage due to lower LABOR costs, was dealt with by the Multifiber Agreement. This arose as a result of multilateral discussions in the GATT, contrary to the principles of the institution which enabled developed countries to enter into bilateral arrangements with lesser-developed countries (initially those such as JAPAN and HONG KONG) about how much in the way of imports of particular textiles they would accept. Formal acceptance of this arrangement by the GATT has subsequently cost the developing world many billions of dollars in lost sales as they have been unable to penetrate the markets of developed countries, markets in which they have definite advantages to the extent that GATT seemed to promise.

In recent years, other issues and forms of trade have increased significantly in importance in the world of international trade. In particular, trade in service and intellectual property have become of considerable importance as, in the face of increased competitiveness from low-labor-cost countries such as CHINA and VIETNAM not previously part of the capitalist system, profitability has come increasingly to depend on possession of knowledge, brand, and other value-added and capital-intensive assets.

The developed nations called for these areas to be included in GATT; agriculture and similar industries have been resolutely placed out of bounds. The Uruguay Round concluded with the expansion of GATT's efforts into the World Trade Organization (WTO) to include many of those issues requested by the developed nations.

Eight rounds of talks were held by the GATT before its abolition and, perhaps inevitably, given the nature of a weakly enforceable agreement structure with complex issues, many participants and a dynamic environment, success varied among the different rounds. Those of particular significance included the Kennedy Round of 1964–67, the Tokyo Round of 1973–79, and the Uruguay Round of 1986–94, all of which were in fact held in Geneva, Switzerland. This period witnessed numerous important changes in international arrangements that had an impact upon GATT negotiations.

For example, the rise of the "East Asian Tigers" (SOUTH KOREA, TAIWAN, HONG KONG and SINGAPORE) demonstrated in different ways that free trade was not always necessary for rapid economic growth by some lesser-developed nations. Similarly the spread of multinational enterprise units and their importance to the world economy, and the increasing pace of globalization, have considerably lessened the importance of many nation-states as actors in international trade.

However, it is slightly unfair to criticize the GATT for failing to deal with issues that were unanticipated at its formation, and that it did not have the resources with which to adapt itself. For example, environmental degradation and the need for SUSTAINABLE DEVELOPMENT were not recognized as important issues in the middle, and indeed the later part of the 20th century, when it was believed that exploitation of natural resources and overall economic growth could continue indefinitely.

At the same time, relative success in removing or reducing tariff barriers in a number of important industries led to attention being switched to non-tariff barriers (i.e., those designed, at least in part, with a view to maintaining labor protection or environmental standards). This led to increasing friction with trade unions, non-governmental organizations, and social activists whose role has been to protect those standards.

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General Electric

A DIVERSE SERVICE AND technology company, General Electric (GE) owes its beginnings to the famous inventor and innovator, Thomas EDISON. GE is the only company listed on the Dow Jones Industrial Index of 1896 that is still listed today. The company's success and longevity have involved power generation, financial services, aircraft, plastics, television, and other products, and it employs over 300,000 people in 100 different company divisions today.

GE traces its origins to the 1878 Edison Electric Light Company. An 1892 merger between the Edison General Electric Company and the Thomson-Houston Electric Company created the General Electric Company. The company had 2001 net earnings of over $14 billion on international revenues of $50 billion. Its market capitalization is estimated at an astounding $263 billion. Recent GE corporate leaders, such as Jack Welch, have been lauded as the new form of CHIEF EXECUTIVE OFFICER who can transform traditional industry companies to take advantage of emerging markets.

Along the way, GE has been involved in a large number of innovations with over 67,000 patents and two Nobel Prizes in about a century of operation. GE has been responsible for making available a vast array of products, processes, and services. Some of these are the tungsten filaments for lighting that helped bring artificial light to the world as a tool. The man-made diamond, the first television broadcast, the magnetron, the microwave, improved Magnetic Resonance Imaging (MRI) and CT scanners, digital x-ray imaging, new plastics, applications in the communication industries, and much more have been spawned in the labs inspired by Edison so many years ago at his Menlo Park laboratory.

Some of the most important developments and products include inexpensive light bulbs in 1879; x-ray machines in 1896; the first radio broadcast in 1906; the first electric-generator-propelled ship in 1912; the electric system for the Panama Canal in 1914; and in 1918, the development of the magnetron vacuum tube for control of microwaves, and the first trans-Atlantic radio power generator.

During the 1920s, GE scientists designed the sources of power behind record-setting airplanes and racecars, and the first television broadcasts. In the 1930s, GE helped spread electric technology to the home by building power generation systems and home appliances that became standard after the 1940s. Between the 1930s and 1950s, the GE Credit Company allowed many consumers to acquire the tools of tomorrow on payment plans. During WORLD WAR II, GE pioneered the television station, the first American jet engine, and jumpstarted the field of atmospheric science with forays into rainmaking, or cloud seeding.

In the 1950s, GE popularized its innovations in plastics and home appliances. In the 1960s, GE played an integral role, from products to service, in placing the first human on the moon. During the 1970s, GE power sources became a norm for most commercial aircraft. In the 1980s, GE developed fiber optics and began to expand operations into new markets such as the launch of CNBC, a cable news network.

GE continues to diversify today with offerings in insurance, finance, and entertainment to supplement its traditional business of power generation and electrical and plastics products. The General Electric tradition of scientific advancement, beyond market profit, also continues with experiments in the world of the very small and very extreme using super magnets, space-age materials, and GE power sources for the experiments, often carried out with GE scientific involvement.

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General Motors

COMMONLY CITED FOR decades as the largest corporation in the world, General Motors (GM) traces its history to the Olds Motor Vehicle Company, organized by Ransom E. Olds, in 1897. The next century would see incredible development and expansion in the automotive industry, with GM a leader worldwide.

In 1899, a merger between Olds Motor Vehicle and Olds Gasoline Engine Works formed Olds Motor Works, leading to the first automobile manufacturing factory in the United States. In short order, Cadillac came into existence, organized by Henry M. Leland in 1902, followed by the incorporation of Buick Motor Company a year later. Billy Durant took control of Buick in 1904 and subsequently organized General Motors Company on September 16, 1908.

GM purchased Oldsmobile in November of the same year and purchased a 50 percent interest in Oakland Motor Car Company (later to become Pontiac) the following year. Later in 1909, GM expanded once more, adding Cadillac to its fleet with a purchase price of $5.5 million. Expansion continued throughout 1909, with AC Spark Plug (known as Champion Ignition Company) joining GM, followed by the acquisition of Rapid Motor Vehicle Company, the forerunner of GMC Truck, and Reliance Motor Truck Company. In an effort to grow even more, Durant attempted to buy Ford Motor Company the same year but was denied a loan request of $9.5 million.

By 1910, however, GM finances were precarious. Facing financial collapse, loans were secured to keep GM afloat and Durant was removed from his leadership role. In 1911, GM President James J. Storrow created the Engineering Department, which would become the GM Research Department in November 1911. Continuing with its expansion, General Motors Truck Company (today known as GMC) was organized in July 1911, followed by the incorporation of Chevrolet Motor Company in November 1911. Simultaneously, GM Export Company was put into place to handle sales of GM products abroad.

Expansion continued throughout the 1920s, with GM's first European assembly plant established in 1923 under the leadership of Chairman Alfred P. Sloan. Sloan's focus in the 1924 annual report was to declare GM's strategy of "A car for every purse and purpose." This strategy certainly fit well, given the pace of acquisitions, development, and expansion of GM products in its first 30 years of business. Expansion continued, with GM establishing its presence in England, Brazil, Argentina, Spain, Paris, Berlin, South Africa, Australia, New Zealand, Japan, Egypt, Uruguay, India, Germany, and China by 1930.

GM's impressive growth was marked by the production of its 25-millionth car on January 11, 1940. With the onset of World War II, GM lost control of Adam Opel AG to the NAZI government, shut down operations in Japan, and devoted all of its production to the beginning war effort.

1953 brought about the introduction of one of Chevrolet's most famous products, the Corvette. The late 1960s saw more expansion in GM's product lines with the introduction of the Chevrolet Camaro in 1967 and the Pontiac Firebird the following year (but listing a 1967 production year). Much to the chagrin of muscle-car enthusiasts, both vehicles were discontinued in 2002. In other arenas, GM produced the navigation system for the Apollo 11, guiding the first landing on the moon.

GM continued its acquisitions in early 1971, acquiring a 34.2 percent interest in Isuzu Motors Ltd. It entered into a joint venture in IRAN in 1972 but pulled out in December 1978 (at the time of the Islamic Revolution). At the same time as it launched its venture in Iran, GM entered into a joint venture with Shinjin Motor Co. of Seoul, South Korea. This would become Daewoo Motor Company in 1982. GM held a 50 percent interest in the company until 1992.

With the oil embargo of 1974, GM moved forward with a strategy of downsizing its products. The Chevrolet Chevette was introduced in 1975, with smaller models of Chevrolet, Pontiac, Oldsmobile, Buick, and Cadillac being introduced in 1976.

The 1980s saw the introduction of GM's Saturn Corporation, with production beginning in 1990. GM further diversified by acquiring Electronic Data Systems Corporation (EDS), a data processing and telecommunications company. The late 1980s featured the redesign of GM's fleet of mid-sized cars and the introduction of SmartLease, a GM consumer-leasing program. It also formed a joint venture with Volvo for its heavy truck business and introduced its Geo line of vehicles. By the close of the decade, GM had purchased a 50 percent interest in Saab Automobile AB of Sweden.

The early 1990s saw another management change, with John F. Smith, Jr. being named chief executive officer of GM. A reorganization effort ensued, establishing two primary operations for GM, its North American Operations and General Motors International Operations. Further, GM released the 5 percent rebate GM Mastercard. In the mid-1990s, GM's sales outside North America exceeded 3 million vehicles for the first time.

In 2000, GM increased its equity in Saab to 100 percent. It also entered into e-business partnerships with Sony, NetXero, and AmericaOnline, created a strategic alliance with Fiat, broke ground for a new $1 billion manufacturing complex in Michigan, increased its equity share of Suzuki to 20 percent, and announced the planned discontinuation of the Oldsmobile brand.

In 2003, GM revolved around six fundamental values for its business, including continuous improvement, customer enthusiasm, innovation, integrity, teamwork, and individual respect and responsibility. GM posted a net profit margin of only 0.3 percent in 2001. However, in the third quarter of 2002, GM posted a 30 percent improvement in earnings compared with the same period in 2001. The improvements are attributed to strong market performance and cost-cutting measures. Earnings were reported at $696 million, compared with $527 million in the third quarter of 2001.

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Generally Accepted Accounting Principles (GAAP)

THE ACRONYM FOR Generally Accepted Accounting Principles, GAAP provides the standards, rules, and conventions that accountants follow in recording financial transactions and preparing financial statements. Following GAAP essentially means the "accepted way" of doing accounting.

GAAP was largely developed and saw most of its growth throughout the 1930s. This was spurred by several earlier factors, including the establishment of the corporate form of business which saw the separation of management and ownership; the introduction of the income tax in 1913; the stock market crash and the ensuing DEPRESSION; and the regulatory period of 1933–34, which saw the establishment of the SECURITIES AND EXCHANGE COMMISSION (SEC), the regulation of securities trading, and full disclosure to investors.

In 1934, the SEC was given statutory authority to develop accounting standards, but instead, it left the private sector standard-setting bodies, such as the American Institute for Certified Public Accountants (AICPA), to do the bulk of the governing work.

The question becomes, then, what exactly is GAAP, and who presides over it?

First, the accounting industry is governed by various authoritative bodies, and their respective influence on accounting standards is given on the basis of the authoritative rank of each group's literature. This is arranged into what is known as the GAAP hierarchy. The GAAP hierarchy is established by the Financial Accounting Standards Board (FASB). FASB is the designated organization within the accounting industry that establishes GAAP. Though the SEC has statutory authority to establish standards for publicly held companies, it has long relied on the private sector to do this. Consequently, the SEC does indeed recognize GAAP standards as authoritative.

At the top of the five-category hierarchy, there is the FASB Statements and Interpretations. Also on par with the FASB Statements is the Accounting Principles Board (APB) Opinions and Accounting Research Bulletins.

The next category establishes the significance of FASB Technical Bulletins, AICPA Industry Audit and Accounting Guides, and AICPA Statements of Position. The third category is consensus positions of the FASB Emerging Issues Task Force (EITF) and AICPA Practice Bulletins. The fourth category includes AICPA Accounting Interpretations, FASB Questions and Answers, and prevalent industry practices. Finally, the last and least authoritative level in the GAAP hierarchy is composed of FASB Concept Statements, AICPA Issues Papers, and accounting textbooks and journal articles.

However, GAAP is not a fixed set of rules. Since there is no official, published list of principles, accountants must be familiar with this hierarchy, and the available sources within each category, in order to make proper judgments in a hazy and sometimes ambiguous environment.

The ambiguity contention then brings us to GAAP and its fundamental objectives. It was originally intended to be a set of principles, which are fundamental concepts and not specific rules to guide conduct. Though the rules, practices, conventions, and procedures used by accountants are subject to change, the purpose of the implementation of GAAP was to give the accounting industry a guiding set of principles to prevail throughout changes in the business environment and actual accounting practices.

GAAP principles, however, are mostly derived from tradition or specific practice over time. This is what has caused GAAP to be critically referred to, by its critics, as mere "working rules of practice" as opposed to an actual model set of principles.

However, the major components of GAAP are principle-based, while the various conventions and practices for the various components are generally driven by accepted norms, rules, and conventions within the industry. And the GAAP hierarchy lays out which authoritative sources shall guide the recording of transactions.

Indeed, principles and rules of conduct are very distinct. For example, assorted accounting measurements may have several accepted procedures or rules for financial statement representation; however, GAAP requires that these procedures follow the consistency principle, meaning that measurements are not subject to the whims of deliberate misrepresentation from one accounting period to the next. In other words, a company adopting a certain accounting principle to disclose specified information must use that principle in the same manner from one period to the next, and if that principle changes, that fact must be disclosed along with the effects of the change.

Another broad GAAP principle is the asset/liability measurement principle, that measures assets and liabilities by different attributes that depend on the nature of the asset/liability, and the relevance and reliability of the attribute measured. GAAP also has broad principles dealing with disclosure, the matching of revenues and expenses, revenue recognition, and the monetary unit assumption.

GAAP principles, overall, are those that have substantial authoritative support, and they are principles that are evaluated on the basis of how much they contribute to the objectives of the financial-reporting process. On the whole, the basic emphasis is to have a pervasive impact on the form and content of financial statements so that they are understandable to external users.

In any case, if GAAP is, by some appearances, just a "suggested" list of principles, why do accountants need to follow them? Accountants need to follow GAAP because even though they are referred to as principles, they are similar to laws within our legal system. For example, certified public accountants routinely AUDIT companies to determine if their financial statements are prepared according to GAAP. These audit findings will be published along with the company's financial statements. Keep in mind there is an immense amount of legitimacy placed on the external auditor's report, a report that essentially states whether or not GAAP was followed in a consistent manner. Most outside users of financial statements, except perhaps those dealing with smaller businesses, require externally audited financial statements that concur with GAAP. This compliance helps maintain creditability with creditors and stockholders because it reassures outsiders that a company's financial reports accurately portray its financial position.

GAAP, however, has had some setbacks in the era of corporate collapse during the early 2000s. The accounting scandals surrounding ENRON, WORLDCOM, Xerox, and other corporate giants play a large role in the revamping of principles-based accounting, the industry's ability to continue self-regulating, and the authoritative hierarchy within the industry.

Enron was the first spectacle to bring critical attention to GAAP and its ability to be effective. By late 2001, all major media markets were focused on Enron and its financial woes as it was revealed that Enron's off-balance-sheet accounting had not disclosed losses from a number of complex partnerships. Before that, Enron had been bumping up its revenues via a loophole in accounting rules because the FASB just could not make up its mind about how energy contracts should be accounted for and, at some point or other, decided that each company had a free hand to do what it wanted.

What followed was a media barrage on the entire accounting industry, as one scandal after another was revealed: Enron, WorldCom, Xerox, Global Crossing, Tyco, Halliburton, Qwest Communications, K-Mart, and so on. Financial statements from years back were restated, losses were revealed, stock prices dove, and 2002 saw the world's largest bankruptcies. Previously, the media couldn't have cared about accounting, but now, not only were accountants the new objects of ridicule, but GAAP, formerly an industry-only utterance, became a household word.

Though GAAP clearly had solid principles to determine revenue recognition rules, the allowable degree for deviation was so great that it was exploited by Enron in an attempt to prop up the appearance of booming profits. The fallout for GAAP was that it was said to be, essentially, not tough enough with its principles, and therefore, allowed for deceptive accounting practices far too easily. So again, where GAAP encounters problems is when companies are left free to pursue aggressive accounting tactics, though they are not necessarily illegal.

This wave of corporate accounting scandals ushered in a new era of regulation to the accounting industry. Perhaps the new regulatory oversight, as government adopts a new get-tough policy on deceptive corporate accounting, will prove to be more cumbersome than advantageous. Alas, the increased involvement from the public sector may prove to be detrimental in terms of competition, because the costs of wide-ranging oversight, political lobbying, and compliance to the various new rules will likely prohibit those on the margin from competing in businesses under less vigorous oversight conditions.

Change is inevitable, however, in terms of ultimate accounting principles, practices, and oversight. As the various governing and advisory bodies within the accounting industry adapt to ever-changing economic phenomena, up-and-down markets, and more burdensome regulatory oversight, opinions about the perceived benefits or harm to third-party financial statement users will be the driving influence in the way that GAAP is further developed, defined, and administered.

In conclusion, the implication sometimes is that GAAP is not as soundly principle-based as it could or should be, and that it is perhaps using misleading terminology to reflect that it is. However, the greatest challenge to the accounting profession is not to nitpick at the difference between terminologies, but rather to fully develop underlying postulates and concepts so that a principle-based system such as GAAP can keep pace with the needs of a rapidly changing business system.

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Georgia

LOCATED IN THE Caucasus Mountains, along the eastern coast of the Black Sea, Georgia's history dates back 2,500 years. It has retained its distinctive culture (and its own language, Georgian) over this long period in spite of sieges and occupations by Persians, Arabs, Turks, Mongols, and Russians. Its dominant religious faith has been Orthodox Christianity since its conversion in the 4th century A.D.

In 1801, RUSSIA incorporated Georgia into its empire. The Russian Empire collapsed in the February 1917, Revolution, after which the first Republic of Georgia was proclaimed, on May 26, 1918. In March 1921, Georgia was incorporated into the SOVIET UNION. The most well-known Georgian in the Soviet leadership was Joseph Stalin, whose surname by birth was Dzhugashvili.

Georgia proclaimed its independence from the Soviet Union on April 9, 1991, but has continually been beset with its own national separatist movements. Its government was somewhat stabilized by presidential elections in 1995 (which twice have chosen Edouard Shevardnadze, Soviet foreign minister under Mikhail GORBACHEV). Nevertheless, corruption and violence are widespread in Georgian political and economic life. The provinces of Abkhazia and South Ossetia and other areas that are not Georgian have produced refugee problems and threaten the stability of the region. Georgia hopes that its strategic location between the oil-rich Caspian Sea and the Black Sea will boost its economy through the construction across its territory of the Baku-Tbilisi-Ceyhan oil pipeline.

Georgia, with a population of five million people, had a GROSS DOMESTIC PRODUCT (GDP) of $15.5 billion in 2001; the majority of production coming from agriculture, mining, machinery, and chemicals.

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Germany

THE ECONOMIC FATE of Germany is closely tied to the effort to unite Europe economically as the EUROPEAN UNION (EU). The success of this new form of capitalism beyond the nation-state, with free-market economies, and outside of national planned economies, will largely depend on the economic fortune and future of countries such as Germany and FRANCE in the EU.

Moderate summers and rainy winters characterize the German climate and make for well-watered, high-yield soils. The Alps form the southern border with AUSTRIA and SWITZERLAND, and mountain ranges also define the southeast border with the CZECH REPUBLIC. The eastern border with POLAND has the Oder and Neisse Rivers. The north consists of the European plain and the Baltic Sea. To the west is the Rhine River drainage and BELGIUM, LUXEMBOURG, and France. The Danube River starts in the Black Forest and becomes a major waterway for Europe. Many of the European rivers are linked by canal systems through Germany.

Historically, Germany was a group of small states that shared common cultural, but not political borders, before unification under Otto von BISMARCK in the 1870s. However, the capitalist tradition was strong in German states going back to the time of the Hausa Baltic seafaring states and continuing through German gun-making communities associated with early gunpowder weapons in Europe.

During the rise of the Prussian State in 1815 and after, the small German state economies became linked with military production and a significant civilian sector was always present as evidenced by the Weimar Republic period. The military-economic linkage increased with WORLD WAR I in the beginning of the 20th century. After the war, the German state collapsed and the economy became part of the global DEPRESSION of the 1930s, only to be renewed with a re-emerging military-based economy under Adolf Hitler.

After WORLD WAR II, the German state was divided between the SOVIET UNION (East Germany) and the western allies (West Germany). The Soviet economy, based in Russia as a socialist, state-run economy controlled East Germany until the economic and political reunification in late 1980s and early 1990s. West Germany followed the path of capitalism and is currently trying to re-integrate its East German territories back into a capitalist economy, albeit with great deal of trouble.

In early 2003, the Bundesrepublik Deutschland (The Federal Republic of Germany) had a coalition government headed by Chancellor Gerhard Schröder since 1998. Its two main economic goals are internal and external in nature. Internally, Germany needs to rebuild the civilization of infrastructure of the former socialist East German territory. After a generation of socialist economic activity, even the East German citizens are unfamiliar with what this will mean exactly, and re-education is a big part of the effort. Historians suggest it will likely take one or two generations of East Germans absorbed into West German capitalism before full reunification becomes a reality.

Externally, Germany hopes to lead the way to European economic unity with the EU. This is no easy task either, as the different European communities are united mainly by sharing the same subcontinent and general history. The multitude of languages, cultures, and monetary systems, however is offset by reasonably similar transportation and civilization infrastructures, at least in the European states outside of the eastern block dominated by Soviet rule for the last half century.

Essentially, Germany faces the same internal economic difficulties as the EU faces externally. There is the question of how to integrate former socialist economies and civilization infrastructures of the last half-century with the traditional capitalist economies of Western Europe. Additionally, there are the dynamics of democratic social states in the west such as the Scandinavian states or the NETHERLANDS, and small states such as Luxembourg integrated with large states such as France or Germany.

A key component to the EU is the monetary system and Germany has led the way as the banking and finance center of Europe, and in adopting the EURO currency. Germany has 82 million people. Most are German-speakers and are united by a sense of German culture. The capital has been moved back to Berlin in an effort to aid the economy of East Germany. The GROSS DOMESTIC PRODUCT (GPD) per capita was $25,000 (2000), the GDP real growth 3 percent (2000). The labor force of about 41 million has a 9 to 10 percent unemployment rate. This is due to 17-percent unemployment rates in the former socialist East German territory, and to an influx of refugees and job seekers from less economically robust areas of the globe. Inflation is low at 2 to 3 percent per year and foreign debt is $2 billion.

Chancellor Schröder has enacted tax reforms, the shutdown of nuclear plants, and the importation of 20,000 computer specialists to help boost the economy since 2000. In dealing with cross-European issues, moves toward organic animal husbandry and away from industrial production have stemmed mad-cow and hoof-and-mouth disease impacts.

The launch of the EURO in 1999 by the EUROPEAN CENTRAL BANK (ECB) is centered in the German finance and banking centers. So far, the euro's volatile performance versus the U.S. dollar is of concern. The ECB raised interest rates five times in 2000 alone to combat this instability but such moves are dangerous for the already high unemployment rate in Europe.

Tax rates have been modified to move away from a more socialist past and toward a market-oriented future. Corporate top tax rates will drop from 52 to 39 percent by 2005. The lack of trained computer professionals (employment experts cite the need for 450,000) has only been partially addressed by importing foreign professionals. Retraining of East German citizens is a likely move in the future to lower unemployment and boost the economy.

Germany is the world's second-largest exporter, averaging over $400 billion annually but its trade deficit grew to $23.5 billion by 2001. Transnational companies based in Germany such as Dresdner Bank, DAIMLER-CHRYSLER, T-Mobile, and re-insurers in the insurance industry are concerned. Drops in the German stock market reflect this, and the German government has responded by retooling the education system to move Germany into competitiveness in the technology sector. However, the experience of recent U.S. economic slowdowns in this sector may call such a strategy into question.

The German economy is often described as a social-market economy based on industry and the service sector. Free enterprise is sometimes subordinate to political goals and exports are key for the long-term. The emerging East German market has increased imports and may help to increase domestic consumption as its citizens transition to capitalism. Basically a new generation and economy will have to grow out of the two, older economies of the pre-unification era. With such internal division, economists see two ways to look at Germany's entry into and leadership of the EU.

One view suggests that the time is right for the EU and Germany. Germany is transitioning internally anyway with reunification and might as well transition externally too. This combination of internal and external economic change could just propel the German economy into a position of global pre-eminence. Another view is not so positive. Germany's internal troubles should first be resolved or it should first become entrenched in the EU economy, but should not do both at the same time. The stress on the economy could be too much and an economic collapse may be likely.

The current economy of Germany is providing data on both of these views but the results are hard to interpret for the long-term. More and more Germans speak

English and French as well as German. In the 1980s, privately owned companies were allowed into the public broadcasting fields of radio and television. Most of the 600 daily newspapers are now dominated by private enterprises. Advertising now plays a key role in much of media. Germany's entry into the EU meant further markets for its export products, beyond its main North American markets for automobiles and other high-end products. The low performance of the euro gave North American U.S. dollar-holders good incentive to trade with countries using the euro. Now over half of German export trade is with EU countries.

But problems abound. Indications are, that despite high-quality export products in aircraft, motor vehicles, heavy machinery, precision instruments, office equipment, and electrical engineering products, success in foreign markets for German products is tied more to trade liberalization, reduced tariffs, and collapsing competitor statist economies like JAPAN, than to Germany's excellent quality and service reputation. So even if East Germany is brought up to West German standards of capitalism, the EU members will have to do the same for benefits to be realized in Germany.

The agriculture sector accounts for only 1 percent of the GDP and employs 4 percent of the workforce. Yet one-fifth of all imports are foodstuffs. Recently, West German farmers have migrated to the east to start new farms or become advisors for the old East German cooperative farms. EU policy now links German farms, many below fifty hectares. The EU sets farm prices, marketing quotas, and exchange rates. This makes it difficult for Germany to become self-sufficient and create internal food production-consumption cycles that would benefit farmers and the economy. To combat this, the German Ministry of Food, Agriculture, and Forestry has enacted national policy within the EU framework to preserve efficient farmsteads with tax incentives, grants, and subsidies as well as a social security system.

The farming dilemma is a vital problem throughout the EU and Germany. Europe, known for its small farms and high quality, fresh produce and meats, is unlike the North American, mass-production approach to food production and consumption. Much of the local economy in rural areas is based on this organic, daily version of farm-to-market economics. Farmer protests from France to Ireland, to Eastern Europe indicate the importance of balancing local, state, and EU economic needs.

In 2000, German products were exported to France (11 percent), United States (10 percent), United Kingdom (8 percent), Italy (7 percent), the Netherlands (6 percent), Belgium/Luxembourg (5 percent), Austria (5 percent), Spain (5 percent), Switzerland (4 percent), and Poland (3 percent). Imports for the same year were France (10 percent), the Netherlands (9 percent), United States (8 percent), United Kingdom (7 percent), Italy (7 percent), Belgium/Luxembourg (5 percent), Japan (5 percent), Austria (4 percent), Switzerland (4 percent), and China (3 percent).

Such numbers indicate intricate linkages between the German economy and import/export. Membership in the EU and the incorporation and subsidization of East Germany into the German economy are potential threats to the delicate balances in the German trade-driven economy.

The industrial sector accounted for 36 percent of the GDP in 1999 and employed 36 percent of the workforce. Traditional industries like steel and shipbuilding have contracted or even changed their focus to survive. For instance, the traditional heavy industry conglomerate Preussag is changing operations toward tourism as of 1999. Elsewhere, even the vaunted German automobile industry has moved toward transnational corporate status to remain competitive with global and EU market changes. The combination of the American car company Chrysler and the German company Daimler-Benz is a prime example. West German industry is modernizing with electronics while East German industry has lagged far behind with high wages and worker productivity sometimes 70 percent below that of West Germany.

Tourism accounts for 16 percent of the GDP and 16 percent of the workforce employed. Most visitors are from the Netherlands, the United States, the United Kingdom, Italy, and Switzerland. Increasing private sector operations in tourism are helping to lead the way in economic growth for German service industries.

In the energy sector, mining accounts for 1 percent of the GDP and 1 percent of the workforce. Other than large supplies of brown and black coal, and huge potential deposits of lignite in East Germany, most German energy resources are imported. High cost of extraction in East Germany and EU resistance to pollution from brown coal has affected internal energy production. Brown coal, in particular, has caused air and water pollution from the Black Forest to the Netherlands, but the alternative has been a 40-percent production of German electricity from nuclear power. The German Green Party, part of the coalition government of Schröder, has been actively pressing for the curtailing of nuclear activity in Germany. This has further exacerbated German energy import dilemmas. Germany now imports 40 percent of its energy consumption as oil. Natural gas imports account for 20 percent, and nuclear energy for most of the rest.

Germany has eight major stock exchanges located in Frankfurt, Munich, Berlin, Dusseldorf, Hamburg, Stuttgart, Hanover, and Bremen. The Frankfurt exchange still handles over half of all the volume as of 2002, despite the move of the capital to Berlin. Together the eight exchanges are second only to the London Stock Exchange (LSE) in Europe. However, the eight exchanges are still separate and indicate the regional nature of much of the German economy. A bold move to combine the Frankfurt Stock Exchange with the London Stock Exchange in 2000 could have helped integrate the hesitant United Kingdom into the EU. Instead, the move was derailed by the LSE, partly on concerns of lack of German stock-exchange unity according to some analysts.

A sophisticated system of banking forms the financial structure behind German economic might. The central bank of Deutsche Bundesbank operates on behalf of the European Central Bank. Many banks have shareholdings in industry companies and bank members are also board members for such companies. This relationship is dangerous as the German industry sector contracts to a lesser position within the German economy. Potential contraction of German industry would seriously impact the German banks, and thus the Deutsche Bundesbank, and likely the ECB as well.

Some positive signs for German capitalism are evident as well. The deregulation of public phone companies led the DEUTSCHE TELECOM company to gain control of 99 percent of local telephone connections. Costs for customers were dramatically reduced by up to 85 percent for domestic long-distance calls. Deutsche Telecom, or T-Online and T-Mobile, as they are known in the internet and cell phone markets, also controls the internet access market in Germany and cell phone operations are spreading into North America and beyond.

Additionally, national transportation and communication infrastructures are some of the best in the world. Government ministries are excellent harbingers of economic policy and are generally proactive rather than reactive when problem-solving. So, usually, Germany gets results when addressing economic issues, such as mad-cow disease, and is considered a leader in economic problem solving and PLANNING.

The economic future of German capitalism is clearly one of increasing privatization, pro-growth policies by the German government, and further integration within the EU. Germany should be a leader within banking and finance in the EU. German reliance on external energy will likely shrink its industrial sector but the potential for consumption and production in eastern Germany is intriguing.

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globalization

AS THE SPREAD OF WORLDWIDE, interconnected business, globalization provides an archetype of perceived class conflict; what one sees depends upon one's angle of vision.

From the commanding heights of the owners and managers of the media, industrial, commercial, and international financial institutions looking down, 21st-century globalization is greater, wider, and thicker global interdependence than that which has been growing for centuries in the form of expanded trade, environmental interdependence, and cultural exchange.

However, from the grassroots perspective of the poor and dispossessed, unemployed and underemployed, downsized, restructured, and dislocated workers and migrant populations, the officially encouraged higher mobility of capital in contemporary globalization is an ongoing disaster, which began with the movement toward deregulation in the UNITED STATES in the late 1970s. To the immediate victims of Joseph SCHUMPETER's "creative destruction," and from the perspectives of overworked environmental, human rights, peasant, and labor organizers who care, globalization is disastrous.

From the heights, globalization is the freeing up of international capital through corporate structures, the result of the neo-liberal convergence, where mobile capital in the form of transnational corporations, enabled by free trade and deregulation from national political barriers, will increase the living standards of all countries.

Or, looking from below, it is a race to the bottom, where stateless corporations play nations, communities, ecosystems, and workers against one another by demanding concessions of wages, taxes, environmental standards, and quality of life, while seeking to maximize profits. They feel the advocates of free trade show little serious regard to democratic processes, environmental degradation, or labor standards, that are tacked on as if after-thoughts to international trade agreements.

Without meaning to minimize the very many diverse forms of globalization, we will focus largely on the economic conditions surrounding globalization.

Early globalization. Here are a few examples of early or thin globalization: the spread of Christianity and Islam, the plagues that swept Europe, and the Silk Road that connected medieval Europe and Asia. Luxury goods and spices traveled over the Silk Road to elite customers among the European populations, all classes of whom suffered from the viruses that accompanied the traders. The invention of Chinese fireworks designed for entertainment value, quickly provided increased coercive capacity of European explorers and conquerors with new weapons, as they began their domination of indigenous peoples in the 16th century.

Later, at the beginning of the INDUSTRIAL REVOLUTION, a passage from Karl MARX's and Friedrich ENGEL's *Communist Manifesto* captures the ambiguity of the spread of global capital: "All old established national industries have been destroyed or are being destroyed . . . in place of the old local and national seclusion and self-sufficiency, we have intercourse in every direction, universal interdependence of nations."

Around the turn of the 19th century, many theorists of international politics including Princeton University's Woodrow WILSON began to think about what came to be known as liberal internationalism; the development of international law and institutions and free trade as democratic, stabilizing, and peaceful substitutions for secret alliances and wars conducted by aristocratic European elites to correct imbalances of power. This globalization had its idealist spokespersons, as well as its policy planners of brutal and forced colonization, interventions, and gunboats. In many cases it was hard to distinguish between the idealists and colonizers.

WORLD WAR I interrupted the progress of "free" trade. International organizations surrounding the League of Nations proved as ineffectual in dealing with threats to national security as with economic integration and stabilization issues. As the world DEPRESSION spread globally in 1929, "beggar thy neighbor" protectionist policies typified national economies in the 1930s. WORLD WAR II brought a completely globalized military world, eventually leading to two alliance systems and the ability of United States forces to project its power anywhere on the globe, rationalized by containment of the communist "threat." The close of the war brought a new paradigm for globalization and international organizations. Recognizing a need for national autonomy, as well as a need to protect national economies and populations, the UNITED NATIONS (UN), designed by the victorious powers, built a regulated international monetary system along with ten-year plans to end tariff barriers to trade, and increase international economic integration.

The postwar period turned out to be a time of very rapid growth for the United States and Western industrial nations, and of prolific plan-making, but little economic growth for the poor nations or the second-world socialist/communist nations. These countries largely fought amongst themselves and were uncoordinated and ineffectual in their efforts to provide an economic model to challenge free-enterprise international capitalism.

The development of the European economic common market, and the slow evolution of genuine mobility of labor and capital, supported by regional institutions and motivated by the apparent desire to prevent downward harmonization and improved social development throughout the European community, contrasted with the developments across the ocean. The outstanding economic success of the United States, its use of covert or overt means, including preventing international loans to achieve regime change of unfriendly nationalist leaders, some of whom valued care and concern for their own citizens above the right of free international investment, the international popularity of Hollywood portrayals of the world, the growth of multinational corporations (the majority headquartered in the United States), some with more resources than medium-sized nations, and the growing tendency to conduct business in American English using American legal, accounting, technical practices, probably inclined many observers and leaders of the world to equate late 20th-century globalization with Americanization.

Modern globalization. The fall of the Berlin Wall and disintegration of the Soviet empire seemed to accelerate the processes and deepen the consequences of America-centric international integration and globalization. The evolution of an unchallenged hyper-superpower, the apparent success and dominance of deregulation and privatization in the publicized economic policies of the successful candidates of both U.S. political parties, seemed very important in terms of establishing another new paradigm of globalization.

Deregulated and privatized globalization, dating from the late 1970s, has characterized the integrated practices of those institutions in the UN dealing with the international monetary regime—the WORLD BANK, the INTERNATIONAL MONETARY FUND (IMF), and the successor to the GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT), the WORLD TRADE ORGANIZATION (WTO). The United States supplies the multilateral lending institutions with the most funds of all UN members, and has taken a pre-eminent position with near-veto power in developing lending policies and economic development models in the tool kits of UN financial lenders and managers.

This model of economic development for the poor and transitional countries of the world, is now identified as "the Washington Consensus" and is articulated by neo-liberal economists, whose views of mixed capitalist economics seem to neglect or forget that the regulation and tariff protection of infant industries was very important in allowing the United States and other great economic powers to successfully build their own economies.

For most developing countries, except those with oil to export, virtually the only way to engage in economic development is to secure international financing for projects beyond the capacities of their weak economies and revenue structures. To qualify for international loans from most major banks, the IMF or World Bank must certify the borrower's willingness to service the debt. IMF counselors have established a standard, which requires the loan recipient to agree to structural adjustment plans. These often include: trade liberalization to encourage international investors; reducing and ending tariffs that may have protected infant industry; privatization of public sector enterprises and rationalizing public sector work by downsizing and reducing the number of public employees; ending subsidies for food products and services; devaluation of local currency; and expanding export production.

From the perspective of the bankers, investors, and multinational corporations these structural adjustments provide a stable environment in which to invest, they hasten movement from barter to monetized economies, remove inefficiencies of publicly owned enterprises and surplus labor, and assure that at least the interest, if not the principal, on previous loans will be repaid.

From the perspective of the workers, farmers, and the poor, the effects of these policies have been to increase the cost of food and services, to increase the unemployment rate, often to discourage enforcement of labor law, thereby reducing union membership and power, lowering the number of school attendees and the availability of medical care, and driving many economic refugees behind the fences of international sweatshop and *maquiladora* or "offshore" production facilities. The Washington Consensus, in its structural adjustment plans, does not value well-paid labor as imports are to be discouraged and the increased money from exports should be used to service the debt. Companies threaten to move and thus further erode the bargaining power of workers, in both industrial and poor countries. Some are willing to abandon their disposable fixed capital, even after bargaining to gain concessions, in large part because of the incentives provided by the new host nation in the form of rapid depreciation, lower taxes, low or no environmental regulation, and wages a fraction of the rates at home, in pursuit of much higher profits and lower costs in even lower-wage countries.

A truly globalized world, international relations expert Joseph Nye points out, "would mean free flows of goods, people, and capital, and similar interest rates." But in modern globalization, close to 70 percent of the GOODS, which are exchanged, are transferred between branches of multinational corporations. Capital flows have increased in speed, frequency and volume ($150 billion per day in 1973; $1.5 trillion per day in 1995), and massive transfers happen instantaneously, sometimes with disastrous results, as with the 1997 ASIAN FINANCIAL CRISIS that affected the whole international community. Borders are still relatively impervious for people, who have little legal opportunity to move to high-wage nations, but who often feel blessed with good fortune of having any job and receiving a few dollars a day working in sweatshop conditions in what used to be called "duty free" or "off shore" zones.

Globalization certainly has not meant the creation of a universal community. In social and political terms, some citizens of the third world view the United States as "the great Satan." The major targets of the September 11, 2001 terrorists were economic and military symbols of America-centric globalization, the World Trade Center and the Pentagon, and perhaps the White House. The United States votes against the majority of the world in the UN General Assembly about 88 percent of the time. There are other aspects of globalization, for instance: U.S. fast-food culture is everywhere, even if it includes local recipes and specials on the menu, and has prompted an international "slow food" movement. Many U.S. standards are pervasive, including English spoken by all air-traffic controllers around the world, international internet protocols, securities laws and practices, and drug regulation, and most nations scorn the United States' refusal or inability to move to the metric system. It also appears many world leaders are repulsed by American capital punishment and the prevalence and hallowedness of gun ownership.

Interdependence and technology have clearly increased the speed and pervasiveness of both real and virtual viruses. Historians point out that it took 3,000 years for smallpox to reach every continent on the globe, while AIDS has only taken three decades. Various strains of the flu from across the oceans inspire the necessary flu shots every fall. Virus protection is also part of the clear growth industry of computer software, largely because it only took three days for the "Filipino Love Bug" to affect major computer systems all over the world. The speed, complexity, short reaction time, participation of hackers and networking interdependence of corporations and increased uncertainty, will very likely create greater instability and a number of panics in the future.

Differential consequences. Most of the indices of globalization reflect the great benefits that have accrued to the Western industrial nations and the financial elites in the third world. Until the recession beginning in 2000, per capita income in the United States, Europe, JAPAN, AUSTRALIA, and New Zealand had shown substantial increases. Although the disproportionate growth was in the top 10 percent of each population, many economists point out that the bottom 70 percent have had stagnant or declining incomes in the last three decades. For neo-liberal economists, the free market unfettered by government regulation has allowed tremendous increases in entrepreneurial creativity and economic growth. As Milton FRIEDMAN noted, advocates of freedom do not count the heads of those who succeed. What is important is the opportunity, even if it results in the richest three individuals in the world owning more wealth than the bottom 40 percent of the world's population. Aside from a few countries in east Asia, that had substantial economic growth until the late 1990s, the Latin American economy has stagnated for two decades, and economic growth of African nations has declined. About a 100th of the population of Africa has access to the internet.

Besides increased world per-capita income and growing inequality, there are some interesting economic effects. Critics of globalization point to a general belt-tightening over hungry stomachs, increasing joblessness, internal migration and suffering, structural adjustment plans that have predictable, and perhaps intended but unspoken results. Since there are few finished products that can compete with those from developed industrial producers, most of the legal exports to earn foreign exchange to service growing debt are primary commodities, such as ore, bananas, and coffee.

Other indebted states in the same climatic and geographic regions have to play by the same rules, thus increasing the supply of similar primary products. The market works well for these commodities, thus prices fall. As export prices decline by a third, the primary exporting country must produce 50 percent more to raise the same earnings. As each producer nation scrambles to increase production, prices fall further. Profits for the foreign and indigenous transporters, merchandisers, and owners increase and widen the gap between the rich and the poor. The benefits accrue to the importing nations with stable tax bases and high employment, as well as to fat bank accounts and investors seeking more profitable opportunities. This asymmetrically beneficial exchange usually flows to the same states that have adamantly refused to establish much sought-after commodity price agreements hoped for by the primary product exporters. The cumulative effect of worsening terms of trade, and less return for more work, increases the perception of illegitimate rules and practices controlled by the rich and successful states and their local allies.

Critics of globalization also point to another perverse consequence, clearly intended, and which benefits important political constituencies in the rich nations. As tariff barriers are removed, "inefficient" producers of commodities, such as food grains in poor countries can no longer compete with the often highly subsidized and high-technology industrial agribusinesses, which now have new markets for their corn, rice, and wheat. For example, price caps and subsidies for tortillas in MEXICO must be removed as part of the conditionality of the structural adjustment plans required of a debtor country, as well as, requirements of membership in the WTO and the North American Free Trade Agreement (NAFTA), but agricultural subsidies continue for the agribusiness exporters, in large part because of the power of important constituencies in industrial nations. Thus, subsistence farmers who used to be able to sell their small surplus are now required to participate in a monetized economy and to pay for "cheap" imported grain from the industrial societies in order to eat.

The falling prices of exports, and the non-competitiveness of indigenous grain producers facing agribusiness imports, has driven and will continue to drive many small producers into illegal crops, such as coca, heroin poppies, and marijuana. This will provide some cash to participate in the monetized economy, but not substantially increase the quality of caloric intake. It also provides a rationale for the industrial countries to continue their global war on drugs, and for enriching shady elites in both rich and poor nations who are not caught.

Economic downturns in developed countries increase the rigidity of debt servicing, thus there is more austerity for the indebted, less forgiveness of the poorest indebted countries, and growing transfer of wealth from the poor to the rich.

Reactions to the consequences of globalization. The articulated and rational critique of the consequences of the international political economy dominated by rules favorable to mobile capital and free enterprise (or no rules), have been around since the first radical challengers to capitalism in the 19th century. But the late 20th-century developments, perhaps fueled by the absence of working alternatives to democratic capitalism, have turned sporadic and unconnected protests into worldwide protests. Demonstrators shadow the industrial giants, the G-8, at international finance meetings regarding the WTO, the Multilateral Agreement on Investment, NAFTA, and the Free Trade Act of the Americas often in proximity to the IMF and World Bank institutions, organized by new and grassroots-accessible communication tools such as the internet. The effective organization of worldwide critics of the multilateral agreement on investment by Australian and Canadian net workers, brought a premature end to an agreement which would have benefited international investors protected by secret processes that seemed to give more rights to corporations than to citizens.

The growing perception that the rules and institutions of the global economy have lost their legitimacy, has led to a number of trends as we move into the 21st century. The U.S. drive for greater economic growth and more flexible sovereign autonomy may have motivated the superpower's unilateral withdrawal from a number of international treaties such as the Kyoto Protocol on global warming, the International Criminal Court, and anti-ballistic missile treaties. There are plausible claims that the United States may have, as its primary motivation in attacking the regime of Saddam Hussein, the desire to control directly the 13 percent of the world oil reserves underneath Iraqi territory.

In the early 2000s, the regular criticism of U.S. policies by most members of the United Nations seems to heighten the American willingness to go it alone and give up on multilateral institutions. Major critics of the current neo-liberal international monetary regime have won recent elections in Latin America. Participants of the World Social Forum, established in Porto Alegre, Brazil, in 1999 and founded as a counterpoint to the world economic forum held annually by the G8 SUMMIT in Davos, Switzerland, feel that it is possible to change the rules set by the current international monetary elite, particularly those dealing with a deregulated, pro-corporate model for the economy.

The current challengers will have to figure out how to convince electorates and the media about the need for greater autonomy for nations in how they participate in the world economy, for example, by regulating foreign investment to suit domestic needs. A specific idea has been floated: There could be a small fractional tax on global currency and financial transactions to deter some speculative capital flows and at the same time generate funds for development and debt-servicing by poor nations. Other items on the challengers' agenda include establishing more regulations at the international level to provide protections and standards for workers, the environment, and the poor that most industrial nations enacted to try to tame the extremes of capitalism, as noted by Charles Dickens and Karl Marx at the end of the 19th century and early years of the 20th century.

Absent a powerful government at the international level willing to enact regulations such as Franklin D. ROOSEVELT's NEW DEAL in the United States, this will be very difficult. Without the development of much more critical thinking in the United States about globalization and its relatively few beneficiaries, success of proposed reforms to globalizations seem doubtful.

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gold standard

EXPRESSING THE VALUE of a country's currency in the form of gold was first established by England in the 18th century, and the gold standard existed in some form throughout the 19th century. However, the use of gold as a medium of payment has been in existence for centuries: It was perhaps the only universal form of currency. The introduction of paper money and coinage was made for convenience and safety; carrying gold was not a very safe activity, thus paper currency and coinage became a medium of exchange.

In the UNITED STATES, there existed a bimetal standard, using both gold and silver. However, by the middle of the 19th century, the United States converted to a full gold standard and fixed the price of gold in 1834, at $20.67 per ounce. This price did not change until the initial demise of the gold standard during WORLD WAR I.

The idea behind the gold standard was for every participating country to fix the price of gold according to their currency, then the exchange rate between currencies could be easily calculated. Since the price of gold was fixed in various countries, the prices of commodities were also fixed and over time these prices had a tendency of moving together. This was a de facto, fixed-exchange-rate system that was adopted by the member countries.

The gold standard required that the member countries follow certain rules. First, the price of gold had to be fixed in terms of the local currency. Second, member nations had to allow for free import and export of gold. Third, the country had to allow for free conversion of the domestic currency in lieu of gold and vice versa. Fourth, the country could not impose any restriction on the coinage of gold, and gold had to be considered legal tender within the country.

Once all this was achieved, the country saw an automatic adjustment of its balance of payments, due to the existence of the gold standard system. This system was also referred to as the Classical Gold Standard system. The outcomes of the gold standard system followed the classical principles of equilibrium, and the idea that very little government intervention was required.

The benefit of the gold standard was that the U.S. domestic economy saw very little inflation. From 1870–1914 the inflation rate in the United States averaged about 0.1 percent. A similar comparison from 1946–90 saw U.S. inflation at an average of 4.2 percent. The price stability is achieved by adhering to the rules mentioned earlier. As the domestic economy demands more foreign commodities, it results in an outflow of gold. This causes a decline in the money supply that will result in a reduction in the price level. In the foreign country, the inflow of gold in lieu of the commodities sold will increase the money supply and thus cause an increase in the price level. The pattern of trade will reverse and now the foreign country starts importing more commodities. Trade balance will thus be achieved in both countries.

Any discovery of gold will lead to temporary changes in the price level, but the long-run effect is negligible. The discovery of gold in California is one such example of instability in the United States. With the California Gold Rush of 1848, the money supply in the United States increased, which, in turn, increased nominal income and thus lead to an increase in imports. With the resultant increase in the gold outflow from the United States, this caused a trade deficit in the United States and a trade surplus in the exporting nations. Although initially the discovery of gold led to an increase in the amount of output produced, it eventually led to only an increase in the price level.

The gold standard allowed for stable prices in the member countries, however, it did not allow for any possibility of using macroeconomic policies to address any problems in the economy. Thus, while price fluctuations were held under check, the output fluctuated significantly.

As Europe and North America plunged into World War I, member nations started overlooking the rules of the gold standard and thus the entire system was abolished. Between World War I and II, a makeshift arrangement was created that aimed to bring some stability into the system. The Great DEPRESSION, it is argued by some, was precipitated by the inaction of the U.S. government that was required by the gold standard system to not act in response to the economic alarms of 1929–30.

After WORLD WAR II, in a meeting at BRETTON WOODS, New Hampshire, world leaders and economists devised an alternative plan to address the issue of price stability and removing the uncertainty over trading with each other. The plan called for the U.S. DOLLAR to be the primary currency. The value of gold was fixed at $35 per ounce and the value of the other currencies was fixed against the U.S. dollar. The countries were encouraged to hold dollar-denominated assets, as they were assured that the United States would exchange the dollar bills for gold at the fixed exchange rate.

This system performed well in the 1950s and 1960s, when the U.S. currency was considered to be the most valuable asset in the world. In the late 1960s, the United States started experiencing a trade deficit and a loss of competitiveness. This coupled with a declining value of the dollar, forced many nations to relinquish the dollar and ask for gold in exchange for it. President Richard NIXON signed an order in 1971 that eliminated the gold standard system. Currencies thus did not have any backing, other than the government's seal.

There is still some support in academia and the business community to revert back to the gold standard system. The attraction primarily stems from the price stability that is possible. Another benefit, as viewed by these individuals, is the lack of control exhibited by policy makers. The assumption here is that human intervention is based on personal agenda and not sound economic principles, thus it is liable to do more harm than good. Also, the gold standard system was a fixed-exchange rate system. With all the fluctuations in the exchange rates in the world today it seems preferable to revert to a fixed-exchange rate system.

The gold standard system was a very useful tool for a specific time in human history. Under current circumstances, when the focus is on targeting both inflation and unemployment, using Keynesian type policies, it is not possible to see how the gold standard could be revived. Present-day economies are unwilling to forgo control over economic policies and rely on a system of gold inflow and outflow to bring domestic equilibrium. Nonetheless, the gold standard system allows world economies and academics to critically evaluate present economic policies based on the outcomes achieved under the gold standard system.

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goods

THINGS THAT SATISFY human needs and desires, goods are often physical objects, such as cars and loaves of bread, but they can also be intangible, such as software and technological methods. Goods can satisfy human needs either directly, like a loaf of bread, or indirectly, like the oven and ingredients used to make the bread.

As central as goods are to any economic system—and indeed, to human survival itself—modern economists spend very little time thinking about what they are. Many undergraduate economics textbooks contain no definition of the term, though they discuss various types of goods at great length. Even some dictionaries of economics fail to define the term "good."

The reason for this apparent lack of interest is that by the end of the 20th century, economists had settled most of the fundamental questions about goods. A few disputes still remained, such as whether the value of goods could be quantified, or whether a consumer truly could be indifferent between two goods. But on the big issues of what goods are and why they are valuable, economists—though probably not people in general—are in almost unanimous agreement.

Goods satisfy human needs and desires, but not all goods are studied by economics. In order to be an economic good, a good must be scarce—that is, there must be less of the good than would satisfy all human desires for it. If a good is not scarce, it is a "free good" and is not studied by economics. Breathable air, for example, is a good, but is not now an economic good because it is not scarce compared to human needs for it. Drinkable water, on the other hand, has become sufficiently scarce that bottled water sales are booming in many areas.

The economic value of goods is determined by three main factors:

1. the intensity of human need and/or desire
2. scarcity
3. the availability of substitutes.

Thus, the value of goods combines both subjective (human need or desire) and objective (scarcity, availability of substitutes) elements.

In economics, these factors are often expressed in terms of SUPPLY and DEMAND curves that show how the quantities supplied and demanded of a good change based on changes in the price. For normal goods, consumers tend to buy more at lower prices and less at higher prices. Conversely, suppliers tend to produce less at lower prices and more at higher prices. A demand curve shows the different quantities of a good that consumers will want to buy at different prices. A supply curve shows the different quantities of a good that producers will want to make and sell at different prices.

The price at which consumers want to buy the same quantity that suppliers want to sell is called the market-clearing price and is the economic value of the good. This value can easily change, such as when consumer tastes shift or a new substitute comes onto the market.

Historically, the value of goods was thought to be derived from the labor required to make them. The two most famous advocates of this view were Adam SMITH, best known as a free-market supporter and founder of modern economics; and Karl MARX, best known as a social-control supporter and a founder of communism.

Smith's version of the labor theory of value was more sophisticated than Marx's, mainly because Smith was inconsistent about applying the theory and Marx wasn't. Smith wrote that: "Labor alone, therefore, never varying in its own value, is alone the ultimate and real standard by which the value of all commodities can at all times and places be estimated and compared. It is their real price: money is their nominal price only."

However, only 26 pages later in his *Wealth of Nations*, Smith modifies his theory and observes that supply and demand are key determinants of the economic value of goods: "The market price of every particular commodity is regulated by the proportion between the quantity which is actually brought to market, and the demand of those who are willing to pay the natural price of the commodity." In his personal life, Smith was notoriously absent-minded, and that trait occasionally seemed to serve him well in economics when he forgot the flawed labor theory of value and relied on his observation of markets.

Marx dealt with the same problem by distinguishing between the use value and the exchange value of commodities (goods). Marx argued that although exchange value was affected by other factors, the use value of a good was determined solely by the amount of labor required to produce it: "A use-value, or useful article, has value only because human labor in the abstract has been embodied or materialized in it. How, then, is the magnitude of this value to be measured? Plainly, by the quantity of the value-creating substance, the labor, contained in the article."

A modern variant of the labor theory of value is the cost-of-production theory: that the fair price of a good is the cost of making it, plus a small amount of profit. This is the common-sense view of many people. However, goods' cost of production does not reflect their actual economic value, and economics has nothing to say about what prices are "fair."

There are two main types of goods. Consumer goods are those that directly satisfy human needs and desires. Examples of consumer goods are bread, automobiles, comic books, shoes, and music compact discs. Capital goods are those used to create consumer goods. That is, capital goods are those that indirectly satisfy human needs and desires by helping produce goods that satisfy them directly. Examples of capital goods are flour (to make bread), steel, glass, and rubber (to make automobiles), paper and ink (to print comic books), leather (to make shoes) and petroleum by-products (to make compact discs).

Whether a good is a consumer good or a capital good depends on its use. The same good can be a consumer good in one use and a capital good in another use. For example, if a computer is used for playing games, it is a consumer good. If the same computer is used a few hours later for writing a business report, it is a capital good.

Substitutes are goods that, as their name implies, can substitute for each other. A jacket and a sweater are substitutes; taking the bus or riding a bicycle is a substitute for driving a car. The availability of attractive substitutes tends to reduce the economic value of goods. Conversely, the absence of substitutes tends to increase the economic value of goods. If two goods are substitutes for each other, an increase in the price of one tends to increase the demand for the other because the substitute has become less attractive.

Complementary goods are those that go together and are less attractive alone. Gasoline and automobiles are an example of complementary goods. The availability of complementary goods tends to increase the economic value of goods for which they are complementary. Conversely, the absence of complementary goods tends to decrease the economic value of their complements. If two goods are complementary, an increase in the price of one tends to decrease the demand of the other because the two goods are normally used together.

Giffen goods are an unusual class of consumer goods in that people buy more of them at higher prices. This is an unusual but not unheard-of phenomenon. The appeal of higher-priced Giffen goods is due mainly to:

1. consumers' perception that a higher price means higher quality
2. consumers' sense of social status attached to paying a higher price for certain goods.

Thus, consumers might prefer an expensive compact disc player because they assume it is of higher quality than a cheaper model, even if they can't hear any difference. Likewise, they might prefer an expensive pair of sneakers because of the social status attached to the brand-name logo they bear, even though the sneakers are no better in manufacturing quality than much cheaper brands.

Public goods are those that are scarce and valuable but considered difficult to sell as commercial products. A public good is "an economic good which, by its nature, cannot be provided separately to each individual, but must be provided, or not provided, to all the members of a pre-existing group," explains economist David Friedman. The problem in providing public goods in a commercial market is that, because such goods must be provided to all people in the market, then if they are provided at all, they cease to be scarce and producers find it difficult to charge for them. If some consumers decide not to pay for the public good, they still receive it: they are "free riders" on the producers and on those who pay for the good. For those reasons, public goods are usually provided by governments and supported by taxes. However, some economists contend that there are no public goods; other economists argue that most goods claimed as public goods could be provided as commercial products.

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Gorbachev, Mikhail (1931–)

LEADER OF THE SOVIET UNION from 1985 to 1991, Mikhail Gorbachev was born in the village of Privolnoye and raised in Stavropol, an agricultural region of southern Russia. He grew up on a collective farm and was influenced by both of his grandfathers. One of them, a *kulak* (relatively prosperous peasant) taught him a work ethic; the other, a committed communist, helped form Gorbachev's political outlook. Gorbachev distinguished himself early in life. While in high school he won the Hero of Socialist Labor award for his work as a tractor driver.

This earned him a scholarship to the prestigious Moscow State University. Instead of studying engineering or some technical trade, a path to professional success that was quite popular at the time, Gorbachev studied law, receiving a degree in 1955. While in Moscow he married Raisa Maksimova Titorenko, a woman who would attract much attention in both the Soviet Union and abroad in the 1980s with her glamorous and sophisticated demeanor, a role quite unlike the usual wives of Soviet leaders, who kept low profiles in public life. He joined the Communist Party in 1952, a move necessary for further professional advancement in a socialist country where the government owned and operated all institutions, and where Party officials ran the government.

Gorbachev returned to Stavropol, where he served as first secretary in organizations of increasing importance: from 1958 to 1962 he served in the Stavropol Territory Komsomol (Young Communist League), the leading Party-run youth organization; in 1966 he was on the Stavropol City Communist Party Committee;

from 1970 to 1978 he led the Stavropol Territory Communist Party Committee. In 1967, he earned a graduate degree in agronomy. In 1971, he became a member of the Central Committee of the Communist Party of the Soviet Union. The Central Committee was important because its members, several hundred in number, were all leading Party officials who elected the Politburo, a committee of 10-15 men who ran the country.

Gorbachev did more than just obtain leadership positions. Through his diligence, engaging manner, and public speaking ability, he gained the attention of Soviet leaders. It didn't hurt that Stavropol was a vacation spot for the Communist elite. In the early 1970s, he was in charge of improving agriculture and undertook various reforms to increase production. His experimentation focused on trying to reduce bureaucracy and give incentives for extra work. He broke up large collective farms and promoted the use of small work teams that could work on their own. In the 1970s, few Soviet leaders undertook initiatives with their own ideas. Gorbachev's telegenic presence became an even greater asset at a time when more and more Soviet citizens were purchasing televisions.

Yuri Andropov, head of the KGB (state security service) recognized Gorbachev's dynamism and effectiveness as a leader and brought him to Moscow as a lower member of the Politburo, the top committee that governed the country. Gorbachev was put in charge of agricultural affairs in 1978. Andropov promoted Gorbachev as someone capable of leading the nation through its serious systemic problems.

Andropov was more aware than most officials of the moribund nature of the Soviet economy and bureaucracy. After the older generation of communist leaders died (Leonid Brezhnev in 1982, Yuri Andropov in 1984, and Konstantin Chernenko in 1985), Gorbachev was chosen as the new Soviet leader at the age of 54, the youngest man to hold the position since Josef Stalin in the 1920s. This meant that he held the top Party post, general secretary of the Communist Party.

Within his first two years Gorbachev worked to bring in a new generation of leaders, decentralized power to local officials, and in 1989 organized the first free, competitive elections in Russia since 1917. He carried two broad programs: *glasnost* or openness, which allowed freedom of speech; and *perestroika* or economic restructuring, which sought to break down the old centralized administrative command structure of the Soviet economy. Gorbachev also signed an Intermediate Nuclear Forces (INF) arms-limitation treaty with the UNITED STATES in 1987, and encouraged the Soviets' Eastern European "satellite" countries to liberalize economically and politically. In 1989, he ended the Soviet occupation of Afghanistan, 10 years after the Soviet invasion that had brought an end to the period of *détente* (when East and West had sought a relaxation of Cold War tensions). Gorbachev also released political prisoners and permitted greater numbers of Soviet citizens to emigrate, a move that began the largest wave of immigration to Israel since the creation of that state in 1948.

The new political liberties contributed to Gorbachev's fall from power and the dissolution of the Soviet Union. Long-suppressed national tensions in the Baltics, other Slavic republics such as Belarus and Ukraine, as well as Soviet republics in the Caucasus and Central Asia, sought autonomy or outright independence. In August 1991, while Gorbachev was vacationing on the Black Sea, Soviet hardliners attempted a coup d'etat against Gorbachev and the government in an effort to halt the breakdown of the Union, which was made up of 15 constituent socialist republics and hundreds of nationalities. Although the coup failed, afterward Gorbachev found himself powerless over the new authority of Boris Yeltsin, who had been elected president of the Russian Republic of the Soviet Union. On December 8, 1991, Russia, Belarus, and Ukraine agreed to form the Commonwealth of Independent States, a loose confederation of almost all of the Soviet republics. The CIS made the Soviet Union obsolete, and on December 25, 1991, Gorbachev resigned his position and dissolved the Union of Soviet Socialist Republics.

Although Gorbachev unsuccessfully ran for president of Russia in 1996, he has been active in various endeavors. He won the Nobel Peace Prize in 1990. In 1993, he became president of the Green Cross International, an environmental organization that he founded. He also heads the Gorbachev Foundation, established in December 1991, a self-described international non-governmental foundation for socio-economic and political studies.

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Gordon, Robert J. (1940–)

ONE OF THE MOST PROLIFIC contemporary economists, Robert J. Gordon has fundamentally advanced our knowledge of MACROECONOMICS processes, economic growth and economic policy, by addressing economic theory, empirical testing of theory, and detailed methodology of measuring relevant variables.

Gordon attended Harvard and Oxford universities before earning his Ph.D. at the Massachusetts Institute of Technology in 1967. Most recently the Stanley Harris Professor of the Social Sciences at Northwestern University, Gordon was appointed professor of economics at Northwestern University in 1973. Previously, he taught at Harvard University and the University of Chicago. He has spent more than 25 years as a research associate at the National Bureau of Economic Research. In addition, Gordon has served as a research Fellow at the Centre for Economic Policy Research in London, a senior advisor to the Brookings Panel of Economic Activity, and on the Economic Advisory Panel of the Congressional Budget Office and the Economic Advisory Panel of the Bureau of Economic Analysis.

Gordon has examined the causes and consequences of inflation and unemployment, theoretically and empirically. He has modeled and estimated PHILLIP'S CURVE relationships between inflation and unemployment, along with a host of related dynamics of wage growth, output growth, and productivity growth. His work has helped explain the inflation of the 1970s, and the productivity slowdown of the 1970s and 1980s. This work has enhanced our understanding of key macroeconomic dynamics such as BUSINESS CYCLES and changes in the rate of UNEMPLOYMENT consistent with constant INFLATION.

Gordon's related work on precise measurement of prices, output, and productivity, at both industry and aggregate levels, has broached many of the subtleties of accounting for quality change in specific rapidly evolving industries, such as computers or banking. Gordon's work has influenced revisions of the Consumer Price Index and estimates of trends in productivity growth.

His analysis of macroeconomic variables and business cycles extends to international and historical dimensions. He has compared U.S., European, and Japanese performance with respect to productivity, wages, and unemployment. Gordon has also examined long-term productivity growth in the United States, price movements and U.S. policy between 1890 and 1980, and compared current and late 19th-century technical change.

Recently, Gordon has emerged as a leading skeptic of "new economy" arguments, that he claims overestimate the significance of information-based technical change in the 1990s. Gordon was one of the first to argue that the productivity boom of the 1990s was fragile because it partially reflected the upward swing of a strong business cycle as well as a temporary surge in computer investment.

Overall, Gordon's work has contributed to the development of capitalism by offering substantial theoretical, empirical and measurement tools relevant to business cycles, economic growth, inflation, unemployment and related policies.

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Gould, Jay (1836–92)

BORN IN NEW YORK as Jason, Jay Gould has come to be known as one of the most ruthless financiers in American capitalist history. He rose to control over half the railroad mileage in the southwest, New York City's elevated railroads, and the Western Union Telegraph Company.

Beginning at age 21 with $5,000, Gould speculated in the securities of small railroads. He became director of the Erie Railroad by joining with James FISK and Daniel Drew to defeat Cornelius VANDERBILT for control of the railroad, often using unscrupulous tactics such as issuing false stock and bribing regulators to legalize fraud.

In 1869, along with Fisk, Gould manipulated and cornered the gold market, resulting in the "Black Friday" panic that ruined many investors. Due to public protest, Gould and his group were forced out of the Erie Railroad.

Subsequently, Gould bought into the Union Pacific Railroad and other western lines, eventually gaining control of four major railroads. His intent was not to build and grow these rail lines but to manipulate their stock for his personal profit.

Leaving $77 million upon his death, Gould is best known in the annals of 19th-century capitalism as one of the "robber barons."

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Grant, Ulysses S. (1822–85)

THE 18TH PRESIDENT of the UNITED STATES, Hiram Ulysses Grant was born in rural Ohio. His father arranged for Grant's appointment to West Point military academy without his knowledge. Upon arrival, Grant found that he had been mistakenly listed as Ulysses Simpson Grant—the name he went by from then on. After graduation, Grant served with distinction in the MEXICAN-AMERICAN WAR. Peacetime, however, proved frustrating. Underpaid, forced to leave his family behind, and dealing with a difficult commanding officer, Grant resigned from the army in 1854. He tried a series of civilian jobs but was unsuccessful. Then, the AMERICAN CIVIL WAR began.

Grant commanded the 21st Illinois Regiment before being appointed general. A string of advances in Tennessee brought him to national prominence, and after his capture of Vicksburg, in 1863, and other successes, President Abraham LINCOLN put him in command of all U.S. forces.

Grant proposed an ambitions plan to make simultaneous movements on all fronts. The South had great generals, but was not well enough equipped to compete with the North on all fronts at the same time. Despite suffering bloody losses, Grant continued to advance. Within a year, the South was decimated and Confederate commander General Robert E. Lee surrendered.

Grant remained commander of the army after the war. President Andrew JOHNSON appointed him acting secretary of war, but when the removal of Grant's predecessor resulted in Johnson's impeachment, Grant decided to resign the Cabinet position.

Grant was the overwhelming choice for president in 1868. He entered office with no clear agenda and let Congress set policy. The main issue of the day was Reconstruction, rebuilding the South after the war. Grant supported efforts to protect the rights of the freedmen against a hostile white majority, but the efforts proved half-hearted, as Southern whites were able to retake control.

During the Civil War, the federal government had issued paper money without any backing by specie (gold or silver). Grant agreed to redeem the greenbacks for specie. This prevented runaway inflation, but upset westerners who hoped that inflation would reduce their debts.

Grant's two presidential terms are mainly remembered for their scandals. One was an attempt by two speculators to corner the gold market in 1869. Their attempt counted on the government not to release gold reserves as the price increased. Grant's brother-in-law and senior officials were in on the deal. However, when the attempt resulted in financial panic and caught Grant's attention, he fired those responsible and released government gold into the market.

The Credit Mobilier scandal involved stock sales to key government officials, including Vice President Schuyler Colfax, at reduced prices. Congress then gave the company lucrative government contracts and stockholders garnered hefty dividends. Congress considered impeaching Colfax. Though not pursued, he did not run again in 1872.

Grant was never implicated personally in any of the scandals. However, he was criticized for standing by his aides even after their guilt was well known and for failing to set stronger ethical standards.

Many Republican leaders encouraged Grant to run for a third term, but the Party decided against it due to the precedent of a two-term limit. His name was proposed again at the 1880 convention, but he was not nominated. Grant left office destitute, and proceeded to engage in business ventures that failed. To support himself, he began writing his memoirs, which were published posthumously.

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Greece

THE COUNTRY OF GREECE, located in southeast Europe in the Balkan region, has a Mediterranean climate, a mountainous landscape and over 2,000 islands with vast access to the Mediterranean Sea.

The country has a population of more than 10 million people with 60 percent living in cities such as the ancient capital of Athens. The major ethnicity and language is Greek, the official religion is Greek Orthodoxy, and the currency is the euro. Currently, Greece is a multiparty republic with a developing private enterprise economy based on agriculture, manufacturing, and tourism.

Beginning with the Minoan civilization on Crete, the Greek peninsula has been a major influence on the development of Western civilization, including some components of capitalism. For instance, classical Greece had an economy based on markets but lacked full private ownership of surplus production. Interestingly, the role of seafaring for movement of goods and development of communication and exchange standards was a key to both ancient and modern Greek economic systems, capitalist and otherwise.

After the conquest of Greece by the Macedonians and Alexander the Great in the 4th century B.C.E., Greek culture was spread throughout the Macedonian Empire including the Hellenistic forms of the Greek economic systems. These systems would later influence Roman economic systems including old-world land and sea trade, much like modern global capitalism.

During the medieval period, Greece became a colony of various empires including the Eastern Orthodox Byzantine Empire, the Muslim Ottoman Turkish Empire, and at times, the Roman Catholic Austrian Habsburg Empire. Often utilized as a mercantile colony, Greece was unable to develop any permanent economic system of its own. Only in 1832 would it emerge independent from the Ottoman colonial and economic system. Even then, the Greek economy was often controlled by financial linkages with the great powers of Europe, including RUSSIA, England, and FRANCE. Permanent Greek independence did not manifest itself until after WORLD WAR I, when the turbulent Balkan region calmed. However, 20th-century capitalism failed to establish a lasting presence in Greece because of the WORLD WAR II Nazi occupation.

After the war, Greece fell into civil war with communist and capitalist forces vying for control. The strife lasted until 1949 when communist forces were defeated. However, the civil war left Greece with a mixed legacy concerning beliefs on communist and capitalist economic systems.

The ancient Greek tradition of seafaring helped capitalism gain a permanent foothold in Greece during the 20th century. It was a complex and fascinating set of events that led to the emergence of capitalism with Greek shipping empires. Rather than capitalism emerging from within Greece, it came from outside.

Greece, after centuries of external control, had little to offer in terms of surplus internal resources for a capitalist market. Instead, enterprising capitalists such as Aristotle Onassis turned to external resources in other capitalist markets before importing those resources back into Greece. For instance, Onassis borrowed funds and bought Canadian ships anchored in Rotterdam, the Netherlands, with Panamanian flags to establish his early shipping fleet. Greek shipping magnates became middlemen for moving World War II and Cold War resources around the globe. This planted the seeds of capitalism within Greece despite an uncooperative government and socialist-oriented economy. In particular, the role of oil in and after the Cold War provided opportunity for Greek capitalists to move foreign resources with foreign-built ships. This created links between Greece and a capitalist, Western economic system, culminating with Greece joining the North Atlantic Treaty Organization in 1952 and the EUROPEAN UNION in 1981.

The economy of modern Greece is still weak, but is expanding with the aid of outside sources. In 2000, the GROSS DOMESTIC PRODUCT (GDP) of Greece was estimated to be $181.9 billion. Greece's GDP breaks down into three categories. Services account for 62 percent, industry accounts for 23 percent, and agriculture accounts for 15 percent.

Tourism is Greece's largest industry and it is also the nation's only source of foreign-exchange earnings. Much of Greece's capitalist economy depends on the roles of importing and exporting. In 2000, Greece's imports were valued at $33.9 billion with its exports totaling only $15.8 billion. In recent years, Greece has worked to strengthen its economy by becoming a part of international economic systems. The country's economic expansion has resulted greatly from government programs, economic aid from the UNITED STATES, trade with the Middle East, and trade with other members of the EUROPEAN UNION.

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CHRIS HOWELL
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The quaint villages of ancient Greece are one reason tourism is the nation's largest industry in the 2000s.

Greenspan, Alan (1926–)

A ONE-TIME ADVOCATE of the GOLD STANDARD who became chairman of the U.S. FEDERAL RESERVE system, Alan Greenspan presided over both the economic boom of the mid-1990s and the first deep recession of the 21st century.

Born on March 6, 1926 in New York City, Greenspan studied economics at New York University, where he earned his B.S. in 1948 and his M.A. in 1950. He began an economics Ph.D. program at Columbia University in 1950, but had to drop out for lack of money and take a job as an economist. NYU finally awarded Greenspan his economics Ph.D. in 1977 after he had already served (1974–77) as chairman of the COUNCIL OF ECONOMIC ADVISORS for President Gerald Ford. He also received honorary degrees from Harvard, Yale, and Notre Dame universities.

Though best known as a banker and economist, Greenspan started out as a student at New York's famous Julliard School of Music and found his first job in the late 1940s as a saxophone player in a swing band.

After leaving Columbia in 1954, Greenspan co-founded the economic consulting firm of Townsend-Greenspan & Co. and served as its chairman from 1954–74 and 1977–87. His career as a private-sector economic consultant was punctuated by frequent involvements in government, the first of which was as a policy advisor to the presidential campaign of Richard M. NIXON (1967–68). He was recruited for the post by his former bandmate Leonard Garment, who had become a lawyer and one of Nixon's campaign managers. After serving on Gerald Ford's economic team, President Ronald REAGAN appointed Greenspan chairman of the National Commission on Social Security Reform (1981–83), and then chairman of the U.S. Federal Reserve (the Fed), where he filled an unexpired term from 1987–91 and was reappointed by President William J. Clinton in 1992 to a 14-year term as chairman.

In 2000, Greenspan was awarded the Légion d'Honneur, the French government's highest honor. In 2002, he was made an honorary Knight Commander of the British Empire by the government of the United Kingdom.

During his tenure as Fed chairman, Greenspan's reputation at any given moment closely tracked the performance of the U.S. economy and stock market. In the last months of the 1990s economic boom, Senator Phil Gramm (himself a former economics professor) hailed Greenspan as "the greatest central banker in the history of the world." Two laudatory books told his story. However, after the recession of 2001 began and the stock market began to slide, Greenspan was criticized for his apparent failure to recognize and stop the economic "bubble" that had artificially inflated the late-1990s U.S. economy to unsustainable levels.

Indeed, Greenspan had in 1996 warned against the "irrational exuberance" of the U.S. stock market, but he had taken no action for fear of causing the recession, which by then was inevitable. Five years later, the recession began—worse than it might have been if the Federal Reserve had acted in 1996.

Greenspan's public statements as Fed chairman tended to be vague but reassuring, as befitted a man from whom a careless remark could send stock prices plummeting. Earlier in his career, however, he did not shy away from controversy. As a friend and confidant of novelist Ayn RAND from the 1950s on, Greenspan wrote in favor of the gold standard and for the repeal of ANTITRUST laws.

In 1962, Greenspan wrote of "the destructiveness of compromise, of mixed premises and mixed purposes." Given the pragmatism with which he guided the Federal Reserve through good economic times and bad—compromising when necessary, improvising when helpful—the mature Greenspan seemed to have reconsidered those youthful sentiments.

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gross domestic product (GDP)

GDP IS THE BROADEST measure of an economy's output and can be defined as the market value of all final goods and services produced within a country during a given period of time. To understand this definition it is best to consider each phrase separately.

The market value: GDP adds together the market values of the many different types of goods and services produced in a modern economy to give a single measure of economic activity.

Of all: GDP is a comprehensive measure and includes all goods and services bought and sold legally in markets. However, goods and services produced and consumed in the home and those traded in black markets are excluded.

Final goods and services: To prevent double counting of transactions GDP includes only the value of the final goods and services, which are the end products of the production process. Intermediate goods and services such as the steel used in the production of a car are excluded.

Produced: GDP measures current production. Goods and services sold in second-hand markets are excluded since these were counted when they were originally purchased.

Within a country: GDP includes all goods and services produced with the geographical boundaries of a country, regardless of the nationality of the producer. It excludes all production by domestic producers within the geographical boundaries of a foreign country.

During a given period of time: GDP is a flow variable measured over a period of time, usually quarterly or yearly. Quarterly data is seasonally adjusted by government statisticians to remove the effects of the regular seasonal changes in an economy's production of goods and services for example, the effect of increased production during the Christmas period.

GDP can be measured by one of three methods. The output method sums the value added by all firms in the economy, at each stage of the production process. Value added is the market value of a good or service, minus the cost of inputs purchased from other firms. For example, assume GENERAL MOTORS produces a car using $8,000 of steel bought from U.S. STEEL, and sells the final product for $20,000. The value added by U.S. Steel is $8,000 and the value added by General Motors is $12,000. Summed, the value added by each firm equals the market value of the car.

The expenditure method measures GDP as the sum of expenditure on all final goods and services in four broad expenditure categories; personal household consumption expenditure (C), private investment expenditure (I), government purchases of goods and services (G), and net export expenditure (NX)—domestic goods and services sold abroad (exports) minus foreign goods and services purchased by domestic households (imports). Imports are subtracted because C, I, and G include domestic expenditure on foreign goods and services. The relationship between GDP and total expenditure on domestically produced goods and services can be expressed by the national income identity:

$$GDP = C + I + G + NX$$

The income method measures GDP as the total income generated by production. When a good or service is sold the total revenue from sales is distributed to workers and to the owners of the capital. Therefore, GDP = labor income + capital income. Labor income accounts for approximately 75 percent of GDP and includes income from employment and income from self-employment. Capital income accounts for the remaining 25 percent of GDP and includes payments to the owners of physical capital and the total profits of businesses of all types. Thus, GDP can be measured in three ways; as the total production of goods and services in an economy, as total expenditure on the economy's goods and services, or as total income in an economy.

So far we have discussed nominal GDP, which measures the value of final goods and services produced using current prices. However, comparing nominal GDP from one year to the next does not permit us to compare the quantities of goods and services produced in those two years. Changes in nominal GDP between two time periods may reflect only changes in prices, not changes in production. Real GDP measures the value of goods and services produced using the prices prevailing in a base year. For example, if the base year is 2000 then real GDP in 2003 is calculated using the 2003 quantities valued at 2000 prices. Real GDP is therefore unaffected by changes in prices and provides an accurate measure of changes in the quantity of goods and services produced. Several years can be compared using the base-year prices and the resultant figures will be an accurate reflection of production increase, or in some cases, decrease over time. Comparing real GDP from one year to another enables us to say whether the economy has produced more or fewer goods.

It was not until WORLD WAR II that the need to accurately measure a nation's output of goods and services became paramount in government planning. During this period, economic measurement was developed principally by two economists working separately, but following parallel ideas, Simon KUZNETS in America, and Richard STONE in the UNITED KINGDOM. Their Nobel Prize-winning work became the internationally accepted basis for measuring national output. During World War II, the calculation of GDP, gross national product as it was then known, was used to monitor and adjust industrial war effort. Today, measures of change in real GDP are used to determine whether an economy is doing well or poorly in terms of economic growth. In addition, measures of real GDP are often considered to be an indicator of the economic well-being or standard of living of the population within a country.

Certainly countries with higher per-capita levels of real GDP enjoy a greater abundance of consumer goods, greater life expectancy, lower infant and child mortality rates, better medical facilities, more doctors, and greater access to education. However, it has been argued that because GDP measures only the value of market-based activities, it can, at best, be only an imperfect measure of economic well-being.

For example, because GDP measures only the production of goods and services it ignores totally how those goods and services are produced. The current debate reflects the fact that measures of GDP do not take into account the effects of environmental degradation, the rate of resource depletion, or indeed the pollution caused by industry. It could be argued that a measure of the value of these negative consequences of economic growth should be used to offset measures of increases in GDP. Such environmental effects are subjective and it is therefore almost impossible to obtain a unified widely accepted measure. It follows then that achieving a consensus as to the value of such negative consequences is difficult. Because of the effects on resources and environment and because such negative costs are not reflected in GDP, critics charge that government policies which are based on GDP statistics are fundamentally flawed.

In addition, GDP cannot measure the distribution of goods and services within society. By using it as a standard measure of society's well-being, the overlying assumption is that all members of that society enjoy life to the same standards—we know that is not the case.

GDP ignores the added value placed on goods by ensuring they are produced in a humane, democratic working environment that provides an acceptable standard of living for the workforce. Measuring only the quantity of output GDP ignores the added value of well-being. However, as with environmental impacts, achieving useable figures to measure these concepts is a difficult and time-consuming process.

Using a single index value compiled from separate indicators, such as unemployment rates, infant mortality rates, homeless rates, health care coverage and income levels, may overcome some of these problems. Although common indicators such as these are readily available, the problem is in deciding which indicators should be included with the possibility that including the wrong indicators may compound the nature of the problem.

There are other common factors that have an adverse effect on the accuracy of GDP. The UNDERGROUND ECONOMY is supported by those who work or conduct their daily business on a cash basis and avoid paying any contributions to the Internal Revenue Service. There is no way to accurately measure the amounts involved but no one doubts that it has a negative effect on GDP. Some goods and services are excluded from GDP because they are not sold on the open market. The husband who cuts the lawn on the weekend, the grandparent who babysits—social tasks such as these, that clearly have an economic value, are not included when calculating GDP.

GDP should be used cautiously when employed to make comparisons over time or across countries. When the value of the negative consequences of economic growth are taken into account, a high GDP might not always be an indication that a country's economy is making true economic growth.

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gross national product

SINCE VALORIZATION (to maintain and enhance value) is the main driving force of material productions under capitalism, it is necessary to have a quantitative measure of all value-producing activities and the resultant commodities. Gross national product (GNP) is one such yardstick. GNP measures the money value of all final commodities produced by the residents of a country no matter where, within or without the national boundaries, the production was carried out within a given period of time, generally a year, and calculated at current market prices. Because it is impractical to catalog and track long and numerous lists of quantities, kinds and types of commodities, it is customary to reduce them to their common-value denominator of MONEY to arrive at an aggregate measure of all production. The term "final product" implies that no intermediate products will be counted. An illustration might be to count the value of bread but not that of flour used as raw material for bread making. This obviates double counting since the value of flour is included in that of the bread.

The gross in GNP refers to the fact that the depreciation of capital has not been taken into account yet. When that is done, GNP is transformed into net national product. The total output is measured as a sum of all commodities multiplied by their corresponding market prices, (e.g., 5 loaves of bread at $3.00 each contributes $15 worth of GNP), and is classified as nominal GNP. Clearly, if only prices increase and the actual output remains the same, the GNP (nominal) would increase. To assess the changes in economic production, therefore, one can measure output at constant prices, i.e., to adjust for inflation and arrive at real GNP. The changes in real GNP reflect the changing level of actual production. Real GNP per capita, then, can gauge the average potential standard of living for a country.

GNP data over time indicate how the economy is progressing—too slow, fast, or just right—to make intertemporal comparisons. The size and the rate of growth of GNP are obviously a major determinant in the standard of living. One can thus use GNP figures for different countries to make comparisons of relative prosperity between different communities. These are essentially measures of economic well-being comparing different countries or tracking a specific country over time—a valuable piece of sociological knowledge by itself. After all, the value of production forms the basis of provisioning our income required to carry on the daily life and its transactions. This, however, does not place these data collection efforts at the center of economic decision-making.

With the advent of Keynesian formulation (circa 1930s) of the dynamics of a market economy, the emphasis of information procurement has shifted from welfare comparisons to policy-making instruments. Keynesian analysis suggested that the level of production, employment and income is directly related to the expenditures on goods and services (i.e., the level of "effective aggregate demand"). The role of expenditures in the performance of the economy, therefore, takes center stage.

The type of expenditure and its decision mechanism takes on an added significance. The expenditures, therefore, are divided into sectors of domestic consumers, investors, governments, and foreign buyers, because each one is typically regulated by different forces, which in turn can be affected by appropriate and commensurate policy measures. While Keynesian theory established the determinants of national production and income, Keynesian policy proscribed the need for collective action. The governments are to adopt economic policies to promote large enough expenditures for socially desirable levels of employment and income distribution. To carry out this responsibility, the governments need reliable and accurate estimates of national income, expenditure, the size and direction of change in response to specific policy steps and the sites and modalities of the system to induce and initiate fruitful changes. It is the acceptance of this challenge and its consequent contingencies that necessitates most governments to collect, classify, and disseminate national accounts of income and expenditure—the GNP being the foremost category.

The modern-day battery of fiscal and monetary policy measures are based on the direction and rate of change of GNP data. In a Keynesian world, if the unemployment level is higher than socially desirable, the government is to increase expenditures or reduce taxes to increase aggregate demand to promote higher production which, in turn, would lead to higher employment—this is FISCAL POLICY. Or the FEDERAL RESERVE bank can increase money supply, reduce INTEREST RATES thus fueling expenditures to the same effect—the expression of MONETARY POLICY. In the event of an inflationary period—when prices are increasing at a fast enough clip to be detrimental to social well-being—these fiscal and monetary policies could be applied in reverse to achieve a social optimum. Needless to say that the complexities of economic policy diagnostics and practical implementation are much more vexing than this abstract presentation. The point, however, is to highlight the centrality and importance that an accurate assessment of GNP has acquired.

Given that GNP as a category is so crucial to welfare comparisons and policy prescriptions, it is advisable to examine the robustness of this yardstick. To the extent that GNP records only market transactions, its frequent invocation in comparisons to less economically developed countries can be very misleading. To wonder how an average Indian citizen, for example, can live for a year with less than $500 worth of income is to ignore that a self-sufficient, rural-based peasantry has limited interaction with the market. Hence, even its meager income in GNP terms is grossly under-estimated. Likewise, for BARTER transactions in the advanced countries when, for instance, a plumber fixes the leaky faucet of an auto mechanic in exchange for a tune-up. Trade in illegal commodities—as in alcohol during the Prohibition era—is not counted for moral and practical reasons. Even though rental value of owner-occupied residences is estimated and included in GNP, the value of household production—cooking, cleaning, babysitting, etc., which could likewise be estimated, is excluded to prompt some to indicate gender bias.

Environmental degradation is not deducted but any restorative activity is taken as a positive entry, thereby puffing up GNP figures. Government transactions are assessed at cost rather than market price, which can introduce distortions. No allowance is made for labor depreciation (as opposed to capital depreciation which is allowed) and no account taken of leisure—the ultimate utility good the desire for which balances the income-generating incentive of work. With all these and other theoretical pitfalls, in addition to the herculean task of tracking down different bits of relevant data, GNP is still the most widely used indicator of economic activity, and no other measure of comparable acceptability has been devised despite numerous theoretical albeit debatable innovations.

As of 1991, the United States has adopted a slightly modified but essentially similar measure of output called GROSS DOMESTIC PRODUCT (GDP). GDP measures all production within the national boundaries regardless of the ownership of the means of production—meaning that whatever production is carried out by residents as well as foreigners but within the national territory is counted as part of U.S. GDP. This leads to GNP being equal to GDP plus the income earned by U.S. residents from factors of production outside the country minus the value of income earned by foreigners from factors of production in the country. Even though this transformation has been occasioned in response to international income accounting practices, the two measures generate similar figures for the economic output of the United States.

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growth

ECONOMIC GROWTH REFERS to a continual increase in a country's ability to produce goods and services. The amount of goods and services produced by an economy at a given period of time, usually a year, is called the GROSS DOMESTIC PRODUCT (GDP). When GDP is adjusted for the general increase in prices (i.e., inflation), it is termed "real GDP." Economic growth can thus be defined as a sustained increase in real GDP.

Economist Adam SMITH put together the first theory of economic growth in 1776. Defining labor's productivity as the output per person employed in the work force, Smith's theory can be summarized as follows: An increase in the division of labor increases labor's productivity. The increase in productivity, in turn, raises output, income, and the demand for goods and services; this creates larger markets that further increase the division of labor.

Hence, there is a virtuous circle linking the division of labor and the size of the market. For Smith, this virtuous circle could, however, be broken in the absence of "good" governments. A good government enforces property rights and maintains order. If, for instance, a government were to implement monopolies or take measures that limit the expansion of international trade, this would break the virtuous circle. Since monopolies restrict output and charge higher prices, the increase in productivity would not lead to increased output, and the circle would be broken.

In 1798, the Reverend Thomas MALTHUS put forward a theory of economic growth casting doubts on Smith's virtuous circle. Malthus believed that population expanded at a geometric rate, doubling every 30 years or so, while land grew very slowly. This divergence in the growth rate of the two factors of production (resources) would lead to a fall of a worker's marginal contribution to food production. Combined with a growing population, per capita food production (i.e., the amount of food produced divided by the number of people) would fall gradually and this would lead to a decline of standards of living toward subsistence levels. Malthus believed that if people could limit their progeny, a constant state of subsistence level could be avoided; otherwise rising death and famines would result. Malthus thus offers a very negative and pessimistic view of the theory of economic development and growth.

In the 1940s, economists Roy HARROD and Evsey Domar developed independently a model to help explain the role of CAPITAL ACCUMULATION (i.e., investment) in the growth process, known as the Harrod-Domar model. It suggests that saving provides the funds that are borrowed for investment purposes. More physical capital is needed to stimulate economic growth. With increased economic growth comes higher income and therefore higher levels of saving. Saving, in turn, leads to higher investment.

We thus have a virtuous circle between capital accumulation, income, savings, and investment. An implication of the model is that economic growth requires policies that encourage higher saving. Unfortunately, the virtuous circle of the Harrod-Domar model leads to the fact that if an economy strays from its optimal growth path it either explodes or implodes. This unrealistic characteristic lead to the search for alternative models, the most famous being the neoclassical growth model, usually associated with Robert SOLOW.

Nobel Prize-winning economist Solow expanded the Harrod-Domar model by introducing labor and technology into the growth equation. By doing so, economic growth could only result either from increases in the quantity and quality of labor (i.e., population growth and education), or increases in the capital stock (i.e., factories, equipment, buildings) through saving and investment, or technological progress.

Another finding of the neoclassical growth theory is that an economy always converges towards a steady-state rate of growth. More precisely, closed economies (those with no international trade with the rest of the world) with lower saving rates will tend to grow more slowly than those with higher saving rates, and will converge to lower per capital levels of income in the short-run. In contrast, open economies will converge at higher levels of income in the short-run. Technical progress played a key role in the Solow model. In the long run, technical progress becomes the main determinant of economic growth. The problem, though, was that technology was assumed to be exogenously determined (that is, determined independently of all other factors). So, what makes people better off in the long run in per-capita terms? The neoclassical response will be: technology. But if one were to ask about the determinants of technology, the neoclassical economists could provide no explanation.

In the 1990s, a new growth theory, known as endogenous growth theory, came into existence due to the growing dissatisfaction with the idea of exogenous technical progress and per capita income convergence arising out of the neoclassical theory. Pioneers of this new view include economists Robert LUCAS and Paul Romer. In an endogenous growth framework, the rate of growth of output depends on aggregate stock of capital (both physical and human) and on the level of research and development in an economy. Endogenous growth theories also explain the persistent differences in growth rates between countries and the importance of research and human capital development in permanently increasing the growth rate of an economy. A consequence of that view, for instance, is that a recession in a country, whether temporary or prolonged, could lead to a permanent increase in the output gap between itself and the rest of the world.

Sources of economic growth include increases in factors of production (LABOR, CAPITAL, LAND) and technology. Indeed, a country can increase production (grow) if it increases the amount of resources used or makes better use of existing factors of production. Resources (factors of productions) and technical progress (innovation) are all important determinants of the growth rate of an economy. Various policies can be used to improve the economic growth rate (mostly through their impacts on resources and technology); they include investing in human capital, creating policies to stimulate savings, encouraging international trade, and subsidizing research and development.

Barriers to economic growth are somewhat related to the sources of growth and include the lack of technical knowledge or a slowdown in technical progress; the lack of capital and skilled labor needed to manufacture goods and services; a rapid population growth; and a large foreign debt. Current research in economics shows that the quality of institutions is also an important determinant of economic growth/slowdown. Countries with poor institutions (i.e., high corruption, weak judicial systems) tend to grow slower than countries with strong institutions. The recent economic crises in Southeast Asia and Russia are examples of the importance of institutions and the role of the state in economic growth and development. Another example comes from African countries that are well endowed with natural resources but are still lagging behind the rest of the world; their low growth rates seem to be due mostly to the high levels of grand corruption of their top government officials who frequently engage in "white elephant" projects.

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List of Articles

Encyclopedia of CAPITALISM

VOLUME II

H

Haavelmo, Trygve (1911–99)

THE NORWEGIAN ECONOMIST Trygve Haavelmo began his career as a student of Ragnar FRISCH at the University of Oslo. He went to the United States in 1939 as a Fulbright scholar, where he ended up staying until 1947. Haavelmo spent much of his sojourn at the Cowles Commission, before returning to Oslo.

Haavelmo was awarded 1989 Nobel Prize in Economics for his clarification of the probability theory foundations of ECONOMETRICS and his analyses of simultaneous economic structures.

The field of econometrics is concerned with estimating economic relations and testing whether postulated relations conform fully to reality. In an article in *Econometrica* in 1943 and in his doctoral thesis entitled, "The Probability Approach in Econometrics" (1944), Haavelmo showed that the results of many of the methods used thus far had been misleading. Earlier methods did not sufficiently account for the fact that real economic development is determined by the interaction of a multitude of economic relations and that economic laws are not strictly rigorous. For example, he demonstrated that an economist could not gauge the impact of a change in tax rates on consumer spending without using sophisticated statistical methods.

In his thesis, Haavelmo presented a new and groundbreaking approach to the estimation of economic relations by applying methods used in mathematical statistics. His work established the foundations for a new field of research, which came to dominate the study of estimating complex economic relations.

In his review of Haavelmo's doctoral thesis, the British Nobel laureate Richard STONE wrote that it was a brilliant contribution to econometrics, which would have a revolutionary effect on the degree of success in estimating economic relations. After he became professor at the University of Oslo, Haavelmo's research interests turned to economic theory. His book, *A Study in the Theory of Economic Evolution* (1954), was a pioneering study of the possible reasons for economic underdevelopment of a country in relation to other countries, long before other economists became seriously engaged in development research.

Haavelmo also made a valuable contribution to the theory that determines the extent of investments in a country. His book, *A Study in the Theory of Investment* (1960), introduced theories that have been of fundamental importance in subsequent research. Numerous theoretical and empirical studies of investment behavior have been inspired by his work.

Many of Haavelmo's other studies, such as a monograph on environmental economics that appeared long before such research came into vogue, have been an inspiration to other researchers. "Haavelmo had a tremendous influence on me and on many other young econometricians in the 1940s," said Lawrence KLEIN, 1980 Nobel Laureate for his work in the field.

Haavelmo has also had a decisive influence on economics in Norway, not only as a researcher but also as a teacher. During his active years at the Institute of Economics at the University of Oslo, he was the leading teacher in the field. He covered numerous areas of economic theory and many of his students and assistants received their first instruction in authorship by writing expositions based on his lectures, under his stimulating guidance. No less inspiration was given to the many research recruits for whom Haavelmo served as advisor.

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Hamilton, Alexander (1755–1804)

ALEXANDER HAMILTON IS BOTH a character on the stage of American capitalism and one of its main theorists. Hamilton's story is one of upward mobility. He emerged from a bankrupt family to become one of the most influential politicians in 18th-century America. At the age of 12, because of the failure of the family business, Hamilton entered the workforce as a clerk and apprentice at the counting house of Cruger and Beekman. Three years later, he was running the business, although the ambitious Hamilton was certainly not satisfied: "I would willingly risk my life, though not my character, to exalt my station," he wrote when he was 14 years old.

His station in life suddenly changed as he joined a patriot volunteer corps in the AMERICAN REVOLUTION and became George WASHINGTON's personal secretary and aide. After independence, Hamilton left the military career and turned to politics and economics: he was a delegate to the Constitutional Convention of 1787, an author of the *Federalist Papers*, and the first secretary of the Treasury from 1789 to 1795.

While an upward-mobile character in the plot of American capitalism, Hamilton was also one of the system's main theorists and is considered the father of the U.S. financial and banking system. As U.S. Treasury secretary, Hamilton developed an economic system that would help the expansion of the new nation. He focused on the repayment of the American Revolution debt, and on the expansion of commerce both through the establishment of trade relations among the states with European countries, as well as through the exploration of the *terra incognita* west of the Mississippi River.

In addition to the well-known *Federalist Papers*, Hamilton's political and economic legacy is clearly expressed in the four reports that he authored as Treasury secretary and presented to Congress between 1790 and 1791. These four reports on public credit, the establishment of a mint, the establishment of a national bank, and manufactures stand in sharp contrast with the economic theories espoused by Hamilton's contemporary Scottish theorist Adam SMITH. The four reports conceive an interaction between the nation's development into political unity and economic prosperity—into an "empire" in Hamilton's own words—and its economic institutions. Public and private interests are interrelated, as are politics and markets.

In particular, Hamilton's "Report on Manufactures" represents a rejection of Smith's LAISSEZ-FAIRE capitalism and recurrently argues that economics is mutually dependent on state power, thus outlining a plan for governmental support of American industry. Hamilton wanted a protective tariff so that imports were taxed and foreign goods would be more expensive than American products. It did not seem plausible to him that a nation of farmers could compete against the industrial strength of Europe. He argued that the United States could only assure its political independence by maintaining economic independence. Hamilton rejected the idea that "the systems of perfect liberty to industry and commerce were the prevailing systems of nations," and disputed "that industry, if left to itself, will naturally find its way to the most useful and profitable employment," according to Smith's policies. Hamilton's elaborate plan for tariffs and support of American growing industries was the only part of his program that was not initially supported by Congress.

The report also stands in contrast with Thomas JEFFERSON's view of America as a society built on an agrarian economy and the most eloquent opposition to Hamilton's proposals came, not surprisingly, from him. Jefferson believed that the growth of manufacturing threatened the values of an agrarian way of life. Hamilton's vision of America's future directly challenged Jefferson's ideal of a nation of farmers in communion with nature and maintaining personal freedom through land ownership. Like slaves, Jefferson feared, factory workers would be controlled by their masters, who would make it impossible for them to think and act as independent citizens.

While his personal story is about individual success and rise from poverty to political influence, Hamilton's political economy is anchored in the belief that the state had an important part to play in sustaining the process of industrial growth. In addition, this process could be employed to reach a "General Welfare," in Hamilton's phrase, going beyond mere individual wealth.

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Hancock, John (1737–93)

ALTHOUGH THE HISTORICAL legacy of John Hancock is often overshadowed by some of the more prominent Founding Fathers, Hancock was one of the most important political leaders in colonial America. By the mid-18th century, Hancock had become the wealthiest man in the North American colonies, and Great Britain's financial impositions on the colonists incited the former British loyalist to become a revolutionary. But in spite of his social status and financial comfort, Hancock's appreciation of the ideals of liberty earned him the admiration and trust from ordinary men who would ultimately unite in the colonial militia.

Hancock's evolution from Tory to revolutionary leader was in part due to his ability to appeal to the elite merchant class as well as the working class and farmers. He became a critical player in both Massachusetts and, later, national politics and nation-building during the era and the aftermath of the AMERICAN REVOLUTION.

Hancock was born in Braintree (now Quincy), Massachusetts to the Reverend Thomas Hancock and his wife Mary Hawke. The Hancocks were prominent Congregational clergymen in Boston and young Hancock enjoyed a privileged early childhood. However, in the spring of 1744, Reverend Hancock fell ill and died, leaving his wife and children facing a life of poverty. Shortly following his father's death, Hancock was sent for by his extremely wealthy and childless uncle, another Thomas Hancock, who desired an heir to the fortune he had amassed under the title, "The House of Hancock."

Living under the wing of his uncle's good fortune, Hancock developed a love and appreciation of the finer, richer things that money afforded. He also had the opportunity to attend the finest educational institutions: Hancock enrolled in Boston Latin School and later Harvard College. Following his graduation from Harvard, Hancock opted to enter the colonial merchant world of trade and commerce and he became formally apprenticed to his uncle who soon made Hancock his official business partner and sole heir. When his uncle died during the summer of 1764, Hancock, at the age of 27, became one of the wealthiest men in the colonies.

Though Hancock would become a popular figure in Boston politics, he spent much of life alone, living only with his widowed aunt in his isolated Beacon Hill mansion. Years later, he would marry Dorothy Quincy, a woman from a prominent family. They had two children, a daughter and a son but neither lived to see adulthood.

Well known for his success in commerce, Hancock formally entered political life in 1765 when he was elected to the position of Boston selectman. As anger brewed in the colonies over the British Parliament's unfair policies of taxation such as the Stamp Act (the first internal tax levied on the colonies), Hancock became acquainted with Sam Adams, who led much of the opposition to Britain. By 1768, with the imposition of British taxes on paper, glass, paint, and tea, Hancock's camaraderie with Adams and other revolutionaries steered him toward becoming a leader of resistance against the British.

That same year, British customs agents invaded and investigated Hancock's ships but he took a stand against the agents; the incident propelled him to hero status overnight.

Elected to the Massachusetts legislature, Hancock's skills as an orator rallied the colonists, particularly in the wake of the 1770 Boston Massacre, when British soldiers fired upon a hostile, unarmed crowd and killed five people. When the American Revolution began just five years later, Hancock was charged with the responsibility of organizing the Boston militia. His role made him as reviled by the British as he was revered by the colonists. Hancock's reputation primed him for the position as president of the Second Continental Congress that convened to assume the responsibilities of coordinating the revolution. On July 4, 1776, the Congress formally adopted the Declaration of Independence. It was upon that document that Hancock left his elaborate, famous signature; it was a mere representation of the indelible mark he would leave on the nation.

In 1780, Hancock returned to Massachusetts and received an enthusiastic homecoming from Bostonians who elected him governor later that year. During his first term, Hancock faced a state financial crisis brought on by the devaluation of Continental money. Congress continued to print worthless paper dollars and colonists grew outraged at such irresponsible economics. In Massachusetts, farmers and soldiers alike rallied against the worthless money and demanded back payments. The culture of debt and credit that was inherent to the colonial economy exacerbated the tensions among the classes.

Although his health had markedly declined, Hancock was continually re-elected governor of Massachusetts during the first half of the 1780s. Throughout his term, the state was plagued by internal conflicts stemming from western farmers' demand to abolish the requirement that property taxes be paid in hard currency. Although Hancock took measures to appease the parties, even his political and business acumen were not enough to alleviate the fiscal crisis. Hancock had at one time been able to bridge the divide between the wealthy merchant class and the working class, but in the era after the revolution, economic issues made it much harder for him to appeal to both sides.

Exhausted by age and frustration and fearing heightened economic tensions, Hancock chose not to seek reelection in 1785 and 1786. His decision would prove clairvoyant: in 1786-87, Daniel Shays, a former captain in the Continental army, led farmers and debtors in a series of armed rebellions against state and local authorities who enforced tax collection and imprisonment for debt. The Massachusetts state militia ultimately suppressed the insurrection but the incident revealed the lack of essential legislative powers that characterized the weak American government under the Articles of Confederation.

In 1787, Hancock was re-elected as governor of Massachusetts. Although Shay's Rebellion had been a largely unsuccessful episode for farmers, Hancock was careful not to punish the colonists who had rallied behind Shays and the Massachusetts' uprising became an important point in the debates over the United States Constitution.

Hancock recognized the need for a stronger central government, but he was very committed to adding a Bill of Rights to the Constitution document in order to give the anti-Federalists, those who were against centralized power, a stake in their government. Hancock's mediation skills were critical to the Constitutional convention; in 1791 the Bill of Rights became part of the U.S. Constitution.

Although he continued to serve as the governor of Massachusetts, Hancock lived his remaining years in very poor health. He spent much of his personal fortune rebuilding the city of Boston and accordingly, historians have recognized him as American's first great humanitarian and philanthropist.

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Harding, Warren G. (1865–1923)

POPULAR MYTHS COLOR the memory of President Warren G. Harding's brief administration and mysterious death. Generally thought to be one of the most corrupt and ineffective presidents, Harding served only two years in office during which time he was subject to the influence of ambitious and crooked Republican operatives.

Warren Gamaliel Harding was born on November 2, 1865 in Blooming Grove, Ohio, a region dominated by the Republican Party. He spent his formative years in small, rural communities and attended Ohio Central College, graduating in 1882. Upon earning his degree, Harding moved to Marion, Ohio, where he worked for a short time as a teacher before joining the reporting staff of the Marion *Mirror*, the local newspaper. Yet, his determination to become a successful businessman drove him to purchase a different newspaper, the Marion *Star,* just one year later. Encouraged by the burgeoning industrial capitalist spirit, and armed with an affable and enthusiastic personality, Harding quickly transformed the dying publication into a powerful, small-town newspaper by developing it as a Republican journal. His success in business would have a permanent impact on his views and understanding of the American economy during an era of industrial growth and change.

In 1891, at the age of 25, Harding married Mrs. Florence Mabel King DeWolfe, a divorcée five years his senior. Generally believed to be a marriage of convenience, the couple had no children though they did share the responsibilities of running the *Star*. His wife's attention to business afforded Harding time for an active social life characterized by drinking and gambling. His illicit personal activities also included a series of affairs, one of which produced an illegitimate child. However, such behavior was kept hidden from the public and did not affect his social standing, or his increasing political power within the ranks of the Ohio Republican party.

Harding's popularity propelled him to the Ohio State Senate, where he served for two years, before being elected lieutenant governor of Ohio in 1904. Despite an unsuccessful run for governor, Harding was elected to the U.S. Senate in 1914 and in 1919, his name was proposed as the Republican nominee for president. Considered a dark-horse candidate, Harding nevertheless put forth the economic creed that had made him successful: "American business is everybody's business." Believing that business would save the country, and promising Americans a "return to normalcy" in the wake of WORLD WAR I, Harding defeated Democratic candidate James Middleton Cox, also of Ohio, to become the 29th president of the United States.

President Harding's rags to riches story and commitment to business made him a very appealing figure to Americans in the post-World War I era. By 1923, the postwar depression seemed to be giving way to a new wave of economic prosperity. His victory had been made possible in large part because of his powerful Republican friends, and he repaid their friendship by appointing many of them to his cabinet—a fateful mistake. Rumors soon circulated that some of his friends and advisors were involved in illicit activities such as graft, bribery, and other malfeasance.

In an attempt to defend his administration against such charges, Harding embarked on a talking tour across the country in the summer of 1923. It was during his travels that he became ill with food poisoning, then suffered a heart attack and died on August 2, 1923 in San Francisco.

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Harrison, William Henry (1773–1841)

THE NINTH PRESIDENT of the UNITED STATES, William Henry Harrison was born in the wealthy Tidewater section of Virginia. His father served in the Continental Congress and was governor of Virginia. In 1791, Harrison began studying at the University of Pennsylvania Medical School. However, when his father died, he could not afford to continue his studies. He received a commission in the army and began a military career.

Harrison fought as an officer in the Indian Wars of the Northwest Territories (present-day Ohio, Indiana, Michigan, Illinois, and Wisconsin). In 1800, President John ADAMS appointed him territorial governor. During the WAR OF 1812, Harrison commanded U.S. forces in the Northwest Territories. Later, Harrison served in the U.S. House of Representatives and Senate, elected from Ohio, and as ambassador to Colombia under President John Quincy ADAMS.

President Andrew JACKSON refused to renew the charter for the Second Bank of the United States, resulting in its termination in 1836. State banks filled the demand for credit and currency, but this was dependent on the financial soundness of the institution that issued the notes. If people lost faith in a bank, there would be a run on the bank to cash in their notes for specie (gold or silver). Those left holding notes when a bank ran out of specie and suspended payments were left with worthless pieces of paper.

During the westward expansion of the 1830s, speculators borrowed money to buy land that they hoped to resell to pioneers moving west. In 1836, the federal government began requiring gold or silver as payment. This caused the contraction of credit as people scrambled for gold and silver to make their land payments. Banks quickly ran out of specie and had to suspend payments. At the same time, a collapse in the price of cotton crippled the south, where many farmers were unable to make mortgage payments. This led to a severe RECESSION, the Panic of 1837, which lasted well into the 1840s.

The Whigs, who had elected only one president so far in the 19th century, were eager to capitalize on the crisis. Henry Clay was the favorite, but his Masonic membership caused opposition from the anti-Masonic wing of the party. Harrison was nominated because he was a man of the people and a war hero: two images that called to mind the popular former President Jackson. Harrison used the nickname "Tippecanoe," a reference to his military victory against the Indians in 1811 and spoke of being born in a log cabin.

The Harrison campaign also supported a higher tariff, which appealed to northern manufacturers. The tariff and a stable financial system were key issues of the campaign. Harrison received only 53 percent of the popular vote, but carried 80 percent of all electoral votes, doing well in all regions of the country.

Harrison never had a chance to do much as president. He contracted pneumonia after giving a long inaugural address in freezing weather, and died 30 days later.

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Harrod, Sir Roy F. (1900–78)

ANY UNDERSTANDING OF Roy Harrod's theory would be impaired by the belief that he had anything to do with the “Harrod-Domar Growth Theory” bowdlerized by some economics textbooks. Harrod attempted to create a model of an unstable economy that regularly underwent booms and busts.

His mathematical model derived from the basic identity that savings must equal investment, S = I. Assume that savings is a fixed fraction of income, so s = (S/Y), and divide both sides of the equation by Y. Then take the right-hand side and multiply by (dY/dY) and get (S/Y) = (dY/Y)(I/dY), or s = GC (in Harrod’s terms), where G = (dY/Y) is the growth rate of national income and C = (I/dY) is the incremental capital-labor ratio (remember that Investment is the change in the capital stock, so I = dK). So this equation, s = GC, is as much a tautology as S = I.

The theory only enters with some modest behavioral assumptions: if growth is faster than expected, then this can only occur if C is lower than expected. If firms, seeing their desired capital-output ratio decline, respond with more investment, then the system is clearly unstable. An unexpected increase in income growth will increase investment, or vice versa. The economy will not be dynamically stable but will be on a “knife edge” so that chance deviations will set in motion cumulative processes (similar to Knut Wicksell’s theories).

Most economists learned about Harrod’s work only after WORLD WAR II, and then only in tandem with a paper by Evsey Domar that used similar analytical structures in questions of long-run growth. This vein of business-cycle research was transmogrified into neoclassical growth theory: Robert SOLOW’s and almost every modern macroeconomic growth theory can trace roots back to Harrod. (Still growth theorists talk of “Harrod-neutral technological change” that leaves C constant.) Harrod’s original essay stimulated an enormous amount of research, following up on his basic point that John Maynard KEYNES’ simple model did not take adequate account of the effect of investment on future capacity.

Harrod was an early Keynesian, one of the group of young economists who clustered about the influential man (however Harrod was at Oxford not Keynes’ Cambridge). Harrod made other important contributions beyond his dynamic theory: with Joan ROBINSON, he was one of several innovators establishing the concept of “Marginal Revenue” for a firm with market power. Harrod wrote an early biography of Keynes, from the perspective of a young disciple who had proofed early versions of both the *Treatise* and *General Theory*.

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Harsanyi, John (1920–2000)

HUNGARIAN-AMERICAN philosopher, economist, and Nobel Laureate, John Harsanyi was born in Budapest, HUNGARY. He began studies in pharmacy at the University of Budapest in 1937, but was sent to a forced-labor camp during WORLD WAR II. He escaped his captors just before his unit was about to be transferred to a concentration camp in Austria. After the end of the war, Harsanyi re-enrolled at the University of Budapest in 1946 and graduated with a Ph.D in philosophy in 1947. He served at his alma mater as a faculty member until 1948, at which time he was forced to resign for his outspoken criticism of the communist regime.

Harsanyi emigrated to Sydney, AUSTRALIA, in 1950. He obtained an M.A. in economics from the University of Sydney in 1953, and a Ph.D. in economics from Stanford University in 1957 while on a visiting appointment. He served in several academic departments in Australia and the UNITED STATES, before accepting a professorship at the University of California, Berkeley, in 1964.

In his research, Harsanyi showed how strategically behaving individuals can make optimal choices even when their knowledge of each other’s objectives is imperfect. He extended GAME THEORY and the methods of predicting non-cooperative games, pioneered by John NASH in the 1950s, to situations of incomplete information. For his path-breaking achievements, Harsanyi was awarded the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel in 1994. He shared the prize with Nash of the United States, and Reinhard SELTEN of Germany.

Harsanyi demonstrated that games of incomplete information can be analyzed by introducing an auxiliary player (nature) who, through chance moves, determines the other player’s objectives. If the probabilities of nature’s moves are common knowledge among all other players, the techniques of Bayesian statistical inference allow players to make predictions and optimal choices under uncertainty. Harsanyi extended Nash’s equilibrium concept to games with chance moves, so that each player’s strategies are optimal when taking into account both the uncertainty of the situation and the choices made by the opponents.

Harsanyi published his results on incomplete information games in a series of articles in 1967 and 1968. His work had an immediate and profound impact on the state of economic analysis. Today, Harsanyi's work is the foundation for what is known as Information Economics. Its applications range from the theory of contracts, to the optimal design of auctions, to advice for individuals in bargaining situations and negotiations, to name just a few.

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Hayek, Friedrich August von (1899–1992)

FELLOW NOBEL LAUREATE Vernon L. SMITH called Friedrich von Hayek the "leading economic thinker of the 20th century." Born in Vienna, Hayek, winner of the 1974 Nobel Prize in Economics, served in the Austro-Hungarian army during the latter part of WORLD WAR I and returned to AUSTRIA in 1918 to begin his studies at the University of Vienna, where he was introduced to the ideas of the AUSTRIAN SCHOOL of economics. Hayek earned two doctorates, in law and political science, and after a year in the UNITED STATES, became director of the Austrian Institute for Business Cycle Research in 1927.

Hayek's analysis of business cycles led him to forecast an impending economic crisis, specifically in the United States. He argued that increases in the money supply sent misleading signals to the market, creating an unsustainable expansion followed inevitably by economic collapse. His lectures on the subject at the London School of Economics (LSE), which were published as *Prices and Production* in 1935, were a great success and Hayek became a professor at LSE.

In 1944, Hayek published *The Road to Serfdom*, which became a surprise bestseller in England and the United States. He warned against the dangers of both FASCISM and SOCIALISM, arguing that state control over the economy led inexorably to totalitarianism, and concluded that "only capitalism makes democracy possible." According to Hayek, "Economic control is not merely control of a sector of human life which can be separated from the rest: It is the control of the means for all of our ends." Hayek published "The Use of Knowledge in Society" in 1945, an article in which he described the price system of competitive markets as a "marvel" that allows society to use its resources efficiently. Market prices, he argued, act to coordinate the separate actions of many different people, providing them with information about how to respond best to economic changes. According to Hayek, "The mere fact that there is one price for any commodity . . . brings about the solution which . . . might have been arrived at by one single mind possessing all the information which is, in fact, dispersed among all the people involved in the process."

Hayek moved to the United States in 1950 and became a professor at the University of Chicago. He returned to Europe in 1962, first as a professor at the University of Freiburg, and later, the University of Salzburg. Hayek received the Nobel Prize for his work on business cycles, the problems of centralized planning, and his analysis of how competitive markets incorporate widely dispersed information. He continued to write and lecture throughout the 1970s and 1980s, and, at the age of 89 published his last great work, *The Fatal Conceit: The Errors of Socialism*.

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Hayes, Rutherford B. (1822–93)

THOUGH THE HISTORY of the 19th president is tainted by the controversy surrounding his 1876 election, Rutherford B. Hayes' handling of the Great Railway Strike of 1877 ultimately played an important role in shaping the relationship between capitalistic business and the presidency.

Hayes spent his early life in Ohio as the youngest child of Rutherford and Sophia Birchard Hayes. His father passed away before he was born and his mother was frequently ill, but Hayes nevertheless flourished as a student and a civic leader. Graduating as valedictorian of his class at Kenyon College, he went on to Harvard Law School, and successfully practiced law in Cincinnati, Ohio, until he joined the Union Army. Returning to

Ohio following his army service, Hayes was elected to the House of Representatives and also served three terms as governor of Ohio before being nominated for president on the Republican ticket in 1876.

The presidential election of 1876 remains one of the most controversial elections in American history. The country was still engulfed in Reconstruction and both the Democrats, who opposed the Reconstruction regime, and the Republicans, who supported it, stood widely divided and eager for power. Neither Hayes nor Samuel J. Tilden, the Democratic Party nominee, gained the 185 electoral votes necessary for election.

Despite Tilden's 200,000-vote popular majority, both candidates claimed to have won the electoral college. Congress established an electoral commission consisting of eight Republicans and seven Democrats; the commission voted along party lines and pushed Hayes into the White House. To appease the Democrats, upon entering the White House, Hayes astutely withdrew federal troops from the South, ostensibly ending Reconstruction.

Hayes' previous political experience and even temperament proved to be important assets when he faced the great Railway Strike of 1877. Beginning in West Virginia but quickly spreading to other states, strikers resorted to violence and state militia could not control the discontent.

Although economic indicators, such as the Panic of 1873 that greatly hurt the RAILROADS, might have anticipated such a crisis, the strike represented the first major confrontation between labor and capital. President Hayes responded by issuing a series of proclamations warning strikers against further lawless action. Ultimately, Hayes was compelled to use federal troops to quell the strikers. By using his executive authority against labor interests, Hayes both set the tone for the era of big business and established a precedent for executive intervention in industrial capitalism at the end of the 19th century.

Hayes decided against seeking a second term. He spent the remaining years of his life at Speigel Grove, his elaborate Ohio residence, and died there on January 17, 1893.

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Hazlitt, Henry (1894–1993)

NEVER TRAINED AS an economist, Henry Hazlitt nevertheless goes down in history as the author of one of the best-selling books on economics of all time, *Economics in One Lesson,* first published in 1946. Meant to be a satire, nothing more, *Lessons* derides the government's ill uses of its own economy, but in preaching this message, Hazlitt inadvertently helped set the basic rules mandating government policy spending.

A man of many talents, Hazlitt, throughout his 98 years, was a journalist, literary critic, economist, and philosopher. At an early stage in life he had determined that a lack of formal education was not going to prove a barrier to his success. He wanted to learn, to use what he learned.

Drifting through a series of menial jobs in his youth, Hazlitt eventually decided to be a newspaperman. In 1915, he landed a job as a stenographer with the *Wall Street Journal.* At the same time, and attesting to the brilliance already stirring within him, he had a book published. It was a philosophical retrospect entitled *Thinking as a Science*. He was 21.

Throughout the 1920s, Hazlitt wrote for a number of popular New York newspapers, among them the *Evening Mail*, the *Sun* and the *Evening Post*. He also published a second book, the psychoanalytical *Way to Will Power*. This book, in particular, a deep and sometimes searing analysis of the errors rampant in Freudian psychology, is a tribute to the author who never completed a university education.

At this point, Hazlitt began to earn a number of well-known admirers who found his straight-to-the-point style a refreshing transition from so-much heavy-handed prose from other, more notable writers. One admirer was the British philosopher Bertrand Russell who, for a time, considered writing Hazlitt's biography.

Hired by *Nation* magazine to write hard-hitting essays on an assortment of subjects, Hazlitt stumbled on the subject of American economics, the direction it was taking, the changes, the basic laws of economics affecting the public. The more he researched it, the more convinced he became that government intervention was hurting the national public life. Spurred on by the social evils caused by the 1930s DEPRESSION, Hazlitt began attacking Franklin Delano ROOSEVELT's presidency, particularly his NEW DEAL program. Despite warnings from the pro-Roosevelt *Nation* magazine, Hazlitt's tirades didn't cease. He was fired.

Over the next couple of decades, Hazlitt's left-wing views on the economy brought him in contact with others like him, who respected his openness on any conceivable topic. In the 1930s, he took over as editor of the *American Mercury* magazine whose founder, the critical

H.L. Mencken, called Hazlitt "one of the few economists in human history who could really write." But, much of what he produced was for the *New York Times*, then beginning to take on a radical transformation.

Cooling his tone somewhat, Hazlitt accepted a job with *Newsweek* in the 1940s, writing a widely read and quoted financial column called "Business Tides." Simultaneously, he wrote *Economics in One Lesson*. Soon after, he penned *Will Dollars Save the World*, attacking the post-World War II MARSHALL PLAN.

The 1950s and 1960s saw Hazlitt manifesting other successful literary ventures. While serving as editor of *Freeman* magazine, he compiled the best of his past satire into the analogous *Wisdom of Henry Hazlitt*. As well, he published a resource guide, *The Failure of the New Economics*; a study of psychology, *The Foundations of Morality*; and a novel, *The Great Idea*. The latter relates, in a unique story-telling fashion, the progression of socialism into market economics.

Reaching his 70th birthday in 1964, his work slowed down. Yet his messages remain in many of his works that continue to be regarded by economists as, to quote Ludwig von MISES, "the economic conscience of our country and our nation."

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health

IN THE CANONICAL ECONOMIC model of health developed by Michael Grossman (1972), health is a durable capital stock that yields an output of healthy years of life. Individuals are born with an initial endowment of health stock, which depreciates with age but can be increased through investments. Death occurs when the health stock falls below some minimal level.

People demand health because it provides them with utility, either on the extensive margin by increasing lifespan, or on the intensive margin by increasing the quality of a fixed lifespan. On each of these margins, health is valuable both as a consumption good (one is happier when one is alive and healthy) and as an investment good (it determines the amount of time available for market and household production).

In the economic model of health capital, people produce their own health by combining time (for sleep or exercise) with market goods such as pharmaceuticals and food. People would not demand medical care except as inputs to the production of health; for this reason, the demand for medical care is a "derived" demand. This model of health capital has the intriguing feature that individuals both demand and produce health.

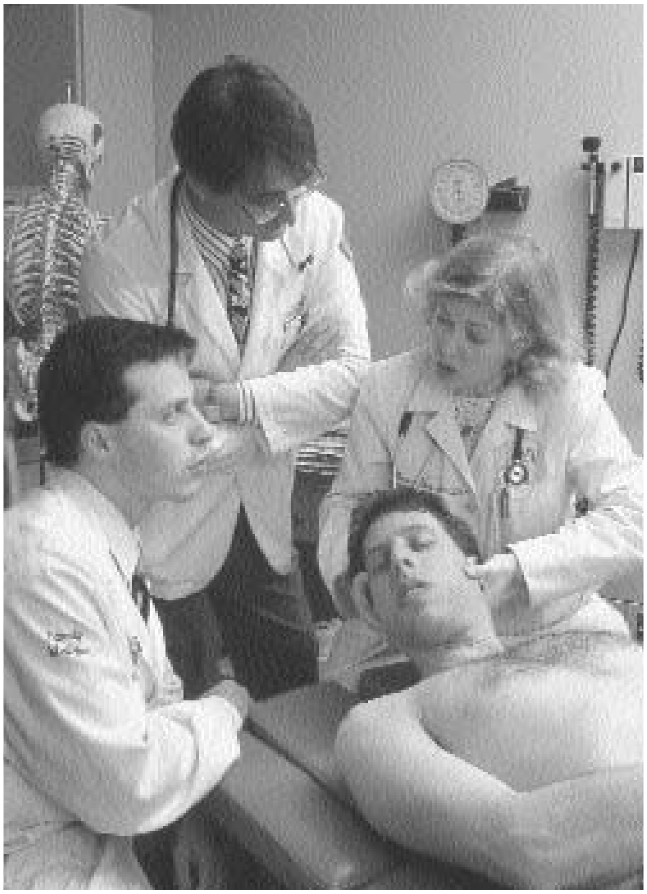
This economic model also provides the interesting insight that people to some extent choose the length of their life. When deciding whether to smoke tobacco, drink alcohol, take drugs, eat cholesterol-rich food, skydive, or engage in any risky behavior, individuals weigh the utility benefits of the risky behavior against the utility costs of the behavior in terms of lost length and quality of life.

This is a radically different perspective on health and health behaviors than those that dominate the fields of medicine and public health. Medicine typically studies the role of exogenous factors like genetics, bacteria, and viruses on health and longevity. The public health literature often engages in advocacy; those in the field of public health typically believe that individuals should act to maximize their health. For example, public-health officials frequently issue guidelines stating that a certain activity lowers health, and therefore people should not participate in that activity. In contrast, economists believe that individuals seek to maximize their overall utility. Since health is one determinant, but not the only determinant, of utility, economists accept that people may rationally decide to participate in an activity that lowers their health and shortens their life.

There is a strong, positive correlation between socioeconomic status and health. Education appears to have a stronger correlation with health than any other measure of socioeconomic status, including occupation and income. There are three possible explanations for this correlation:

1. education increases health
2. people with better health invest in more education because they have longer lifetimes over which the investment can pay off
3. unobserved factors (such as genetics or household influences) lead some people to be healthy and well-educated and others to be unhealthy and poorly educated.

Arguments that education increases health can be classified into two categories. The first is that education increases allocative efficiency in the production of health (i.e., better educated people, presumably because they have access to better information, choose a different set of inputs that allows them to produce more health). The second is that education increases productive efficiency



In economics, health is viewed as a capital stock that can yield an output of productive years.

(that is, better-educated people can produce more health using the exact same inputs). The strong correlation between education and health is still not well understood, and it is not yet clear whether education increases allocative efficiency or productive efficiency or has no role in the production of health.

Failures in health care markets. Five factors differentiate the study of health from the study of other GOODS and services. First, consumer demand for health care is a derived demand. Second, there are many EXTERNALITIES in health markets. Third, consumers suffer a severe lack of information in health markets. Consumers must visit physicians (sometimes, multiple physicians) to learn which, if any, health care goods and services they should consume. Fourth, there is considerable uncertainty, both on the part of patients and physicians, about the benefits and costs of various health-care goods and services. Fifth, the person who consumes health-care goods and services often pays little of the total price.

Some of these characteristics are also found in other markets, but health-care markets are special in exhibiting so many potential market failures. The complications inherent in markets in which patients consume medical goods and services on the advice of their doctors, with the bill paid by an insurer or the government, has led one commentator to ask how well would restaurants work if one person ordered the meal, a second prepared it, a third ate it, and a fourth person paid for it.

Externalities abound in markets for health care. For example, when a person receives an influenza vaccine, everyone in that person's community enjoys a positive externality, because the spread of the flu has been hindered; every person's risk of contracting the flu has fallen thanks to the inoculation of one individual. The socially optimal quantity of vaccines has been provided when the marginal social costs of the vaccine equal the marginal social benefits. Market failure occurs because when individuals decide whether to get vaccinated, they take into account only their marginal private benefits; they do not tend to take into account any benefits to others. For this reason, consumption of vaccines and other treatments for infectious diseases tend to be lower than what is socially optimal. Governments seek to solve this market failure by subsidizing vaccines and/or requiring them by law.

Consumers face considerable uncertainty about their future health care expenditures. One is always at risk of exogenous health shocks, such as being hit by a car. Because many people are risk-averse, health insurance is very attractive. Health insurance allows people to transfer the financial risk of health shocks to insurance companies. Health insurers are willing to assume this risk because as long as the health shocks of their enrollees are independent, insurers can spread the risk of health shocks over large numbers of enrollees and enjoy considerable confidence about the amount of future claims.

A difficulty for private markets in individual health insurance is that enrollees may have private information about their future health care expenses. People with private knowledge of high future expenses will be more likely to buy insurance that is actuarially fair for the population, whereas people with private knowledge of low future expenses will be less likely to buy such insurance. From the perspective of the insurer, this is adverse selection; the people selecting the insurance are those the insurer least wants to enroll, those who are the most unexpectedly costly.

Such adverse selection results in insurers paying higher-than-expected claims, and then raising premiums in the next period. This can lead to a death spiral in insurance premiums; as they rise, only those with the highest expected health-care costs increasingly buy the insurance, causing costs to rise further and forcing additional premium hikes. At the extreme, only the very sickest are covered and the insurance market disappears.

To alleviate the risk of such adverse selection, the governments of many developed countries sponsor universal health insurance. In such programs, adverse selection is impossible because selection is impossible; participation is mandatory. The UNITED STATES is unusual among developed countries for not offering universal health insurance. Instead, most Americans receive their health insurance through an employer. Specifically, employers sponsor group health insurance. Risks are pooled among the employees, and insurers set premiums based on their previous experience with similar pools of employees. The total cost of the employer-sponsored insurance is divided between employer and employees. To some extent this arrangement lessens the opportunity for adverse selection because to select into a specific health insurance plan one must be hired by an employer sponsoring such a plan. A significant percentage of Americans lack health insurance because they are not covered by employer-provided health insurance and do not qualify for government health insurance programs for the elderly (Medicare) or poor (Medicaid).

The consumer's lack of information introduces a principal-agent problem into markets for health care. The agent is the physician, and the two principals are the patient and the payer (whether a private health insurance company or a government insurance program). The patient wants the physician to provide treatment, prescriptions for drugs, and referrals for specialist care to the extent that the patient's out-of-pocket cost equals the patient's benefit. The interest of the patient differs from that of the payer, who wants to minimize its long-run costs. It has been alleged, with weak empirical support, that physicians are capable of exploiting consumer ignorance by inducing demand, that is, convincing patients to purchase goods or services that they do not need but that enrich the physician.

Some payers have tried to solve the principal-agent problem by giving the physician a fixed per-patient (or capitated) payment, in most cases based on patient health status. A physician is allowed to keep whatever amount is left after treating the patient; this pay structure can align the incentives of the physician with those of the payer.

MORAL HAZARD is another complication in health-care markets. Insured patients do not bear the full financial cost of medical care, which creates an incentive for patients to invest less in avoiding illness, and to consume more medical care, than is socially optimal. The socially optimal consumption of medical care occurs when the marginal social benefits of consumption equal the marginal social costs. The complication is that with insurance, patients' out-of-pocket costs are often far less than the marginal social costs, and as a result, patients have an incentive to consume an amount greater than is socially optimal. Insurers seek to restrain such moral hazard by covering only health care expenditures beyond some large initial deductible, and/or by requiring patients to pay a certain amount, called a co-payment, for each covered good or service consumed.

Managed care is a popular solution to the information asymmetries and other market failures inherent in health markets. A managed-care organization (e.g., a health-maintenance organization) regulates the relationship between health-care providers and the insured, either by setting conditions under which services will be covered, limiting access of the insured to a set of providers, or creating financial incentives for providers to act in a manner that minimizes long-term costs.

Managed care has spread rapidly in the United States since the early 1980s; today the vast majority of Americans with health insurance are enrolled in a managed-care plan. While managed care developed in the private insurance markets of the United States, the public health insurance programs of other developed countries have adopted methods of managed care. From the perspective of the insured, managed care can be less attractive because it tends to limit the choice of providers. Also, patients fear that the financial incentives for providers to act in a manner that minimizes the long-term costs of the payer will encourage the provider to provide less care than is socially optimal.

However, it has been argued that there is a benefit from managed care's tendency to offer better coverage for preventive services; managed care organizations have an incentive to provide preventive care to the extent that it decreases long-term costs.

Information asymmetries also exist with respect to the efficacy of certain treatments. In the 19th century, hucksters roamed the United States, touting elixirs as cures for a variety of ailments. In the 20th century, most developed countries began to regulate the market for pharmaceuticals, requiring proof from manufacturers that DRUGS were both safe and efficacious before allowing them to be sold. In designing such regulations, governments face a trade-off between requiring lengthy review periods to guarantee efficacy and safety before allowing drugs to be sold, and allowing potentially beneficial drugs to reach market as quickly as possible.

Another strategy governments have used to improve the flow of information to consumers in health markets is to sponsor public health departments, which disseminate information about preventing the spread of communicable disease and the health consequences of certain behaviors.

The RAND Health Insurance Experiment. Much of what economists know about moral hazard and insurance comes from the Health Insurance Experiment (HIE), which was funded by the U.S. Federal Government and conducted by the RAND Corporation, lasted from 1974 to 1982, and has been described as the largest randomized experiment in the history of economics.

Two of the major objectives of the HIE were to determine: 1) the effect of cost-sharing between the insurer and the insured on costs and patient health; 2) the extent to which lower utilization of health care services by enrollees of health maintenance organizations (HMOs) was due to either favorable selection (that is, healthier people joining HMOs) or to HMO enrollees receiving fewer health-care services than people of equal health status in traditional health-insurance plans.

The HIE was a randomized field trial; approximately 2,000 families were assigned to various insurance plans. The insurance plans differed in two dimensions. The first was the co-insurance rate (the fraction of the total health-care bill paid by the insured), which was set at 0 percent (free care), 25 percent, 50 percent, or 95 percent. The second dimension was the maximum out-of-pocket expenditure per year (after which the insurance plan covered 100 percent of charges), which was set at 5 percent, 10 percent, or 15 percent of family income, up to a maximum of $1,000. Some participants were randomized into HMOs that had zero cost-sharing. Seventy percent of the participants were enrolled for three years and the remainder for five years.

The results of the HIE indicate that cost-sharing matters; the more families had to pay out-of-pocket, the fewer services they used. This was true even for services one might consider necessities, such as hospital admissions. An exception, however, was hospital admissions for children: these were not sensitive to out-of-pocket cost. The decreased use of health-care services that accompanied cost-sharing did not result in worse health for the average person. However, those who at time of enrollment were both poor and sick enjoyed health gains if they were randomized into the plan offering completely free care.

The HIE also found that there was no evidence of favorable selection into HMOs; people who voluntarily enrolled in HMOs had similar utilization to those who were randomized into an HMO. Managed care appeared to result in lower utilization; those randomized into an HMO had 39 percent fewer hospital admissions and 28 percent lower estimated expenditures than comparable people randomized into the zero co-payment plan (free care). With the possible exception of those who at time of enrollment were both sick and poor, this reduced service use did not appear to have negative health effects. However, patients randomized into HMOs tended to report lower satisfaction with their health care plan than those randomized into traditional insurance plans.

The findings of the HIE have been tremendously influential in policy circles and the health-insurance industry. The findings generated optimism that managed care could reduce utilization and spending without worsening enrollee health. Moreover, the results confirmed the importance of cost-sharing for insurers and payers seeking to reduce utilization and costs without affecting enrollee health.

Health policy for special populations. Policymakers have shown special interest in the health care provided to three groups in society: children, the elderly, and the disabled. Children are treated as special because early childhood health has been linked to health and welfare throughout later life. Out of a sense of fairness, policymakers often seek to establish a minimum threshold of health for children, to ensure that all citizens have roughly equal opportunity in life. Furthermore, while policymakers often are concerned that adults may seek government health-insurance coverage to avoid paying for insurance out of their own pocket, children are incapable of such calculating behavior. For these reasons, virtually all developed countries guarantee prenatal care for pregnant women and health care for infants.

Policymakers also take special interest in the health of the elderly. The market for health care to the elderly is characterized by the extra complication that some elderly individuals suffer from Alzheimer's disease or dementia, and are not always capable of making rational decisions. This, combined with the fact that individuals are credit-constrained toward the end of their lives, suggests that the elderly are among the most vulnerable in society. A political economy explanation for the interest of policymakers in providing health care to the elderly is that the elderly tend to be a powerful and influential voting bloc. For these reasons, virtually all developed countries guarantee health-insurance coverage to elderly individuals.

Disability is loosely defined as the inability to work for pay because of poor physical or mental health. Disability policies are designed to achieve one or more of the following goals: offset lost earnings through income transfers; require employers to accommodate disabled individuals in the workplace; and retrain disabled individuals for jobs in which their limitations would not prevent employment. In essence, disability benefits represent a social insurance policy; all taxpayers contribute to those unfortunate enough to become disabled. Policymakers, concerned about the incentive to feign disability in order to receive income transfers, typically require physician certification of disability and waiting periods before benefits may be received.

Many of the discussions regarding health policy focus on issues of fairness and equity of access and care. While the tools of economics can be effectively used to assess the efficiency impacts of alternate health-care policies, the discipline of economics is silent on normative questions of equity.

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Heckman, James (1944–)

LABOR ECONOMIST AND econometrician, James Heckman pioneered the study of the econometric problem of selection. Economists often wish to know the relationships between variables in the population, and because of selection, they are forced by necessity to measure the relationships using samples, which are in some important ways, non-representative of the population.

For example, suppose one wanted to know how age affects WAGES. The problem is that at higher ages many people choose to drop out of the labor force. The people who stay in the labor force are likely those able to earn the highest wages. This is a problem of missing data on wages for certain individuals.

Heckman perceived that this problem of missing data is due to calculated decisions (selection) on the part of the individuals involved. In this example, people decide whether to stay in the labor force based on the costs and benefits. People who calculate that their utility is maximized by working will work, and people who calculate that their utility is maximized by retiring will retire. If one were to naively estimate the effect of age on wages by regressing wages on age for all workers, that calculation would suffer from selection bias, because at high ages, wages are likely only observed for people who have the highest earning potential.

The challenge for the researcher is to find some way to adjust the estimates derived from a select sample to account for the selectivity of the sample. Heckman developed techniques to correct the econometric problems associated with sample selection. Perhaps the most widely used technique created by Heckman is the two-stage procedure dubbed the "Heckit."

In the example given above, the first stage would consist of estimating the probability that an individual works as a function of age and other variables using a sample that includes both people who work and those who do not work. In the second stage, one would estimate wages as a function of age and a function of the estimated probability that the individual works that was calculated in the first stage, using the sample of workers. In essence, the coefficient on age in the naive regression of wages on age suffered from omitted variable bias; Heckman's solution is to add a variable reflecting the probability that the observation appears in the sample.

Heckman has applied these methods to program evaluation, in which one must estimate how government programs have affected individuals when one does not know how the participants would have fared if they had not been enrolled in the program. His techniques have also been widely applied in the study of education, choice of occupation, and job training. His research also spans the econometrics of duration models, with a particular emphasis on the unobserved heterogeneity that causes some people to spend more time unemployed than others.

Heckman was born in Chicago, Illinois. He studied mathematics at Colorado College and earned a Ph.D. in economics from Princeton University. He has served on the faculties of Columbia University, Yale University, and the University of Chicago. In 2000, he was awarded the Bank of Sweden Nobel Prize in Economics "for his development of theory and methods for analyzing selective samples" that "are now standard tools, not only among economists but also among other social scientists."

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Hecksher, Eli (1879–1952)

A SWEDISH ECONOMIST and a very influential thinker of his time, Eli Hecksher was a prolific writer and had to his credit over a thousand publications. His educational background took him from training under David Davidson at Uppsala University to Gustav Cassel at Stockholm University. Hecksher, however, decided to pursue economic research on his own terms.

Among his publications, Hecksher's work on MERCANTILISM accorded him some notoriety. Originally published in 1931, and later translated into German and then into English in 1934, this work drew a lot of attention, as it presented a case for the origins of mercantilism in the formation of nations in Europe and their expanding influence over the rest of the world. Heckshers presented a case for mercantilist policies as the logical extension of the process of colonization pursued by the European countries.

Hecksher wrote a paper in 1919 titled "The Influence of Foreign Trade on the Distribution of Income." This paper became the basis for the writings of Bertil OHLIN, who went on to receive the Nobel Prize in Economics in 1977. When Hecksher was a Professor at the Stockholm School of Business, Ohlin was his student.

Together Hecksher and Ohlin are credited with explaining how international trade takes place, in a manner that refined trade theories of the 18th and 19th centuries. This theory focused on the ability of a nation to produce a commodity using the most abundant factor of production. Thus, trade between countries would not simply look at the comparative cost of producing commodities, but instead factor the endowment of different countries. A labor-abundant country would produce a commodity that uses labor intensively, and a capital-abundant country would produce a commodity that uses capital intensively. This theory also spawned some of the seminal work of the 20th century, such as Factor Price Equalization by Paul SAMUELSON.

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Hegel, Georg W.F. (1770–1831)

GEORG WILHELM FRIEDRICH HEGEL goes down in history as one of the world's greatest thinkers and philosophers, yet his philosophies are brooding and often meandering juxtapositions of harshness and even darkness. His writings, albeit extremely complex in nature, earned him the title of "Father of the German Idealist School of Thought." This train of thought, generalized, is called the Dialectic Branch of Philosophy.

Author Peter Landry attempts to define Hegel's philosophy in layman's terms. Hegel, says Landry, "departed from the earlier Fichte-Schelling analysis by stating that it was reason that should take over, not your reason or my reason, but the World Reason, Universal Consciousness; an Absolute. This Absolute, while it governs the individual (the Ego) and all the world around the individual (the non-Ego) . . . is synonymous with Reason (Ego) and Reality (non-Ego)."

Hegel's Dialectic Logic stems from this premise. Based on a reasoning-and-disputing approach, it is based in part on Plato's and Socrates' teachings, urging "absolute contraries" in order to find inaccuracies in all arguments. Through various steps including the Theory, then the Antithesis of that Theory, a conclusion or a truth could be arrived at—perhaps by finding the most practical factors and melding them together (or "Synthesizing" them) into a conclusion.

Hegel spent almost his entire adulthood diagnosing the most complex of philosophies and adjusting them to his own rationale and beliefs—the existence of man and his fundamental being; the world that developed through a series of events (or economic stages). For example, he saw mankind as having evolved through four episodes in its history: from subservience (the Oriental Empire), to a more republic-oriented state of the individual (the Greek Empire), to a political subservience (the Roman Empire), and finally to a condition where individual and state become one (the Germanic Empire).

Unwavering and severe, Hegel's views resemble something of a political survival of the fittest. "Since a political unit must act through the wills of individuals," Hegel wrote, "the hero represents the Spirit in its march through history, no matter how unconscious he may be of his mission or how unappreciated his deeds are by his fellow men."

Examining this statement, which is a crux to the Hegelian School, it is not surprising to learn that Adolf Hitler was a devout Hegelian. In Landry's estimation, "If one needs an example of a philosophy which can lead millions of people to ruin, then one need look no further than the philosophy of Hegel."

Hegel was the son of a Stuttgart (GERMANY) civil servant and a mother whose devotion to Protestant piety was unwavering. Both parents encouraged Hegel, in his early years, to study for the clergy but his mind had already become infatuated with the airy and colorful philosophies of Greek and Roman poets. Nevertheless, in 1788, he entered the Tubingen Seminary to please his parents.

At the seminary, Hegel befriended two fellow students who would prove to impact his future direction. One, Friedrich Holderlin, would become a world-famous romantic poet of aesthetic leanings; the other, Friedrich W. von Schelling, would make his mark as one of Germany's luminary philosophers. "These friendships clearly had a major influence on Hegel's philosophical development," explains the *Stanford Encyclopedia of Philosophy*, "and for a while the intellectual lives of the three were closely intertwined."

By the time Hegel received his degree in philosophy and theology from the seminary in 1792, he had already abandoned his pursuit of the ministry. At Tubingen, he had been enraptured by the limitless horizons of philosophy, a field that he felt stretched with no direction, begging (he felt) for some definition—at least some guide-posting on its perimeter to lead others to follow with a compass into the unknown. He moved to Berne, SWITZERLAND, where, for the next nine years, he obsessively threw himself into the deepest recesses of the mysterious subject. During this time, he was forced to tutor an ongoing number of students to allow him funds for lodging and food.

When his father passed away (early 1800), Hegel received a small fortune, which was large enough for him to be able to dismiss his students and concentrate on the cultivation of philosophy.

"Hegel's aim was to set forth a philosophical system so comprehensive that it would encompass the ideas of his predecessors and create a conceptual framework in terms of which both the past and future could be philosophically understood," explains the Encarta Learning and Research Center. "Such an aim would require nothing short of a full account of reality itself." Over the following 30 years of his life, Hegel strove to frame that "reality," what he called the Absolute—to define it, to demonstrate its purpose in nature and history, and to communicate its infiniteness.

The first decade of the 19th century brought Hegel through various stages in not only his advancing independent research, but also in his professional and private life. From 1801 to 1806, he taught and lectured at the University of Jena (Germany), while turning out exhaustive writings on his studies. Much of his findings up to that time were put under one cover when he published *The Phenomenology of Spirit* in 1807. *Spirit* was, simply put, an explanation of what he saw as Reason.

Fleeing the devastation caused by the invading French Army under Napoleon, Hegel fled to the Bavarian Alps. There, in Bamberg, he edited the local newspaper, *Zeitung*. When the war calmed, he relocated to northern Germany, accepting a job as headmaster and philosophy professor at the Nuremberg Preparatory College in 1808. He would remain with the school until 1818, in between marrying, siring four children, and writing another book, *The Science of Logic*.

Actually a series of three books—published respectively in 1812, 1813, and 1816—*Science* refines his statements made earlier in *The Phenomenology of Spirit*. The triad explores his developments on three interrelated doctrines, "Being," "Essence" and "Concept," and is rather a transcendental look at the nature of man.

According to Hegel, "the state is the living God and individuals but passing shadows in which conflict and war are affirmations of the vitality of the state." This pseudo-militaristic philosophy was put to the test in Hegel's native Germany much later in world wars.

In 1818, Hegel accepted the chair of the philosophy department at the famed Heidelberg University, then two years later, took a similar position at the University of Berlin. He compiled the thrust of his knowledge in the compendium, *Encyclopaedia of Philosophical Sciences*, following it up with what would be his final major work, *Elements of the Philosophy of Right*. This, considered by many to be his masterpiece, interweaves the philosophy of law, politics and sociology with the philosophy of history.

Although his life came to an end when he died from a cholera plague at the age of 61, his work continues to be studied today for its efficiency, depth, and diverse views of the human animal.

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hegemony

FIRST DEVELOPED BY THE Italian Marxist theorist Antonio Gramsci during the late 1920s and 1930s while he was in prison because of his opposition to fascism, the concept of hegemony has enjoyed a vast popularity throughout the 20th century. Coined in his *Prison Notebooks* due to Gramsci's intellectual search for the reasons why the Italian working-class had deserted democracy and yielded to fascism, the term has not remained restricted to political theory but it has been widely applied to a number of cultural fields and disciplines: from history to literary studies, from media to film theory.

Hegemony defines the winning of consent to unequal class relations, which it makes instead appear as natural and fair. Dominant elites in society, including but not limited to the ruling class, maintain their dominance by securing the consent of subordinate groups, such as the working class. This produces a split consciousness in the members of a subordinate group. In Gramsci's words, the "active man-in-the-mass" has one consciousness "which is implicit in his activity and which in reality unites him with all his fellow-workers in the practical transformation of the real world." Yet, at the same time, he holds another consciousness which, "superficially explicit or verbal, . . . he has inherited from the past and uncritically absorbed."

The process of hegemony "holds together a specific social group, it influences moral conduct and the direction of will, with varying efficacy but often powerfully enough to produce a situation in which the contradictory state of consciousness does not permit any action, any decision, or any choice, and produces a condition of moral and political passivity." Hegemony, therefore, does not function mainly by coercion: subordinate groups are dominated through their consensus and collusion thanks to their desire to belong to a social, political, and cultural system.

The central focus of hegemony is not the individual subject but the formation of social movements and their leadership. As Michael Denning has explained, the construction of hegemony is a matter "of participation, as people are mobilized in cultural institutions—schools, churches, sporting events—and in long-term historic projects—waging wars, establishing colonies, gentrifying a city, developing a regional economy." The participation in such a movement depends on how the patterns of loyalty and allegiance are organized, conveying specific cultural practices in a new historical bloc, by offering new values and world visions, such a historical bloc "creates the conditions for a political use or reading of cultural performances and artifacts, the conditions for symbolizing class conflict."

In theorizing the concept of hegemony, Gramsci was clearly concerned to modify the economic determinism typical of Marxist social theory. Class struggle must always involve ideas and ideologies and historical change is brought about by human agency; economic crises in themselves would not be able to subvert capitalism. Gramsci shows that there is a dialectic between the process of PRODUCTION and the activities of consumption.

Hegemony is not exclusive property of the bourgeoisie. The working class can develop its own hegemony as a strategy to control the state by taking into account the interests of other oppressed groups and social forces and finding ways of combining them with its own interests. Working for the formation of a counterhegemonic discourse implies considering structural change and ideological change as part of the same struggle. The labor process may well be central for the class struggle but it is no less crucial to address the ideological struggle if the masses of the people are to reject their internalized "false consciousness" and come to a consciousness allowing them to question the political and economic assumptions of the ruling elites.

However, this process of consciousness formation requires time and intellectual strengths as people have internalized the assumptions of ideological hegemony: what is happening in society is common sense or the only way of running society. The basic beliefs and value system at the base of capitalist society are seen as either neutral or of general applicability in relation to the class structure of society. In the establishment of a counterhegemony that can break the hold of the elites over subordinate groups, Gramsci reserved a relevant role to intellectuals. The creation of a mass consciousness was an indispensable premise for the mass participation in the future revolution and, to this effect, that there should be a strong unity between the intellectuals and the population. Critical self-consciousness requires the creation of an intellectual elite as the human mass cannot become independent without organizing itself.

Intellectuals must be "organic" to the masses: they should work out and make coherent the principles and the problems raised by the masses in their activity, thus forming a cultural and social bloc. This unity and mutual dependence is at the core of what Gramsci describes as "the philosophy of practice." It does not tend to leave "the simple [people] in their primitive philosophy of common sense, but rather to lead them to a higher conception of life. If it affirms the need for contact between intellectuals and simple [people] it is not in order to restrict scientific activity and preserve unity at the low level of the masses, but precisely in order to construct an intellectual-moral bloc which can make politically possible the intellectual progress of the mass and not only of small intellectual groups."

Gramsci's concept of hegemony crucially advanced Marxist theory by showing that Karl MARX was inaccurate in assuming that social development always originates form the economic structure and that the revolution could be the result of the spontaneous outburst of revolutionary consciousness among the working class. The usefulness of hegemony, however, is not limited to Marxist theory, alerting us, as it does, to the routine structures of everyday common sense, which work to sustain class domination and tyranny.

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Hewlett-Packard

IN A GARAGE IN PALO ALTO, California, engineers William Hewlett and David Packard started a company with $538 in 1939. Today, Hewlett-Packard (HP) operates in 120 countries, produces almost 30,000 technology products, and was ranked as the 70th largest company in the world by *Fortune* magazine. Hewlett and Packard first developed testing devices for clients such as Walt Disney, but HP's pioneering products include the oscilloscope, handheld scientific calculators, business computers, and LaserJet printers.

In 1977, chief executive John Young led Hewlett-Packard into the computer age. Young presided over the introduction of HP's early desktop mainframe computers, LaserJets, and personal computers.

Despite a 60 percent share of the laser-printer market, dominance in the ink-jet printer market, a $13-billion valuation, and a great reputation for reliability, HP's revenues dropped in the 1980s, as did those of competitor IBM. Adaptation to the global economy was needed. Young retired and Lewis Platt took over in 1992. A 1984 Cannon partnership led to reaching LaserJet and ink-jet markets globally.

After the death of founder Packard in 1996, Hewlett-Packard paid $1.3 billion to acquire Verifone, a leading manufacturer of credit-card authorization systems and devices. The move marked the full-scale HP entry into the most sacred area of capitalism, its medium of exchange, or money. In 1999, Hewlett-Packard spun off its testing, measurement, and medical technology unit as Agilent Technologies. More recently, HP has merged with Compaq Computers, one of the early leaders in producing clones of IBM PC computers in the 1980s.

HP Labs played a key role in developing the JPEG (Joint Photographic Experts Group) standard for the transfer of digital images over the internet, for instance—the payoff comes in the form of licensing rights to their intellectual property. HP used its background in measurement and standards testing to help develop EISA, or Extended Industry Standard Architecture after 1988. As one of the founding nine technology companies, HP had a strong input into how the standards for future technology integration would look. In the new millennium, HP continues to stir up the market with mergers, spin-offs, and acquisitions.

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Hicks, Sir John R. (1904–89)

AWARDED THE 1972 NOBEL PRIZE in Economics, Sir John Richard Hicks pioneered contributions to the general economic EQUILIBRIUM theory and the WELFARE theory. He shared the award with Kenneth J. ARROW.

Hicks' classic work, *Value and Capital* (1939) attests to the economic forces that, in his theory, balance one another rather than merely reflect trends. The content is widely used by public and private sectors and utilities to determine foreign trade, investment policies and prices. "The trail of the eternally eclectic John Hicks is found all over the economic theory," explain economists at New School University. For example, in looking at the role of the earlier-established accelerator theory in affecting growth and income, Hicks concluded that the accelerator theory may induce various fluctuations in the level of output. Using that base as a foundation to subsequent perceptions, he then developed the IS-LM model. This model provides a frame for equilibrium in the economy by looking at equilibrium in the goods and services markets (the IS curve) and equilibrium in the money markets (the LM curve). Where both these markets meet—or are in equilibrium—is the true level of output.

In short, the IS-LM model, which was one of the main components in his winning the Nobel Prize, compares output against rate of interest. This model focuses on the assumptions concerned with investment, savings and supply-and-demand, pinpointing a cross-section where all elements meet.

Aside from winning the Nobel Prize, Hicks was knighted by Queen Elizabeth II in 1964 for his academic contributions as a subject of Great Britain.

Hicks was born in Warwick, England. The son of a columnist on a local newspaper, he grew up in a very erudite way, taught to see the world in an exciting manner, a world offering many possibilities for success. A brilliant student early on, he attended Clifton College from 1917 to 1922, then Balliol College, Oxford, between 1922 and 1926. An expensive education, most of it was made possible through scholarships that he successively earned for his achievements.

Hicks felt that his interests in literature and history—most likely incited by his father's literate background—needed to be addressed. The study of philosophy interested him, as well, so much so that in 1923 he changed his course of study to philosophy, politics and economics. The combining elements of these three subjects were being woven into a new school of focus at Oxford.

After receiving his degree, he accepted a lectureship at the London School of Economics in 1927, simultaneously serving as a labor economist, and conducting research on industrial relations. In 1930, after the London School began a resurgence of new ideas and thoughts

Sir John R. Hicks, son of an erudite writer, who brought new conceptions to economics, such as the IS-LM model.

closer to what Hicks believed, he accepted a full-time teaching position as professor of economics.

With new conceptions of economics occupying his interest, Hicks felt he needed time away from teaching to "put it all together," as he explains in his autobiography."[When] an opportunity arose for a university lectureship at Cambridge, I took it." At that time, he also introduced his conjectural variations hypothesis as a way of uniting various theories of the imperfect condition syndrome. This theorem was the threshold to the work that would earn him many admirers.

During his Cambridge years (1935–38), Hicks focused on compiling his research findings, readjusting and realigning them, so that by 1939 he published his *Value and Capital*.

Hicks spent the next eight years as professor at the University of Manchester (England), broadening his scope on welfare economics and its association with social accounting. The year 1946 saw him back at Oxford—where he would remain through 1971—first as a research fellow of Nuffield College, then as Drummond Professor of Political Economy, and lastly as a research fellow of All Souls College.

During his latter Oxford years, and after retirement, he wrote on international trade and growth and fluctuation. With his wife, he traveled abroad in order to research articles that he eventually wrote on applied economics in developing countries. In 1950, he became a member of the Revenue Allocation Commission in Nigeria, and in 1954 he freelanced as financial consultant to Jamaica.

Besides being a recipient of a host of honors—as fellowship with the British Academy, as a member of the Accedemia del Lincei in Italy, as president of the Royal Economic Society, and many more—Hicks is the author of a large number of additional notable works. Among them are *Taxation and Wealth* (1941), *The Problem of Budgetary Reform* (1949), *A Revision of Demand Theory* (1956) and *Capital and Growth* (1965).

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Hitachi, Ltd.

BEGUN IN 1910 AS A SINGLE mechanic's shop in Tokyo, Hitachi, Ltd. has since risen to become one of the world's largest and most identifiable technology companies. Some 95 years later, now with more than 300,000 employees, it ranks as number 32 on *Fortune* magazine's 2002 list of Global 500 largest companies in the world. The company's values are encompassed in its promise to customers of the new millennium: "Reliability and Speed."

The founder of Hitachi, Ltd., Namihei Odaira, designed the Hitachi trademark logo even before the establishment of the company in 1910. It was his belief that a mark was necessary to win the trust and confidence of the people as a symbol of quality products.

Odaira used the two Chinese characters *hi*, meaning "sun" and *tachi*, meaning "rise" to form the mark by superimposing one character on the other and enclosing them in a circle. The four barbs protruding at the four points of the compass signify the sun's rays. The mark was designed to capture Odaira's vision of a man standing before the rising sun, planning a better future for all.

To meet the ever-changing demands of the times, the corporate structure of Hitachi, in the early 2000s, was undergoing a re-mapping, according to its president and director, Etsuhiko Shoyama. The changes are, he says, "brought about by the rapid pace of the progress of digital technology, information systems technology and network technology."

Hitachi reported revenues of almost $64 billion in 2001, derived from the following seven product and service areas: Information & Telecommunications Systems (i.e., systems integration); Electronic Devices (i.e., medical electronics equipment); Power & Industrial Systems (i.e., nuclear power plants); Digital Media & Consumer Products (i.e., microwave ovens); High Functional Materials & Components (i.e., printed circuit boards); Logistics & Service (i.e., general trading); and Financial Services.

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Hobson, John Atkinson (1858–1940)

ECONOMIST AND JOURNALIST, the author of more than 40 books, principally on economic and social questions, John Hobson stands in the ranks of British economists of the early 20th century second only to J.M. KEYNES, upon whom he had an important influence. His contemporary reputation, however, rests mainly upon his status as one of the earliest and most significant theorists of IMPERIALISM as a political phenomenon.

Born in Derby in northern England, the son of a provincial newspaper proprietor, Hobson was educated at Oxford University and worked as a schoolteacher and university extension lecturer. His conventional political views were transformed firstly by his exposure to the works of John Ruskin and Herbert Spencer, and subsequently by his membership of the moderate socialist Fabian Society. His involvement in Fabianism led him to the systematic study of political economy, and in 1889 he published his first major work, *The Physiology of Industry*, with A.F. Mummery. This book contained the first systematic exposition of Hobson's "under-consumptionist" thesis, which he was to spend much of his life attempting to defend.

Under-consumptionist theories were by no means new to 19th-century economic thought, but Hobson's was one of the more sophisticated and persuasive examples of the genre. Market economies, he maintained, were not self-regulating as classical political economy had assumed, but tended to result in the accumulation of excessive amounts of capital in the hands of a wealthy elite. This "mal-distribution" of income was the principal cause of slumps, depriving as it did the masses of purchasing power and manufacturers of profitable markets for their goods.

Over-saving and over-investment, in Hobson's view, could best be prevented by state regulation of the economy, in particular by means of redistributive taxation. The transfer of wealth from the richest to the poorest members of society was not only desirable on ethical grounds, but would create a steady source of demand and smooth out oscillations in the trade cycle. The raising of the average standard of living was thus as much in the interests of the well-to-do class as of the working class, especially as it offered the only practical method of avoiding a destructive clash between the classes.

After the Boer War (1899–1902) Hobson extended his under-consumptionist thesis to the field of foreign affairs. In the book for which he is best known, *Imperialism: A Study* (1902), he drew connections between the vast expansion of the British Empire from the 1880s onward and the export of British capital overseas. Because the wealth-monopolizing classes were unable to find profitable investment outlets at home, they increasingly looked to African and Asian lands for suitable opportunities, and applied pressure on the government to annex these territories to protect their assets.

Hobson acknowledged that imperial trade contributed little to national prosperity: It was nonetheless, he contended, highly profitable for the small minority of well-connected investors engaged in it. The costs—in the form of colonial wars, bloated military establishments and legions of unproductive imperial administrators—were borne by the rest of the community, that derived no overall benefit from the possession of empires. Hobson's proposed solution was the same as in the previous instance: the raising of living standards at home to absorb surplus wealth and expand the domestic market.

Hobson's importance lies in a catalyzing influence upon the ideas of others, rather than as the founder of a school of his own. His theory of imperialism, for example, was taken up in 1916 by V.I. LENIN, who used it to explain why the inevitable crisis of capitalism—a notion to which Hobson himself did not subscribe—had failed to occur. Similarly, his insistence on the need to stimulate demand and raise the purchasing power of the masses was echoed by Keynes, who nonetheless rejected Hobson's proposition that over-saving rather than under-investment was to blame for economic depressions. But as a theorist who stressed the interconnectedness of economics, politics, international relations and ethics, Hobson helped to lay the foundations for a more holistic and interdisciplinary approach to social science, an emphasis that has led to a recent revival of interest in his ideas.

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Hodgskin, Thomas (1787–1869)

THOMAS HODGSKIN'S CONTRIBUTIONS to political economy and his influence on socialist and anarchist thought were the subject of renewed interest in the 1990s, not least because they resist a neat classification into any specific school of thought. An associate of Jeremy BENTHAM and James Mill, he influenced an entire generation of progressive and radical thinkers, most notably Karl MARX.

Throughout his life, Hodgskin had been an important advocate for educational reform and especially for the diffusion of practical science among the working class. He edited (with J.C. Robertson) the *Mechanics Magazine,* which was instrumental in launching numerous Mechanics Institutes (first founded in Glasgow in 1806 and London in 1810) in which an inexpensive, modern education could be obtained. Mechanics Institutes quickly opened in several Scottish cities, and by the 1820s, there were many institutes throughout Britain. Hodgskin published *Popular Political Economy* in 1827 based on his lectures at the London Mechanics Institute. In 1824-5, Hodgskin edited *The Chemist* in which he attacked the scientific establishment's exclusion of the working classes from scientific knowledge and education.

Hodgskin's first book was an anarchistic critique of naval discipline (*An Essay on Naval Discipline*, 1813) which he experienced first-hand during the Napoleonic Wars. Following suit with a book on Germany (*Travels in the North of Germany*, 1820), Hodgskin then directed his attention to political economy with what is probably his most well-known work: *Labor Defended Against the Claims of Capital* (1825). It is here that he articulated his critique of capitalism which, together with *Popular Political Economy* (1827), was an important influence on Marx. Furthermore, the latter book has often been considered to be the first textbook of socialist economics.

Hodgskin was certainly a radical and an anti-capitalist, but his views significantly diverge from those of the proto-socialists of the Chartist movement; he did not argue for a classless society and directed his critique at the specific practices of capitalist employment that gave rise to urban squalor. Hodgskin held that economic justice requires political freedom—no dictatorship of the proletariat here—and that both depend on markets unhindered by government intervention. It should be noted, however, that unlike most of today's advocates of LAISSEZ-FAIRE, Hodgskin saw government as intervening on behalf of the capitalists who control it, and not as a check on free markets or a provider of a social safety net. Be that as it may, he must be credited with the extension of classical labor theory-of-value to industrial capitalist labor markets with the concept of exploitation. Marx explicitly used Hodgskin's work in developing his own theory, but "de-ethicized" it by showing that exploitation inevitably arises from the political economic system itself, and not from specific unethical practices of capitalists.

His last book (excluding published lectures and periodicals), *The Natural and Artificial Right of Property Contrasted* (1832), is the key to recasting Hodgskin as an early neo-liberal, but his commitment to liberty and the free market can be traced throughout his texts. While maintaining his concern with unequal exchange between employers and employees, Hodgskin locates the source of the problem in the "artificial" privileges associated with political power as it is applied in the economic sphere. Specifically, he applies the LIBERTARIAN nonaggression principle to argue against economic privileges resulting from government intervention on behalf of well-connected and influential individuals. This allows him (along with John Wade and other so-called Ricardian Socialists) to develop a philosophical position that ethically supports fair exchange while economically supporting free markets and strong property rights.

Hodgskin's commitment to the education of the masses eventually led to his co-authorship (with James Wilson) of THE ECONOMIST periodical from its launch in 1843. Initially published by the Anti-Corn-Law League, the renowned weekly newspaper was the voice of the laissez-faire movement, but soon became an influential voice of classical 19th-century liberal thought in general. In 1857, Hodgskin left *The Economist,* which had probably become, by then, too conservative for him.

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Home Depot

WHEN BERNARD MARCUS, Arthur Blank, and Ronald Brill found themselves unemployed from Handy Dan's home center, their creative solution was to do what most cut-rate retail operations, like their former employer, could not do.

They would appeal to the majority of the building-supply industry's buyers by offering more than double the 10,000 different items normally sold, and knowledgeable, accessible salespeople who would take the mystery out of how to use the products. This concept allowed the three men to acquire the financing necessary to open the first Home Depot outlets in Atlanta, Georgia, and eventually become the largest home-center retailer in the UNITED STATES, ranking as the 46th-largest company in the world by *Fortune* magazine in 2002. Home Depot was incorporated in 1978.

Creative customer amenities, plumbers and electricians on staff, and contractors giving workshops led to large profits; however, in the 1980s, attempts to expand into new areas brought an increase in the cost of sales that cut profits, and sent stock prices plummeting significantly.

Marcus shifted to a more conservative approach, emphasizing reducing existing debts with a stock offering of 2.99 million shares, the build-up of existing markets rather than expansion to new areas, and the development of a satellite data-communications network to link existing stores together.

The chain's ability to more accurately assess market changes led to its continued success. By the 1990s, it added 75 stores in the northeast to its operations in 19 states, and by 2000 it had over 1,300 stores. In 2002, Home Depot reported sales of $53.5 billion, ranking it as the 46th largest company in the world.

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homo economicus

TRANSLATED INTO ENGLISH AS "economic man," homo economicus is the name given to the abstract concept of the human being who behaves in ways typical of mainstream economic models. According to these mainstream models, human actions and choices are motivated solely by the pursuit of one's own self-interest, and are selected optimally to maximize one's own level of satisfaction, or utility.

The expression homo economicus first appeared in 1909 in the writings of Vilfredo Pareto. Weighing in on a contemporary debate about the proper approach to the study of social science, Pareto proposed that specialized social sciences such as economics should develop by focusing on abstractions from the real phenomena that they investigated.

While the actions of real humans reflected varied motives, including economic, moral, and religious, the study of economics, or ethics, or religion, should concern themselves with abstractions (homo economicus, homo ethicus, or homo religious) whose behavior reflects only the motives of critical interest to the relevant social science. Just what were the economic motives that Pareto refers to? And how did they differ from moral motives, if at all?

Pareto's concept of homo economicus reflected a more-than-a-century long debate over the subject matter of economics and the ethical foundations of economic behavior. In the course of that debate, philosophers and economists struggled to provide a satisfactory account of how selfishness and moral principles motivated human behavior. Thus, in his book on the Theory of Moral Sentiments, Adam SMITH recognized the power of selfishness, but made sure to add that:

> How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it except the pleasure of seeing it.

These principles, referred to as "sympathy," tempered Man's hedonistic pursuit of personal happiness and pleasure, a central aspect of utilitarian philosophy. Its recognized father, Jeremy BENTHAM, proposed the principle of utility according to which human behavior's "only object is to seek pleasure and to shun pain," feelings that could be associated with behavior in accordance with morals and codes of conduct.

While accepting the principle of utility, later economists aimed at separating the study of political economy from concerns about the morality of human behavior. Thus, Stanley JEVONS, a pioneer of contemporary microeconomic theory, argued that the pursuit of utility was driven either by higher motives (responding to mental and moral feelings) or by lower motives (responding to the desire for physical objects). The latter should be the exclusive concern of economics because their intensity had a critical and quantifiable influence on the determination of prices.

Alfred MARSHALL shared Jevons' view that economics should concern itself with those aspects of behavior resulting from motives whose intensity could at least indirectly be measured. Unlike Jevons, however, Marshall identified the scope of economics in the normal actions of humans whether dictated by higher or lower motives, a distinction that he thought to be of no consequence from the viewpoint of economics. Marshall was also critical of the emerging characterization of homo economicus as behaving in accordance with rational calculations of utility, arguing that "people do not weigh beforehand the results of every action, whether the impulses to it come from their higher nature or their lower."

Subsequent development leaned precisely toward the abstract view of human behavior as self-interested, materialistic, and perfectly rational. While Pareto laid scorn on simplistic attempts to understand concrete phenomena, as if the actions of real humans were solely driven by their economic motivations, later economists such as Lionel Robbins, Milton FRIEDMAN, or Gary BECKER, have provided different, and on the whole, positive assessments of the usefulness of the concept of homo economicus in economic theorizing. In contrast with Pareto's concern about defining narrow boundaries for its intellectual habitat, homo economicus has spread to an increasingly broad range of topics in the social sciences. To mention but a few, homo economicus has been adopted as a model of individual behavior in the study of political processes, and in the development of GAME THEORY and its application to the social sciences.

This record of success notwithstanding, homo economicus has been the focus of intense criticism and controversy. A growing contingent of economists has denounced the lack of moral bearings in economic discussions of human behavior, describing homo economicus as a "hedonistic sociopath."

Herbert SIMON has been perhaps the most influential critic of the assumption of perfect rationality and, at least since the 1960s, homo economicus has been under fire from a growing body of literature in cognitive psychology, associated with Amos Tverski and Daniel KAHNEMAN, that emphasizes the role of heuristics in human problem-solving and the resulting failures of rationality. While several of these critics of homo economicus have been the recipients of the Nobel Prize in economics, the demise of homo economicus is yet to come.

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Honda Motor Company, Ltd.

HONDA HAS LONG PURSUED QUALITY through customer-convenient products. Since 1948, when it built only bicycles, it has developed into a mammoth industry leader of nearly 200,000 employees who produce technologies for a diverse marketplace. The company concentrates on products with a strong public demand—from small utility engines to sports cars. From its 300 subsidiaries throughout the world (including its native Japan) spring major products that include small-sized and mini-automobiles, motorcycles and motorbikes, and power products such as tractors, hedge trimmers, and snow removal equipment.

Some 110 manufacturing facilities in 31 countries produce the products that serve 11 million customers each year. Major plants are located throughout Japan, Africa, Asia, the Caribbean, Europe, the Middle East, North and South America, and Australia. Of its vast product line, its automobile output has become the most visible and identifiable on the streets of the world, from the Honda Overview to the Honda Accord to the Honda S2000. The Honda "H" is one of the automotive industry's most familiar logos.

While its assembly lines roll all over the world, Honda also actively pursues an image in the community market—to be a good corporate citizen by focusing on safety standards and environmental issues. For instance, Honda's "Green Factories" focus on carbon-dioxide reduction and fuel efficiency.

Honda was ranked number 41 on *Fortune* magazine's 2002 Global 500 list of the largest companies of the world, with revenues of $58 billion.

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Honduras

PART OF SPAIN'S VAST EMPIRE in the New World, Honduras became an independent nation in 1821. Located in Central America, Honduras borders the Caribbean Sea between Guatemala and Nicaragua, and the Pacific Ocean between El Salvador and Nicaragua. After two-and-a-half decades of mostly military rule, a freely elected democratic constitutional republic came to power in 1982. During the 1980s, Honduras proved a haven for anti-Sandinista contras fighting the Marxist Nicaraguan government and an ally to Salvadoran government forces fighting against leftist guerrillas. It is one of the poorest and least developed countries in Latin America with an economy based on agriculture, mainly bananas and coffee.

Honduras depends on world prices for the exportation of bananas, leaving the country at the mercy of market fluctuations. Hondurans are banking on expanded trade privileges under the Enhanced Caribbean Basin Initiative and on debt relief under the Heavily Indebted Poor Countries (HIPC) initiative. Honduras lacks abundant natural resources and its manufacturing sector has not yet developed beyond simple textiles. In early 2003, Honduras was still coping with the catastrophic effects of 1998's Hurricane Mitch that caused $3 billion in damage.

Honduras is a trans-shipment point for illegal drugs and narcotics and an illicit producer of cannabis, cultivated on small plots and used principally for local consumption. Corruption and bribery are cited by international agencies as major problems facing the Honduran government. In addition, there is expanding deforestation as a result of logging and the clearing of land for agricultural purposes. There has been uncontrolled development and improper land-use practices, such as farming of marginal lands, and mining activities, leading to further land degradation and soil erosion.

With a population of approximately 6.5 million people, Honduras had a GROSS DOMESTIC PRODUCT (GDP) of $17 billion in 2001.

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Hong Kong

A POWERHOUSE OF capitalist enterprise under British rule until July 1997, when Hong Kong reverted to Chinese control, the territory has remained capitalistic (if not as democratic) under CHINA's communist party direction. China has promised that, under its "one country, two systems" formula, China's socialist economic system will not be imposed on Hong Kong.

In 2003, having managed to rise from a two-year period of economic doldrums, Hong Kong's free-market economy improved—but not to the point that it might be called stable. Moving into a new millennium, problems persist; the economy is a dichotomy of good figures and bad.

Hong Kong was one of the first east Asian territories to experience explosive economic growth and its consequences in the ASIAN FINANCIAL CRISIS, due to a strong dependence on international trade. Hong Kong's per capita GROSS DOMESTIC PRODUCT (GDP) growth, before 1998, averaged 5 percent, peaking between the years 1989 and 1997. With the fallout of the Asian Financial Crisis, 1998 saw Hong Kong's economy hard hit, with GDP tumbling 5 percent. But by 2000, GDP had risen 10 percent; five percent in 2001. Yet, with a slow global economy in the early 2000s, Hong Kong carries a 7.5 percent unemployment rate.

The majority of Hong Kong's industry is in electronics, textiles and garments, printing, publishing, machinery, fabricated metal goods, plastics, and watches and jewelry.

While it is argued that the economy of pre-China Hong Kong was more stable, many determined Chinese entrepreneurs would not agree.

MariMari, an Asian-based travel company that monitors the region's economies, writes in its report that, "Hong Kong's business sector was [once] an arena for British companies like Jardine Matheson, Wheelock Marden, Hutchison Whampoa and the Swire Group. Since then, enterprising Chinese groups with investments in shipping, property, and the textile industry have risen to compete with some of the British-founded concerns."

Chinese counterparts have demonstrated a competitive nature just as strong, if not more aggressive, than the British capitalists who preceded them. Because of the present "Chinese connection," China dominates Hong Kong's trade in merchandise at 40 percent of total trade. Behind JAPAN and the UNITED STATES, Hong Kong is China's third largest trading partner.

China's official policies for Hong Kong include low taxation, free and fair market competition, an orthodox legal and financial framework, a fully convertible and secure currency, an efficient network of transport and communication, a skilled workforce (that includes an enterprising spirit), a large degree of internationalization, and cultural openness. "The private sector deals with business decisions and is usually left intact by the government," reports MariMari. "The taxation system is simple, a corporate tax rate at 16.5 percent."

Supporting the organized corporate/business structure are financial institutions: Hong Kong is the world's fifth largest banking center, formulating itself as a major international trade and financial arena. The territory impressively houses 80 of the world's top 100 banking corporations. Links between Hong Kong and mainland China-based banks and financial institutions have been slowly but surely solidifying. The Bank of China is currently the second-largest banking group in Hong Kong, behind the British-owned Hong Kong Bank.

James E. Thompson, chairman of the American Chamber of Commerce in Hong Kong, remains economically optimistic. He told the Xinhua News Agency he sees the economic integration of Hong Kong and the Chinese mainland as an opportunity for expanded growth. "Actually," he said, "one can see that the integration process has taken a life of its own. All the partners in the process start to look for better ways to work together for their common interests."

The Hong Kong Trade Development Council agrees with Thompson's predictions for eventual recovery if exportation can succeed. The inconsistent ratios of consumer spending should not regulate the output, explains the Council. The real matter is productivity—how good or how bad, how successful or unsuccessful.

Economist Alex Leonardo, a writer for the *Hong Kong Voice of Democracy*, explains, "If productivity in manufacturing or services keeps pace with rising business costs (the result will be) profitable returns . . . If Hong Kong's economic woes are due to a lack in productivity to justify or sustain high operating costs, then the way to return to market equilibrium will be through both productivity improvement and asset deflation."

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Hoover, Herbert (1874–1964)

THE 31ST PRESIDENT of the UNITED STATES, Herbert Hoover is remembered as one of the least effective and least popular executives. But, Hoover's legacy may be as much a product of historical circumstances as it is a reflection of his inadequacies as president.

In office at the onset of the Great DEPRESSION, Hoover's commitment to 19th-century economic ideals of efficiency, enterprise, opportunity, individualism, substantial laissez-faire, personal success, and material welfare made him ill-equipped to handle the financial crisis that swept the country following the STOCK MARKET crash in 1929. Although his business acumen and firm beliefs had made him both a self-made success and a well-liked American figure, his social and economic philosophy hampered his ability to provide essential leadership and relief as the country endured unprecedented financial hardship.

Hoover was born in West Branch, Iowa, to Jesse Clark Hoover and his wife Hulda Randall Minthorn. Hoover would become the first president to be born west of the Mississippi River. His father passed away in 1880, and his mother died less than three years later leaving Hoover an orphan at the age of 9. Hoover and his siblings lived briefly with other relatives in Iowa before moving to Oregon to live with their mother's brother, Dr. John Minthorn. Dr. Minthorn had amassed a fortune though the Northwestern land boom and Hoover enjoyed his first forays into business by working as an office boy for his uncle.

Educated in the local Oregon schools, Hoover was later encouraged to apply to Stanford University, a then-new institution dedicated to providing higher education to residents on the west coast. Once at Stanford, Hoover excelled as a student of mathematics and the sciences. In 1895, he graduated from Stanford as a member of the university's first graduating class.

Following graduation, Hoover took a job in a mine near Nevada City. In a short time, he had advanced his career to hold more responsible positions assisting prominent western engineers. As the mining industry expanded into national and international markets, Hoover made a career for himself as an engineer and international businessman. By the time he was 40, he had become a multimillionaire and was the director of engineering companies in several countries around the world. By the early 20th century, Hoover's self-made success had imbued him with an appreciation of and commitment to the ideals of American capitalism and individual enterprise.

Early political career. Hoover achieved international fame and recognition at the outbreak of WORLD WAR I in 1914. A Quaker dedicated to humanitarianism, Hoover initiated a massive undertaking of war relief by providing food, clothing, and shelter to thousands of war refugees. When the United States joined the war three years later, Hoover's reputation preceded him and President Woodrow WILSON placed him in charge of food distribution both in the United States and abroad. Wilson continued to seek counsel from Hoover during the peace negotiations. The two men shared a commitment to American liberal capitalism and thus had the same vision for a reconstructed European economy. Hoover's position as one of Wilson's economic advisors during the Versailles peace conference made him into a prominent political figure.

Although Hoover initially had no strong party affiliation, by 1920, he announced that he would be seeking the Republican nomination for president. Hoover lost the Republican nomination to Warren G. HARDING but he remained a powerful personality within the ranks of the Republican Party. When Harding won the presidency he appointed Hoover as the secretary of commerce, a position Hoover would continue to hold through the subsequent Calvin COOLIDGE administration.

During his tenure as commerce secretary, Hoover's popularity and fame continued to rise. The 1920s were an era of big business, and Hoover was able to strike an important political balance between the interests of business leaders and consumers. He also encouraged greater investments and trade abroad in an attempt to increase American economic opportunities in foreign markets. Hoover believed that America's emergence as a leading world power was due to the American economic creed of free enterprise and "rugged individualism." He believed that government interference in business impinged on personal liberty and progress, and argued that the government's role in the economy should be strictly limited to levying high tariffs and low taxes, and also maintaining a balanced budget. The flourishing economic conditions of the "Roaring 1920s" solidified Hoover's economic beliefs as he advanced further into the political foreground.

Presidency and the Great Depression. At the 1928 Republican National Convention in Kansas City, Missouri, Hoover was the clear nominee. Running against Democrat Alfred E. Smith, the first Roman Catholic to run for the office, Hoover won an easy victory and was inaugurated on March 4, 1929. Just over six months later, in October 1929, the values of the stock market fell abruptly. This crash represented the beginning of the Great Depression, a period in which levels of production, prices, profits, employment, and wages declined so dramatically that Americans were quickly plunged into a period of economic despair.

When the nation entered the Depression, Hoover believed that the economy was basically sound and would eventually recover, as it had from previous depressions and recessions, through the naturally correcting mechanisms of the American system of capitalism.

Nevertheless, to halt the depression, Hoover took some limited initiatives. He requested business leaders to voluntarily maintain employment, wage scales, and capital investment; however, faced by falling prices, production, and profits, businesses were unable to do so—rather, companies were trying to avert bankruptcy. Economic conditions continued to worsen and in the 1930 congressional elections, the Democratic Party made huge gains in the face of Hoover's declining popularity.

Going against his economic principles, Hoover tried to take limited action to alleviate the failing economy. He secured an increase in appropriations for a limited federal public works program and he also tried to stimulate the economy through increased government spending. Then, in December, 1931, Hoover requested that Congress create the Reconstruction Finance Corporation. Known as the RFC, the institution was meant to provide federal loans to banks, life insurance companies, railroads, and other businesses in financial trouble. Hoover further tried to alleviate the country's economic problems through domestic legislation. In 1929, the passage of the Agricultural Marketing Act was an attempt to raise farm prices by establishing a Federal Farm Board with funds to purchase surplus produce. And the Hawley-Smoot Tariff, passed in 1930, raised tariffs to their highest levels. However, Hoover's efforts proved inadequate to stop the Depression, which reached its lowest depth in the years 1932 and 1933.

Hoover's failure to implement relief measures was a reflection of his personal opposition to government intervention in the economy. For example, he opposed the proposals for direct federal relief to unemployed workers; he was against such government handouts because they were in direct conflict with his belief in "rugged individualism." He also rejected the request of unemployed veterans for immediate payment of their World War I bonuses (not due until 1945). Known as the Bonus March of 1932, the Veterans' request of their bonuses caused trouble for Hoover and exacerbated his relationship with veterans, who had been staunch supporters of him just three years earlier.

Hoover ultimately ordered the U.S. Army to remove groups of veterans from the Anacostia neighborhoods of Washington, D.C., where they had gathered to pressure the government for their bonuses. Hoover's seeming insensitivity made him a target for thousands of suffering Americans, searching to blame for their frustrations. But even as the country continued to suffer desperate economic conditions, Hoover remained faithful that the economy would recover and that "prosperity was right around the corner."

Although some of his greatest personal successes had come through his international dealings, as president, Hoover's forays into foreign affairs were nearly as unsuccessful as his domestic policies. At the 1930 London Naval Conference, the United States, England, and

JAPAN agreed to continue limiting the size of their navies for five years. One year later, the Japanese government invaded the Chinese northern province of Manchuria, breaking its pledge to resist imperialist impulses and avoid war in east Asia. Hoover's secretary of state, Henry L. Stimson, informed Japan that the United States would not recognize the Japanese seizure of Manchuria, or any of other coerced acquisition of land. This policy was known as the Hoover-Stimson doctrine and was viewed unfavorably as an ineffective measure to protect American security interests in Asia.

Additionally, in the Western Hemisphere, Hoover refused to intervene in Latin America to protect American economic interests, thus rejecting dollar diplomacy, or the offer of full military and diplomatic support to American business interests in the Caribbean and Latin America. Consistent with Hoover's lack of diplomatic support in Latin America, in 1933, he withdrew American marines from Nicaragua.

During Hoover's four years in office, unemployment increased to 13 million people, nearly 25 percent of the American workforce. The high increase in unemployment was mirrored by the decline in business production, hurting huge American industries, such as steel, but also small businesses and family farms. Hunger and homelessness rose to all-time-high levels. Because of the problems that plagued Americans, there were instances of rioting and violence. However, Americans, in general, remained faithful to the country's traditions and patiently awaited the presidential election of 1932.

Although the country blamed Hoover for the depression, the Republican Party re-nominated him at the convention in 1932. His Democratic opponent was the governor of New York, Franklin Delano ROOSEVELT. The two men stood in direct opposition to each other over economic issues: While Roosevelt believed that it was the government's duty to intervene in the American economy, Hoover remained firm in his belief that the government's proper role in the economy should be a very limited one.

Although Hoover's vision of the economy had served him well, the years of Depression had rendered obsolete his commitment to non-government action. The American people were ready for a change in government and in economic philosophy and they elected Roosevelt in an overwhelming victory. The Democrats also achieved a substantial majority in both houses of Congress. Thus began the era of the NEW DEAL, a period of great transformation for the American political tradition.

Hoover enjoyed the longest post-presidential career in American history thus far. He left the White House in 1932 and lived outside of the public eye for the following 31 years. Over the years, he was able to earn respect for his conservative views. The government called upon him for advice on more than one occasion and he willingly provided it. He wrote books, chaired a variety of commissions, and worked to restore his reputation as a worthy and venerable American statesman.

Although he would never enjoy the popularity that had ushered him into the White House in the late 1920s, when Hoover died on October 20, 1964, at the age of 90, his body lay in the U.S. Capital Rotunda before burial. He was remembered as a man of high integrity whose commitment to his ideals and beliefs were as much his weaknesses as they were his strengths. Hoover's presidency is not likely to ever be regarded favorably by historians and economists, but in the decades following the Great Depression and World War II era, some experts began to assess and understand Hoover as a product of an economic doctrine that proved incompatible with the circumstances surrounding his administration and the new era.

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housing

IN THE ECONOMIC HISTORY of American capitalism, few industries play as central a role as housing. American capitalism is an economic system with private OWNERSHIP of LAND and CAPITAL, an individual's right to his or her own labor, and the existence of competitive markets that determine prices and quantities for goods, services, and for factors of production (land, raw materials, labor and capital). It is often defined as free enterprise, or LAISSEZ-FAIRE, describing an economy in which government plays a limited role. Until the Great DEPRESSION of the 1930s, housing construction was a local activity and the federal government adopted a laissez-faire policy. But by the Depression, the laissez-faire policy was rejected in favor of an interventionist approach. After the 1930s, the U.S. federal government used housing policy to address social problems of postwar America. This new approach significantly impacted the structure of the 21st-century housing market.

The nature of the market. Before discussing housing in specific periods, it is important to understand the nature of the housing market. Builders generally tend to extol Adam SMITH's philosophy of production for progress and the benefits of hard work. In housing, the greatest advances have always been the result of inventiveness, research, enterprise, and a favorable financial climate. Public housing has usually failed, while private building has produced wanted homes, aided by federal financial agencies such as the Federal Housing Administration (FHA), Veterans Administration (VA) and quasi-government agencies such as Federal Home Loan Bank (FHLB), FANNIE MAE and Freddie Mac.

The actual construction of houses is carried on in thousands of isolated sites or on small lots in and around more than 20,000 towns and small communities, as well as in an infinite number of scattered locations in suburbia, exurbia, and rural areas. The result of this vast dispersion of labor, materials, and land has been to discourage large-scale production. Home building is a profession of individuals. Anyone with energy, initiative, and a small amount of expertise can get ahead, or as often happens, go broke. Many builders get started by building one house—if it sells at a profit, they build another, if not, they sometimes move in. The housing industry testifies to the strength of a private enterprise system that allows housing to function as independently as it does.

The housing industry is one of the last places where a small entrepreneur, a carpenter, a bricklayer, or a gifted college student can start from nowhere and become great. From 1880 to 1990, these individual homebuilders produced approximately 102 million homes, whether single-family homes or multifamily apartment complexes.

Housing history. Despite an extended depression in the 1890s and later short recessions, the "pre-modern" era lasting from 1880 to 1916 was generally an era of rapid economic and urban growth, and heavy immigration in which the United States emerged as the world's leading industrial nation. Important technological innovations were introduced during this era that directly impacted the housing market, including improved building techniques, the street car, the automobile and the generation of electric power. These developments all contributed to a relatively high and stable level of housing production with minimal direct government involvement.

By 1916, about 11 million dwelling units had been added to non-farm housing stock since 1880. The quality of the housing stock was substantially better in 1916 than in 1880, particularly in the cities. From 1880 to 1916, there was an estimated increase of 4.5 million units. The ratio of homeownership went up from a roughly estimated 36 percent to 40 percent. While this may seem like a relatively small increase in the ratio over a full generation, it should be kept in mind that the country had absorbed a massive inflow of poor immigrants; despite their economic progress most families still could not afford to own their own homes. Mortgage credit was limited compared with later periods.

The period from 1880 to 1916 incorporated the Progressive Era, and housing reform was an integral part of this movement, with special emphasis on the elimination of tenement houses, which crowded the land and lacked proper light, ventilation, fire protection, and rudimentary sanitary facilities. Commercial builders speculatively built tenements for low-income renters at an earlier time during strong population growth and rising land values. Enactment of building and housing codes specifying minimum standards for both new and existing construction was the principle objective of this "restrictive" legislation. Enforcement of the codes was reasonably effective with regard to new construction, one result of which was to raise the cost of new housing beyond the reach of poor families. Enforcement of existing-housing regulations was less vigorous, partly because requiring strict compliance, even where feasible, would make minimum housing prohibitively expensive.

The second or "transition" period in housing history begins in 1917 and ends in 1956. During the transition period, housing production was very uneven due to the tumultuous events of the period. Housing production fell to exceptionally low levels during wartime and Depression periods and attained unusually high levels during the postwar booms. The housing market was rarely in equilibrium during this era. By 1956, the United States transformed itself from a laissez-faire economy to one in which the federal government had a predominant involvement, including extensive intervention in the housing market. The drastic change was attributable to the political consequences of the Great Depression and World War II.

Housing production in World War I dropped to a level not seen since the depressed 1870s. Housing starts declined from 437,000 units in 1916 to 240,000 units in 1917 and 118,000 units in 1918, due to rising costs and the diversion of capital and materials to war production. The reduced rate of production during the war, coinciding with a time of rising income, produced a severe housing shortage, estimated at 1 million units in 1920. The federal government became directly involved in housing construction, outside government reservations, as a war measure during World War I under the Emergency Fleet Corporation and United States Housing Corporation. The former acted as mortgagee while retaining control over rents and prices; the latter assumed direct responsibility for construction. These organizations provided over 15,000 new family dwelling units as well as other accommodations in defense production centers.

After World War I, the federal government returned to its policy of laissez-faire. The 1920s witnessed one of the greatest housing booms in U.S. history. The period from 1921 to 1928 was the first, since at least 1880, in which the number of homeowners increased significantly more than the number of renters. Homeowners increased by 2.8 million, or 61 percent of the total increase in households, and renters by 1.8 million. The homeownership ratio went up by 4 percentage points from 41 percent in 1921, nearly equaling the increase of the preceding 40 years. This change was due to several developments. The 1920s was a decade of rising real income during a period of sustained high-level prosperity, generating a larger volume of mortgage credit than ever before at moderate and stable interest rates with consumers more willing to assume the burden of debt.

The Great Depression. The laissez-faire policies of the federal government ended with the onset of the Great Depression and the election of Franklin ROOSEVELT and his NEW DEAL policies to return the unemployed to work and allow homeowners to remain in their homes.

The stock market crash of 1929 changed the course of U.S. housing and affected it for many years. On October 29, 1929, the stock market crashed with the selling of 16 million shares of stock. The consequences were significant. Builders stopped working overnight, mortgage finance dried up, housing starts plunged, millions of building laborers were thrown out of work, and more than 1.5 million homes were foreclosed. Housing starts plummeted from 330,000 in 1930 to 254,000 in 1931; 134,000 in 1932; and to the irreducible minimum of 93,000 in 1933, still an all-time low, and a 90 percent drop from 1925. No funds were available to builders to finance anything—not a house or even the tiniest remodeling job. Huge mortgage bond defaults on real-estate projects approached scandalous proportions.

In December 1932, President Herbert HOOVER recognized the desperate plight of housing by calling his President's Conference on Home Building and Ownership. More than 400 housing specialists took part. One of these urged an improved mortgage-credit system "to make it easy to buy a house as a car." But this was far too radical an ideal for Hoover, and little came of the conference.

One Hoover achievement was the passage of the Federal Home Loan Bank Act in 1932, creating 12 regional banks with capital of $125 million to act as a reserve system for savings and loan associations and thrift home-finance firms. Under Roosevelt's New Deal, the Federal Home Loan Bank was expanded and a subsidiary, the Home Owners' Loan Corporation, was set up to refinance and save more than a million foreclosed homes.

Federal intervention. The New Deal acts, laws, legislation, and programs had an important impact on housing. Together with the restoration of confidence in the economy, these acts produced a remarkable expansion in building. The three direct major contributors to the revival of this industry were the Home Loan Bank Board (FHLB), the Home Owners' Loan Corporation (HOLC), and the extremely successful Federal Housing Administration's FHA program, a new concept in low-cost, long-term amortized home-mortgage finance.

FHLB was organized in 1932, operating through 12 regional banks, and acted as a reserve system similar to the FEDERAL RESERVE. It brought stability and liquidity to thousands of saving and loans, savings banks and thrift institutions. It chartered hundreds of new Federal Savings and Loan Associations that brought added funds into the hard-pressed home finance field. The result was that funds began to flow once more into thrift institutions, and they were able to resume making loans for new home construction.

The HOLC operation was a classic example of the well-managed use of the financial power of central government. HOLC raised billions for the refinancing operation by selling low-interest bonds. It then offered to pay off the short-term, high-interest mortgages of distressed homeowners and replace them with one long-term, amortized loan at 3 percent interest. The program was an immediate success. By September 1934, HOLC had refinanced 492,700 mortgages, totaling $1.48 billion. The program rescued more than a million homeowners, and brought solvency and strength to the savings and loans and thrift institutions of the country. The Home Loan Bank enabled the financing of home construction to resume, and paved the way for a sharp increase in housing in later years.

Roosevelt signed the Federal Housing Act putting FHA into business in June 1934, but FHA achieved much more. It revolutionized finance with its long-term amortized mortgage, and it changed the structure of the housing industry.

The result of this revolution in housing finance, wrought by the federal government's direct intervention in housing finance, was that private builders, both large and small, went back to work, and housing starts and sales began to accelerate rapidly in 1936.

Housing during the 1940s focused on building desperately needed defense homes and a better-housed, postwar America. The ultimate achievement of the decade was the production of an astounding 7,443,000 homes for war veterans and other Americans. Independent builders constructed 96 percent of the total.

With the 1950s came social and cultural advances, economic growth, vast highway expansion, new concepts for better living, and, of course, building advances. A record 15.1 million homes were constructed, and they were markedly better built, better planned, and better equipped, larger in size, and gave higher value than had ever been achieved in this or any other nation. And housing research, planning, and design reached new heights, paving the way for still further improvements.

Creation of suburbia. Perhaps nothing in the 1950s had a greater impact on the lives and housing of Americans than the highway-building programs that the U.S. Congress initiated. The national interstate program brought thousands of miles of roads, expressways, thruways, and urban and suburban development to towns and cities in every corner of the land. It was a major stimulant to building projects in cities, suburbs, and outlying areas, spawning thousands of new home communities, shopping centers, motels, and vacation-home projects. With the initiation of the national interstate-highway building system, housing entered the modern period of 1956 to 1990.

The 1960s was a time of remarkable housing growth, and it saw more than 14.42 million homes provided by American builders. Each of the three U.S. presidents of this decade took office on a wave of political promises to aid housing and urban development. The cold statistics, however, show that the greatest housing advances of the decade came in the private sector. Of the 14.42 million total starts, only 357,000 were in public housing, less than 3 percent. The dream of great urban development and redevelopment to restore the decaying central cores of the cities simply did not materialize.

Housing history in the 1970s reflected the tumultuous, turbulent, and sensational life of America in those years. Home buyers and home builders were rocked by tight money, double-digit inflation, sky-high interest rates, the energy crunch, and a drastic building depression in 1973–75 that bankrupted 1,500 building firms. Yet the years, 1970–79 were a great decade for the housing industry: 17.8 million housing units were built—the largest number in U.S. history. Even more astonishing, the single-family home—the epitome of the American dream—became reality to millions of Americans.

Homeowners fared extremely well in that decade. The value of their homes increased faster than inflation, and the average home that sold for $25,000 in 1970 was selling for $68,000 or more in 1979. The inventory of occupied housing (single family, condominiums, co-ops, and apartments) rose to 88 million units, and Americans continued to be better housed than citizens of any other nation The soaring equity values of older homes became a powerful aid to new home buying in the 1970s.

The Fed's influence. Of all the forces at work on housing and builders during the decade, the most powerful were the monetary policies of the federal government. Dr. Arthur Burns, chairman of the Federal Reserve System for many years, was the prime villain to most building industrialists. They saw housing starts rise or crash, time after time, as a result of the Fed's actions. Perhaps the most drastic was the tight-money, building depression that brought U.S. starts tumbling from 1973's 2,058,000 level to 1,171, 400 in 1975. Hundreds of building, real estate, and financial firms were forced into bankruptcy and the losses were in the billions. Again, many economists say the culprit was government spending funds it did not have.

During the 1980s, the economy was dominated by the Federal Reserve's frontal attack on inflation in 1981 and 1982, which raised interest rates and unemployment. Housing production fell, reflecting the limited demand due to the long-term decline in annual population increases. Production totaled 17.3 million units for the period, averaging 1.7 million annually.

Mortgage-interest rates rose to unprecedented heights and thrift institutions experienced a dis-intermediation crisis. Housing production, including mobile homes, sank to 1.3 million units in each year, the lowest production totals since 1946. Single-family starts were 50 percent below the peak levels of the late 1970s and multifamily starts were off by 35 percent.

New deposits turned negative in the first half of 1981 and continued so through 1982. Money-market mutual funds diverted deposits from thrift institutions in very large amounts. The growth rate of outstanding mortgage debt declined drastically. The profitability of savings and loan associations and mutual savings banks as a whole was negative in both years. In these two years, 843 federally insured savings and loan associations and 39 mutual savings banks failed or merged.

Multifamily apartment complexes are among the 102 million homes built in the United States from 1880 to 1990.

To return deposits to savings and loans, Congress enacted legislation that authorized thrift institutions to offer money-market deposit accounts at market interest rates with federal deposit insurance. This attracted a very large inflow of funds in a very short time. With the ending of high rates of inflation and the slowing-down of income growth, the burden of mortgage debt continued to rise. The financial health of the savings and loan industry continued to deteriorate.

After the flush years of 1983 and 1984, new deposits virtually dried up. The Federal Savings and Loan Insurance Fund was bankrupt, and a large portion of the industry was on the verge of collapse. A deadly combination of deposit insurance, relatively high interest rates, adverse economic conditions in the southwest, mismanagement by some institutions of the new powers accorded a deregulated industry, numerous instances of blatant fraud involving criminal prosecutions, and ineffective, if not irresponsible oversight by the federal government produced some of the largest loan losses in U.S. history.

To address the problems of the savings and loan, through the 1990s Congress enacted legislation that would provide the capital and organization required for closing the many insolvent institutions whose losses were steadily mounting, and to end abuses that had developed in the 1980s by establishing stricter standards for the remaining institutions while retaining deposit insurance. By the late 1990s and early 2000s, continued drops in interest rates to levels not seen in 40 years propelled the housing market while much of the rest of the American economy slid into recession.

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HSBC Holding

LONDON-BASED HSBC HOLDING is ranked among the 10 largest banks in the world. Branded as "the world's local bank," HSBC is the parent company of a global network of financial services institutions serving 32 million customers in 81 countries. In 2002, the bank reported assets of $746 billion.

Founded in 1865 as the Hongkong and Shanghai Banking Company, Ltd. by Thomas Sutherland, a shipping-line manager with no banking experience, and financed by HONG KONG's business leaders, HSBC was the then-British colony's first locally owned bank. It grew steadily through regional branch expansion until the 1950s, when it began to form subsidiaries and make acquisitions in the UNITED STATES, INDIA, and the Middle East. The expansion accelerated as Hong Kong's future became evermore uncertain and in 1993, four years before the colony was returned to China, the bank was renamed HSBC Holdings and relocated to London.

In step with the emergence of the global banking industry, HSBC's acquisition strategy continued throughout the 1990s. After buying major banks in the UNITED KINGDOM and FRANCE, it became Europe's largest bank. It also continues to grow in North and South America and remains positioned strongly in Asia, where it hopes to participate in the economic opening of CHINA.

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Hume, David (1712–76)

IN RETROSPECT, DAVID HUME is considered a notable figure among 18th-century Scottish philosophers. Hume passed through academic courses at the University of Edinburgh, where he devoted himself to the study of Scottish laws. Whether from the modesty natural to one of great merit, from a consciousness of his deficiency in elocution, or from a happy indolence of a temper that was little fitted for the Bar's agon, he never put on an advocate's gown. "Few men, even among the learned, had ever less of that spirit than the honest, easy, indolent, but philosophic Hume. His life, consequently, affords few of those occurrences which are commonly supposed to give interest to a biographical narration," Edinburgh newspapers said in his obituaries.

Other studies than the law attracted him. Hume rested all his hopes of fame and fortune on his merit as an author. He applied himself to metaphysical inquiries early in his career: He perceived, or claimed to identify, defects within former systems of thought. His reputation grew slowly until he became acknowledged as one of Britain's principal men of letters. Adam SMITH, writing of Hume after his death, noted "upon the whole, I have always considered him, both in his life-time and since his death, as approaching as nearly to the idea of a perfectly wise and virtuous man, as perhaps the nature of human frailty will admit."

Hume settled down to a life of literary work at his residence in Edinburgh. In 1739, he published the two first volumes of his *Treatise of Human Nature*, with a third emerging from the presses the following year. The author's purpose in that work, as he informs his readers in the preface, was "to introduce the experimental method of reasoning into moral subjects." In such a fashion, Hume employed the empirical techniques of the scientific revolution for the study of humans as social and moral creatures. In this work, Hume stated: "The sole end of logic is to explain the principles and operations of our reasoning faculty, and the nature of our ideas: morals and criticism regard our tastes and sentiments; and politics consider men as united in society, and dependent on each other. In these four sciences, logic, morals, criticism, and politics, is comprehended almost every thing, which it can any way import us to be acquainted with, or which can tend either to the improvement or ornament of the human mind."

Many readers have since cited portions among Hume's work to complement Smith's idea that an "invisible hand" guides market transactions. Both authors' ideas converge in the observation that individuals' actions can promote economic distribution—and, presumably, social harmony—without the deliberate coordinating efforts of institutions acting in the public interest. However, Hume's *Treatise of Human Nature,* while in no way inferior to any other rumination on the moral or metaphysical kind in any language, was largely overlooked at the time of its publication, or decried, except among a few liberal-minded men.

In 1741, Hume published two small volumes of moral, political, and literary essays. On the whole better received than the former publication, Hume later noted in an autobiographical volume "the work was favorably received, and soon made me entirely forget my former disappointment." His small patrimony having been almost spent, Hume was glad to return to his essays. As he noted to a correspondent, "You must know, that Andrew Millar is printing a new Edition of certain Essays, that have been ascrib'd to me; and as I threw out some, that seem'd frivolous and finical, I was resolv'd to supply their Place by others, that shou'd be more instructive," (1748).

Eventually, Hume supervised the printing of approximately 47 different compilations between this first trial and his death. In 1751, Hume published *Political Discourses*, which he remembers in his autobiography as "the only work of mine that was successful on the first publication. It was well received abroad and at home." During his lifetime, printers in London, Amsterdam, and Utrecht published Hume's philosophical works in French. Editions were printed in Hamburg, Biesterfeld, Leipzig, and Copenhagen for German readers, and in Venice for Italian readers.

Political Discourses included such topics of interest to scholars of capitalism as "of Money," "of the Balance of Trade," "of Commerce," "of Interest," "of Taxes," and "of Public Credit." Taken all together, these followed the continental PHYSIOCRATS' rejection of MERCANTILISM, with the counter-argument that national wealth derived not from gold but agricultural surplus. Hume's economic essays, particularly those "of Money" and "of the Balance of Trade," merited critical responses from Robert Wallace, James Steuart-Denham, Josiah Tucker, and Smith.

Even after Hume's death, his economic ideas continued to be discussed by John Weatley, David RICARDO, and Dugald Stewart. Later commentators turned to Hume's economic essays for a metaphor drawn from the natural sciences to describe the circulation of specie: Just as gravity causes a fluid to seek its own level through interconnected chambers, increased supply of money in one country speedily disperses to other countries. When fluid is removed from one chamber, fluid will be drawn from the surrounding chambers. If Great Britain were to receive new specie, this would drive up Britons' labor prices and the cost of British goods. On finding that other nations' labor and goods are cheaper, Britons would import, in effect sending their money to foreign countries.

From contemporary politics, toward which he had now made a considerable contribution, Hume turned his inquiries to history, and completed a first volume for the *History of Britain Under the House of Stuart,* which reached the printers in 1750. This initial contribution received little notice; the success of a second volume was by no means considerable; yet by the time of their publication, Hume could happily announce, "notwithstanding the variety of winds and seasons, to which my writings had been exposed, they had still been making such advances, that the copy-money given me by the booksellers, much exceeded any thing formerly known in England; I was become not only independent, but opulent." In this way, Hume served as an example of how the values of a commercial society, that he defended in his own essays, could be compatible with a philosopher's life. Indeed, such a philosopher could thrive in the new world of global trade in goods and ideas.

Hume's life was also a consequence of his relationships with friends and antagonists. Smith, although close to Hume, made little effort on the latter's behalf when he attempted to secure an appointment at the University of Glasgow: "I should prefer David Hume to any man for a colleague; but I am afraid the public would not be of my opinion; and the interest of the society will oblige us to have some regard to the opinion of the public," Smith wrote to a colleague. The celebrated Jean Jacques Rousseau, whom Hume brought over to England with him in 1766, and for whom he procured the offer of a pension from the king, will long be noted for the vigor with which he waged a campaign of animosity toward Hume. Hume spent his last years trying to protect his name from calumny in Rousseau's forthcoming memoir, and completing his own memoir only months before his death in 1776.

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Hundred Years' War

A DISPUTE OVER ENTANGLED feudal property rights in FRANCE evolved into the Hundred Years' War, lasting from 1337 to 1453. The war, complemented by the plague, destroyed more than two centuries of gains in both population and living standards in western Europe. It was to increase the incentives for a more centralized government and army, and to alter the way wars were financed.

The feudal system of fielding and funding the military quickly became inadequate and the longevity of the conflict required a standing army. Such an army relied on merchants and their emerging towns to supply the taxes and loans necessary for its upkeep. The inability of the feudal warrior class to achieve a decisive victory was to lessen their political power, and kings began to bypass the nobility and to economically rely on, and nourish, the merchant class which would become the necessary source of funding for a national government and army—prerequisites of the modern state. The new armies of commoners loyal to the Crown, added to this shift from feudal obligations to a spirit of nationalism.

Western Europe had reached a stage of relative prosperity by 1337, and with its rich soil and increased agricultural productivity (improved field rotation, heavier plows, horse harnesses, and water mills), it experienced significant increase in population and income. Trade had increased substantially with a variety of trade fairs in which instruments of CREDIT and bills of exchange were used. Newly chartered towns, with trade guilds and merchants, accelerated the movement away from the self-sufficiency of the manorial economy toward a greater degree of economic specialization.

Politically, Europe was still feudal with land still the principal form of wealth and, thus, land was the foundation of military and economic power. The property of the nobility was like a mosaic spanning different kingdoms. In 1337, the English king, Edward III, had a claim to the throne of the French kingdom through maternal lineage, and was also the Duke of Aquitaine, a province under the domain of the king of France. Skirmishes became particularly intense in the sole English duchy of Aquitaine, England's main source for wine. Given this system of overlapping political jurisdictions, appeals were made to either the French or English royal courts, depending on where one was likely to get the most favorable ruling. Conflicts were ultimately resolved by whose military was in command of the area under dispute.

Both kings, however, had limited military and financial resources to engage in military expeditions. By the late Middle Ages, the feudal levy system was in decline, especially in England. It required the nobles to send troops in defense of the realm for 40 days, at their own expense, at the king's call. Given the mosaic of land ownership, important nobles faced a dilemma. Siding with either king would result in the forfeiture of land in the other kingdom. This created incentives for nobles to not hear the king's call to arms, or answer it only in part.

War expenses outran the kingdoms' government revenues from the very start. The first 10 years of war used up 18 years of English government revenues, most of which were generated by an export tax on wool, and special war taxes. These measures, however, decreased the funds available to the nobility, and therefore their ability to fund the war.

Usually, however, the effective use of war propaganda by the kings led to a rising national consciousness (especially among the merchants) and the tax was granted. To supplement the tax, the English resorted to voluntary and sometimes forced loans, requisitions (especially ships and sailors), and the manipulation of the lucrative wool trade, which was used to leverage political and military alliances, and as collateral for loans and credit. The revenue from the wool-export tax was about twice the value of all other sources of government revenue.

The French supplemented war taxes with repeated manipulations of the value of coinage, from which they could earn a 30 to 40 percent profit. They also resorted to loans, confiscation of the funds of a planned crusade, and the sale of a princess as a wife for the Duke of Milan.

By the time the war began, England's feudal levy had been replaced by a system of indenture. This was a system where military combatants were paid according to the feudal military hierarchy based on the types of weapons and armor that the combatants would provide (mounted knight, squire, archer, and so on to the footman).

The demise of the feudal levy in England was partly due to necessity because knights were scarce in relatively small England, and the feudal levy was restricted for domestic defense. Furthermore, recent defeats in the Scottish wars had forced reorganization in military strategy. The mounted cavalry charge was now replaced with the dismounted knight, the archer, and better field tactical control. The English army was therefore a volunteer force, serving for pay and spoils of war, and willing to serve abroad.

The French *chevalier* was still the most formidable warrior on the continent, but the limitations of the feudal levy were becoming apparent as armies were sometimes withdrawn mid-siege when the 40-day period elapsed. French royal ordinances were issued to develop a royal army much like the English, but the French nobility's distaste for the lower classes and belief in the nobility of combat hampered this effort.

There were only three pitched land battles in the first 100 years, all won by the English use of the archer. In that same period of time, the French belief in their superiority as warriors led them to continue the mounted charge with little discipline, into the arrows of these well-trained commoners. The repeated defeats at the hands of commoners diminished the social superiority that the noble had enjoyed throughout the Middle Ages. Ultimately, by 1450, the French royal army, with commoners at its core, was able to defeat the English in a fourth battle.

The fact that there were only three major pitched battles reflects, in part, the costs of these armies. It, however, does not imply that the ravages of war did not continue throughout the period. The most effective way of controlling costs was to dismiss the army the day the battle was over. This transferred the costs from the king to the local population. The dismissed army would reorganize into smaller groups of armed men that would approach a town or province, demand food and money, and destroy the area if (as often was the case) their demands were not satisfied. The destruction of rural and urban property in the French kingdom continued for decades and resulted in famine and flight. The fact that, with the exception of some coastal raids, the war was fought on French soil was a tremendous economic advantage for the English.

The persistence of war taxes led to peasant and urban revolts against the farmers and the nobility, but interestingly not against the kings. The oppressive taxes, military reverses, and general economic depression were ascribed to the incompetence and greed of the nobility. The kings were seen as victims with popular sentiment rallying around them. The peasant uprisings were violently suppressed, while the urban revolts were sometimes appeased by royal concessions that further increased the power of the merchant class in both the local and national governments.

Although most of the French kingdom was affected by this war, it was too large to be completely enveloped by it. Regions that were less affected rallied to the king's cause with revenue and men. The rise of nationalism, driven by the desire to defeat the English, concentrated power in the hands of the king.

Both the French and English kingdoms were about to be temporarily eclipsed by SPAIN and PORTUGAL during the age of exploration, but their economies were irreversibly altered by the war. The rise of the merchant class (particularly in England) and the concentration of power in the hands of the king (particularly in France) formed their subsequent histories as nation states.

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Hungary

THE REPUBLIC OF HUNGARY borders Slovakia to the north, UKRAINE to the northeast, Romania to the east, Serbia and Montenegro, and Croatia to the south, Slovenia to the southwest, and AUSTRIA to the west. Budapest is the capital.

Hungary's population is approximately 90 percent Magyar, with Roma, Germans, Slovaks, Croats, Serbs, Romanians, and others making up the rest. Hungarian, or Magyar, is the official language. German and English, as well as other languages, are also spoken. About two-thirds of the population lives in urban areas, with Budapest significantly larger than any of the other cities. Due to a higher death rate than birth rate, Hungary has a negative population growth rate.

Hungary was part of the Austro-Hungarian Empire, which endured until its defeat in WORLD WAR I. After WORLD WAR II, Hungary fell under communist rule directed by the SOVIET UNION. In 1956, Hungary revolted and attempted to withdraw from the Warsaw Pact. The Soviet Union suppressed the revolt by sending in its military. During Mikhail Gorbachev's years as the head of the Soviet Union, Hungary was the leading advocate for dissolving the Warsaw Pact and shifting toward a multiparty democracy and market-oriented economy. After the Soviet Union's collapse in 1991, Hungary developed close economic and political ties to Western Europe. In 1999, Hungary became a member of the North Atlantic Treaty Organization (NATO).

Industry accounts for about a third of Hungary's GROSS DOMESTIC PRODUCT (GDP), services 62 percent, and agriculture the rest. After the collapse of communism, Hungarian industries were ill-equipped to compete in the international marketplace and, during the first half of the 1990s suffered substantial economic fallout. One industry that has grown substantially is tourism. Hungary's currency is the forint. The National Bank of Hungary is the central bank and is responsible for issuing currency and maintaining checking and savings accounts. The Foreign Trade Bank services enterprises trading abroad and the State Development Institution finances large-scale investment projects. In 1990, the Budapest Stock Exchange opened.

In 2002, Hungary's exports were valued at approximately $31.4 billion annually and its imports at $33.9 billion. Exports include machinery and equipment, chemicals, agricultural products, and wine. Imports include machinery and equipment, fuels and electricity, consumer goods, and raw materials.

Hungary was unprepared for the competitiveness of the international marketplace and developed a large trade deficit that it covered via foreign loans. In order to repay these loans the country had to use much of its export earnings.

Hungary continues to show strong economic growth and is expected to join the EUROPEAN UNION (EU). In 2000, its sovereign debt was upgraded to the second-highest rating among central European transition economies.

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Hypovereinsbank (HVB Group)

TWO GERMAN BANKS, Bayerische Hypotheken und Wechsel Bank founded in 1835 and Bayerische Vereinsbank founded in 1869, merged in 1998 and became the HVB Group. After the acquisition of Bank Austria Creditanstalt in 2001, the HVB Group became one of the five largest banking groups in Europe, with a commanding position in central Europe.

The HVB Group has more than 66,500 employees, with 2,100 branch offices and approximately 8.5 million customers. Their core geographic markets are Germany, where HVB is number two (2002 revenues were 4.2 billion), Austria, where they are the market leader, and the rapidly growing markets in central and eastern Europe (2002 revenues were 3.1 billion). The "corporates and markets" business segment accounted for 2.5 billion in 2002, providing the corporate customer with an integrated one-stop shopping solution for financing, risk management, and other services. HVB's strategic aim is to focus on retail and corporate banking, and to recover from their first loss ever of 858 million in 2002 through an ambitious cost-cutting exercise and restructuring via the disposal of non-core activities, such as the spinning-off of the commercial real estate group into an independent entity. Despite the loss in 2002, HVB Group still ranked among the top 100 of the largest companies in the world.

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I

imperialism

AS A SOCIAL CONCEPT, imperialism became part of the political vocabulary as recently as the late 19th century, but empires have existed since ancient times. It can be argued that imperialism refers to the stage in the historical development of capitalism when it became a global system, from the 19th century onward. There has been an extensive scholarly debate on the phenomenon of imperialism, which was sharpened by the fact that its conclusions became important to Marxist political movements during the 20th century (even though Karl MARX never used the term).

After the INDUSTRIAL REVOLUTION in Britain in the late 19th century, the continuously expanding process of investment, technical change, production, and trade led to the emergence of a globalized economy. It involved a new international specialization of production in which the economies of a number of countries of Asia, Africa, and Latin America were restructured to export raw materials to, and serve as markets for the manufactured goods of the industrial economies. This phenomenon was associated with a division of the world among the major capitalist powers into a set of colonies and spheres of influence. For example, as Eric Hobsbawm points out, between 1876–1915 about one quarter of the globe's land surface was distributed in the form of colonies among half a dozen states.

It is undeniable that the division of the world (as much as its integration) since the late 19th century and the strategic projection of state power (as much as international collaboration) have had an economic dimension. Like the systems of power, the ideologies that legitimized the political imperatives of imperialism and those that impelled revolt, were also modulated by the expanding capitalist economy. Indeed, this new division of the world reached into the very heart of humanity. The colonized people were ruptured from their history, language, and culture, as they internalized the image of the native, an image that was constructed by the settlers charged with a civilizing mission. Thus, it was not only the economy of the colonized peoples that was restructured but their very psyche. As Aime Cesaire, in his discourse on colonialism, points out: "I am talking of millions of men who have been skillfully injected with fear, inferiority complexes, trepidation, servility, despair, abasement."

The dynamic of growth and inequality. The new world that was shaped by the development of capitalism from the Industrial Revolution to the contemporary period was marked by dramatic improvements in TECHNOLOGY, and in the growth of output and incomes. Just as dramatic was the increase in the inequality of incomes and the availability of basic public services between the industrialized countries on the one hand, and the countries that became under-developed on the other. For example, the share of world income accruing to the advanced capitalist countries in 1850 was only 35 percent while the share of what are now called the less-developed countries was 65 percent.

Over the next 100 years there was a dramatic change in the relative economic fortunes of these two sets of countries brought about by the uneven impact of capitalism. Thus, by 1938, the share of world income accruing to the advanced capitalist countries had increased to 76 percent while the share of the less-developed countries fell to 24 percent. The disparity in income shares subsequently continued to increase rapidly.

The question is, what is it in the nature of the industrialization process, within the framework of capitalism, that imparts to it such tremendous dynamism and such a powerful mechanism of inequality? In the late 18th and early 19th centuries, the shift from handicraft production to factory manufacturing represented perhaps a watershed in the history of man's relationship with nature. Throughout the preceding ages, it was the human hand that wielded the implement of production. There was, therefore, a close ceiling to the growth of productivity because it depended on the strength of the human hand and the quickness of the human eye. With the onset of large-scale factory production in capitalism, the implement of production was transferred into a machine, thereby opening up unprecedented possibilities of productivity growth. Now the speed with which the implement could be wielded was determined no more by the human hand, but by the development of science and its systematic application to machine design. Income inequality could therefore be expected to grow rapidly between industrialized and non-industrialized countries.

The capitalist growth process had a tendency for continuous expansion due to its social organization of production: Individual capitalists (later management-controlled corporations) were pitted in competition with each other within a market framework, where survival required not only increasing profit but reinvesting it continuously. In the process of reinvestment, if profit was to increase, an increase in productivity had to be achieved. It was this imperative of continuous reinvestment, expansion of profits, and the systematic application of science to production that imparted to capitalism an unprecedented dynamism.

At the same time, the fact that this process was powered by those who could acquire the initial investment resources, command labor, and secure access to raw materials and markets for finished goods, meant that there was an inherent tendency for inequality both at the national and global levels. The town-dwelling burghers, who started life as merchants supplying goods and finance to feudal estates in Europe, had by the end of the 17th century emerged as a political power in England. Such was the interplay between politics and a dynamic capitalist growth process, that by the end of the 18th century, the bourgeoisie had become a major political force in FRANCE, and by the end of the 19th century, the dominant political power in the world.

Imperialism and the development of capitalism. In the process of capitalist expansion after the Industrial Revolution, four distinct phases in the structure of the global capitalist economy can be identified. A brief discussion of these phases would indicate the dynamics of imperialism in the context of the changing relationship between the dominant capitalist countries and the dependent countries.

From the 16th century to the mid-18th century, there was direct appropriation of resources. This precursor stage to the Industrial Revolution was characterized by the coercive extraction of resources from Asia, Africa, and South America on the basis of organized, though selective, use of military force and administrative measures. As Ernest Mandel argues, the appropriation of resources in this period by Europe from the countries of the East was "the outcome of values stolen, plundered, seized by tricks, pressure or violence, from the overseas peoples with whom the Western world had made contact."

In this pre-industrialization phase, trade consisted of imports into Europe of luxury goods from the east such as silk, cotton and fabrics, spices, and jewelry and precious stones. Trade in this period was neither conducted within free markets nor were norms of fairness in fashion at the time. The resources extracted from the countries of the East during this period, were not only substantial, but may have played an important direct or indirect role in the process of investment and economic growth in Europe. According to a conservative estimate by a senior colonial official, Sir Percival Griffiths, £100 to £150 million was plundered from INDIA alone during the period 1750–1800. Its significance can be judged from the fact that the British National Income in 1770 was only £125 million, and the total investment that had been made in the whole of Britain's modern metallurgical industry (including steel), by 1790, was only £650,000. According to another estimate, gold and silver valued at 500 million gold pesos were exported from Latin America during the period 1503–1660. Similarly, profit obtained from the slave labor of the Africans in the British West Indies amounted to over £200 million.

From the late-18th century to the mid-19th century, there was a period of export of European manufactures. Following the Industrial Revolution in Britain (which subsequently spread to Europe), the imperative of capitalist expansion was for each of the new industrial countries to secure sources of raw materials and exclusive markets for their manufactured goods. This involved not only sovereign control over the colonized countries of Asia, Africa, and Latin America, but a restructuring of their economies to enable systematic resource extraction through the market mechanism. Specifically this consisted of rupturing the link between domestic agriculture and handicrafts industry, which was the basis of the self-sufficiency of many of these countries. This domestic disarticulation laid the basis of integrating the colonized economy into the global capitalist economy.

The undermining of the domestic industry of the colony was, in many cases, conducted through protectionist measures. For example, even as late as 1815, Indian cotton and silk goods were 50–60 percent cheaper than similar British goods, thereby making Indian exports more competitive than the British. Accordingly, Indian exports to Britain were subjected to an import duty of 70–80 percent for a long period. Moreover on at least two occasions (in 1700 and 1720), import of Indian cotton textiles into Britain was prohibited altogether.

The domestic economy of the colonies was restructured to specialize in the export of cheap raw materials for the emerging European industry on the one hand, and import of its expensive manufactured goods on the other. Thus, the economy of the colony became structurally dependent on, and a source of resource extraction for, the European economy: The economies of Asia, Africa, and Latin America became part of world capitalism, yet the accumulation of capital that characterizes the system, occurred essentially in the dominant industrial countries. Thus, while the global economy was integrated, its gains were divided unequally between what Samir Amin calls the metropolitan and peripheral countries, respectively.

The late 19th century to the mid-20th century was characterized by the export of capital. Joseph SCHUMPETER describes "gales of creative destruction," that swept away the inefficient firms; the efficient firms, through new products and manufacturing processes, rapidly increased their market share. By the 19th century, large national corporations emerged as an important production unit in the dominant capitalist countries. This enabled considerable monopolistic profits to be made. Soon there was the attendant problem of re-investing these within the European market, which set the stage for the DEPRESSION of the 1870s. This crisis impelled an historically unprecedented export of European capital. During the period 1870–1914, large investments were made in CANADA and AUSTRALIA. Apart from this, rapid development of COMMUNICATION technologies (steam ships, railways, and telegraphy) enabled export of capital to a number of countries in Asia, Africa, and Latin America for building economic infrastructure to facilitate the export of raw materials, and the import of European manufactured goods.

The growth of large national corporations during this period resulted in intense rivalry and occasional conflict between the dominant industrial countries, as their respective national corporations sought to secure sources of raw materials, and markets for their goods and capital in the rest of the world. These tensions constituted one of the underlying factors leading to WORLD WAR I.

The mid-20th century to the present can be called the era of multinational corporations, the information revolution, and the financial sector. After WORLD WAR II, a new era of globalization and (after the end of the Cold War) a new structure of power relations emerged whose specific features are just beginning to be manifested. At least three characteristics distinguish the globalized economy at the end of the 20th century from that of the late 19th century. These are:

1. In the late 19th century, the globalized process of extracting raw materials, manufacture, and sale of goods was conducted by large national corporations. This induced a contention between the dominant industrial countries. Since World War II, the multinational corporations have emerged as the predominant production unit. Within this framework there has been an inter-penetration of capital among the advanced industrial countries. Consequently the earlier rivalry and conflict between the advanced industrial countries has been replaced by the possibility of growing collaboration in the economic and political spheres, ensuring the conditions of growth and stability in the global economy.

   After more than 200 years of economic growth within the advanced capitalist countries and their dependent territories, a much more integrated globalized economy may be emerging in the world. It is a world where economic boundaries and, indeed, the sovereignty of nation states is eroding, although more for the weaker than for the stronger states. The doctrine that the free market mechanism at the global level is the most efficient framework of resource allocation, production, and distribution of GOODS is resurgent. It is being translated into national economic policies of various countries through the loan conditions imposed by multilateral institutions such as the WORLD BANK and the INTERNATIONAL MONETARY FUND (IMF), which emerged after World War II. More recently, the "open economy" policy framework has been embodied into a set of international trade agreements under the auspices of the WORLD TRADE ORGANIZATION (WTO). Under these circumstances those developing countries, which do not have the institutions, economic infrastructure, and resources to compete in the world market, are vulnerable to rapid economic deterioration, debt, and impoverishment. This could become a new factor in accentuating international economic inequality.

2. The revolution in information technology (IT) has created the potential of a new trajectory of technological growth. Its consequences may be as far-reaching as the Industrial Revolution in the late 18th century. The Industrial Revolution involved the systematic application of science to machine-manufacture and thereby laid the basis of rapid productivity growth. Now artificial intelligence, embodied in interactive computers, can become an aid to human intelligence itself, and can therefore help achieve an unprecedented acceleration in technological change.

   As knowledge-intensive industries, particularly the IT industry, become the cutting-edge of growth, the economic gap between countries with a highly trained human capital base and those without such a base is likely to grow rapidly. While this fact has opened new opportunities for developing countries to achieve affluence (for example, the newly industrializing countries), it has also created a grave danger of rapidly increasing poverty for those countries that are not positioned to meet the challenge of knowledge-intensive growth.

3. The financial sphere in the second half of the 20th century has grown much more rapidly than the sphere of production, so that the volume of international banking is greater than the volume of trade in goods and services in the global economy. For example, international banking in 1964 was only $20 billion compared to $188 billion worth of international trade in goods and services. By 1985, the relative position of the two sectors had reversed with international banking valued at $2,598 billion and the value of traded goods and services worldwide being lesser, at $2,190 billion.

   The predominance of the financial sector, internationally integrated financial markets, and the previously unimaginable speed with which financial transfers can be effected, have combined to introduce into the global economy a new fragility. Exogenous shocks (such as terrorist attacks, regional wars, and political instability in raw-material producing countries) can be transmitted much more rapidly through the globalized economic network. Therefore, the world's real economy that underlies the financial sphere and spawns production, employment, and standards of living in individual countries, is prone to instability. Economic instability in the real economy is likely to have a relatively greater adverse impact on poorer countries than on the rich, thereby further accentuating poverty and inequality.

Future challenges. Through much of history, hunger and deprivation had pitted individuals and states against each other and therefore constrained the human quest of actualizing the creative potential of the individual. Capitalism, with its capacity for a rapid improvement in the material conditions of society based on science and individual freedom, created the possibility of human liberation. Yet the very process through which historically unprecedented improvements in technology and levels of material production were achieved, also created a world order based on dominance and dependence. While it provided hitherto unimaginable material well-being to a relatively small population, it engendered the conditions of systemic poverty, human misery and conflict for a large section of the world's population.

Today, after over 300 years of capitalist development, of the world's 6 billion people, almost half (2.8 billion) live in poverty (earning less than $2 a day per person). In poor countries, where the majority of the world's population resides, as many as 50 percent of children below the age of five are malnourished, thereby stunting their mental and physical growth. While there has been an impressive growth in technologies and production, the gains are grossly unequal. The average income in the richest 20 countries is 37 times the average in the 20 poorest countries, a gap that has doubled in the last 40 years. The poor countries are, in many cases, under such a heavy debt burden that the debt-servicing expenses are greater than their foreign-exchange earnings, so that debt servicing itself has become a mechanism of resource transfer from the poor countries to the rich.

The rapid and continuous growth of production over the last three centuries has been associated with environmental damage, affecting the life support systems of the planet. At the same time economic destitution, illiteracy, or in some cases a sense of political injustice is tearing apart the fabric of society in some countries and giving rise to extremist tendencies that violate human values and threaten the economic and political stability of the world.

The problems of mass poverty, debt, and environmental degradation threaten the sustainability of growth (see SUSTAINABLE DEVELOPMENT) in a highly integrated global economy, which we have suggested, is both fragile and unstable. Overcoming poverty and debt will not only require changes in institutions and the structures of the economies of poor countries, but will also require large net-resource transfers from the developed to the developing world, and rectifying the asymmetry of global markets with respect to the rich and poor countries. These changes can only occur through international collaboration based on a shared human responsibility toward the global community and its future.

The problem of environmental degradation results from a level and composition of economic growth that is based on a private profitability calculus that does not adequately take account of the social costs of production. A market-based regime of tax incentives and disincentives, together with regulatory institutions, is, of course, necessary for reducing the environmental cost of growth. Equally important is the rapid development and adoption of environmentally gentle ("green") technologies. Yet this may not be enough. The level of growth itself may need to be adjusted to make it consistent with the conservation of the environment. In view of the fact that currently almost 85 percent of the world's resources are being consumed by less than 10 percent of the world's population, the burden of reduced growth in per capita consumption may have to be borne by the rich countries. This will require a new sensibility characterized by a responsibility of the individual toward the present and future human community, and new forms of social life.

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income

THE LIFEBLOOD OF A capitalistic society is the diversity of income, the variety of ways it can circulate within society. From the rent of houses to the salary of workers or the royalties of copyright, securing the rights to a certain type and flow of income are the name of the game under capitalism. But income means more than a purely economic relationship: social and political structures are built around it, at least from the point of view of classical political economy, and later Marxian economists. When classical economists, such as Adam SMITH or David RICARDO, spoke of class, they conceived of it as the set of people receiving a particular type of income. Feudal lords of the land and serfs, masters and slaves, obviously made their living in different ways.

What about a capitalistic society? We would find three main classes in the classical economists' description. CAPITAL, made up of capitalists whose gain is originated in their property of the means of production (think of a pin-factory owner), and the PROFIT obtained after the expenses of production have been accounted for; LABOR, comprising workers whose income comes in the way of wages (such as those people working in the pin factory), and land-owners, whose income is the rent of their fields to farmers. As agriculture has diminished in importance as the main productive activity, the former two classes have remained the most important, even if many would argue that social conflict is not really found along the lines defined by types of income. In some political economy accounts, however, how labor and capital divide the total product in a society, how income is shared or appropriated, determines its development in the long run.

Now, if income were associated with more or less material possessions and nothing else, perhaps we should not be overly worried. The problem is that other more important traits are linked to income stratification. In the well-known Whitehall Study that surveyed 17,000 British civil servants, it was found that mortality rates were three times as high among the lowest grade workers (messengers, doorkeepers) than among the highest grade civil servants (administrators). In 1995, American people below the poverty level were three times as likely as those above twice the poverty level to report fair or poor health status. In hundreds of reports, the most powerful predictor of educational achievement is consistently the social class background of the students and their parents, usually driven by income level.

An international map of income per capita. Although the source of income is surely important, the amount of total national income and its distribution are certainly decisive for a great number of factors affecting quality of life, such as health or cultural and political participation. GNI, or Gross National Income (also known as GNP, GROSS NATIONAL PRODUCT), is a very good indicator of a country's place under the sun. The WORLD BANK defines GNI as the sum of value added by all resident producers plus taxes and receipts of compensation of employees and property income from abroad. In 2001, according to the *CIA World Factbook*, INDIA's GNI was $2.66 trillion, SWEDEN's was $227.4 billion, and the U.S. GNI topped the world's ranking at $10.1 trillion.

But the number of people adding value to India's GNI is certainly higher than the number of Swedes adding value to their GNI. So we need to divide the GNI by the population, in order to get the picture of the income available to the average resident (we shall see that inequality greatly affects this "average"), and a very good indicator of the stage of economic development and modernization of that country. We can expect to find good health care services and basic education granted to all citizens of countries above $10,000 per capita, which was exactly that of CHILE in 2001, measured in purchasing power parity (that is, adjusted to what you really can buy with the same amount of money in different places). This GNI per capita was also highly unequal in its international distribution, such as $2,540 in the case of India, to follow with our example, $25,400 for Sweden, and $36,300 in the United States. Very low per-capita-income countries are to be found in Africa, such as poverty-ravaged Sierra Leone, with $500 per capita. These low-income levels are usually associated with high mortality rates, especially infant mortality, and low education levels.

It has been argued that this distribution is no accident, but is the result of a highly unfair world-system, where trade policies, financial structures and skewed international arrangements maintain a flow of wealth from poor countries (the periphery) into rich countries (or core), the United States in particular, and increase within-nation inequality. How can this happen? Take corn as an example. Thanks to large subsidies and industrialized production systems (for instance, how fertilizers are used can be optimized through satellite imagery of large-scale crops), American corn producers are able to outsell farmers in Mexico (where corn, incidentally, was turned into a crop around 7,000 years ago). This eventually leads unemployed laborers out of the countryside and into cities. Corn subsidies in the Dakotas may, in this way, have a devastating impact in the slums of Mexico City. This is another, and less obvious, side of GLOBALIZATION.

Measuring income inequality. Income is not evenly distributed, a fact we know all too well. Inequality of income is one of the main ways to understand the fundamental workings of a society, the joint result of its legal, social, and political institutions, and also a cottage industry in the social sciences. Among other problems, it is not an easy task to know just how unequally income is distributed in a given country at a given moment. Say that we divide the population into five parts, and then we compare the income accruing to the top 20 percent (or quintile), to that earned by the bottom quintile. That is the 80th/20th ratio, and looks good as a measure of inequality. Now see how it has changed in recent American history. In 1967, that richer fifth of the population got 3.95 times more income than the poorer 20 percent. But in 2001, they got an income 4.65 times greater than their poorer fellow countrymen, which means that inequality (measured this way) had grown around 18 percent.

But what if the growth in inequality was really concentrated in the upper rungs in the income ladder? What if only the very rich had grown truly richer? In that case we may have needed to look at other places in society, for example the top five percent of the distribution, and how their income compares to the bottom 20. What we see now in this 95th/20th indicator is a different story: it goes up from 5.97 in 1968 to 8.38 in 2001. That is a 40 percent increase. Whatever has been going on in the growth of income inequality in America, it has mainly taken place among the very rich.

Another indicator, probably the best known of inequality measures, is called the Gini coefficient. To understand how it is calculated, start with some (social) science-fiction. Imagine a society where income is distributed in a perfectly equal way. If we took the first percentage of people in the population, they would also have one percent of the total income. Five percent of people, five percent of the income, and so on. If we drew that in a graph showing the different fractions of total population (horizontal axis) and their accumulated share of total income (vertical axis), a graph called the Lorenz curve, we would end up with a straight line from 0:0 to 100:100, running at an angle of exactly 45 degrees from the bottom left corner of the graph.

Real life is not like that. The poorest first percent of the people have much less that one percent of the nation's income, perhaps 0.1 percent or probably less. The poorest 20 percent have maybe 5 percent of total income, but this goes on up to the upper rungs. Take the less rich 95 percent of the country, and they have still have less than 80 percent of total income. That is because the richest 5 percent has more than 20 percent of it, in case you had not guessed.

The trend is more or less clear: increasing income inequality in all countries, but at a much faster pace in the United States and the UNITED KINGDOM, less so in CANADA, and a mild growth in Sweden. This clearly points out that policy choices and institutional structures (such as redistributive measures) have a deep impact in income inequality: the Thatcherite and Reaganite conservative revolutions (led by Margaret THATCHER and Ronald REAGAN), with their market-oriented reforms, led to more income inequality than European welfare states.

But let us say that we know perfectly well how income is distributed in a given society. Does that mean we have a perfect picture of social structure, e.g., we know how and when to intervene to prevent health or educational differences? It is important to underline that income is only one of the factors we need to take into account. Money is only part of the story: EDUCATION (human capital), connections (social capital) or other assets (real estate, for instance), have a great impact in life chances.

But is income inequality a bad thing, something that is perhaps inevitable or even fair, or in and of itself, is it a social wrong? Some think it is a very necessary evil, or not an evil at all if compared to the alternatives. If people desire an ever-greater income, and this income can be increased as a result of their investment in human or physical capital, their ambition would push them toward ever-greater productivity and better use of productive and technological possibilities.

Taken together, all those individuals striving for greater incomes would push the society as a whole toward more productive states. This is more or less the basis for what Bernard Mandeville, an 18th-century philosopher, famously called "private vices, public virtues." In fact, according to this view, only fear of want may keep the slack and lazy in motion, or as Mandeville stated in his *Fable of the Bees*, "[t]hose that get their living by their daily labor . . . have nothing to stir them up to be serviceable but their wants which it is prudence to relieve, but folly to cure." This idea, in a more palatable guise, underpins the incentive theory of the positive effects of inequality.

A more sophisticated argument for differences in income is the contention that the market needs those differences as "signals," that direct activity in ways that cannot be calculated by some central authority. This is in line with Friedrich von HAYEK's ideas, developed in opposition to socialist economists' plans for a centralized system. Hayek argued, in what has become one of the most powerful rationales in favor of capitalism as a market-based economy, that economic signals such as PRICES (wages are prices of labor in this sense, too) are in fact the best way to cope with the essentially incomplete and fragmented knowledge of the state of things. Prices tell us, in condensed form, about the conditions of production of goods we could never know in detail.

Income, productivity, and the winner-take-all economy. But what determines who gets what—or how much? Economic theory, in its now dominant neoclassical version, gives a very clear answer: What we earn depends on what we produce. This is called the marginal productivity theory of income. In theory, that is, if all the necessary conditions hold (most important of all, that no agent can manipulate prices of the factors of production), workers get a wage that is exactly proportional to the value they add. Imagine that a pin factory worker is able to make 1,000 pins per day. According to neoclassical economics, we would expect him, all other things being equal, to earn twice the salary of another worker who makes 500 pins per day, since in equilibrium no one would be willing to pay more than that to the less productive worker. As in other accounts of neoclassical economics, any other outcome is the result of a distortion, for example, if workers are unionized and control the supply of work, or "hide" individual productivity levels in collective arrangements.

But, as we have seen, we find a much higher degree of inequality than what absolute differences in productivity could account for. Perhaps it is relative differences in productivity that matter, as the so-called tournament theory claims. Small differences may get huge rewards if being first is the only valid goal.

Michael Jordan helped the Chicago Bulls score a few more points than their rivals, but that made all the difference, and that's why he got such a high compensation. Astonishing salaries (and stock options) of corporate CHIEF EXECUTIVE OFFICERS (CEOs) may also tie to this winner-take-all economy.

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income distribution theories

IN CLASSICAL ECONOMIC theory there were three factors of production—LABOR, CAPITAL, and LAND. In modern economic theory a fourth factor of production, entrepreneurship, is often added. The concept of labor is fairly self-explanatory. It refers to the human input into production, the process of working itself. Capital refers to the tools, machinery, and all non-human (excluding natural) material with which labor works to produce output. Land refers to land itself, as well as other natural resources that are needed to produce goods and services. By introducing a fourth factor, entrepreneurship, the services of those who initiate, oversee, and control production are separated out from the first human factor, labor.

In the process of production these factors are combined to produce the myriad goods and services within an economy. The factors are then paid for their productive services, so that the total output is divided among them, either according to what they have contributed to production or according to their position within economic society. The study of how and why the total output is divided the way it is among the factors of production is called the theory of income distribution.

Economists from different perspectives have addressed the issue of income distribution in many different ways. This is not surprising, given the political import of how the theory is developed. If, for example, we argue that labor is paid less than what it contributes to output, then the inevitable conclusion is that workers are exploited, and capitalism is an unjust system. If, on the other hand, we say that labor, and all the other factors of production, are paid what they create, then we can conclude that capitalism is a just and fair economic system. The main theoretical positions on income distribution over the years include the following: classical, Marxist, marginal productivity, post-Keynesian, and neo-Ricardian.

We will discuss the two most important theories below. The first, developed by Karl MARX in the 19th century, takes the position that labor, in opposition to capital (which is owned by capitalists), is exploited under a capitalist system. The second, developed primarily in the 20th century, argues that all factors of production are paid according to their contribution to production and thus the capitalist system is fair.

Marxist theory of income distribution. Marx's primary concern in his theory of distribution was how output was divided between capitalists and workers. He considered these two factors of production—capital and labor—as the two great classes under capitalism, and an explication of the relationship between them as crucial to an understanding of the laws of motion of capitalism. It was particularly important for Marx to view workers as members of the working class, and not as isolated individuals who happened to be working for capitalists. Because they are members of this class they enter into certain social relationships with the capitalist class and it is this class relationship that is paramount for an understanding of income distribution.

In order for production to begin, the capitalist hires the worker to work for a particular period of time, say one day. The worker, of course, expects to get paid by the capitalist in exchange for his or her labor. The question for a theory of distribution is then, how much should this worker receive for his or her effort? How are wages, in general, determined in a capitalist economy?

Marx based his answers to these questions on his theory of the value of commodities. Put simply, the value of any commodity (a good or service that is produced for exchange, not for the use of the producer) is determined by the amount of labor necessary to produce it. This means that each commodity embodies a certain proportion of the total labor expended by society. Marx then argued that commodities would exchange with each other on the market according to these socially necessary proportions. As more labor was bestowed on a commodity, its value would increase, and it would exchange for a larger value in the market; in a competitive system, equal value would exchange for equal value.

Capitalist firms are in business to produce commodities. The whole point is to produce goods and services for sale at a price that will both recover the expenses laid out by the firm (for labor and all the non-human materials) and leave enough for a profit. But where can this profit be generated if all commodities are exchanged at equal value?

Marx answered this question with his theory of SURPLUS value. The key was to consider the ability to work, what he called labor-power, as a commodity. Even though this ability to work—which is embodied in workers—is not produced by firms, it is bought and sold on the (labor) market, and so becomes a commodity like all other commodities. Its value is determined, as for all commodities, by the labor necessary to produce it, or in this case, the labor necessary to reproduce the worker. Marx writes: "For his maintenance [the worker] requires a given quantity of the means of subsistence . . . [thus] the value of labor-power is the value of the means of subsistence necessary for the maintenance of the laborer." The amount of the means of subsistence, or in other words, the worker's standard of living, is historically determined, depending on "the degree of civilization of a country."

So the capitalist buys labor-power for a day at its value as determined above. Let us say that this value is 6 hours (i.e., the value of what the worker consumes is 6 hours). If the working day is 8 hours, then there are 2 hours left over, in which the worker produces value beyond what the capitalist paid the worker. The worker creates what Marx called surplus value in these 2 extra hours. Because the capitalist owns anything produced by the firm, this surplus value—profit—accrues to the capitalist. We see that workers create more output in a day than is distributed back to them, meaning that a part of their day is spent creating value for capitalists.

Marx thought that this manner of distribution of output between workers and capitalists showed the exploitative nature of capitalism. Workers spend a portion of every day creating value for which they receive no compensation, with this value going to capitalists simply because they own the productive resources and therefore control production. Even though distribution is based on market exchange at equal values, workers are exploited by capitalists in the distribution of income between capital and labor.

Marginal-productivity theory of income distribution. The neoclassical marginal-productivity theory of income distribution, which was developed in the early 20th century, and which has become the dominant theory accepted by economists, stands in stark contrast to the Marxist theory. In this theory, capital and labor are seen as equal factors of production, each contributing to production, with each receiving their just reward. In particular, these two factors are not seen as representing the two great classes in capitalism, i.e., capital and labor are simply technical factors of production, and the sense of class, which is so important for Marx, is completely missing in this conception. The focus in neoclassical economics is always on the individual, who as the owner of a factor of production enters into the production process as an isolated unit, not representing a class in any way. Rather, capital and labor face each other as equals in the distribution of output, where exploitation does not occur, contrary to Marx where capital clearly has the upper hand and is able to exploit labor.

To understand the neoclassical theory we must first explain what is meant by the "value of the marginal product." One aspect of marginalism (the general concept of which is central to all of neoclassical theory) is that the marginal product of a factor can be defined as the added increment to total output which can be attributed to the addition of one unit of a factor to the production process. For example, if one more worker is hired (with all other factors remaining the same), and the total output of chairs rises from 49 units to 51 units, the marginal product of labor at that point would equal 2. The value of the marginal product is then defined as the marginal product multiplied by the price of the commodity being produced. In this case, if the price of a chair were $120, then the value of the marginal product would be $240.

From this concept of marginal product, neoclassical theorists then developed a general theory of the distribution of income between the factors of production. Not surprisingly, this theory is a form of SUPPLY and DEMAND theory, not unlike the neoclassical theory of prices. The supply of any factor is calculated to be positively sloped, while the demand is calculated to be negatively sloped, with the market price determined by the intersection of the supply and demand curves.

In the theory of the distribution of income, the firms would demand a productive service so that the value of the marginal product would equal the factor price, for example, the wage. What this means is that a certain amount of output (the marginal product) can be said to be produced by a worker, and that the wage paid to the worker will exactly equal the value of that extra output (the value of the marginal product). Thus, the worker receives as payment exactly what he or she produced. This conclusion can be generalized to all of the other factors so that each one of them also receives exactly what it has produced.

By treating all factors of production in the same way, neoclassical theory removes the political dimension from the theory of income distribution. Each factor simply becomes a technical component in the process of production, with distributive shares determined precisely by contribution to production. As long as competitive market forces work freely, exploitation does not exist. Rather, the conclusion one draws from this theory is that income distribution under capitalism is ethical just because each factor receives back as payment exactly what it contributed to production.

Conclusions. Because of their inherent political component there are many theories of income distribution. We have discussed here the two main ones that are current today. These two theories of income distribution give distinctly different views of the capitalist economic system. The first, derived from Marx, sees capitalism as an exploitative system, squeezing surplus value out of workers, who receive minimal wages unrelated to their productive contributions. Capitalists receive profits not because they have contributed anything to production, but because they own the productive resources and are able to hire workers (who are defined precisely as that group which does not own the productive resources and therefore must work for others) to labor for them.

Neoclassical theory, on the other hand, sees capitalism as a system in which all of the factors of production voluntarily come together to produce output, which is then distributed back to them in a fair and just manner. Capitalism is seen as a system in which individuals, as owners of the factors of production, but not as members of classes, enter into the productive process on an equal basis, and receive payments because of their productive contributions. Capitalism, far from being an exploitative system, rewards individuals who are productive members of society.

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income statement

ALSO CALLED THE statement of income, statement of earnings, or statement of operations, the income statement reports the revenues and expenses for a period. The excess of revenues over expenses is called net income. An ACCOUNTING principle, called the matching concept, is applied in recognizing the revenues and expenses for the period. The term PROFIT is also widely used for this measure of performance, but accountants prefer to use the technical terms, net income or net earnings. If the expenses used in generating the revenue exceed the revenue, the excess is the net loss for the period.

An income statement is the primary measure of performance of a business, during a period. The accounting period used to measure the income can be a month, a quarter, or a year. Usually, one year is the most widely used period of measurement.

GENERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP) require that financial statements should be prepared in accordance with accrual-basis accounting principles. The matching concept is the essence of accrual-basis accounting. Therefore, an understanding of the matching concept is important to grasp the concept of accrual-basis accounting. In its simplest form, matching concept requires that all the expenses incurred to generate a period's revenue should be recorded (matched) in the same period regardless of when paid. Conversely, if the expenses of the next accounting period are paid in the current period, they cannot be deducted in the current year; they need to be deducted (matched) with the revenues of the next year. Accrual-basis accounting also requires that revenues should be recorded when earned, regardless of the timing of the cash receipts.

There is another form of accounting, called cash-basis accounting, which is usually used by very small businesses. It is based on the actual cash receipt and payment system. Therefore, under this system, revenue would not be recognized (included) in the income statement until actually collected. Similarly only those expenses, which have actually been paid, are recorded as expenses. Because, by choosing the timing of the payment of expenses or collection of revenues, income of the business can be manipulated, GAAP does not recognize the cash method of accounting as an acceptable method of reporting income.

Components of the income statement. Business entities earn revenues from the sale of goods and services to customers. It is immaterial if cash has been received. If the business substantially has done all that it was supposed to do to have a right on the agreed-upon revenues from customers, revenue should be recognized in the period when it was earned, regardless of the timing of the collection.

Expenses represent the dollar amount of resources the entity used to earn revenues during the period. In accordance with the matching principle, again the timing of the payment of expenses does not matter. It is the timing of the obligation to pay for the expenses that counts. Thus, revenues are not necessarily the same as collections and expenses are not necessarily the same as payments to suppliers, landlord, utility company, or employees. It follows that because of this timing difference, net income normally does not equal the cash generated by operations. Expenses are further divided into two main categories, selling expenses and general and administrative expenses.

Merchandising or manufacturing companies first calculate the gross profit on sales as an intermediary step before calculating the net income. Gross profit is the excess of the selling price (revenue) over the cost of the product sold. From the gross profit, total expenses are deducted in order to arrive at the net income number.

GAAP requires providing the user of the financial statement a detailed breakdown of the sources of income, so that the user can evaluate the quality of the income. Therefore, operating income resulting from the entity's main activity and from its day-to-day operations is separately calculated, and shown in the income statement. Income arising from non-frequent or ancillary activities of the business is separately calculated. The presentation of the income statement (and supported by detailed notes) in this manner helps a user to assess the long-term earning power of the company and not be misguided by one-time or infrequent income or loss items. For example, if there was loss on the sale of the textile division of the company, it will be separately reported as "other revenues and gains" (and not as part of the operating income). Similarly, if there was a loss due to an earthquake, it will be reported under the category called "extraordinary items," within the income statement.

GAAP also requires that companies calculate earnings per share (EPS) and show it on the face of the income statement. EPS is the net income divided by number of common stock shares in hands of the shareholders. It needs to be separately calculated for different income numbers such as income per share from continuing operations, loss per share from discontinued operation, and so on.

Users of income statements. Prospective or existing owners/investors, financial analysts, bank loan officers, income tax authorities, customers, and suppliers—all of these people need to use the income statement to analyze the company's performance over a period of time. Management of an entity needs it to compare the actual results to the budgets and take appropriate corrective measures, if needed. Investors are interested in the income statement of the company to evaluate the company's performance and divest if necessary.

The preparation and the use of the income statement is not limited to the business or for-profit companies. Not-for-profit entities such as American Cancer Society would need to prepare an income statement and other financial reports for its donors, management, and for the governmental agencies. An income statement for a not-for-profit entity would include a breakdown of various sources of revenues and how much and in what categories money was spent. It would also show what was the fund balance in the beginning and at the end of the year.

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incorporation

THE LEGAL CREATION of an entity having an existence separate from its owners is termed incorporation. Examples are business corporations, NONPROFIT corporations, professional corporations, limited partnerships, limited-liability companies, limited-liability partnerships and business trusts. Opposed to such entities are sole proprietorships and general PARTNERSHIPS that are not legally separate from their owners.

An incorporated entity has three advantages: continuity of existence, centralized management, and the ability to accumulate large amounts of capital. Large business enterprises require large amounts of capital; even medium-sized corporations today require more capital than is owned by any individual except the rare billionaire. An incorporated entity allows for the pooling of investments from a large number of individuals.

Incorporated entities have continuity of existence, with most having a perpetual life. The capital accumulated in such entities will continue to be used for various purposes even though the individual owners die or sell their ownership interests.

This is unlike a sole proprietorship or a general partnership whose business existence terminates when the owners die or decide to leave the business.

Incorporated entities have the advantage of centralized management. Individual owners are not required to participate in day-to-day management and can hire professional managers whose expertise is more likely to make the enterprise profitable. This is different from sole proprietors and general partners who have full management rights.

People who invest in incorporated entities also gain advantages. First, they normally have limited liability for the debts and liabilities of the business. The statutes under which these entities are formed usually stipulate that the investors are liable only for the amount of money they promised to pay for their interest in the entity. Second, investors normally have the right to freely transfer their interests in the business. The business entity itself is not affected by the transfer and the investor does not need the permission of the managers of the entity before making the transfer.

Sole proprietors and general partners have unlimited liability for the debts and liabilities of their businesses. Moreover, if a sole proprietor or a general partner attempts to transfer his or her ownership interest in the business, this business normally terminates.

Very small incorporated entities often lose or give up some of these advantages. The shareholders of a very small corporation are often so few in number that all of them are directors and the principal employees of the corporation. Such shareholders often agree to restrict the free transferability of interests in the corporation to avoid having outsiders take over the business. These shareholders often do not have limited liability since they actively participate in management and may be required to personally guarantee the debts of the corporation.

The creation and operation of incorporated entities is governed by statute. Although there are some federally chartered corporations in the UNITED STATES, the vast majority are created under state law. The normal state statute requires the filing of documents with a central office such as the secretary of state or the department of commerce. If the entity is to be a business corporation, the document is called the corporate charter or the corporate articles of incorporation.

Management of the business is turned over to a small group such as the directors of a business corporation, a management committee of a limited-liability company, or some other such group. These people are responsible for the general business policy of the entity and often delegate some of their authority to officers and high-level employees. The responsibilities of directors, officers, and high-level employees are often spelled out in by-laws, resolutions of the directors, and other documents.

The managers of the business are also in charge of selling ownership interests in the business to various investors. In a corporation, these owners are shareholders. In other entities they may be limited partners or members. In many cases, owners have some control over the incorporated entity because they are allowed to vote on whom will be managers. Most business corporation acts require an annual meeting of shareholders where these shareholders have the right to elect a new board of directors. Similar rights exist with respect to other kinds of incorporated entities.

One area of major concern is the relationship between managers and investors. The law states that managers owe a fiduciary duty to the investors. Since investors have very little control over the managers, it is often possible for managers to conduct the affairs of the business in such a way as to damage the interests of the investors. Once ownership and control are separated, the possibility of abuse easily arises. The history of American business can be written around scandals where managers have abused the trust of the owners, and enriched themselves at the expense of the owners and employees of the business. Law and business ethics have struggled with various mechanisms to avoid or limit breaches of fiduciary duties by management.

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India

LOCATED ON THE SOUTH Asia peninsula with the Indian Ocean and the island of Sri Lanka to the south and the Himalayan Mountains to the north, India has a tropical monsoon climate except in the mountains. Major rivers include the sacred Ghanges and Bhramaputra in the north, the Indus in the west, and the Namarla, Godavari, Krishna, and Kaveri Rivers in the center and south.

The country has a population of over one billion people rivaling CHINA as the largest in the world. Unlike China, India has been unsuccessful in controlling population growth. Natural resources have been heavily denuded to support this growth, especially natural forests and topsoil, as well as coastal marine resources. India has surprisingly few cities with populations over 10 million people, but they include its capital New Delhi in the north, its major west coast port Mumbai (Bombay), and its major east coast port Kolcata (Calcutta).

Over 70 percent of the population is rural and a big economic problem is adequate rainfall at the right time and place for a bountiful harvest. India's official languages include Hindi (derived from ancient Sanskrit), English (from the British colonization of India until 1947), Punjabi (in the western provinces), and 15 major and 1,600 minor additional languages. Major ethnicities include 72 percent northern Indo-Aryans and 25 percent southern Dravidians. Religiously, 83 percent are Hindus, 10 percent Muslim, 2.6 percent Christian, 2 percent Sikh, 1 percent Buddhist, and 1 percent Jain. Such variety is largely due to an endless historical stream of invasions and migration into the region.

The Hindu caste system, derived from the Indo-Aryan migrations into north India over 3,000 years ago, is still the major organization of Indian society, with some

The Taj Mahal, a symbol of eternal love, also attests to the wealth of the emperor who built it for his late wife.

60 percent of the population designated as low-caste or *dalit*. About 15 percent of the Hindu population consists of the *Brahmin* priestly caste, who are often Indo-Aryan and wealthy. India has a population density of 277 inhabitants per square kilometer, and over 15 million people who live and work overseas.

The current, multi-linguistic, ethnic, and religious identity of India is represented in India's ruling group the National Democratic Alliance (NDA). India's socialist past, which helped it gain independence from the British Empire in 1947 under the leadership of Ghandi, is represented by the main opposition party, the Indian National Congress (INC). Together, the NDA and INC struggle for control of an economic system rooted in colonial MERCANTILISM, independence-period SOCIALISM, and new-millennium global capitalism.

Beginning with the 4,500-year-old Indus River valley civilization of the Punjab, the subcontinent of India has been at the center of Afro-Eurasian trade, migration, and invasion routes by land and sea because of its central geographic location and highly prized natural resources such as spices and jewels. Civilizations from the ancient Sumerians to the Han Chinese to the Romans have sought land- and sea-trade routes to India and today, these linkages continue. Well-educated, English-speaking Indians often leave India for jobs around the world, while Asian, Western, and Middle Eastern industries seek the inexpensive labor pool within India to keep costs down. Despite such global linkages, during the 1990s India had persistent 10-percent unemployment and inflation rates, foreign debt of close to $200 billion, and gross domestic and national production of less than $500 per person. Despite recent indications of political and social reform as evidenced by the 1997 election of Kocheril Raman Narayanan as president, the economic outlook for India's move toward capitalism is mixed.

Recent attempts to modernize the rail system have not led to a national transportation and communication infrastructure. Air and ship travel are still best between cities while a haphazard mixture of telephone, telegraph, and telex suffice for communication. India's debt-straddled, multi-interest state is only able to spend about $9 per person for education. This does not compare favorably with other rising east Asian, state-run economies that serve as a model for India, where spending is often 10 times more.

India's population is frugal, saving over 22 percent of its rupees (Indian currency) but unreliable rainfall forces many of India's 700 million rural inhabitants to borrow money at high rates of interest to buy food. Government efforts to remedy the food situation are hampered by high inflation prices and poor transportation. Additionally, the privatization of state-run businesses by selling them off or trying to make them competitive by encouraging joint foreign ventures, has only led to foreign-owned but Indian-administered industry that seeks profitable global markets rather than developing Indian markets.

India is the world's largest producer of tea, mangoes, sugar, and jute, but it also does well in rubber, tobacco, textiles, spices, and gems. India is self-sufficient in rice, grain, and dairy products but earthquakes, monsoon storms, droughts, poor storage, and transport cause great fluctuation in its staple products and food supply at a regional level. In manufactured products, India produces and exports clothing and textiles often made of native cotton. India is rich in mineral resources such as iron ore, bauxite, and chromite, leading to steel, chemical, rubber, and heavy machinery exports. This is offset by India's need for hydrocarbons in the form of oil as energy for its privatizing industries. Current consumption is over two billion barrels of crude oil per day compared with only 643,000 barrels of crude oil production per day within India. Many rural residents rely heavily upon wood for power but the forest reserves are now decimated. Increasing production of natural gas, thermal, and hydroelectric sources must happen quickly to relieve the energy situation. Unfortunately, this appears unlikely as major foreign power- and energy-investors include troubled transnational companies, such as the collapsed ENRON. Such foreign companies have an abysmal record in India and now are looked upon with suspicion and distrust by the majority of the labor force.

Although a stock market and banking system has existed in India since the days of the Dutch and British EAST INDIA companies, government debt, public poverty, and distrust of foreign corruption have led to an increasing reliance on a strong central bank and regional stock markets for funding the growth of capitalistic enterprises. The Reserve Bank of India now firmly controls India's banking system. Even private banks must contribute to national initiative projects. Since 1986, the Bombay Stock Exchange has also helped fund this growth but foreign-derived corruption scandals involving banks and shares have hurt the Indian banks and stock exchanges in 2001.

A more promising sign is the establishment of information technology (IT) enterprises in India, with the second-largest "Silicon Valley" being Bangalore in the south of the country. These IT firms present enormous potential for generating local employment and earning foreign exchange.

Many economists believe India must first negotiate power relationships between various groups with differing belief systems inside and outside of India. Then a civilization infrastructure of transport, communication, and education can be addressed. Only afterward can India move beyond a patchwork of local economic systems. Conflict between Hindu, Sikh, or Muslim, between PAKISTAN, China, or India, only masks the more serious social economic issues within India due to its fascinating past and future population growth.

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Indonesia

A NATION OF ISLANDS, Indonesia consists of eight major and over 17,000 smaller islands. Situated in the Indian Ocean between Asia and Australia, the unique natural resources of the area have played a significant role in its economic development. The earliest settlers to the islands were attracted, perhaps, by the stores of metallic ores including tin, nickel, copper, gold, and silver. In the 2nd century, the Greek geographer Ptolemy reported that the islands possessed a relatively advanced economy, including the use of special dyes for their *batik* clothing, the production of metal wares, and metal coinage. The islanders were active traders and participated in elaborate trading networks with southern INDIA, Persia, southeast Asia, and later CHINA and JAPAN.

Exotic spices were another important natural resource. Cinnamon, mace, and nutmeg were rumored to have medicinal or magical properties. Lured by such rumors (and high profits), several European countries came to these spice islands in the 1500s. Control over the luxury trade was hotly contested between the Portuguese, the British, and the Dutch who ultimately prevailed. The secret of the Dutch success was the unification of the efforts of individual traders and trading companies under one umbrella organization, the Dutch East India Company (*Verenigde Oost Indische Compagnie*), or VOC, which became one of the world's most powerful company. Using funds raised from issues of stock, the VOC set up their headquarters in the city of Jakarta. Either as a private company or a branch of the government, Dutch interests would dominate the Indonesian economy until independence in 1949.

While the Dutch maintained a fairly effective monopoly in the native spices, they were not able to keep competitors out of the more lucrative pepper market, and they began to introduce new crops in an effort to offset the costs incurred in the defense and maintenance of their colony. The most successful of these was coffee, introduced to the island of Java in 1723. Despite these efforts, the VOC was beset by high costs, corruption, and poor management. By the latter part of the 18th century, its profitability was steadily declining. In 1800, the VOC was disbanded and the Dutch presence in Asia was assumed directly by a newly created government agency.

In 1830, the agency instituted a radical new policy called the *cultuurstelsel*, or Cultivation System. Under its auspices, Dutch overseers managed agricultural output in the islands to maintain a balance between subsistence crops for the natives and profitable export crops. Farmers were assigned quotas of each and had to sell to the Dutch state at fixed prices and to ship them on Dutch ships. The system quickly became very profitable and constituted as much as approximately one-third of the state's revenue throughout the nineteenth century.

Not everyone was pleased. In 1860, a former colonial official, using the alias Multatuli, published *Max Havelaar: The Coffee Auctions of the Dutch Trading Company*, a scathing condemnation of the Cultivation System that exposed the brutal exploitation of Javanese peasants upon which it rested. The government bowed to public pressure fueled by the book and instituted a series of reforms, such as public education and irrigation, that were collectively called the Ethical Policy. By the end of the century, most economic regulations had been removed and the local economy prospered.

In the 20th century, the Indonesian economy benefited from the presence of rich oil and gas reserves. Possession of such strategic commodities was less helpful during WORLD WAR II, as the islands became a frequent target for bombing raids, but the two fuels constitute the bulk of Indonesian export income to the present day. The other major export, timber, is in increasing jeopardy because of deforestation. Since World War II, the Indonesian economy has had periods of prosperity but faces serious problems in the form of chronic political instability, corruption, and massive debt.

Indonesia is the most populous Muslim country in the world, with a GROSS DOMESTIC PRODUCT (GDP) of $687 billion (2000) for a population of 231 million.

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industrial organization

AS ECONOMIST Kaushik Basu notes, the importance of a field becomes evident when it usurps the acronym of another. For a long time, a mention of "IO" in economics would certainly be taken as a reference to input-output analysis. Today, however, "IO" is for certain to be taken as a reference to industrial organization (or industrial economics, as it is called in Europe).

In short, industrial organization is the study of the functioning of markets or industries. Studies in industrial organization have influenced, and are continuing to influence, the formulation and implementation of public policy in such areas as regulation and deregulation, the promotion of competition through antitrust policy and merger guidelines, and the stimulation of innovation and technological progress through subsidies and granting of PATENTS.

Industrial Organization is not a new subject. The field's foundations are traceable to Adam SMITH (1776), Antoine Cournot (1838), Alfred MARSHALL (1879), and Joseph Bertrand (1883), who are viewed by many as pioneers of industrial organization. However, it took a long time and two waves of interest for industrial organization to become what it is today, one of the major fields in MICROECONOMICS.

The first wave, known as classical industrial organization, is best characterized by the famous structure, conduct, performance approach. The basic idea of this approach is that market structure (i.e., the number of firms in a market, the degree of product differentiation, the cost structure, the degree of vertical integration, and so on) determines market conduct or pricing, research and development activities, investment, advertising, and so on. Market conduct then yields market performance that is measured by cost efficiency, price-cost margins, product variety, and innovation rates.

One can think of a profit-maximizing MONOPOLY as a theoretical model relying on the structure-conduct-performance approach. Assuming that the monopolist maximizes profit by choosing the level of output, the first order necessary condition for a maximum implies that the percentage deviation of price from marginal cost be equal to the inverse of the absolute value of the price elasticity of demand. Strictly speaking, this EQUILIBRIUM condition does not imply anything regarding causality, however it seems natural to view causality flowing from the demand elasticity to the price, the cost margin. Thus, from the basic conditions (DEMAND) via structure (MONOPOLY) we move to conduct (profit maximization) and performance (price cost margin). The structure-conduct-performance approach, although plausible, often rested on "loose" theories and emphasized case studies and empirical studies of industries. In fact, during this first wave of interest, industrial organization became synonymous with empirical studies of industries.

Typically, some measure of industry profitability was regressed on some measures of industry concentration, barriers to entry, and other proxies for structural variables of the industries under consideration. These regressions were run on cross-sectional data for a large sample of industries. Ignoring measurement problems, such regressions produced an array of stylized facts or regularities. However, the "links" between variables must be interpreted as correlations or descriptive statistics, not as causal relationships. The absence of causal interpretation is unsatisfactory from a theoretical perspective.

The finding that the price-cost-margin increases with the concentration in an industry suggests that firms in concentrated industries have market power and that the performance of these industries is not optimal. However, it does not reveal anything about the causes of market power and does not provide any guidelines for public policy aimed at improving market performance. Nevertheless, the first wave (i.e., the empirical tradition with its regressions and case studies) set an agenda for industrial organization. It also has to be noted that the first wave, or classical industrial organization, did not completely ignore economic theory. Still, growing dissatisfaction with the limitations of the empirical analysis and its lack of theoretical foundations gave rise to the second wave, that many have labeled the new industrial organization.

This second wave of interest started in the 1970s and was primarily fueled by the fact GAME THEORY imposed itself as a unifying methodology to the analysis of strategic interaction in markets. To a degree, the second wave re-launched the research started by Cournot and Bertrand. The new industrial organization utilizes the tools of microeconomic theory and game theory to analyze strategic interactions among firms in markets that are between the extreme cases of perfect competition and pure monopoly.

As a result, new solution concepts such as John NASH's equilibrium, dominant strategy equilibrium, sub-game perfect equilibrium, to mention a few, have been applied. Non-cooperative, as well as cooperative game theory, are used to explain behavior of firms operating under specific market conditions. Furthermore, dynamic analysis has in many instances replaced the old static approaches to the analysis of market structures. The New Industrial Organization has successfully formalized some of the informal stories and rejected others that were used to explain the results of the regressions analysis of the structure-conduct-performance approach. The theoretical contributions of the second wave have also fed back to empirical analysis. Cross-sectional studies of particular industries have been complemented by time-series analysis of the same industry, as well as comparisons of different industries. Advances in industrial organization, brought about by the new industrial organization, have also led to changes in other fields in economics.

Models of perfect competition are being replaced with models of imperfect competition in international trade and macroeconomic theory. In fact, one can argue that the new industrial organization was at the forefront of a drastic change that is going on in economic theory (i.e., re-examining all economic interactions as strategic interactions).

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Industrial Revolution

THE WORDS "Industrial Revolution" have been used to describe the most extensive change the world has ever experienced. The term was coined by English philosopher John Stuart MILL (1806–73) but was brought into popular use by English historian Arnold Toynbee (1889–1975). The most significant aspect of the Industrial Revolution was that it changed much of the world from a collection of separate agrarian communities into interconnected industrialized cities.

In the process, much of the work that had been done by human hands for centuries began to be performed by machines, which were faster and more efficient than humans could ever be. While many scholars accept 1760–1850 as the official period in which the Industrial Revolution took place, it actually continued into the 20th century in parts of the world and continues to evolve in developing nations into the 21st century.

Pre-Industrial Revolution. When the Industrial Revolution began in Europe, most people supported themselves from agriculture in some way. Agricultural practices had changed little since the Middle Ages. Families not only grew the food they ate but also made their own tools, clothing, and household items. Many workers did not own the land they farmed. Sometimes land was divided into strips that were farmed by different workers. Agriculture production was often inefficient because farmers did not understand the best way to use the land.

A common practice, in the early part of the 17th century, was to grow winter wheat one year, plant summer wheat the following year, and then allow the land to remain idle during the third year. Animals used fallow land for grazing, which upset nature's way of caring for arable land. Either famine or drought frequently destroyed crops, and whole communities went hungry when crops failed. Life was hard, and the mortality rate was high because diseases were common. Medical knowledge was often nonexistent, unavailable, or inadequate. Education was rare among the working and lower classes. Since people rarely traveled, many of them knew little of the world beyond their immediate areas.

The only sources of power on most farms were human muscles and animal strength. On a farm, human work generally included planting seed, gathering and chopping firewood, harvesting crops, and threshing grain. Horses, mules, or oxen usually pulled plows and transported goods. As knowledge advanced, people began using wind and water as sources of power to grind flour, pound cloth, saw timber, and crush stones. Villages might also have blacksmiths, carpenters, and wheelwrights. Women sometimes worked alongside the men in the fields, but were still expected to perform essential household tasks. Additionally, some women worked in their homes producing hand-made goods that could be sold to help support the family. Cloth-making was a major industry in Europe, and much of it was produced by women working in their homes.

Early stages of the Industrial Revolution. As the 18th century began, Europe was on the brink of enormous changes that would alter the entire world. Industrialization progressed faster in England than the rest of Europe because it was a land that possessed many essential resources, such as coal and iron. The population was rapidly growing to meet the needs of additional workers, and both the physical climate and the political climate were relatively stable. Between 1700–1850, the population of Europe doubled, while the population of England tripled. The North American population grew from one million to 26 million during this same period. As TECHNOLOGY and innovation grew, agricultural knowledge expanded accordingly. New and better ways of using the soil made agriculture more efficient and productive. The Dutch developed improved methods of rotating crops that did not exhaust the land so rapidly, and the number of agricultural products expanded when North Americans began to grow potatoes, tomatoes, beans, and corn for the first time. Farmers began to concentrate on growing special products rather than on trying to grow everything they needed or could sell from a limited number of acres. New machines were developed that improved farming still further. In England, for instance, Robert Ransome invented a self-sharpening plow; and in the UNITED STATES, John Deere invented a steel plow. Both inventions saved time for farmers that could be used elsewhere, making them more productive.

By the beginning of the 18th century, England had become the center of the cloth-making industry; and as industrialization progressed, the demand for all kinds of cloth products increased. Advances in machinery brought this industry into factories and away from the cottage industries that had sprung up earlier to meet the ever-growing need for cloth. Cotton replaced wool as the most commonly used textile because it was cheaper and it uses were more varied. New inventions, such as the flying shuttle, the "Spinning Jenny," combing and carding machines, and the power loom improved both efficiency and production in textile mills.

The iron industry also grew rapidly as the Industrial Revolution progressed. Iron was used to build railroads, steamships, machinery and bridges. New ways of producing purer iron of higher-quality resulted in additional uses for iron, such as farm implements, moving parts for factory machines and steam engines. However, it was the discovery of the process by which iron could be turned into steel that revolutionized the iron industry. In the mid-18th century, Henry Bessemer in England and William Kelly in the United States learned how to make steel by injecting air into molten ore. Steel became cheaper and more durable with this process; and thereafter, steel was used in making railroads, bridges, and buildings. This process paved the way for skyscrapers that would dominate cities in the following centuries.

Industrialization also brought about increased demand for coal to be used as fuel, which was needed to stoke the furnaces that produced steel. Once methods of mining were developed that allowed coalminers to dig deep into the earth, safety was a questionable issue. New ways of providing light and pumping water from the mines made mining safer, but then new problems developed. Small children were put to work bringing the coal to the surface, and what would later become known as black-lung disease developed among mine workers from breathing cold dust in confined spaces. Critics claimed that Great Britain became the world's manufacturing center by exploiting workers who were required to work long hours for little pay and under poor working conditions. Child labor became a major political issue, partly because of the practice of buying children from orphanages and workhouses to work in mills in Great Britain's cities.

Great Britain in the UNITED KINGDOM was the undisputed leader of manufacturing and technology in the early days of the Industrial Revolution. A full 75 percent of British exports were manufactured goods. Then, other European countries, such as GERMANY and FRANCE, began to covet Great Britain's success. At first, the countries simply sent representatives to England to observe the processes of industrialization. Afterward, these countries tried to entice industrialists, inventors, and workers to their countries. As a result, industrialization expanded throughout Europe. Inventors both in Europe and North America began flooding various industries with improvements, and Great Britain became afraid of losing industrial superiority. The country passed laws in 1774 and again in 1781 in an attempt to retain control over the spread of technology. Once expansion of industrialization became inevitable, Great Britain began to voluntarily export technology to countries such as RUSSIA and AUSTRIA. As industrialization spread, so did the need for raw products. These products were supplied from around the world. The United States, CANADA, AUSTRALIA, NEW ZEALAND, ARGENTINA, INDIA, and JAPAN all became major exporters.

Industrialization in the New World. Alexander HAMILTON (1755–1804), then serving as the first secretary of the Treasury, called for the Industrial Revolution to begin in the United States. He believed that the country would be left behind if the changes taking place in Europe were to bypass the New World. America was ripe for the Industrial Revolution because of its abundance of rich soil and available land. The country was new, and its citizens were eager for progress. Additionally, the American system was stable with a shared language and a citizenry who believed in equal opportunities and hard work, and who had a healthy respect for the law.

Foreign investors had been interested in the United States since the end of the AMERICAN CIVIL WAR, so CAPITAL was readily available for building factories, refineries, and mills. Once begun, the Industrial Revolution would progress much more rapidly in the United States than in other areas. American industrialists expanded an idea developed in Switzerland concerning the use of moveable parts for factory machines. They found that parts could be constructed so that moveable parts from one machine were interchangeable with moving parts from another machine. American industrialists also learned that continuous process manufacturing put out goods more quickly. Profits grew, and some of the money that was saved was spent on innovation, which in turn made even more money. The American economy was further transformed by the discovery of gold in California in 1848, and government revenues rose from $29 million in 1844 to $73 million in 1854.

New inventions and better ways of doing things guaranteed continued progress in the United States. In 1833, Obed Hussey developed a mechanical reaper, and the following year Cyrus McCormick patented an improved version that was widely used. In the American

The invention of the steam locomotive was one of the engines that pushed forward the Industrial Revolution.

West, cattle ranchers began to fence land to grow cattle, and range wars between the farmers and the ranchers became commonplace. In the South, rubber, coffee, sugar, and vegetable oil were grown for export. The major impact on Southern agriculture was Eli WHITNEY's invention of the cotton gin, which became instrumental in convincing farmers to switch from growing rice and tobacco crops to growing cotton. In the South, cotton became "king," and the result was that SLAVERY flourished throughout the region. The issue of slavery continued to divide the North and South until the AMERICAN CIVIL WAR, and its aftermath would create problems for the next one hundred years.

In 1785, Claude Berthollet discovered a way to bleach cloth, and the textile industry boomed as patterns printed on cloth made cotton even more versatile and desirable. Elias Howe and Isaac Singer invented the sewing machine almost simultaneously, providing more efficient ways of turning the cloth into other products. In 1789, Samuel Slater left England and brought his skills as a textile worker to the United States, where he designed the first spinning mill. Hamilton's ambitions had become reality. Over the course of the next century, countless numbers of immigrants would come to the United States seeking better lives and greater opportunity. Most of them came from Great Britain and IRELAND, but others left Italy, Germany, RUSSIA, and POLAND to swell their ranks. All of them would bring an element of their own culture into the "melting pot" that the United States had become.

The new industrial workers. The influx of women into the factory system began as the demand for workers resulted in recruitment of farm women who were used to hard work. Males were sometimes given bonuses for recruiting women workers. The women were often clustered together in boarding houses where they could be supervised during their time away from the factories. In factories such as those in Lowell, Massachusetts, women worked 14-hour days from 5 A.M. to 7 P.M. with 30-minute breaks twice a day for breakfast and dinner. Some of the workers were as young as 10, and they came from as far away as Canada. Although the work was hard, overall working conditions in the United States were better than those in Europe. Since the class system was more open and political rights were more readily available, workers were less likely to feel alienated from the system. This would change to some extent in the next century when battles between labor and management became common.

During the early part of the 20th century, industrialization continued to change life in the United States in major ways. Inventions of the past began to be used more commonly and to greater effect. Benjamin Franklin's experiments with electricity had identified its potential use as early as the 1740s, and by the late 1880s, some large cities had begun to develop utility systems. However, it was not until the 20th century that electricity became commonly used. Ilatian Alessandro Volta developed the first battery, and Michael Faraday learned how to generate electricity through coiled wire. In 1844, Samuel Morse invented the telegraph and transmitted the message "What God hath wrought" from Baltimore, Maryland, to Washington, D.C. These inventions were followed by Alexander Graham Bell's invention of the telephone in 1876 and Thomas EDISON's construction of the electric light bulb in 1879. By the turn of the century, Guglielmo Marconi had developed his work with transmitting electric signals to the point that instantaneous communication around the world was possible.

Petroleum, which was already a major industry in the United States, was changed forever when Gottlieb Daimler built the first gasoline-powered car in 1886. Henry FORD revolutionized the automobile industry when he modernized the process by which cars were assembled, producing the Model-T in 1908 at a cost of $825. By 1928, the price of an automobile had dropped to $399. In 1857, Frederick Winslow Taylor began to understand the principles of time and motion. Using a stopwatch, Taylor observed and timed workers, then used the information to develop more productive ways of accomplishing particular tasks. Improved transportation made it easier to send food products across the country and around the world. The food industry was further modernized through new processes of canning, preservation, and refrigeration. Agricultural researchers, such as Booker T. Washington, began to develop derivative products from existing foods. For instance, Washington discovered 325 products that could be made from peanuts and over 100 products that could be made from potatoes.

Industrialization had created corporate giants in the United States such as STANDARD OIL in the petroleum industry and the American Tobacco Company. These industries became so powerful that the federal government successfully sued them for forming monopolies. Industrialist and philanthropist Andrew CARNEGIE used the Bessemer process to produce steel and built the first modernized steel mill in Pittsburgh, Pennsylvania. As a result of the cheaper steel, American output increased from 19,000 tons to 10,000,000 at the turn of the century, and the United States began producing more steel than Great Britain and Germany combined. Further advances were made when interchangeable parts began to be used in guns, sewing machines, electrical equipment, calculators, cash registers, typewriters, and bicycles, making them all cheaper to produce and repair. With each new innovation, labor costs dropped further. By 1919, the United States was producing 35.8 percent of the world's capacity of goods. Its closest competitor was Germany at 15.7 percent, and Germany was reeling from the aftermath of WORLD WAR I.

Life had changed drastically for American women, and many began to demand the right to vote. This right was given in 1920 with the 19th Amendment to the U.S. Constitution. During World War I, women began to work in industries that had previously been closed to them, and they later dominated in many fields. This dominance led to the prominence of women in the early days of the labor movement. For example, in Elizabethton, Tennessee, two rayon plants were built that together employed around 5,000 mostly female workers. In 1929, 500 workers led a walkout, the first of many that would take place in textile mills across the country over the next decade. African-American women were hampered in their attempts for a better life because of legal segregation in the South and discrimination throughout the country. Many of them traded the hardships of the rural South for low-paying service jobs in the North. Industrialization was also a time of change for African-American men in the United States. Educator Booker T. Washington founded Tuskegee Institute in Tuskegee, Alabama, and began to educate African-Americans.

Advances in transportation continued to make the world much smaller during the Industrial Revolution. In

1763, James Watt improved on the earlier ideas of Thomas Newcomen and produced the internal-combustion steam engine, and by the early part of the 19th century, steam was used for sources of power all over the world. The invention of steam engines improved the RAILROADS to such an extent that they began to be used for travel as well as for transporting goods. Reduced travel time made travel more inviting. For example, in 1830, it took three weeks to travel from New York to Chicago, By 1857, the trip could be done in two days. Railroad mileage increased in all major industrial areas. In Great Britain, railroad mileage grew from 6,621 miles in 1850 to 23,387 in 1910. Germany's railroad mileage increased from 3,637 to 36,152 in the same period. The increase was even more dramatic in the United States. From 1840–1910, railroad mileage increased from 9,021 to 249, 902. Intercontinental travel by rail became a reality. In the 1800s, Robert Fulton and Patrick Bell developed the use of steamships for commercial use. In 1837, the Great Western carried passengers from England to the United States. Once ships were in common use, it became necessary to develop quicker routes, and the SUEZ CANAL was built to link the Mediterranean Sea and the Indian Ocean. By 1920, the construction of the PANAMA CANAL opened a shorter passageway between the Caribbean Sea and the Pacific Ocean. The world had truly become smaller place and was now irrevocably linked through travel, communication, economics, and politics.

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inflation

A CONTINUAL RISE in the general level of prices of goods and services is termed inflation. The inflation rate equals the percentage rate of increase in the price level within a certain period of time, usually a year. The two most widely used measures of the price level are the GROSS DOMESTIC PRODUCT (GDP) deflator and the Consumer Price Index (CPI). The former measures the average level of prices of goods and services included in GDP and is defined as follows:

GDP deflator = nominal GDP / real GDP

CPI measures the average level of prices of goods and services purchased by a typical consumer in the economy.

Why should we care about inflation? If the inflation rate is, say, 6 percent, and all prices and wages increase by 6 percent, why would it cause any major cost? The problem is that during inflation not all prices change proportionately; some prices (and wages) rise faster than others. Therefore, inflation can redistribute income from those who raise their prices to those who do not. It seems that despite this income redistribution, the economy as a whole does not become poorer as a result of higher inflation. However, inflation is usually associated with some undesirable consequences. Economists usually talk about the following costs of inflation:

1. A higher inflation rate leads to a higher interest rate and thus increases the opportunity cost of holding money. As a result, people will try to minimize their holdings of money and increase their trips to the bank. This cost of additional trips to the bank is called *shoe-leather cost*.
2. When prices are stable, it is easier for people to compare prices and make the right choices; when inflation is high, this kind of calculation becomes increasingly difficult. This argument is supported by evidence gathered by both psychologists and economists.
3. Since prices rise unevenly, inflation distorts efficiency of economic allocations.
4. Higher inflation is usually more variable. This makes financial assets riskier and increases uncertainty.

Inflation at moderate level has its benefits too. For example, the CENTRAL BANK may want the real interest rate to be negative, say, when the economy is in recession. The idea is that a low or negative interest rate makes investment spending attractive and may boost the economic performance. Recall that the real interest rate is the difference between the nominal interest rate, which cannot be negative, and inflation rate. If inflation rate is zero then the real interest rate cannot be negative and the central bank has very limited ability to help the economy.

High inflation, also called hyperinflation, is always a pathology. Two classical instances of hyperinflations are those in GERMANY in 1922–23 and in HUNGARY in 1945–46. The average monthly inflation rate during the German hyperinflation was around 320 percent, whereas the figure in Hungary was 19,800 percent. Hyperinflations are stopped through what is called a stabilization strategy. It is necessary to impose some control on wages to cut through the wage-price spiral. This is referred to as an incomes policy, which may require less frequent wage indexation, or an agreement between firms and workers about lower real wages. The recent examples of successful stabilizations include Bolivia in 1985, MEXICO in 1989, ARGENTINA in 1992, and BRAZIL in 1996. As the events in Argentina and Brazil suggest, stopping a hyperinflation is a very complex task. It takes government credibility for a stabilization policy to work.

It is widely believed that in developed countries, the optimal inflation rate is somewhere between 0 percent and 3 percent. Those who advocate price stability prefer 0 percent, whereas those who emphasize the benefit of small positive inflation prefer 3 percent.

Economists believe there is a short-run trade-off between inflation and unemployment. This relationship is called the PHILLIPS CURVE, after British economist A.W. Phillips who first observed a negative relationship between the inflation rate and the unemployment rate. The current version of this relationship can be described through this equation:

$$\pi = \pi^e - b(u\text{-}u^n) + \varepsilon,\ b>0$$

According to this relationship, the actual inflation rate π exceeds the expected rate of inflation π^e if the actual unemployment rate u exceeds the natural rate of unemployment u^n. (The role of the random term ε is discussed below.) It is clear that if a policymaker wants to decrease inflation there will be a price to pay in the short run (i.e. a higher unemployment rate and thus lower output). Economists use the notion of sacrifice ratio to measure the cost of lowering inflation. The sacrifice ratio is the percent deviation of output when the inflation rate is lowered by 1 percent. For the UNITED STATES and CANADA this ratio has been estimated to average around 2.4 and 1.5 over the 1960s, 1970s, and 1980s.

If inflation is not desirable, why do governments allow inflation to occur? Almost all cases of hyperinflation occur because of fiscal problems. Governments run large budget deficits and finance them through printing money. This argument is best supported by the so-called quantity theory of money. At the center of the theory is the quantity equation:

(percent change in M) + (percent change in V)
= (percent change in P) + (percent change in Y)

where M is the stock of money in the economy, V is the transaction velocity of money and measures how fast money circulates in the economy, P is the price level, and Y is real GDP. The percentage change in GDP Y depends on the factors of production and technological progress and thus taken as fixed. It is also assumed that velocity V does not change in the short run. Then the quantity theory of money states that the percentage change in the money stock changes one-to-one with the percentage change in the price level, which is inflation.

In other words, this theory claims that the central bank is in control of inflation. If it wants increases in money supply then inflation will pick up. If the central bank wants the price level to be stable, it should keep the money supply stable.

The two terms in the Phillips Curve equation, $b(u\text{-}u^n)$ and ε, can explain how the inflation rate may change. The first term implies that if the unemployment rate exceeds its natural level, this will put upward pressure on inflation. This is called demand-pull inflation for the source of the upward pressure comes from high aggregate demand. High unemployment puts downward pressure on inflation.

The second term, ε, indicates that inflation may go up and down as a result of supply shocks. An example of such a shock could be the oil price increase in the 1970s. This is called cost-push inflation for adverse supply shocks are responsible for higher production costs and eventually higher inflation.

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information revolution

THE INFORMATION REVOLUTION is a phrase we use to refer to the dramatic changes taking place during the last half of the 20th century in which service jobs (ranging from high-technology, highly skilled professions to low-skill jobs) are more common than jobs in manufacturing or AGRICULTURE. The product of skilled professionals is the information or knowledge they provide. It is still early enough that no one knows precisely what all of the implications of the information revolution will be for social life. But clearly changes such as the information superhighway permitting people to communicate using computers all around the globe, fax machines, satellite dishes, and cellular phones are changing how families spend their time, the kind of work we do, and many other aspects of our lives.

At the end of WORLD WAR II, the first electronic digital computer, ENIAC, weighed thirty tons, had 18,000 vacuum tubes, and occupied a space as large as a boxcar. Less than 40 years later, many hand-held calculators had comparable computing power for a few dollars. Today most people have a computer on their desk with more computing power than engineers could imagine just a few years ago.

The impact of computers on our society was probably best seen in 1982 when *Time* magazine picked the computer as its "Man of the Year," actually listing it as "Machine of the Year." This perhaps shows how influential the computer had become in our society. The computer has become helpful in managing knowledge at a time when the amount of information is expanding exponentially. The information stored in the world's libraries and computers doubles every eight years. In a sense the computer age and the information age seem to go hand in hand.

The information revolution began with the invention of the integrated circuit or computer chip. Those chips have revolutionized our lives, running our appliances, providing calculators, computers, and other electronic devices to control our world.

Information revolution and the "new economy." There exists a general consensus among economists and noneconomists alike that information technology is creating an economy that is "new." Information technology is indeed revolutionizing the economy: creating new opportunities, allowing old tasks to be done in different ways, shifting relative costs. What is driving or shaping this change in business and economics? There is no simple answer to this very large question, but certainly very important is the ability of firms to obtain or transmit information at rates never before thought possible. Companies now have the ability to go from ideas to the production line within weeks. Investors have (almost) complete information in making important financial decisions. Students can use the internet to more effectively research a topic. Scientists around the world can better coordinate their efforts to combat the spread of disease. The information revolution created a new economy that is significantly more productive and significantly more efficient than anyone had ever thought possible.

The revolutionary impact of the information revolution is just beginning to be felt in the first decades of the 21st century. But it is not only information that fuels this impact, nor is it only artificial intelligence. It is also the effect of computers and data processing on decision-making, policymaking, and strategy. It is something that practically no one foresaw or, indeed, even talked about until the mid-1990s: e-commerce, that is, the explosive emergence of the internet as a major, perhaps eventually some predict, the major worldwide distribution channel for goods, for services, and, surprisingly, for managerial and professional jobs. This is profoundly changing economies, markets, and industry structures; products and services and their flow; consumer segmentation, consumer values, and CONSUMER BEHAVIOR; jobs and labor markets. But the impact may be even greater on societies and politics and, above all, on the way we see the world and ourselves in it.

Of course, these are only predictions. But they are made on the assumption that the information revolution will evolve as several earlier technology-based "revolutions" have evolved over the past 500 years, since Gutenberg's printing revolution in the mid-15th century. In particular, the assumption is that the information revolution will be like the INDUSTRIAL REVOLUTION of the late 18th and early 19th centuries. And that is, indeed, exactly how the information revolution has been progressing during its first decades.

Industrial Revolution vs. information revolution. The information revolution is now at the point at which the Industrial Revolution was in the early 1820s, about 40 years after James Watt's improved steam engine was first applied, in 1785, to an industrial operation, the spinning of cotton. And the steam engine was to the first Industrial Revolution what the computer has been to the information revolution, its trigger and its symbol. Almost everybody today believes that nothing in economic history has ever moved as fast as, or had a greater impact than, the information revolution. But the Industrial Revolution moved at least as fast in the same time span, and probably had an equal impact if not a greater one. Moore's Law asserts that the price of the information revolution's basic element, the microchip, drops by 50 percent every 18 months. The same was true of the products whose manufacture was mechanized by the first Industrial Revolution. The price of cotton textiles fell by 90 percent in the 50 years spanning the start of the 18th century.

Like the Industrial Revolution two centuries ago, the information revolution so far (that is, since the first computers, in the mid-1940s) has only transformed processes that were here all along. In fact, many argue that the real impact of the information revolution has not been in the form of "information." Almost none of the effects of information envisaged 40 years ago have actually happened. For example, there has been practically no change in the way major decisions are made in business or government. But the information revolution has mechanized traditional processes in a remarkable number of areas.

Information technology and income differences across nations. How does the information revolution affect the income differences between developed countries? There is a debate among economists about how likely it is that the information revolution will provide satisfactory explanations for differences among advanced industrial economies, between, say, the UNITED STATES and western Europe. Advanced economies have access to the same technologies. Yet the degree to which these technologies have been adopted, the purposes to which they are put, and their apparent consequences for business and economic life vary significantly from one country to another. It has been suggested that differences in national policies—encouraging or discouraging private investment in information technology, facilitating or hindering economic restructuring to take advantage of new technologies, shaping private attitudes towards risk-taking, and so on—may be the underlying reasons that different economies have exploited technology in different ways, and that technology has affected economies differently.

Perhaps a more important question is how will the information revolution affect developing and less-developed countries? The answer to this question lies in these countries' ability to effectively adopt existing technology. The work of R. Nelson and E. Phelps (1965), R. Findlay (1978) and more recently J. Benhabib and M. Spiegel (1994) has shown that technology imitation can be a remarkable source of economic growth and development in less-developed nations.

However, technology imitation is not at all trivial as poor countries have neither the human capital nor the infrastructure necessary to make productive use of these technologies. Indeed, one of the recent puzzles in GROWTH theory is why we do not observe more imitation of existing technologies and readily available information by poor nations. It has been suggested by many economists that if poor countries do not start taking advantage of the information revolution, there will be a substantial increase in income inequality within and across countries.

The nature of information. The difference between the value of information (just like technology) on the one hand, and factors of production such as physical and human capital on the other, can more formally be described as follows: If a conventional factor of production is being used by one person, it cannot be used by another. Exactly the opposite is true of information in general; the fact that one person is using information does not prevent others from using it just as effectively. This non-rivalry of information means that in studying it, researchers have to focus much more on transfers (between firms or between countries) than is the case with more traditional factors of production.

In many cases, this transferability can be a disadvantage. The fact that new information can be easily replicated often (but not always) means that the person (firm or country) who has created it will not be able to reap most of the benefits from its creation. This, in turn, means that the incentives for creating technology are diminished.

To see evidence of the role of readily accessible information in economic growth all we have to do is to look around. Growth in living standards is so wrapped up with technological progress that often the two seem indistinguishable. We consume goods that did not even exist 50 years ago. Modern inventions, ranging from the obviously important to the minor, have changed the way in which goods are produced, and have enabled workers to produce immensely more than they did a few generations ago.

One of the main sources of information technology is RESEARCH AND DEVELOPMENT (R&D). R&D (public or private) results in the production of ideas (information) that is then easily distributed to the rest of the economy at low costs. The nature of information is very unique as it is different from most other economic goods.

Most R&D is conducted by private firms that seek to maximize profits. However, the unique nature of technology has long led governments to play a role in research.

For example, in 1714 the British government offered a prize of £20,000 for the creation of a sea-going clock accurate enough to measure longitude. In the United States in 1997, 30.5 percent of R&D was sponsored by the government, although a good deal of this was aimed at military, rather than business applications. And lest we forget, the internet was created and nurtured under government auspices. The most important way in which government aids R&D, however, is by providing inventors with legal protection against having others copy their work, in the form of a PATENT.

Private firms engage in R&D in the hope of inventing something: a new product, or a new, more efficient way of producing some existing product. If the firm is successful in its research, it will be able to raise its profits. In the best case (from the firm's point of view), its invention will give it a MONOPOLY on the sale of some product, allowing it to earn super-normal profits. Alternatively, a new invention may give the firm a means of producing the same product that is being sold by other firms, but at a lower price. In either case, the extra profits that arise from this competitive advantage are the incentive that makes the firm perform R&D in the first place. The larger the profits associated with having invented something, the more the firm is willing to spend in the effort to invent it.

The process by which new inventions create profits for firms, by which these profits serve as the incentive to engage in research in the first place, and by which eventually the new technologies so created are replaced by yet newer technologies, was given the name "creative destruction" by the economist Joseph SCHUMPETER. Although we often celebrate the new technologies, such a perspective ignores the dislocations suffered by those firms and workers who are displaced by new technologies. History is full of examples of technologies (and people) that have been displaced by technological progress.

Many recent models of economic growth emphasize the key role that R&D plays in the production of information and economic development. For example P. Romer (1990), P. Aghion and P. Howitt (1992), and C. Jones (1995), among others, have contributed to our understanding of the unique nature of technological goods and services by constructing economic models in which the production and dissemination of technology/information by private firms results in increased aggregate output and economic growth. The effect of "R&D growth models" in the economics literature is so great that these models are an integral part of teaching at the undergraduate and graduate level. In addition, understanding the economics of information technology using R&D growth models is now a common practice in the literature and a hot topic among economics researchers.

Potential costs associated with the information revolution. There are several costs associated with the information revolution. First, there are computer crimes involving malicious intent of individuals for financial gain (hacking). Second, there are programming breakdowns and failures involving bad programming, operator error, and accidental failure. Third, there is the risk of cyber terrorism and information warfare that involve malicious intent of (political) groups and states. All of these potential drawbacks of the information revolution are serious with very costly consequences to individuals, firms, and the economy.

There are many measures (in fact, markets) in place that try to deal with these problems and try to mitigate their effect. However, as with any other major innovation, we do not know exactly what the future holds and how large these costs may really be. One thing is for sure (and ought to be highlighted more often) and that is that the benefits from the information revolution grossly outweigh the costs.

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ING Group

A GLOBAL FINANCIAL institution, ING Group N.V. offers banking, insurance, and asset management to almost 50 million private, corporate, and institutional clients in more than 60 countries, and is based in Amsterdam, the NETHERLANDS. As a whole, ING is the result of a merger that took place in 1990, between Nationale-Nederlanden and NMB Postbank Groep. Its 1991 acronym means International Netherlands Group.

This financial institution comprises a broad spectrum of companies that are known under the ING brand. Since 2000, ING also includes ReliaStar, Aetna Financial Services, and Aetna International. The company's products and services include private banking, current accounts, savings and investments, individual loans and individual insurance. The company has subsidiaries and affiliates on five continents.

ING's stock is traded in Amsterdam, Brussels, Frankfurt, Paris, New York City, and Switzerland. ING has almost 2 billion shares outstanding. Its market capitalization is around $25 billion, about the same size as DEUTSCHE BANK in GERMANY or FleetBoston Financials in the United States. As a true international company, its Annual Report is published in three versions: Dutch, French and English. ING was ranked as the 20th largest company in the world in 2002 with $83 billion in revenue.

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insider trading

BROADLY, INSIDER TRADING refers to the practice of corporate insiders such as officers, directors, and employees, buying and selling stock in their own companies. In the UNITED STATES, all such trades must be reported to the SECURITIES AND EXCHANGE COMMISSION (SEC), which publishes a monthly compendium of trades in its "Official Summary of Securities Transactions and Holdings."

While such trades may be perfectly legal, insider trading is most frequently used in relation to versions of such trades that are deemed illegal. In these cases, insider trading refers to the practice of trading in a security, while in possession of material, non-public information about it, violating a fiduciary duty or other relationship of trust and confidence in the process. Examples of illegal insider trading would include:

1. An officer of a firm buying the company's stock just prior to release of its financial results, knowing that the news will lead to an increase in the share price.
2. An investment banker trading on the basis of confidential information on a corporate client acquired in the course of his duties for the client.
3. An employee "tipping" information about a company to friends and family members in advance of its public release, so that they might trade on that information.
4. An employee of a printing firm trading on the basis of information gained from documents being printed for a client regarding a corporate merger.
5. "Front Running," a practice in which a stock broker purchases (or sells) stock in a company just prior to executing a large "buy" (or "sell") order for a mutual fund.

Insider trading is frequently viewed as unfair and not conducive to free and efficient markets. Such a practice is characterized as fraudulent in many countries, punishable under civil and criminal law. In the United States, sections 10(b) and section 16 of the Securities Exchange Act of 1934 are applicable to insider trading. Section 16 prohibits "short-swing profits" in the company's own stock by corporate insiders, defined as the officers and directors of the company and shareholders with greater than 10 percent holdings. Short-swing profits are profits realized through purchase and sale of the company's stock within a six-month period. Section 10(b) contains provisions against fraud in securities transactions.

The Securities and Exchange Commission, which was created by the Act, promulgated Rule 10b5 specifying the circumstances in which section 10(b) of the Act was applicable. Rule 10b5 is a rule with broad antifraud provisions, making it unlawful to engage in fraud or misrepresentation in connection with the purchase or sale of a security, and therefore applicable to insider trading cases as well. Further legislation has since been enacted to tighten the law and provide appropriate penalties. The Insider Trading Sanctions Act of 1984 provides for penalties up to three times the profit gained or the loss avoided by the insider trading. In 1988, following several high-profile cases of insider trading, the law was further augmented through the passage of the Insider Trading and Securities Fraud Enforcement Act of 1988.

In interpreting and applying SEC Rule 10b5, an argument that is frequently invoked is the "misappropriation theory." Under this theory, when a person misappropriates confidential information for securities trading purposes in breach of fiduciary duty, he or she defrauds the principal of the exclusive use of the information. The person therefore commits fraud in connection with a securities transaction, violating section 10(b) of the Securities Exchange Act of 1934 and SEC Rule 10b5.

Rule 10b5 has been bolstered by several other rules to take into account special cases occurring in securities markets. The "disclose or abstain rule" covers outsiders who are in a special relationship with a company that gives them access to confidential information regarding its affairs, such as its consultants, lawyers, auditors and bankers. Such outsiders are termed "temporary" or "constructive insiders." As per the rule, corporate insiders, as well as temporary or constructive insiders, who possess material nonpublic information must disclose it before trading or abstain from trading until the information is publicly disseminated.

Rule 14e3 removes the fiduciary-duty requirement in the case of tender offers. Under the rule, it is illegal for anyone to trade on the basis of material nonpublic information pertaining to tender offers provided that they were aware that the information had emanated from an insider. Regulation FD (Fair Disclosure) provides that when a firm discloses material nonpublic information to certain specific persons such as stock analysts, it must also make a public disclosure of that information.

Rule 10b5-1 clarifies the circumstances under which a person would be deemed to have traded "on the basis of" material nonpublic information. Under the rule, it is merely sufficient for the trader to have been aware of material non-public information when making the purchase or sale, in order for the trade to be deemed to have been made on the basis of such information. There are a few exceptions to the rule. These pertain to situations where it is clear that the information that the trader was aware of was not a factor in the decision to trade. For example, the trade could have been made pursuant to a pre-existing plan or contract.

Rule 10b5-2 specifies that a person receiving confidential information under certain circumstances would owe a duty of trust or confidence and thus be liable under the misappropriation theory. These circumstances include:

1. When the person agreed to keep information confidential
2. When the persons involved in the communication had a history, pattern, or practice of sharing confidences that resulted in a reasonable expectation of confidentiality
3. When the person who provided the information was a spouse, parent, child, or sibling of the recipient, unless it could be shown that there was no reasonable expectation of confidentiality in such a relationship.

In the United States, the law on insider trading has evolved through several landmark cases such as *SEC v. Texas Gulf Sulphur Co.* (1968), *Chiarella v. United States* (1980), *United States v. Newman* (1981), *Dirks v. SEC* (1983), *United States v. Carpenter* (1986) and *United States v. O'Hagan* (1997).

In other countries, the law on insider trading is still in a developmental stage. In 1989, the Council of the European Communities promulgated the European Economic Community Directive Coordinating Regulation on Insider Trading, coordinating insider trading regulations within the community and setting minimum standards that must be met by all members. The directive prohibits insiders from using inside information either by themselves or by tipping others. Article 1 of the directive defines "inside information" as "information of a precise nature about the security or issuer which has not been made public which, if it were made public, would likely have a significant effect on the price of the security."

The directive does not require a fiduciary duty to be violated in order for a trade to be deemed illegal. Several member countries have since passed legislation to apply the principles of the directive. The statutes in these countries are usually more specific about what constitutes material nonpublic information. Also, many of these countries define insider trading, not on the basis of fiduciary duty, but on the basis of "access" to information. In general, those who have unequal access to the material nonpublic information are prohibited from trading on the basis of that information, regardless of whether they have a fiduciary duty or not. Thus, even "tippees" who receive information from insiders or others who have privileged access to such information, are liable under this principle.

Over 80 countries have laws in place to regulate insider trading. However, the pace of enforcement of these laws varies widely across countries, with fewer than 40 countries having seen any proceedings under such regulations.

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insurance

IF A PERSON EXPERIENCES diminishing marginal utility of wealth (i.e., an extra dollar provides more utility when one is poor than when one is rich) then a fair bet, which has an expected value of zero, will lower the person's utility. Even though the bet has an expected value of zero, it has an expected utility that is negative because losing the bet would cause more disutility than winning the bet would provide in increased utility. For this reason, people who experience diminishing marginal utility of wealth are called risk-averse and they often seek to eliminate future risks to their wealth using insurance.

An insurance policy is a contract with the following characteristics. The insured pays a premium to the insurer before a specific risk is resolved. The specific risk might involve the possibility of an auto accident, sickness, or death. For simplicity, assume there are only two possible outcomes: a good state of the world (e.g., no auto accident, healthy, or alive), and a bad state of the world (e.g., crash, illness, or death). After the risk is resolved and the state of the world is known, the insurer will pay the insured if the bad state of the world occurred, and will pay nothing if the good state of the world occurred. Thus, insurance is a way that individuals can transfer their risk to an insurance company in exchange for a fee and allows individuals to smooth their wealth over possible future states of the world.

Risk assumption. An insurance company is willing to assume applicants' risks because if the insurance company has insured a large number of people, and if the risks of the people they insure are independent, the insurance company can enjoy great confidence in the amount they will have to pay in claims in the next period. If, however, the risks of applicants are highly correlated, then the insurer cannot benefit from risk-pooling and will be reluctant to assume the risks. Insurers tend to only insure risks that are diversifiable and not to offer insurance for non-diversifiable risks, such as war.

Insurance is actuarially fair if the premium is exactly equal to the expected value of the gamble. For example, if an applicant has a 50 percent chance of perfect health and zero medical costs and a 50 percent chance of illness that will cost $100, then an actuarially fair premium for a policy that would cover the $100 cost of illness would equal (.5 * 0) + (.5 * $100) = $50. If insurance is actuarially fair, risk-averse individuals will fully insure; that is, they will buy enough insurance to eliminate all variance in wealth across possible future states of the world. For example, consider risk-averse people who face two possible states of the future (good and bad) who fully insure. If the good state of the world occurs, they will keep their current wealth less the insurance premium. If the bad state of the world occurs, they will receive an insurance settlement that will bring their wealth to the same level it would have been in the good state of the world.

In practice, insurance is never actuarially fair. There are many costs to an insurance company besides paying benefits to the insured; they must hire a sales staff, comply with state regulations, pay rent on their office space. As a result, the premiums charged to applicants exceed the expected value of the gamble. Faced with premiums that are actuarially unfair, even risk-averse individuals may choose to less than fully insure. The amount that risk-averse individuals are willing to pay for insurance, above and beyond the actuarially fair premium, is called the risk premium.

Insuring against natural disasters is one way to avert the risk of catastrophic future events.

Hedging is the use of forward contracts to insure against future price movements. It is commonly used by farmers, who must plant crops well before they know what the price of the crops will be at harvest. In order to eliminate the risk of price fluctuations, farmers may hedge by entering into a forward contract, in which they promise to deliver the crops at a future date in exchange for a price agreed upon today. Farmers wishing to insure against a future price fall contract with crop buyers who wish to insure against a future price rise.

Insurance markets. Markets for insurance are to some extent affected by the problems of adverse selection and MORAL HAZARD. Adverse selection occurs when there exists asymmetric information between the insurance company and an applicant for insurance; specifically, when individuals have private knowledge about their risk that insurers cannot obtain. If insurers price their policies according to the average risk in the population, their policies will be unattractive to those of lower-than-average risk, and very attractive to those of higher-than-average risk.

As a result, those who sign up for the insurance will be those of the highest risk, and the insurer will pay out greater than expected claims. In response to paying higher than expected claims, the insurer will likely raise the premium, further limiting the pool to the unobservably high-risk. A "premium death spiral" can result, in which the customers of low risk cancel their insurance, premiums rise, more customers cancel their insurance, and the shrinking insurance pool increasingly consists of the high-risk. Fearing that adverse selection may lead to breakdown in private insurance markets, many developed countries have compulsory, publicly sponsored markets for old-age annuities, such as Social Security in the United States, and compulsory, publicly sponsored health insurance programs. Because participation is mandatory in such programs, adverse selection is impossible.

It has been shown that, in theory, adverse selection could be eliminated under certain conditions through a separating equilibrium. Suppose there exist two groups in the population, high risk and low risk, and insurers cannot distinguish between them; it may be possible for insurers to offer two different insurance contracts that cause the two groups to voluntarily choose the contract that indicates their risk type; this is the origin of the term "separating equilibrium." If insurers structure the contracts correctly, a policy that offers a small quantity of insurance at a low price per dollar of coverage will attract the low risk, and a policy that offers a large quantity of insurance at a high price per dollar of coverage will attract the high risk. This theoretical result may not conform to how actual insurance markets operate, however. There is evidence that, contrary to the prediction of this model, those who buy larger contracts, all else equal, are charged lower prices per dollar of coverage by insurers and are of lower risk.

The extent to which adverse selection impedes the functioning of insurance markets is unclear. Insurance companies seek to minimize the impact of adverse selection by collecting information about the expected risk of the applicant (through medical examinations and collecting detailed family medical history), a process called underwriting. When this information is combined with the insurance company's estimates of expected payouts associated with certain characteristics that are based on the insurance company's previous experience, insurance companies may know more about applicants' risks than applicants themselves, greatly limiting the possibility of adverse selection.

The United States is one of the few developed countries that has not instituted a compulsory, publicly provided health-insurance program. In America, most people receive their health insurance coverage through an employer. The heavy reliance on employer-provided health insurance is an artifact of tax policy that allows employers to deduct from their taxes health insurance costs for their workers.

Moral hazard occurs when people take fewer precautions because they know that they are insured against bad outcomes. Moral hazard can occur *ex ante* or *ex post*. Ex ante moral hazard occurs before the risk is resolved if people take fewer precautions against the loss occurring. For example, people may drive somewhat more carelessly if they have auto insurance because they know that if they do get into an accident, they won't have to pay the full price of the damage. Insurance policies seek to limit *ex ante* moral hazard through the use of exclusion clauses, which state that the insurance policy is invalid if the harm seems to have been caused through negligence.

Ex post moral hazard occurs after the risk is resolved and when the insured has the opportunity to influence the total amount of the claim. For example, an insured person who has been in a car accident might choose to stay an extra night in the hospital because she doesn't pay the full cost. Insurers try to limit *ex post* moral hazard by imposing deductibles and co-insurance rates that create disincentives for the insured to increase costs. A deductible is an amount that the insured must pay before an insurance company will pay anything. The co-insurance rate is the percentage of the total bill after the deductible that the insured must pay; however, the co-insurance rate often drops to zero after an insured has reached a specified amount of out-of-pocket spending that is called the stop-loss.

The best evidence on the effectiveness of such cost-sharing mechanisms comes from the RAND Health Insurance Experiment. In this experiment, individuals were randomized into an insurance plan with varying degrees of cost sharing. The experiment found a price elasticity of demand for medical care of –0.2, which is consistent with co-payments decreasing moral hazard.

Insurance markets are also characterized by the principal-agent problem. In such a problem, a principal's welfare depends on actions taken by the agent, but the principal can only imperfectly monitor the actions of the agent. The possibility that the agent may not take the action desired by the principal is raised by the fact that the agent's utility function may differ from that of the principal. Applied to insurance, a health-insurance company would like physicians to minimize the costs of treatment, but physicians have an incentive to maximize their earnings (and minimize their chances of being sued for malpractice). Insurers can only imperfectly monitor whether physicians are over-prescribing care or inducing demand. Patients may go along with an over-prescription of care because they, too, lack perfect information and they may derive some utility from the treatments. Managed-care organizations have attempted to solve the principal-agent problem by attempting to monitor or influence physician practices and by providing physicians with financial incentives to reduce costs.

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Inter-American Development Bank

ESTABLISHED IN 1959, the Inter-American Development Bank (IDB) was the first regional development bank. Originally composed of 19 Latin American nations and the UNITED STATES, its membership has expanded to include 26 borrowing members from Latin America and the Caribbean (all the Latin American nations except CUBA) and 20 non-borrowing members including JAPAN, CANADA, the United States, ISRAEL and 16 European nations. Washington, D.C., serves as the banks' headquarters, but there are offices in all borrowing member nations as well as Paris, FRANCE and Tokyo, JAPAN.

The idea of a regional development institution goes back to the First Inter-American Conference held in Washington, D.C., in 1890, but the IDB was conceived much later to complement the lending efforts of the WORLD BANK in Latin America. Over time the IDB has become the largest source of multilateral funds to the region, with $110 billion in outstanding loans and loan guarantees, and $7.9 billion in new loans and guarantees in 2001.

Unlike other multilateral regional banks, borrowing countries hold a majority of shares in the IDB. Latin American and Caribbean nations have a majority representation in the board of governors, but most functions are relegated to the board of executive directors that approves the loans negotiated between banks' staff and the governments of the borrowing nations. The IDB has been very responsive to U.S. interests in the region as was evident in the refusal to grant new loans to the administration of Salvador Allende in CHILE during the early 1970s, and the switch to market-oriented reforms in the 1980s.

IDB loans were traditionally directed to large infrastructure projects such as dams and roads. The debt crisis of the 1980s in Latin America pointed to the shortcomings of large-project financing for development and threatened the financial soundness of the bank. The IDB responded with a significant shift towards policy-based lending, that is, projects whose objective is to redirect domestic economic policy into compliance with the "Washington Consensus" including administrative reform of the state, trade liberalization, and privatization. Loans for the reform and modernization of the state in 2001 accounted for 30 percent of all loans that year, whereas they were only 17 percent for the period 1961–2001. Other innovations include setting aside up to 5 percent of the bank's portfolio for private sector lending without government guarantee and the establishment of a $10 billion special operations fund to lend to lesser-developed nations at lower-than-market rates.

The IDB gives priority to projects that enhance competitiveness, integration into the global economy, modernization of the state and social development, a strategy that purportedly leads to its two primary objectives, SUSTAINABLE DEVELOPMENT and poverty reduction. The marked adoption of neo-liberal strategies has made the IDB the target of protests more commonly associated with the World Bank and the INTERNATIONAL MONETARY FUND (IMF).

The weakness of Latin American economies since the mid-1990s has placed the bank in a difficult position. When ARGENTINA briefly ceased payments to multilateral organizations in late 2002, the IDB faced the possibility of having its credit rating downgraded given an exposure of 15.1 percent of its loan portfolio in that country. Sluggish growth in BRAZIL and MEXICO, the other two largest borrowers, represents a constant danger to the creditworthiness of the organization.

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interest rate

THE PRICE PAID FOR the use of credit or money, expressed either in money terms or as a rate of payment, interest is payment for use of funds over a period of time, and the amount of interest paid per unit of time, as a fraction of the balance, is called the interest rate. As with any other PRICE, the rate of interest can be analyzed in the normal framework of demand and supply analysis.

Classical economists argue that the rate of interest is a real phenomenon. The interest rate is determined by the demand for investment funds and by thrift, supply of funds in the form of SAVING. The primary objective of borrowing is investment, that is, the addition to productive capital of machines, buildings, and inventories. The basic factor underlying the demand schedule is the productivity of additions to capital, or, the marginal productivity of capital. The downward sloping of the demand for capital goods reflects the principle of diminishing marginal returns, that is, the larger the use of capital goods, the less the increment of production from their further use, or, the greater the use of capital, the smaller the marginal product of capital.

The saving schedule reflects savers' impatience, the increasing marginal disutility of abstinence or time preference. A positive rate of interest is necessary to produce saving, and a rising rate of interest is necessary to secure increasing amounts of saving, thus reflecting the upward sloping supply schedule. The EQUILIBRIUM interest rate is determined at the intersection of the supply and demand schedule, that is, at the point where saving and investment were equal. At the interest rate higher than equilibrium rate, saving and lending would exceed borrowing and investment. Savers unable to find a borrower would accept lower return and bid the rate down. If, on the other hand, an actual interest rate was below equilibrium level, investors would seek more funds than savers would provide. The ensuing competition among borrowers would push the interest rate up.

John Maynard KEYNES, on the other hand, regarded the rate of interest as a purely monetary phenomenon, reflecting the supply and demand for money. In the Keynesian system, money supply is exogenously determined, while demand for money materializes from the speculative, precautionary, and transaction motives. Transaction demand for money comes from individuals' desire to purchase goods and services, and precautionary demand for money materializes from individuals; aspiration to meet unforeseen expenditures. The speculative demand for money comes from people's propensity to hold money as a store of wealth. The cost of holding wealth in the form of liquid money is the rate of return that could be earned on the alternative financials assets, such as BONDs. Since the bond prices were inversely related to interest rate, Keynes deduced that speculative demand for money also was inversely related to the interest rate. He argued that the interest rate is not the price that brings into equilibrium the investment demand with saving; rather the interest rate is the price that equilibrates the desire to hold wealth in the form of cash with available quantity of cash.

The classical economists argued that a unique market rate of interest would be established by the tendency of the rate of returns on physical and financial assets to equate. Keynes emphasized that the speculation in the bond market would stabilize the interest rate, which could differ from the rate of return on physical assets, which may lead to a shortfall in investment and insufficient aggregate demand.

Unlike classical economists, Keynes and his followers argued that interest rate is affected by time preference and liquidity preference (i.e. that interest rate is both a real and monetary phenomenon). However, monetarists, like their classical predecessors, continue to uphold the view that interest rate is a real phenomenon, and that rate of return on physical and financial assets would tend to equality in the long run.

For the sake of simplicity, economists often refer to interest rate as a single number. They assume that only one interest rate prevails in the economy due to simultaneous sale and purchase of an asset (i.e., ARBITRAGE). In fact, at any point of time there are many prevailing interest rates. The actual rate would depend on numerous factors, such as maturity of the loan, credit worthiness of the borrower, the amount of collateral, etc. Financial institutions charge higher interest rates to borrowers and pay lower interest rates to lenders. In addition, due to the risk inherent to lending, lenders will ask for a risk premium, thus charging the higher than market rate of return.

[Editor's Note: In the end analysis, the social significance of the interest rate translates into the privilege that a moneyed individual does not have to work for a living. His or her money (earning interest) works for the individual, a fantastic social arrangement, indeed.]

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International Monetary Fund (IMF)

A SPECIALIZED AGENCY of the United Nations (UN), the IMF was founded by treaty in 1945 to promote international monetary cooperation. The organization is headquartered in Washington, D.C., and is governed by a board of governors that consists of representatives of 184 member states. The statutory purposes of the IMF are to promote the balanced growth of world trade, the stability of EXCHANGE RATES, and the orderly adjustment of member-countries' balance of payments.

Overseeing the international monetary system. In 1944, representatives of 45 countries met at a United Nations conference in BRETTON WOODS, New Hampshire, to establish the IMF. The main purposes of the new organization included overseeing the international monetary system, promoting the elimination of exchange restrictions, and the stability of exchange rates. Under the Bretton Woods system of exchange rates that existed between 1945–71, members of the IMF agreed to keep their exchange rates fixed against the U.S. DOLLAR and change them only to correct a "fundamental disequilibrium" in the balance of payments. The U.S. dollar was pegged to gold during that period. After 1971, when the United States suspended the convertibility of the U.S. dollar into gold, each country chose its own method of determining the exchange rate. Among them are a free float (when the exchange rate is determined by the supply and demand), a managed float (when the monetary authority may occasionally intervene to influence the exchange rate), and a pegged exchange system (when the monetary authority promises to peg its currency's exchange rate to some other currency).

The 1944 conference also founded the WORLD BANK to promote sustained economic development. The two organizations have complementary functions. If the IMF is mostly concerned with macroeconomic issues, the main activities of the World Bank include providing loans to finance the reform of particular sectors of the economy and infrastructure projects.

The IMF is headed by the board of governors. All countries are represented on the board. The day-to-day operations, however, are carried out by the executive board that consists of 24 executive directors. Eight directors represent CHINA, FRANCE, GERMANY, JAPAN, RUSSIA, SAUDI ARABIA, the UNITED KINGDOM, and the UNITED STATES. The remaining 16 directors are elected for two-year terms and represent certain groups of countries. The executive board selects the managing director who is appointed for a five-year term and supervises the IMF staff of about 3,000 employees. The managing director is traditionally a European.

The sources of the fund come mostly from the contributions (called quotas) of its members. The size of a quota broadly depends on the size of the country's economy. The quota also determines the voting power of a country. For example, the United States' contribution to the fund is approximately 18 percent of total quotas. This entitles the U.S. to 18 percent of the total votes.

Three most important areas of IMF assistance to its members are:

1. Monitoring and advising countries on economic policies
2. Lending hard currency to members of the fund
3. Technical assistance and training.

At the country level, an IMF team visits an individual member of the fund and collects economic data, as well as holds discussions with the government. The findings of the team are reported to the executive board, the opinion of which is then given to the country's government. An example of the fund's global monitoring is the publication of a semi-annual *World Economic Outlook* report.

If a member country faces a balance of payments problem (i.e., if it needs to borrow to make external payments without having to take hard measures), it always can immediately withdraw up to 25 percent of its quota. If the country needs more, the IMF assesses the situation and decides the size of the additional loan. The IMF first has to agree with the country's authorities on a specific program aiming to restore financial and monetary stability and promote economic growth.

For short-term balance of payments problems the IMF uses stand-by arrangements that form the core of the fund's lending policies. Loans are given for 12–18 months. If a country has a balance of payments problem that takes structural changes to fix, the fund uses the extended fund facility where loans are for three to four years. The structural program may involve privatization of public enterprises and tax and financial reforms. The poverty reduction and growth facility has been used to help the poorest countries achieve sustainable economic growth and improve living standards.

It should be pointed out that IMF loans are not given to finance projects. The foreign exchange provided by the fund is deposited with the country's central bank to give balance of payments support. Moreover, the IMF ties its loans to certain policies the country has to follow to solve its problems. Loans are divided into several portions, and the next portion is conditioned on meeting goals for the previous stage. Loans must be repaid and borrowing countries pay interest rates and service charges. The typical interest rate charged on a loan is 4.5 percent.

Starting in the mid-1960s, the IMF has provided technical assistance to its member countries. This complements policy advice and financial assistance. With the aim of strengthening countries economic policies, the IMF staff regularly meets with representatives of member countries and provides assistance in central banking, tax policy, monetary and exchange policy. If in the 1960s and 1970s this assistance was given to newly independent countries, the lion's share of such assistance in the 1990s was directed to the countries of eastern Europe and the former Soviet Union. These countries, central-planning economies, were moving toward market-based systems. The IMF helped them to improve their financial systems, to strengthen banking regulation and supervision, and to improve their legal systems.

The IMF and globalization. The IMF faces new challenges that emerge with globalization. The major problem is financial crises that showed weaknesses in the international financial system. The financial crises of the 1990s demonstrated that once alarmed, investors may withdraw very quickly leading to a financial crisis that may rapidly spread to other countries. In order to confront this problem, the IMF works on strengthening countries' financial systems, promoting internationally accepted standards related to countries' statistical practices and codes of good practice in fiscal, monetary, and financial policies. It also encourages openness and timely publication of economic and financial data. The fund has taken steps to increase the organization's transparency. In particular, increased information on the fund's activities and policies is found on its website. External evaluations of the IMF policies and their publications are an evidence of its increased accountability.

The effectiveness of the IMF policies and their impact on the world economy is a subject of debate. Some believe that the IMF conditions on loans exacerbate the recipient country's crises and reduce economic growth. Some even believe that the IMF should cease its lending activity altogether and leave this task to the central banks of the major economic powers.

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International Trade Centre

CREATED IN 1964 by the GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT) the International Trade Centre (ITC) is the focal point used by the United Nations (UN) to foster technical cooperation in trade promotion with developing countries. Acting at the request of the countries concerned, ITC projects are implemented by ITC specialists working in liaison with local officials and, depending on what is required, the length of individual projects may vary from several weeks to several years.

In terms of strategy, the ITC has set as its overriding objective the development of national capacity for improving the trade performance of business. In order to achieve this strategy the ITC assists developing countries to expand exports and improve their import operations by providing assistance in the following six core areas. Product and market development advises on product development and international marketing in order to expand and diversify these countries' exports; development of trade support services is aimed at the enhancement of foreign trade support services at the national and regional levels. Trade information assists in the establishment of trade information services that are designed to allow the effective dissemination of information on products, services, markets, and functions. Human resource development is aimed at the strengthening of existing institutional capacities for foreign trade training and organization of direct training in importing. International purchasing and supply management works by strengthening the advisory services provided by national purchasing organizations; and needs assessment and program design are provided in order to reinforce the link between trade policy and the implementation of trade promotion.

ITC operates by coordinating its work programs with other organizations such as the Food and Agriculture Organization of the UN. In order to allow developing countries to develop the skills required to operate independent of any supporting organization, the ITC produces a range of information sheets on subjects as diverse as *How to Approach Banks*, *Export-led Poverty Reduction Program*, *Product-Network Approach*, and *Jute Geotextiles Promotion Program*, all of which are readily availably to the countries involved.

Over the years, ITC has provided a diverse range of services and these now include market analysis services that collates national trade statistics and details the trade performance of 184 countries by sector or by product; market briefs that are concise market reports on export products likely to be of interest to developing countries; market news service which provides up to date market intelligence on product prices on a range of goods such as pharmaceutical products, fruit and vegetables, and spices; international trade statistics which can be accessed by country or by product group.

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investment

see CAPITAL; VENTURE CAPITAL; BANKING, INVESTMENT.

invisible hand

see SMITH, ADAM.

Iran

THE NATION OF IRAN is located in southwest Asia and borders the turbulent Middle East. The Caspian Sea and Caucasus Mountains are to the north, IRAQ is to the west, Turkmenistan, AFGHANISTAN, and PAKISTAN are to the east, and the Persian Gulf is to the south. Summers are hot and dry, with winters bitter and cold. The massive Iranian Plateau dominates the landscape; scarce water comes from the forested Zagros Mountains to the north.

Iran has a population of 63 million with most living in the northwest. Tehran, the capital, is the center of industry with 8 million people. Farsi (Persian) is the official language and 55 percent are of Persian ethnicity. Shi'a Islam is the religion of 95 percent of the population. This more conservative belief system of Islam has dominated the politics and economy of Iran since the revolution of 1979. President Mohammed Khatami's limited reforms have not changed Iran's economy or political system significantly to date in the middle of 2003. The STATE still controls 85 percent of the GROSS DOMESTIC PRODUCT (GDP), centered on OIL exports.

GDP per capita is $1,604 (1999) with a growth rate of 2.5 percent. Unemployment and inflation are both over 15 percent annually in real terms. Foreign debt is over $10 billion but recent trade balances have approached $6 billion due to the end of the Iranian war with Iraq, high oil prices, and increased exports of oil to RUSSIA. A substantial black market, perhaps 40 percent of GDP reportedly exists.

In 2001, the projected budget expenditure for 2002 was $56.4 billion with $38 billion going to state organizations. Most private businesses are located in the non-oil sector and are likely tied to the black market.

Development and buy-back agreements between Iran and GERMANY, NORWAY, Russia, and JAPAN will help develop oil and gas production, nuclear power, and petrochemicals. In drought years, Iran must import food, and is not yet consistently energy independent. While these projects will allow for energy independence and an influx of combined state and private sector capitalism, the buy-back agreements mean that these partial capitalism ventures will again become state-controlled by the Tavinar electric organization.

Banking and stock-exchange systems are state-controlled and foreign investment is limited to partnerships with state energy-development projects. During the 20th century, decades of capitalistic growth were followed by revolutions, wars, and Middle East strife leaving Iran with a truncated legacy of capitalistic ventures. The strict enforcement of conservative Muslim beliefs allows for only small internal consumption. Its estimated labor force of 18 million so far, interacts mainly through the oil industry with the global economy. Until state control of the oil economy becomes privatized, private enterprise will be restricted to only about 10–20 percent of the GDP. State sponsored privatizing attempts in industry have had little impact to date.

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Iraq

THE NATION OF IRAQ borders TURKEY to the north, IRAN to the east, SYRIA and Jordan to the west, and SAUDI ARABIA and KUWAIT to the south. Baghdad is the capital. [Editor's note: At the time of this writing, July 2003, Iraq was under U.S. military occupation, with efforts being planned for new economic and political policies.]

Iraq's population is approximately 24 million, with about 75 percent Arab, 15 to 20 percent Kurd, and the rest made up of Jews, Turkmens, and Yazidis. Arabic is the official language. Kurdish and other minority languages are spoken, and English is spoken in commerce. Almost 75 percent of the population lives in urban areas, with almost a third living within 90 miles of Baghdad. Much of the rural population lives in tribal communities, leading nomadic or semi-nomadic existences. Due to migration from rural areas, the proportion of urban dwellers continues to rise.

Called Mesopotamia in classical times, Iraq was home to the world's earliest civilizations, and was later part of the Ottoman Empire. In 1932, Iraq gained formal independence, and in 1945 was a founding member of the League of Arab States. In 1958 Iraq was proclaimed a "republic," but in reality a series of military dictators have been in power, the most recent being Saddam Hussein. In the 1980s, Iraq fought an eight-year war with Iran. Due to war expenditures, Iraq incurred financial difficulties, which led the government to impose austerity measures, borrow heavily, and later reschedule debt repayments. In the end, Iraq lost more than $100 billion.

In August 1990, Iraq invaded Kuwait. United Nations (UN) coalition forces expelled Iraq from Kuwait during the Gulf War of January-February, 1991. Following this war, the UN required Iraq to destroy all weapons of mass destruction and long-range missiles, and allow verification of such by inspectors. Iraq failed to comply in full and in response the UN-imposed trade sanctions that remained in effect until the United States and coalition military action (the Iraq War) in 2003. In 1996, the UN implemented the oil-for-food program, which enabled Iraq to export oil in exchange for food, medicine, and necessary infrastructure supplies.

Petroleum is Iraq's most valuable natural resource. In the 1970s, all foreign oil companies were nationalized, and their operations were turned over to the Northern Petroleum Organization and the Iraq National Oil Company. Other natural resources include natural gas, phosphates, coal, gold, copper, and silver.

Approximately 13 percent of Iraq's land is used for agriculture. Crops raised include wheat, rice, figs, olives, and dates, with Iraq's harvest of dates accounting for a large share of the total world cultivation. Livestock raised include cattle, sheep, goats, chickens, and Arabian horses. Timber resources are minimal. In 1983, private rental of land from the Ministry of Agriculture and Agrarian Reform was allowed. In 1987, the government sold or leased all state farms.

Approximately 80 percent of Iraq's roads are paved and there are links with neighboring countries. There are railway connections through Syria with Turkey and Europe. In 1984, Iraq and neighboring countries formed the Middle East group of the International Union of Railways with an eye toward further integration of their rail systems. Domestic air travel is slight, but has been rising. There are international airports at Baghdad and Basra. Rivers, lakes, and channels are used for local transportation, and river steamers navigate the Tigris River. In some rural regions, camels, horses, and donkeys are still a means of transportation. Iraq's oil exports are transported via pipelines, which pass through neighboring countries to reach Mediterranean ports.

Since the mid-1970s, Iraq's industrial sector has rapidly developed, but still accounts for less than 15 percent of the GROSS DOMESTIC PRODUCT (GDP). Services account for more than 80 percent of the GDP and agriculture the rest. Petroleum and natural gas products are the major industries. Other industries include textiles and clothing, cigarettes, and construction material.

Thermal plants produce more than 95 percent of Iraq's electricity. There are hydroelectric facilities along the Tigris River and its tributaries, but generating capacity is below its potential. Iraq's labor force is approximately 4.4 million. About one-quarter of the work force belongs to the General Federation of Trade Unions, Iraq's main labor organization.

Iraq's currency is the Iraqi dinar (IQD). In 1964, all banks and insurance companies were nationalized. The Central Bank of Iraq is responsible for issuing currency. Iraq's exports are valued at approximately \$15.8 billion annually and its imports at \$11 billion. Petroleum exports account for approximately 90 percent of the earnings. The latest figures (2001) show Iraq had a GDP of \$59 billion, with a per capita income of \$2,500.

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Ireland

EIRE, OR IRELAND, is an island country located at the west edge of Europe in the northern Atlantic Ocean. Summers are mild and winters can be cold but rain is present year round. Rivers and lakes keep the hilly terrain well watered and green. The Irish Sea separates Ireland from Scotland, Wales, and England. Irish ports abound and helped fuel the growth of the "Celtic Tiger" in the 1990s.

The Republic of Eire has 3.8 million people with Dublin, the capital at over 1 million. It is 95 percent Roman Catholic with both Irish Gaelic and English as official languages. Politically, Ireland has a bicameral government with a president and ministers. Economically, it is a mix of capitalist and socialist policies.

Eire's history is one of both isolation and invasions by Celtic, Viking, Norman, and Anglo-Saxon tribes. External trade is evident at least 2,000-years ago in Ptolemaic maps of Irish trading ports. During the Middle Ages, Eire was a haven for Christian scholars and emerging Roman Catholicism after the fall of the Roman Empire. However Eire's Catholic ties drew it into conflicts with Protestant neighbors in Europe, especially England. Eire effectively became a colony of expanding mercantile empires after 1690, and lost further power as it was divided into capitalistic English estates in the 18th and 19th centuries.

After a century of revolution and revolt, the 26 counties of the Republic of Ireland achieved full political if not economic independence in 1949. In the 1980s and 1990s, Eire became economically independent as well, with the incredible growth of the Celtic Tiger economy. Agriculture, industry, technology, and shipping led the way, with averages of 10 percent GROSS DOMESTIC PRODUCT (GDP) real growth, 4 percent UNEMPLOYMENT, \$25,000 GDP per capita, 5 percent INFLATION, and trade balances of \$25 billion.

In 2001, Eire joined the EUROPEAN UNION (EU) and its currency converted from the Irish punt to the EURO. Its fiscal policies are currently under direction of the EU banks in Frankfurt, Germany. Current problems due to the growth include political scandals and limited success of the social-partner model of the public sector, employers, and unions. The government response has been a controversial expansionary budget that hopes to reduce inflation rates that are twice that of EU neighbors. The republic also exerts increasing influence over Northern Ireland and takes its foreign policy direction from the EU.

The GROSS NATIONAL PRODUCT (GNP) rate of 8 percent growth annually since 1993 is transforming rural, Irish Gaelic-speaking, farming and fishing villages. Urban areas with foreign, especially German-owned industry are growing in Dublin and Cork. Tourism and a return to Ireland by those of Irish ancestry make up a significant component of the economy. A third of U.S. investment in the EU goes directly to the island and now, numerous traditional, Irish businesses, such as alcoholic beverages, crystal, and clothing, are being exported to the United States.

Eire has an inexpensive and educated workforce of over two million, and a low tax regime for business. Tax cuts and a growing Irish Stock Exchange (ISEQ) along with its labor force should allow the Republic of Ireland to continue to attract foreign investment, industry, and tourism. This is key for a healthy economy as major road and energy production projects continue to modernize the country.

Internally, the country's economy is thriving, fueled by consumer consumption. Exports consist of farming and fishing products to Europe, and a growing textile and manufacturing sector to the EU and United States. Mining and electronic-engineering industries are also in a growth pattern.

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Islamic banking

THE INNOVATION OF Islamic banking has taken on considerable significance since the 1970s. The accumulation of vast reservoirs of cash in the Arab Muslim nations as a result of OIL price increases led to a lively debate regarding the institutional modalities of savings and investment options. The Muslim orthodoxy revived the notion of Islamic banking as a religiously sanctioned and socially responsible alternative to capitalist, interest-based banking. As the Institute of Islamic Banking proclaims, "the basic principle of Islamic banking is the prohibition of Riba (usury—or interest)." This necessitates the development of alternative instruments of financial transactions. Following are some of the innovations proposed to circumvent the role of interest in the new model of banking.

Profit and loss sharing accounts. In these accounts, depositors are not allowed any interest on deposits. Instead, they participate in the profit or loss of the bank's transactions which, in turn, include only interest-free assets such as government commodity operations, bills of import, export, etc. At times, the banks implicitly, and when necessary, explicitly guarantee a minimum rate of return on deposits. The religious scholars consider this as quite objectionable since the guaranteed rate of profit looks suspiciously like an INTEREST RATE.

Musharaka model. Two or more partners contribute to the capital fund and share profits or losses in strict ratio of their contributions.

Muzaraba companies. These companies could issue specific and general purpose certificates to raise capital to invest the funds in Shariat (religious law)-approved projects. The profits (losses) are shared in a predetermined ratio between the partners.

Participation-term certificates are allowed as a means for corporate finance instead of debentures. The certificates are both transferable and negotiable with the proviso that unlike debentures, the holders of certificates would share in the profit (loss) of the companies instead of a given interest.

Housing finance is carried out through banks that would own the building, charge a rent premium till they recovered their loan capital plus a markup; or on a rent-sharing basis with co-ownership where a share of the rent is imputed as return to the bank.

The central bank is allowed to issue hire-purchase leases where the bank would purchase (own) physical commodities and hire them out for a rent premium.

The banks are allowed to advance interest free loans and charge administrative costs at negotiated rates.

It may be noted that foreign transactions are generally allowed on an interest-rate basis to keep the complications to a minimum. Also, the two systems, interest-based and interest-free banking are allowed to operate side-by-side for a period of initial introduction. The interesting thing about this whole project is that some Islamic courts have disbanded the variety of financial instruments and arrangements that were being used in the place of interest. The most obvious is the case of markup. The Islamic Development Bank defines the markup as "the margin added as a profit in addition to the real cost of the commodity sold as in installment sale. . . . Markup is different from interest in that it is related to machinery, etc. . . . whereas interest is related to money." This sounds suspiciously like interest in a new guise.

The limited use of other interest-free innovations is due to the fact that the banks are unable to predict their return in advance and the businesses fear the intrusive role of banks in their daily operations. To get around these difficulties, a complex web of subterfuge seems to have been developed to charge interest to borrowers and pay interest to lenders using Islamic nomenclature, which even the proponents of Islamic banking cannot abide.

The impasse has led to a further refinement of a technical nature among the followers of the Islamic School—an ever-expanding industry of ingenious innovations to circumvent the use or appearance of the use of interest. A more assertive approach is characterized by an attack on the institution of interest as the embodiment and source of all ills, economic and otherwise, like unemployment, inflation, and international exploitation in the defense of devising different interest-free strategies to advance and extend credit service. Another line of argument in the mix has been advanced by the secularist scholarship at various times. This is meant to validate the modern interest-based banking after formally addressing the concerns of Islamic scholars regarding the ill effects of interest.

Interest or usury? It is posited that indeed the role of interest-based loans in ancient times led to exploitation in the form of loan bondage. The Riba (usury) "played a double role in the social and economic structure of (pre-Islamic) Mecca by allowing the concentration of huge amounts of wealth in the hands of a few and by reducing the social status of other." Hence the justified injunctions against the charging of interest. However, in the modern age, interest-based banking encourages SAVINGS, rations CAPITAL and extends the roundabout production of capitalism that benefits consumers. And since banks make large loans to capitalists and landlords, abolition of interest would be a windfall to the ruling elites at the expense of the workers and peasants. The distinction is between interest and usury—the latter being the unusually high rate of interest charged by the rich elite leading to loan bondage of poor people. This might appear as an easy way out of the controversy on interest and usury but the mainstream of Islamic banking proponents find it not to be very meritorious.

Regardless of the acceptability or efficacy of this argument as a whole, it has led to a closer examination of the conceptual definition and practical role of interest in the affairs of humanity, current and ancient. In the mainstream literature of economics there is a long tradition of the exegesis of interest. Eugen von BÖHM-BAWERK, "the bourgeois Karl MARX," in his theory of interest formulates the concept in a way that justifies the receipt of interest (and profit) by capitalists as a reward for abstinence or, as Knut Wicksell explained, how the rate of interest tends to equal social marginal productivity of real capital—meaning that interest is the rightfully earned claim of capital (i.e., the capitalist).

To Irving FISHER, the interest rate helps adjust the time flow of INCOME receipts. The neoclassical theory maintains that interest functions as the equilibrating mechanism between savings and investment. Pre-classical thinking characterized interest as a return for permitting others to use the property accumulated in the form of MONEY. As important as these theoretical formulations are, what is really paramount and long-lasting is the accompanying philosophic social change. The values and ethical norms for economic life in the Christian perspective emphasize the primacy of justice to be measured by how the community treats its poor and the powerless, whether or not the social institutions permit all persons a measure of dignity and active social participation regardless of station in life, where there is a strong presumption against inequality of wealth and income.

The secularist theoreticians, by a process of selective inclusions and exclusions, move the debate away from issues of justice and fair play and toward concerns of productive efficiency and hierarchical social organization. A very similar process is under way in the Islamic economic formulations. The orthodoxy of Islamists is intent on a reformulation of the issue and a change in focus through theorizing their way out of the injunction against interest in Islam, and yet give it the name of Islamic banking. The opponents of this mode of banking propose a different solution—distinguish between interest and usury, have the sanction be directed at usury however characterized and leave the institution of interest intact.

However another reading of the injunction is that interest is unearned income and hence leads to a fundamental introduction of injustice in the community. Money is not fecund in its own right, does not by itself create value. Interest is a social mechanism to transfer value from those who create it through human endeavor to those who have control over money—an apparent case of exploitation. Since the spirit of Shariat in Islam is governed by a strong sense of social justice, fraternity, equality and cooperation, it is possible to argue the logic of inadmissibility in Islamic social schema of an exploitative distributive mechanism such as interest. The abolition of rent and interest—the twin categories of unearned income—may threaten the rentier classes that thrive on them. The debate, it seems, has to be elevated to articulate a system of social relations that encompasses the entire gamut of production, distribution, and consumption, as well as the reproduction of the system itself.

The main features that will have to be addressed are the distribution of property rights, the organization of decision-making arrangements, the setting up of the agenda of social objectives, defining the roles of the state and the market, the individual and the collective, identification of moral and material incentives, prescribing the limits of the permissible and impermissible in the human project. The Islamic concept of oneness—a mode of looking upon all beings as unity—dictates a value prescription of fairness, justice, and equity for all. All economics, including banking—Islamic or otherwise—will have to be tested against this dictum before we can fully overcome the age-old problem of economic injustice perpetually fed by categories of unearned income like the interest rate.

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Israel

LOCATED ON THE eastern Mediterranean Sea, Israel borders Lebanon to the north, SYRIA and JORDAN to the east, and EGYPT to the south. Of Israel's more than six million people, 80 percent are Jewish. The remaining 20 percent of the population is 80 percent Muslim, 10 percent Christian, and 10 percent Druze. In the late 20th century, a notable change to this mix has been the one million people who have immigrated to Israel since 1989.

The State of Israel was founded on May 14, 1948, on the basis of a United Nations Partition plan to create separate Jewish and Arab states, with the city of Jerusalem to be administered by the United Nations. In the fifty years preceding the 1948 proclamation of the State of Israel, growing numbers of Jews emigrated to Palestine. The main impetus to this emigration was the Zionist movement, led by its founder Theodore Herzl, a Hungarian-born Jewish journalist. This political form of Zionism, which viewed being Jewish as a nationality by itself, aimed to create a Jewish state in Palestine.

In 1917, toward the end of WORLD WAR I, Britain's foreign secretary Lord Balfour issued a declaration on behalf of the British government promising to support the creation of a Jewish homeland in Palestine. As a result of its loss in World War I, the Ottoman Empire lost control of its Arab lands, and the League of Nations granted a mandate to Great Britain to administer Palestine. Although the Balfour note promised "nothing shall be done which may prejudice the civil and religious rights of existing non-Jewish communities in Palestine," Arab inhabitants of Palestine opposed the subsequent immigration of Jews.

This influx increased in 1919, after the end of World War I, and grew significantly with the rise of Adolf Hitler to power in Germany by 1933. Great Britain, which had been supporting the rise of Arab nationalism, found itself in an intractable situation. It permitted continued Jewish immigration, but set quotas on the number of Jews who could settle in Palestine. The result was that no one was satisfied. After WORLD WAR II, Britain relinquished its mandate, leading to the 1947 United Nations-sponsored Plan of Partition.

Immediately after the Israelis' declaration of independence in May 1948, the Arab states of Egypt, IRAQ, Jordan, Lebanon, and Syria attacked Israel, refusing to recognize the new state. Israel won what it has since called its War of Independence, in the process increasing its territorial size by 50 percent. Jordan took over the central area of PALESTINE, the West Bank of the Jordan River, as well as East Jerusalem. The resulting situation was very different for Jews and Palestinians: The half million Palestinian Arabs who had fled or left their homes during the war were left with nowhere to go and were not accepted by the Arab states; meanwhile, Israel offered citizenship to any Jew who wanted to emigrate to the new state.

By 1967, the military forces of Syria and Egypt began to threaten Israel's borders to an increasing degree. In response, that year Israel attacked the Egyptian, Jordanian, and Syrian armies. After six days, the Arabs and Israelis agreed to a cease-fire, but Israel's accomplishments provided a new source of conflict. It had seized the West Bank of the Jordan River and East Jerusalem (previously controlled by Jordan), had taken the Golan Heights from Syria, and occupied the Sinai Peninsula and Gaza Strip, both previously held by Egypt. Israel had more territory, but it also now had to rule over one million more Arabs and still had not succeeded in getting the Arab states to recognize its existence.

In an effort to solve the Israeli-Palestinian conflict, the United Nations Security Council adopted Resolution 242, which provided a formula of "land for peace." This proposed solution has remained a central element in the Mideast peace process, and calls on Israel to return territory to the pre-1967 borders, prior to that year's Six-Day War. In return, borders were to be secure and the sovereignty of all nations, including Israel, was to be respected.

The Yom Kippur War of 1973, which took place on October 3, when the Egyptian and Syrian armies attacked Israel on the Jewish Day of Atonement, initially surprised the Israeli Defense Forces. Eventually, however, the Israelis were able to expand (with U.S. arms supplies) the amount of territory they controlled in the Sinai Peninsula. In two ways this war showed how the Israeli-Palestinian conflict reached around the world.

First, Cold War geopolitics—the desire of the United States and Soviet Union to expand their influence worldwide, at the expense of the other—led both superpowers to help conclude the war. Second, oil-producing Arab states used embargoes to drive up the price of oil, thereby hoping to force the United States and Western Europe to have Israel remove its forces from occupied territories. A peace treaty between Israel and Egypt in 1979 led to the removal of the Israeli army from the Sinai Peninsula and the Gaza Strip.

Hope for a comprehensive peace, however, remained remote until 1993, when negotiations conducted in secret in Norway led to a breakthrough: Israel permitted limited Palestinian self-rule in the West Bank and accepted the Palestine Liberation Organization (PLO) as a representative of the Palestinian people; the PLO, for its part, recognized the legitimate existence of the State of Israel. In 1994, Israel began to transfer ruling authority to the Palestinians, at first in places such as the town of Jericho on the West Bank. Since then, however, acts of violence on both sides have harmed efforts to establish peace through the "land for peace" formula.

The Palestinian intifada, or uprising, and extremist suicide bombings have made it difficult to focus on peace. At the same time, militant Israelis harm the process as well, such as the Israeli settler Baruch Goldstein who gunned down Palestinians praying in a mosque in Hebron in 1994, or the right-wing Jewish radical who assassinated Yitzhak Rabin, the Israeli prime minister who had signed the landmark peace agreement in 1994 with PLO Chairman Yasser Arafat.

By the turn of the century, with a population just over 6 million people, democratic and capitalist Israel was suffering through economic challenges driven by the intractable Palestinian situation. Drops in tourism, high technology, and other primary industries have led to negative growth for the $119 billion GROSS NATIONAL PRODUCT (GDP).

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Italy

AS FABRIZIO BARCA has correctly summarized, the judgment on Italian capitalism has constantly wavered between two opposite evaluations, though these have co-existed in the public mind. On the one hand, Italian capitalism remains an anomaly and is negatively influenced by several factors from its beginning: The low standard of living of the middle and working classes, the social and economic impasse of the southern regions of the country, the ambiguous role of the STATE in industrial production, and the inefficiency of the state's bureaucracy. On the other hand, the Italian capitalist system is nonetheless considered capable of assuring one of the most sustained economic developments within industrialized countries.

The centuries-old canals of Venice, Italy, contributed to the growth of trade and capitalism among the merchant class.

Origins of capitalism. The origins of Italian capitalism can be traced back to the 1830s when Italy was only a geographic area, fragmented into a myriad of small, independent states. From that decade, the Italian peninsula witnessed new forms of banking activities with the establishment of offices open to the general public. These increasingly replaced the varied class of people who had supported commercial activities and investments until then: merchant-bankers, usurers, and charitable banks such as the *Monti di Pietà*. From the 1830s onward, Italian banking assumed a progressively public dimension, which substituted the contracts between private parties typical of the previous decades. The *casse di risparmio* were by far the most successful type of this new phenomenon, public banks.

The unification of the Kingdom of Italy between 1859 and 1860 accelerated the spread of banks. The number of towns and cities with bank branches tripled, and the credit system became a source of investment. If the phenomenon of the *casse di risparmio* had been predominantly a public one, the protagonists of this "banking revolution," as Franco Bonelli calls it, were instead private bankers, businessmen, capitalists, and landowners. The private banking sector, throughout the 1860s, also marked the beginning of an enduring phenomenon of Italian capitalism, big banks supplying money to the biggest firms and to whole core sectors of the Italian economy.

During the 1910s, Italy had to face the developments of international capitalism and the second industrial revolution without adequate technical and social structures. The country was struck by the 1907 RECESSION that stopped the growth of the industrial sector and consolidated the hegemony of financial capital. During the 10 years of governments led by the liberal Giovanni Giolitti (1903–14), Italy would try to enter the international markets through the unsuccessful colonial war against Libya (1911–12). These years also witnessed the birth of an important debate that came to endanger the very nature of Italian capitalism. While the government was led by a liberal coalition, the Socialist Party and the Catholic movement were getting increasingly stronger and more organized. Despite their clear ideological differences, both forces aimed at the transformation of the capitalist society into one based on a collective and cooperative structure. This points to a lasting feature of Italian capitalism, the bourgeoisie's and the capitalists' inability to promote social and political reforms. After WORLD WAR I, Italy entered another recession, due to the transition from a war economy to a peace economy, and was shaken by several important strikes.

Rise of Fascism. Because of the inability of Italian liberal governments, linked to conservative beliefs, to innovate and reform, FASCISM could present itself as a movement for the reform of Italian society and its economic structure. The Fascist regime, led by the dictator Benito Mussolini from the mid-1920s to the mid-1940s, adopted two main policies to reinvigorate Italian capitalism, monetary deflation and a re-launch of Italian agriculture by breaking up large agricultural estates and putting them on the market. The process of deflation was intended to expand industrial production, while the agricultural project was designed to distinguish Fascism from the previous liberal governments: the "attack on the large agricultural estates," as Fascists called their agricultural policy, implied the improvement of backward agricultural structures, putting on the market properties which were managed unproductively, and reclaiming malarial and marshy lands.

The Fascist state conceived itself to be a strong, modern nation-state, accepting both the ideas of capitalism in the socio-economic sphere and a syndicalist state, which brought about a forced union of labor and capital. Yet traditional unions were replaced by the Fascist corporations as the sole representatives of the workers with the Palazzo Vidoni Pact signed in 1925. Already weakened by Fascist violence, traditional trade unions, both of Catholic and socialist/communist orientations, were denied their very reason for existence, the right to negotiate wages and working conditions on behalf of their members.

The Fascist regime had to face the 1929 international economic crisis and its aftermath. In Italy, the DEPRESSION became apparent in 1930. At the end of the year, industrial unemployment rose by 70 percent, while agricultural unemployment increased by 50 percent. Significantly, unemployment statistics stopped to be published after 1932. The measure to counter the crisis was somewhat surprising and was not pursued by any other European government except in GERMANY: the Fascist government favored a reduction of salaries (up to 25 percent) and of prices, thus continuing its policy of monetary deflation. In a famous speech in the Senate, Mussolini declared that the Italians' ability to endure hardships was due, paradoxically, to the country's underdeveloped economic system. "Fortunately, Italian people are not accustomed to eat much and they feel the privation less than others," Mussolini declared.

The result of this policy was to increase the mergers of different firms and, thus, the creation of a national economy that was even more dependent on monopolies. The regime also increased spending on public works, social welfare, and armaments. The most original Fascist contributions to the social and economic fields were also dictated by the impact of the Depression, and the difficulties experienced by the banks due to business failures. IMI, a business-credit bank, was founded in 1931, and IRI (Industrial Reconstruction Institute) was established in 1933. Through these organizations, the state intervened to prevent the collapse of banks and of manufacturing companies.

Though Italy recovered sooner than other, more industrialized countries from the Depression, the Fascist government soon had to face another economic crisis resulting from the sanctions imposed on Italy by the League of Nations following its invasion of Ethiopia. Mussolini thus inaugurated the policy of AUTARKY or economic self-sufficiency, tending to reduce imports from other countries. The result, however, was far from successful and produced a closed economy, which had neither the power to import nor to autonomously produce all supplies. As economic historian V. Zamagni puts it, while "the Fascist period did not represent a standstill in the industrialization process . . . nevertheless Fascism failed to bridge the gap between Italy and the other industrialized countries."

The Italian Republic. Most of the Fascist-state apparatus was swept away after WORLD WAR II and the Italian Republic was established by a 1946 referendum. Yet there was a major aspect of continuity between Mussolini's dictatorship and the postwar democratic governments in their economic policies: the huge public sector.

Until a program of PRIVATIZATION started during the 1990s, 40 percent of the Italian manufacturing industry and 80 percent of all banking operations were controlled by the state. Such a massive state presence in the national economy had both positive and negative effects. In the 1950s and 1960s, state intervention played a major role in creating the material conditions of the so-called Italian "economic miracle."

The state succeeded in establishing several new chemical, engineering, and ENERGY industries in which private Italian capitalism had been unwilling to risk its own resources. But the vast intervention of the state in the national economy has also caused one of the characterizing features of the Italian economic system in the second half of the 20th century, CORRUPTION. The governing parties, especially the Christian Democrats and, in the 1980s, the Socialists took direct hold of the public sector and supplied jobs in exchange for votes. In addition, the funds of public companies were often used to fund political parties and their onerous structures while public contracts were awarded to private business after the politicians in charge of the decision had been bribed.

Despite the complications of privatization and corruption, Italy remains a powerful economy. With a population of 58 million (2002), the country's GROSS DOMESTIC PRODUCT (GDP) was $1.5 trillion with a per capita purchasing power of $25,000.

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J

Jackson, Andrew (1767–1845)

THOUGH HE WOULD BECOME the seventh president of the UNITED STATES, Andrew Jackson was not from a prominent, aristocratic family and had little formal education. Born in the Waxhaw Settlement of South Carolina to Irish-immigrant parents, Jackson rose to national prominence after he directed the victory in the Battle of New Orleans during the WAR OF 1812. Jackson's humble origins and military heroics earned him enormous popularity with the "common" people and he remained sincere in his desire to curtail the elitism and financial privilege inherent to what had become the American system of government. Thus, the evolution of the United States during the antebellum era from a republic to a popular democracy has been labeled the period of Jacksonian Democracy.

After minimal education in the Waxhaw schools, Jackson joined the AMERICAN REVOLUTION's Continental Army at the age of 13. He was captured in 1781 and brutally slashed on the hand and forehead by a British officer whose boots he refused to clean. Jackson contracted smallpox in prison before a prisoner exchange afforded his release and his subsequent recovery.

In 1784, he began to pursue a legal career in North Carolina. There he met divorcée Rachel Donelson Robards, the daughter of a prominent Tennessee family, whom he married in 1791 against rumors that her divorce was not finalized. Due to the circumstances surrounding their matrimony, the couple had a second marriage ceremony in 1794.

His marriage into the Donelson family and his thriving legal career catapulted Jackson into the political spotlight. He served as a delegate to the Tennessee Constitutional convention and was elected the state's first U.S. Representative in 1796. In 1797, the legislature elected him to the Senate, but after serving just a few months he resigned to become judge of the Superior Court of Tennessee.

During the early 19th century, Jackson proved instrumental in military efforts against Native Americans, concerning territory disputes, and against the British during the War of 1812. On January 8, 1815, Jackson led a vastly outnumbered American army unit to defeat British military forces in the Battle of New Orleans. Given the importance of New Orleans to American trade in the interior, control over the city was critical and the victory established Jackson as a national hero and one of the most popular men in the country.

Riding the groundswell of popularity, Jackson challenged John Quincy ADAMS, Henry Clay, and William H. Crawford of Georgia in the election of 1824. Although Jackson won the plurality of both the popular and the electoral vote, he did not earn the necessary majority and the election was sent to the House of Representatives who chose Adams as president. Labeled the "corrupt bargain," Adams' election incensed Jackson and intensified his hatred of the elites. Four years later, in the bitter election of 1828, Jackson was handily elected behind the support of a unified Democratic Party. But despite Jackson's victory, the year ended sadly for him when Rachel Jackson died of a heart attack that December.

The events of Jackson's first term in office foreshadowed the growing sectionalism in the United States. In 1828, Congress had imposed a tariff on imported goods that Southerners felt benefited the Northeast's burgeoning industrial capitalist economy over their more agrarian society. In an 1832 Ordinance of Nullification, the state of South Carolina declared the tariff null and void and threatened to secede from the Union. Exercising the extents of his presidential authority, Jackson rejected nullification and secession as powers of the states. Though the crisis was resolved by a compromise tariff in 1833, Jackson became the first president to deem secession an act of treason.

However, the most significant event of Jackson's administration was the controversy surrounding the Second National Bank. Established as a depository for federal funds and a source of credit for businesses, the Second National Bank angered Andrew Jackson, for he believed that it provided the wealthy with unfair financial advantages.

In 1832, Congress renewed the bank's charter, but Jackson vetoed the bill and the conflict over the bank quickly became the focus of that year's presidential campaign. Although Jackson's stance alienated northeastern business interests, his popularity with farmers and artisans afforded him a handy victory. After the election, he took measures to destroy the bank.

But without a national banking system, the country was soon plagued by enormous inflation. Maintaining his commitment to a policy of hard money (gold and silver), in 1836, Jackson issued the Specie Circular, prohibiting the use of paper money in the use of federal lands. He believed that requiring hard currency for land purchase would end the frenzy of land speculation. However, in 1837, a financial panic seized the nation and Congress overturned the Specie Circular issuance.

Thus, during the course of his administration, Jackson maintained his desire to remove financial privilege from the government. He and his followers feared the concentration of economic and political power and believed that government intervention in the economy benefited special-interest groups and created corporate monopolies, both of which favored the rich.

Jackson wanted to restore the financial independence of the individual, the yeoman farmer and the artisan, by ending federal support of banks and corporations and by limiting the use of paper currency, which they distrusted. Jackson's opponents charged him with abusing presidential power and accused him of destroying the economy. But historians have associated him with the rise of liberal capitalism that would nurture the growth of American business and industry over the course of the 19th century.

When Jackson left office in 1837 and later died on June 8, 1845, in Nashville, he remained the hero of the common people, of "rural capitalists and village entrepreneurs" who believed in their right to expanding economic opportunities.

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Japan

A COUNTRY OF ISLANDS in the Far East, Japan is known as the land of the rising sun. It has a population of 127 million people and a GROSS DOMESTIC PRODUCT (GDP) of $3.55 trillion in purchasing power parity (2002). A very high level of human capital, especially in industrial technology, has allowed Japan to become one of the richest countries in the world, with a GDP per capita of $28,000 (2002), despite having a territory slightly smaller than California, rugged and mountainous terrain, and virtually no natural resources. Japan is one of the world's largest and technologically advanced producers of motor vehicles, electronic equipment, machine tools, steel and nonferrous metals, ships, chemicals, textiles, and processed foods.

Early industrialization and the birth of Japanese capitalism. Prior to starting the transition to capitalism in the second half of the 19th century, Japan had gone through almost 250 years of self-imposed isolation from the outside world. In 1854, the UNITED STATES' warships arrived at Japanese ports and demanded the opening of trade. Overwhelmed by the display of western technology and military might, the feudal-military rulers of Japan yielded first to the Americans and then also to other major powers. These events precipitated an acute political crisis. A coalition of rebellious provinces emerged, challenging the government and demanding that the emperor, who had been deprived of political power for several centuries, be restored as the supreme ruler. In 1868, the central government relinquished power in a bloodless restoration of the emperor's rule; this became known as the Meiji restoration.

Amazingly, the new government quickly abandoned the existing ultra-nationalistic stance and embarked instead on a program of profound social and economic reform and rapid Westernization. According to most historical accounts, the changes, that were nothing short of revolutionary, appear to be a result of just a handful of intellectuals persuading the new leaders that, in order to successfully defend the country's independence, it needed to modernize, both economically and politically. If true, these accounts suggest that human capital played the crucial role in shaping the development of Japanese capitalism from its cradle. In a matter of a couple of decades Japan became a constitutional monarchy with an elected parliament and competing political parties; it also embraced free markets, and the concept of civil rights.

Modern capitalist production started in Japan in the late 19th century in the cotton textile industry. This was the first industry to be set up in countries that had gone through industrialization prior to Japan, and its rise in Japan marked the first completely successful instance of Asian assimilation of modern Western manufacturing techniques. For example, Japanese firms introduced new technology of ring-spinning frames faster than any country in the world: in 1910 98.5 percent of Japanese spinning frames were rings as compared to 82.4 percent in the United States, 51.6 percent in RUSSIA, and only 16.6 percent in the UNITED KINGDOM.

In the middle 1880s, Japan still imported over 80 percent of its domestic consumption of cotton yarns. Then, during 1888–1900, domestic production of cotton yarn increased more than 20 times. Exports began in 1890, and the value of exports exceeded that of imports in 1897. By the early 1930s, the three largest cotton-spinning firms in the world were all Japanese. This remarkable success came about as a result of private entrepreneurial initiative and not through government protection.

Initially, the government, lacking an opportunity to impose protective TARIFFs, attempted to assist the process of industrialization by means of publicly subsidized firms. The experiments produced only a budgetary deficit and failed on all accounts, so that in the mid-1880s the policy was abandoned, and fiscal austerity and LAISSEZ-FAIRE in private business became the prevailing mode of economic policy. It was precisely at that time that an internationally competitive textile industry emerged and began to flourish. This historical episode contains a lesson not only for many developing countries and countries in transition to a market economy, but also for the economic problems facing Japan itself at the turn of the 21st century.

As manifested by the example of the textile industry, the institutional system of early Japanese capitalism that made possible this success had very little in common with some widespread notions about it. Until the 1930s, government intervention into the economy was limited. Even the banking system was almost unregulated, and it did not play an important role in financing industrial development anyway. Successful Japanese firms relied on equity issuance to finance investment. Shares were purchased by wealthy people with high reputations in the business community, who personally knew and monitored the management and the engineering personnel of firms they owned. This hands-on style by reputable owners, and the prospect of high dividends, encouraged small investors to also purchase shares, creating the basis for business expansion.

The tragedy of narrow nationalism. The development of Japanese capitalism was interrupted by a resurgence of narrow nationalism in the 1930s. Although some of the contributing factors came from global economic problems stemming from the Great DEPRESSION and isolationist trends in other countries, Japan's own history was probably more important. Ever since the Meiji government adopted the policy of modernization and Westernization, the country had a legacy of considering economic prosperity not as an end in itself, but rather as a means to an end, which was the creation of a strong state and armed forces.

As economic problems mounted, the civilian government gradually became politically paralyzed, and the real power slipped away from it and into the hands of the military. Civil liberties were curtailed, and in the run-up to war economic liberties were curtailed as well. Private businesses were forced to merge and were brought under government control. A group of old business leaders from the Meiji era left in disgust. The rest embraced the military rule. On December 7, 1941, Japanese warplanes attacked Pearl Harbor. WORLD WAR II began, and it was a war that Japan could not hope to win.

U.S. occupation and postwar recovery. Yasuzaemon Matsunaga, founder and president of one of Japan's largest electrical power companies was one of the most influential business leaders in the 1920s and 1930s. He was also one of the "old guard" who strongly disagreed with what he considered to be a policy headed toward disaster, so he quit all his posts in early 1942 and retired from public life.

When, on August 15, 1945, Japan announced its unconditional surrender, the 71-year old Matsunaga stunned his family and friends by declaring, "As of today, I am starting my own war against America!" With many active business leaders discredited by their cooperation with the military regime, Matsunaga was appointed head of the committee that was to decide on the organization of the postwar Japanese electrical power industry. His proposal, calling for splitting the government monopoly into nine independent regional companies and introducing the forces of competition, met with fierce opposition within the committee and from Japanese politicians but was upheld by the U.S. occupational authorities, which left the government with no choice but to implement it.

It was thus a combination of the vision of the best Japanese business leaders and U.S. economic advisors that played a key role in introducing vital reforms that changed the face of Japanese capitalism. After its defeat, Japan became a truly democratic country under civilian rule. Article 9 of the new constitution explicitly prohibited Japan from establishing offensive military capability and eliminated any political power of the military. Land was given to the peasants, government-sponsored monopolies were shattered, and independent labor movement emerged. In 1949, an American advisor, Joseph Dodge, put an end to postwar government budget deficits, price controls, and run-away inflation. The Americans also provided funds to import U.S.-grown raw cotton and other raw materials in exchange for cotton textile and other manufactured products. Helped also by special demand related to the KOREAN WAR, the Japanese economy, in the early 1950s, was finally on the road to recovery.

Years of rapid growth. In the early 1950s, very few people could still imagine that the recovery would be nothing short of an economic miracle. As it turned out, Japan's GDP grew by an average of 9.6 percent per year during the 19 years from 1953 to 1971. For comparison, the U.S. economy, for which those were also very good years, grew by an average of 3.6 percent a year. By the early 1970s, Japan was a major economic power again and its competition was threatening U.S. manufacturers in various key industries, from automobiles to electronics. Matsunaga's friends may have laughed at the old man when he declared the start of his own "war" on America on the day of the Japanese surrender. When Matsunaga died in 1971 at the age of 97, he had witnessed some significant victories scored by the Japanese in the economic war.

A common perception of the post–World War II Japanese economic miracle is that it happened as a result of very close cooperation between the government and business, with the leading role in establishing what is often called "Japan Inc." played by the Ministry of International Trade and Industry (MITI). In reality, the story is much more complicated. The following is just one, although an extremely important illustration.

In October 1945, Masaru Ibuka rented a utility room that did not even have glass in its windows and started a radio repair shop in war-devastated Tokyo. On May 7, 1946, a new company called Tokyo Tsushin Kogyo was officially born, with shareholders' capital of 190,000 yen (several thousand dollars). The new firm had no capital equipment and whatever tools its employees used were handmade.

Fifty years later, in 1996, the shareholders' capital of the same company stood at 1,459,332,000,000 yen, or about $15 billion, with a comparable figure representing the market value of its plants, capital equipment, and other capital assets. The company employed 151,000 people and had 998 subsidiaries worldwide, including the United States. Long before that, in 1957 the company also officially changed its name to SONY.

The biggest breakthrough in company's history came in the 1950s when it became the first Japanese firm to produce transistor radios. In order to do so, Sony had to purchase patent rights from Western Electric, but the transaction required approval from MITI. Sony's initial request for such an approval was flatly rejected on the grounds that other, much larger firms were unanimous in their opinion that there was not enough indigenous technology in Japan to produce its own transistors. It took Sony almost a year to overcome the bureaucratic red tape, and it certainly did not receive any support from the government. Then, a few years later a famous episode made headlines, in which 4,000 only Sony-made transistor radios were stolen from a warehouse in Long Island. The burglars did not take radios made by any other company. In other words, the brand name of Sony had already become a synonym for excellent performance and quality.

The transistor technology example seems to be just one of many cases in which MITI blundered in arbitrarily designating winners, and in picking the direction of development for an industry. Another famous episode is the entry of HONDA MOTOR COMPANY into auto manufacturing. Just about the time Honda was contemplating starting automobile production in addition to producing motorbikes, MITI policy-makers decided that Japan did not need more automobile companies, and were pushing legislation that would have banned any new entry into the industry. Fortunately, the legislation was defeated in parliament. It is hard even to imagine where the Japanese economy would stand 50 years later without Sony and Honda.

True, in some cases, coordination by the government did play an important role (for example, helping Japanese construction-equipment manufacturers and computer producers to become internationally competitive). But the main driving force for the Japanese economic success in the 1950s to early 1970s, just as almost a century before that, mostly came from private initiative and spurring technological innovation based on entrepreneurial spirit and high human capital. Japan was also helped by the overall favorable business conditions in the world economy, low energy prices, expanding international trade, as well as by the fact that it didn't have to spend almost anything on military build-up.

Japan as number one? The advent of complacency. In 1971, President Richard NIXON abandoned the BRETTON WOODS fixed exchange-rate system. In the years following that decision the Japanese yen gained more than 100 percent in value versus the U.S. dollar, from 360 yen for one dollar to the temporary peak of less than 180 yen for the dollar in 1978. In the early 1980s, the Japanese became the biggest holders of U.S. government bonds and Japanese investors were aggressively buying real estate in the United States, including the famous deal to purchase Rockefeller Center in New York City.

More and more people on both sides of the Pacific and elsewhere were starting to believe that Japanese capitalism was inherently superior to its versions in the United States and Europe, and that the 21st century would be the century of Japan. A book entitled *Japan as Number One* by Ezra Vogel became a bestseller.

Complacency and self-satisfaction is a great enemy not only of individuals but also of nations. Precisely at the time the Japanese started flattering themselves with their economic success, problems started mounting.

The biggest problem was with the Japanese financial sector. As Japan grew rapidly in the 1950s and 1960s, private investment demand was so high, compared to the amount of savings that the economy could generate, that the government had to step in aggressively to support the market for corporate loans. The financing of investment by Japanese firms relied heavily on the country's banking system, while the BANK OF JAPAN acted as a lender of last resort to commercial banks, regulated and protected by the Ministry of Finance. Protection and regulation were not limited to banks. They encompassed most of the infrastructure (construction, transport) and wholesale and retail trade. Behind the shadow of highly efficient and internationally competitive manufacturing industries a "second economy" was hiding, where waste of resources, lack of responsibility, and corruption were rampant.

As the era of high industrial growth based on real investment and export demand neared its end in the 1970s, the distortions of the "second economy" started taking a heavy toll. Government budget deficit re-emerged in the 1970s for the first time since it was abolished by the "Dodge line" in 1949. The share of bank loans in the external financing of large corporations had shrunk from more than 80 percent in early 1970s to less than 40 percent in mid-1980s and continued to slide. Instead, large corporations in manufacturing industries themselves became large investors in financial assets. This shift from lending to internationally competitive firms in manufacturing industries to the government and smaller businesses, mostly in inefficient sectors of the economy, proved detrimental, although this was not widely recognized at that time. Instead, a temporary speculative bubble emerged that conveyed a false impression of continued prosperity but resulted only in lowering the morale of the working Japanese.

The systemic crisis and challenges for the 21st century. On the last day of trading in 1989 the stock price index (NIKKEI) at the Tokyo stock exchange reached its all-time peak of 38,916 yen. (Thirteen years after that, on the last day of trading in 2002, it was down 78 percent at 8,579 yen). In the next year the bubble burst, leading to the most protracted depression in the history of the Japanese economy, with the real growth rate averaging a meager 1.4 percent over the "lost decade" of the 1990s.

The burst of the bubble and the resulting economic slump exposed problems in Japanese capitalism that had not been apparent until the economy stumbled. At the turn of the new century, Japan faced a full-scale systemic crisis of severe magnitude. For various reasons, Japan was slow to apprehend the new reality, and to devise its way out of the crises for much of the 1990s. The inertia of more than 30 years of almost uninterrupted economic success proved initially to be too strong for both the business sector and the government.

Japan had to dismantle the outdated system of government guarantees to banks and other inefficient industries, to abandon its implicit life-time employment guarantees for workers regardless of their productivity, and to introduce more disclosure and market competition, but this process moved painstakingly slowly, if at times at all. Investors hung on to their assets in futile hopes of a quick turn-around; as a result, when they eventually did sell, they got back just a fraction of the original value. Fearing the social cost of unemployment, the government tried to bail out inefficient firms, which only prolonged the misery. The government budget deficit eventually took on levels unseen in any other developed economy. Coupled with the aging of the population, this put the country's social security and pension system on the verge of bankruptcy. Many economists believe Japan badly needs to implement a comprehensive restructuring of its economy at the industry and firm level, reform the government and the social security system as well as find innovative ways to compete against the rapidly growing neighboring economies of CHINA and South KOREA.

Still, Japan remains the world's second most powerful economy, and its potential of human capital is as strong as ever. It has also proven more than once in its history that it is capable of strongly recovering from challenging economic times.

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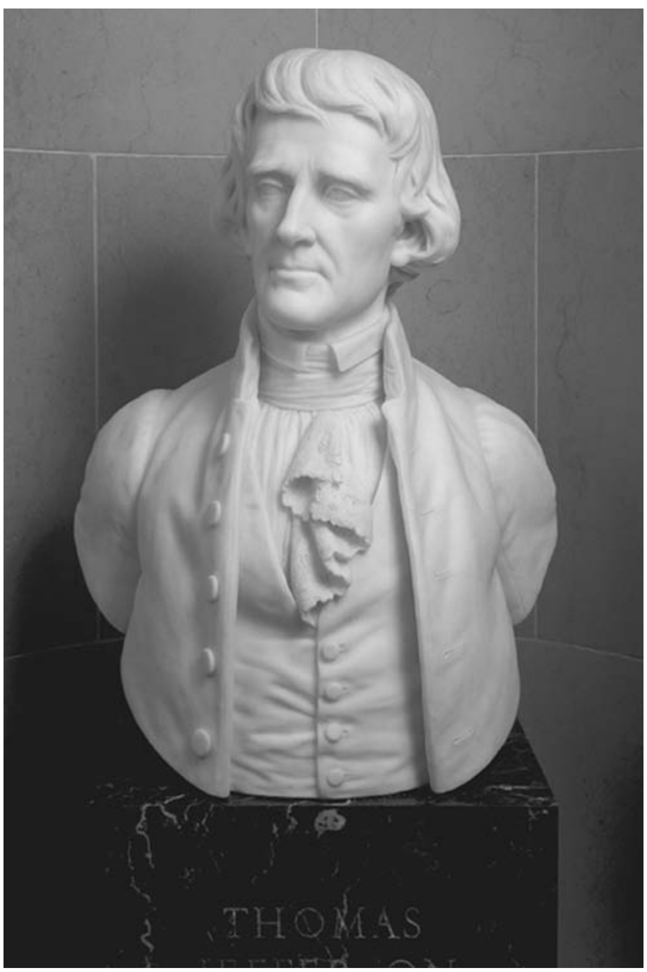
Jefferson, Thomas (1743–1826)

THE ARCHITECT OF THE American Declaration of Independence and the third president of the United States (1800–08), Thomas Jefferson was also a scientist, philosopher, politician, writer, and Renaissance man, and he emerged at the same time as the ascendancy of capitalism in world history. His extraordinary legacy in writing and his actions in life have been interpreted in myriad fashion. Nowhere is this truer than Jefferson on capitalism.

Jefferson's life of hard work seemed to echo that of Benjamin FRANKLIN, and his concepts of individual liberty seemed in line with those of Adam SMITH. His obsession with debt, both personal and national, seems reminiscent of today's fiscal conservatives. Yet Jefferson, the LIBERTARIAN and equalitarian, defies categorization and maybe always will.

Jefferson's economic policy and thought centered on balancing economic inequalities in the complex linkages of agrarian, mercantilist, and capitalist economies that were all present in the early UNITED STATES. Agrarian economies were based on land, mercantile economies upon colonies, and capitalist economies upon surplus capital, and each represented different dynamics. Jefferson himself was an agrarian practitioner who had gone into debt in a mercantilist system, and experienced bankruptcy in the emerging capitalist United States in his later years. It is no wonder he sought balance of economic inequality based on his own and the nation's early debt experiences.



Thomas Jefferson sought a personal and national balance between agrarian, mercantilist, and capitalist forces.

As president and private businessman in the early 19th century, Jefferson sought personal and national economic balance in the trichotomy of an agrarian, mercantilist, and capitalist U.S. economy. Here stems some of the confusion surrounding Jefferson and capitalism. In the 20th century, the three broad paradigms of dealing with economic inequality had emerged. Socialists advocated government ownership; social democrats (known as liberals in the United States) wanted the welfare state and power sharing between capital, government, and labor; and classical liberals (known as conservatives in the United States) wanted personal freedom and responsibility in a free-market context. However, such 20th century concepts do not necessarily directly correlate with the economic systems of Jefferson's time. Moreover, Jefferson's prolific writing career is often contradicted by his actions in life. The Jefferson adage, "Do you want to know who you are? Don't ask. Act! Action will delineate and define you," suggests we should examine his actions as well as his words.

Jefferson has been referred to as the American sphinx, difficult to interpret and impossible to pin down. His seemingly contradictory views and actions are befuddling even in their own historical context. At times, Jefferson appeared to be led by compromise, by vision, by influence, or by all three. In politics, he was influenced by John LOCKE's idea of individual natural rights and Charles de MONTESQUIEU's diffusion of government power in a mixed republic with judicial, executive, and legislative branches. Friend and future U.S. president, James MADISON influenced Jefferson as they fought for balanced government and individual rights in the U.S. Constitution and Bill of Rights, yet kept slaves in a failing slave-plantation economy. Jefferson and Madison also acted for religious thought and freedom of expression, especially if Christianity was involved.

Amid this sea of change and thought in early America, came the emergence of capitalism as espoused by Smith in 1776, the same year Jefferson penned the Declaration of Independence. Jefferson witnessed firsthand early farming colonies in North America transition from agrarian economics to small cottage industries to urban capitalism. At times he tried to direct, interact with, or just get out of the way of the rise of capitalism in his personal and public life. The enormous volume of written material he left leaves a mixed legacy concerning his thoughts and actions on capitalism.

Jeffersonian capitalism is often interpreted as economic policies that can redistribute ownership of productive capital to individuals and small groups. Such a policy should be promoted efficiently by a government that is accountable to the electorate. The result would be an egalitarian economic system of decentralized activities in competitive markets by individuals.

Such an interpretation stems from Jefferson's 1776 draft of the Virginia Constitution. Jefferson advocated free-born male suffrage or voting rights with a qualification of ownership of 25 acres of land. Those who did not own land would be allotted 50 acres and thus suffrage. Though suffrage was not universal (slaves and women were excluded), the idea of combining both political power via the vote, and economic power via the most valued possession of the time, land, was significant to say the least.

Proponents of small government and big capitalism today often quote Jefferson, who wrote, ". . . government is best which governs the least, because its people discipline themselves." Yet Jefferson, as an agrarian, was wholly against what he called "monied corporations," or banks and believed much of the wealth of a nation should always reside in the hands and lands of its people, not banks, stock markets, or capitalist enterprises. Jefferson was supportive of individualism to the extreme, but this did not necessarily translate to support of capitalistic banks and corporations. Jefferson saw the individual, free male landowner as citizen, soldier, money-issuer and keeper of liberty, who, through education and action, would control the power of government and corporations.

He even considered banking corporations a greater threat to personal liberty than armed force or the government. Jefferson and Madison both contested formation of centralized banking in the United States. Jefferson stated, "I believe that banking institutions are more dangerous to our liberties than standing armies. Already they have raised up a monied aristocracy that has set the government at defiance. The issuing power should be taken from the banks and restored to the people to whom it properly belongs." Jefferson also stated, "I hope we shall crush in its birth the aristocracy of our monied corporations which dare already to challenge our government to a trial by strength, and bid defiance to the laws of our country."

Such stances have been interpreted in the modern era as indicating Jefferson was against centralized capitalism with money as the key source of power, and that the law of the land along with individual thought and action should be the guiding mechanisms, not supply and demand. Yet Jefferson defies such simplistic interpretation by any side in debates on capitalism.

Jefferson's purchase of the Louisiana territory from a cash-poor Napoleonic FRANCE in 1804 is also open to multiple interpretations. He purchased it with funds the fledgling United States did not have, a purchase on debt if you will. As soon as possible, he made the land available for settlement, despite the presence of large numbers of settled and nomadic Native American communities. His vision was of the land as the key component for individual liberty as well as economic and political stability at the expense of national debt.

Additionally, Jefferson's own debt in what had been a largely mercantilist economy of slave plantation production of cash crops, such as tobacco, has been given multiple interpretations. Jefferson felt strongly those monied institutions, whether banks or government, represented a serious threat to liberty through debt. Jefferson envisioned political power as a means to redress economic power in the grasp of creditors. He has been called a poor capitalist who needed venture capital to fund his research and development projects in science and invention, the AMERICAN REVOLUTION war debt, and the national debt. Alternatively, he has been portrayed as a successful agrarian and mercantilist who failed only due to the rise of capitalist monied institutions. Some suggestions go so far as to indicate the debt of the landed aristocracy of the colonies owed to creditors in the British Empire mercantilist economy led to their participation in the American Revolution, and to guarded approaches to any future credit and debt system such as financing in capitalism.

Finally, Jefferson's vision of an educated populace acting for its own destiny via government-funded public education has been interpreted as socialist, social-democratic, and democratic, to name but a few labels. Jefferson's suggestion was to "Educate and inform the whole mass of the people. . . . They are the only sure reliance for the preservation of our liberty." However, as should be evident by now, Jefferson is not easy to label nor are his beliefs simplistic. Perhaps that is why his complex messages still have relevance today, no matter the perspective and interpretation.

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Jevons, William Stanley (1835–82)

BEST KNOWN FOR HIS DEVELOPMENT of the concept of marginal utility and his introduction of mathematics into the field of economics, William Stanley Jevons was born in Liverpool, England, the ninth of 11 children of a prosperous family. His father, Thomas, ran the family business, Jevons & Sons, and his mother, Mary Anne, was an accomplished poet. The family's fortunes changed in 1845 when Jevons' mother died following a prolonged illness. Three years later, a collapse in the RAILROAD industry forced Jevons & Sons into BANKRUPTCY, and the family never recovered financially.

At the age of 15, Jevons entered the Junior School of University College, London, and continued on to the University College the following year. In London, he lodged with his cousin, Henry (Harry) Enfield Roscoe, who later became one of Britain's most eminent chemists. In 1853, Roscoe arranged a lucrative position for his cousin at the newly established Sydney mint in AUSTRALIA. Jevons worked at the mint until 1859 when he returned to University College to complete his studies. He became a tutor at Owens College in Manchester in 1863 just as his first book, *A Serious Fall in the Value of Gold*, began to gain recognition.

Three years later, he became a professor at Owens College, and the following year, married Harriet Ann Taylor, the daughter of the owner of the *Manchester Guardian*, a prominent newspaper. The couple had three children, one of whom, Herbert Stanley, followed in his father's footsteps and became an economist. Jevons remained at Owens College for 10 years until he returned to University College, London, as Professor of political economy in 1876. Poor health forced him to resign his position in 1881, and, during a family holiday in August, 1882, Jevons drowned off the coast of Devon.

Jevons first became known in Great Britain for *The Coal Question*, which was published in 1865. He predicted that Britain would soon exhaust its supply of coal and, as a result, relinquish its position as the world's leading industrial power to the UNITED STATES, which had a nearly inexhaustible supply of coal. His prediction about the United States proved correct, but he was far too pessimistic about the prospects for Britain's future. Jevons' analysis failed to account for the development of alternative energy resources such as oil or natural gas, the discovery of new sources of coal, and the incentive to use coal more efficiently as its price increased.

In 1871, Jevons published the *Theory of Political Economy*, which included his most important contributions to economics. Like Carl MENGER and Leon WALRAS, each of whom worked independently of the others, Jevons challenged the view of classical economics that the cost of production determines value: "Repeated reflection and inquiry have led me to the somewhat novel opinion, that value depends entirely upon utility."

Jevons used the example of water to illustrate the subjective nature of value, pointing out that "a quart of water per day has the high utility of saving a person from dying in a most distressing manner." As the quantity of water available increases, though, an additional unit of water provides less utility. Beyond a certain quantity, the utility of additional water gradually sinks to zero. For virtually everything that humans consume, Jevons concluded, "all our appetites are capable of satisfaction or satiety sooner or later."

These observations led Jevons to articulate the idea that later became known as the principle of diminishing marginal utility: "We may state as a general law, that the degree of utility varies with the quantity of commodity, and ultimately decreases as that quantity increases."

Jevons realized that value depended not on total utility, but on the "final degree of utility" of a particular good. This insight allowed Jevons to develop his well-known principle of exchange, which holds that the "ratio of exchange of any two commodities will be the reciprocal of the ratio of the final degrees of utility of the quantities of commodity available for consumption after the exchange is completed." For example, consider a consumer whose marginal utility of oranges is 2 units and whose marginal utility of apples is 4 units. If she gives up 1 apple, she loses 4 units of utility and would require 2 oranges to offset the loss. Thus, the ratio of exchange, 2 oranges for 1 apple, equals the reciprocal of the ratio of the marginal utility of oranges to apples.

In addition to developing marginal analysis, Jevons was also instrumental in introducing mathematics into the field of economics. He pioneered the use of index numbers and believed that "all economic writers must be mathematical so far as they are scientific at all."

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Jiang Zemin (1926–)

A VIRTUAL UNKNOWN UNTIL 1989, when he was picked as the next general secretary of the Chinese Communist Party (CCP), Jiang Zemin can best be described as traditional, a devoted communist, and Western in his economic orientation.

Jiang's roots are traditional: As a young child, he was given up for adoption as male heir to the family of an uncle killed in combat after joining the CCP. His firm background in revolutionary martyrdom positioned Jiang to rise in the CCP: In 1943 he participated in the CCP students' movement, joining the party in 1946. One year later, at age 21, he graduated with an electrical-engineering degree from a Shanghai University.

During the tumultuous Cultural Revolution, he kept a low profile; however, as the pragmatic Deng Xiaoping rose to power and began to liberalize CHINA's economic policies, Jiang began to gain influence. He was elected a member of the CCP Central Committee at the Twelfth CCP National Congress in 1982, oversaw the development of Shanghai's first stock exchange, and was appointed China's electronics industry minister in 1983. Two years later, as mayor of Shanghai, he brought in venture capital from HONG KONG, JAPAN, and the West.

Jiang's economic liberalism was matched by his political conservatism. For supporting suppression of Tiananmen Square protestors, he was appointed in 1989 to the powerful post of chairman of the Central Military Commission, and president of the PRC by 1993.

Soon after having emerged from an elite group after Deng's's 1997 death, Jiang expounded the importance of the party to China through his Three Represents theory, that dictated that the CCP should lead China to modernize its economy, develop its own culture (albeit accepting appropriate Western ideas), and represent all people, rather than only the workers and peasants.

Jiang's theory and policy was affirmed in November 2002, with his announcement of the succession of vice-president Hu Jintao as chief of the CCP, and the invitation that capitalists join the party, thus breaking a long tradition of exclusion. Like his predecessor, Hu vowed to continue to promulgate not only Jiang's Three Represents theory, but also his strict political control. Thus, the resulting mixture of continued political totalitarianism with some aspects of capitalism provides a unique model of non-democratic capitalism. Whether it succeeds in the long run has yet to be seen.

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Jobs, Steve (1955–)

A PIONEERING FIGURE in the personal computer industry and co-founder of Apple Computer, Inc., Steven Paul Jobs was born and raised in the heart of Silicon Valley, California. Jobs attended Reed College for a time but dropped out in 1974 to design video games for the Atari Corporation. Shortly thereafter, Jobs reconnected with a high-school friend, Steve Wozniak, who had been working on developing his own computer logic board design. Jobs took an interest in his innovative work and the two formed a business venture. Jobs and Wozniak dubbed the logic board design, the Apple I, and the two founded Apple Computer on April 1, 1976.

A refined version in a more stylish enclosure, the Apple II, was finished in 1977. It became an immediate success in the fledgeling personal-computer industry. Apple's fortunes soared over the next several years, as it became one of Americas most high-profile computer companies. In 1983, Jobs lured PepsiCo Chief Executive Officer John Sculley to run Apple, in part with the famous line, "Do you want to spend the rest of your life selling sugared water or do you want a chance to change the world?"

Inspired by the concept of a graphical user interface developed at Xerox-Parc (and seen by Jobs on a controversial visit in 1979), Jobs oversaw Apple's efforts to develop a new consumer computer. The 1984 introduction of the resulting Macintosh was a public-relations coup, and a pioneering case of "event marketing." But while the Macintosh proved an instant icon in American business history and popular culture, sales did not match expectations immediately, and Jobs bore considerable blame for this, leading to his dismissal from Apple in 1985 (a move engineered by Sculley).

After leaving Apple, Jobs founded NeXT in 1985 with the goal of matching fine design and superior function in high-powered workstation computers for education markets. The high price of initial models, however, doomed NeXT to a minor position in the computer industry of the early 1990s. Jobs then bought Pixar Animation Studios in 1986, building it into a major Hollywood design studio, responsible for the first full-length computer-generated motion picture, "Toy Story" (1995).

Jobs, by now undeniably a marketing and public-relations expert, accepted an offer to return to Apple in 1997 after it acquired NeXT for $400 million. He resumed leadership of the company several months later, with the typically atypical title of "interim CEO" or "iCEO." With Apple at its lowest fortunes, Jobs made a number of organizational moves to turn the company around, the most dramatic and successful of which included a partnership with MICROSOFT in 1997 and the introduction of the radically revised consumer computer, the iMac, in 1998. In early 2003, Jobs remained at the helm of Apple and one of the more enigmatic and charismatic figures in modern capitalism.

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Johnson, Andrew (1808–75)

THE 17TH PRESIDENT of the UNITED STATES, Andrew Johnson, was born in Raleigh, North Carolina. His father died when Johnson was three years old. Johnson became a tailor's apprentice at 14; he never attended school but taught himself to read and write.

At age 18, Johnson headed west, setting up a tailor shop in Greenville, Tennessee, where he became inspired by Jacksonian Democracy. At that time, power in the southern United States lay with the large plantation owners. Johnson supported the small farmers and professionals who often had opposing interests. In 1829, he challenged the local leadership to win election to town council, and later mayor.

After serving in the Tennessee state legislature, Johnson was elected to the U.S. Congress in 1843. Being gerrymandered out of his district in 1852, Johnson was elected Tennessee governor and after two terms, returned to Washington, D.C., as a senator in 1857.

Although Johnson was a Democrat, he frequently clashed with party leaders in Tennessee. He proposed a homestead law that provided free western land up to 160 acres, opposed by slave owners. In 1860, he supported Stephen Douglas who thought territories should decide whether they would be slave states or free states. Most Southerners were arguing that they had the right to take their slaves anywhere.

While he supported slavery, Johnson staunchly opposed the idea of secession. After Tennessee voted to secede, Johnson refused to recognize its status. He was the only Southern senator to remain in the U.S. Senate after his state voted to secede.

When Union armies recaptured Tennessee in 1862, President Abraham LINCOLN appointed Johnson military governor. In the 1864 presidential election, Lincoln selected Johnson as his vice-presidential running mate. By choosing a Southerner and a moderate who had remained loyal to the Union, Lincoln hoped to pull the nation closer together.

When Lincoln was assassinated a few weeks into his second term, Johnson became president. From the outset of his presidency, there may never have been a more hostile relationship between a president and Congress. Johnson had always been a strict constructionist, who believed in limited government. Although he had accepted emancipation, he wanted to leave it up to the states to decide how to deal with the new freedmen. He saw military occupation of the South as a temporary measure and wanted to return to democratic government as soon as possible.

Johnson's critics pointed out that his policies left the new freed-men at the mercy of a hostile white majority, and that quick removal of the military would turn these states back to people who had been traitors just a few years earlier.

Nevertheless, Johnson opposed measures designed to protect the rights of African-Americans, including the proposed 14th Amendment to the Constitution. Congress overruled most of his vetoes and the relationship between Congress and the White House remained hostile.

Congress passed the Tenure in Office Act over Johnson's veto, taking away his right to fire his cabinet members without Senate approval. When Johnson fired Secretary of War Henry Stanton, the House voted to impeach him. After a lengthy trial, the Senate failed by a single vote to reach the two-thirds majority necessary to convict him. Johnson finished his final year in office and left town.

Thanks to a highly competent secretary of state, Johnson had a relatively successful foreign policy, acquiring Alaska from RUSSIA, and getting the French to abandon MEXICO. Johnson remained relatively popular in Tennessee. In 1874, he was re-elected to the Senate but died only a few months after taking office.

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Johnson, Lyndon B. (1908–73)

LYNDON BAINES JOHNSON, born in southwestern Texas, became the 36th president of the UNITED STATES after an exemplary political career that spanned four decades. Throughout his career in politics, Johnson maintained a composure that became one of his legacies. His ability to compromise and push the Democratic Party's agendas through the toughest of political arenas is well known, as was his dedication to civil rights legislation.

These skills led him to the vice presidency under John F. KENNEDY. After the tragic assassination of President Kennedy, Johnson assumed the commander-in-chief position and used it to pass some of the broadest social legislation the United States had ever seen. His ability to negotiate through political quagmires was pushed to the extremes when the conflict in South Vietnam escalated to a boiling point in 1964. Ultimately, it was the VIETNAM WAR and its repercussions that would allow those who opposed Johnson to maneuver for political advantage against him.

Johnson grew up in a rural farming community. His parents were not wealthy. His father served five terms in the Texas legislature, setting young Johnson up for political connections, but his parents could not fully support his finances. Johnson graduated from Johnson City high School in 1924. In 1927, Johnson attended Southwest Texas State Teachers College in San Marcos. Although he was involved in a significant number of school activities, he was able to graduate in just 312 days. This kind of drive and ambition was the primary trait that would propel Johnson up the political ranks and into power.

Johnson had his first experience in the public arena in 1931 when he campaigned for Richard M. Kleberg, and was appointed as the newly elected congressman's secretary. Now in Washington, D.C., Johnson used his amiable and energetic personality to make his way into the social circles of the House of Representatives. He became known to President Franklin D. ROOSEVELT, Congressman Sam Rayburn, and Vice President John Nance Garner.

Johnson was elected to Texas' 10th congressional district in 1937 in the face of five anti-NEW DEAL Democratic opponents. Using his new Washington acquaintances, Johnson jockeyed for position and made his way onto committees where he could benefit his district. He was interested in such problems as public power, flood control, reclamation and public housing. Also a member of the Naval Affairs Committee, Johnson stood firmly in his opinion that power in international affairs was the correct route to take in the unfolding conflict that would become WORLD WAR II.

Prior to 1941, Johnson had known nothing but political success and direct vertical ascension into the ranks of the U.S. government. But in 1941, Johnson ran against W. Lee O'Daniel for U.S. senator. At the time, Texas Democrats were split between those who supported President Roosevelt and those who opposed him. Johnson had full support of the president, yet lost to O'Daniel, who ran on the anti-Roosevelt platform.

After losing the senate race, Johnson joined the U.S. Navy in December 1941. He was awarded the Silver Star from General Douglas MacArthur for his service in the Pacific theater and returned to Washington, D.C., in 1942 at the order of Roosevelt. Johnson concentrated his legislative efforts on the military during the remainder of World War II.

The post-war political atmosphere was in significant contrast to the environment that was prevalent before the war. Many Americans, and their representatives, began to lean more toward the right in policy and legislative action. After the war, Johnson no longer supported an expansion of the New Deal, but did look after the maintenance of Roosevelt's social reform. Furthering his own tendency to lean toward the right, Johnson supported the Taft-Hartley Act of 1947 that helped to lessen the power of strong labor forces moving throughout the country.

In 1948, it was clear that Johnson had made the correct political decisions to gain the support of the state of Texas, and defeated his Republican opponent for the senator's seat in the U.S. Senate. In his initial years in the Senate, Johnson maintained a right-leaning platform and supported President Harry TRUMAN in the intervention in KOREA. Johnson was directly opposed to communism and its expansion out of Korea, VIETNAM, CHINA, RUSSIA, and CUBA.

Through some fortunate turns of events, Johnson became the Senate's Democratic Party leader in 1953. Johnson's political ambitions were further realized when, in 1954, the Democrats gained control of the Senate and, in 1955, he won the bid for majority leader for a second time. After the political chess match in which he grasped the position of senate majority leader, Johnson had now to prove his effectiveness in pushing legislation through a partisan legislature.

One of Johnson's key methods of directing legislation through the Senate was to selectively support the Republican president, Dwight EISENHOWER. Johnson did not, however, support the president's policies of not exploring space or developing military technology. On foreign-policy matters, Johnson urged the Democrats to support Eisenhower in most initiatives.

As November 1960, and the presidential election closed in, Johnson aimed to present a more liberal approach to legislation in an attempt to balance his appearance to the public as well as his colleagues. He supported two civil rights bills that came through the Senate; one in 1957 and another in 1960. Coming out of World War II as a near-conservative, Johnson had moved back to nearly his original political platform.

Johnson would have liked to run for president in 1960, but he did not have the necessary national support. He got the next best thing. Appointed as Kennedy's running mate and defeating Richard NIXON, Johnson took his seat as vice president in 1961.

Johnson was active during his vice presidency and took on a more liberal platform than he had in the past. He was the chairman of the President's Committee on Equal Employment Opportunity. This position enabled

Johnson to further prove to the public that he was pro-civil rights and in full support of Kennedy's social reforms. Kennedy gave Johnson assurances that he would remain on the presidential ticket in the 1964 election. On November 22, 1963, however, Kennedy was assassinated. Johnson was sworn in as president aboard Air Force One.

Johnson continued to further the Kennedy agendas in Congress. Prior to the assassination, Congress was reluctant to pass Kennedy's civil rights and tax legislation, but now there was no problem passing the legislation. In 1964, Congress passed an enormous amount of social bills, including the Tax Reduction Act and the Civil Rights Act.

The 1964 presidential election was essential for Johnson to further his ambition of establishing a "Great Society." Johnson chose Hubert H. Humphrey as a running mate and defeated Senator Barry Goldwater in November 1964. The Democratic Party had a huge victory in the 1964 election, winning 37 new seats in the House, bringing the total to 295 out of 435, and they held 67 out of 100 seats in the Senate. After the Democrats resounding victory, Johnson was in a position to push a tremendous amount of new legislation. Bills included the Voting Rights Act of 1965 that removed restrictions on the right to vote, two new federal departments including the Department of Housing and Urban Development and the Department of Transportation, an "unconditional war on poverty," and legislation that liberalized unemployment, expanded the food stamp program, and opened up opportunities for youth employment.

With the escalation of the Vietnam War came the decline of Johnson's power and public opinion. Caught between his principles of quelling communism from North Vietnam, public opposition to the war, and a growing number of political opponents, Johnson announced his intentions to not run for another term of office on March 31, 1968, the same day he ordered that almost all bombing in North Vietnam be ceased.

Johnson left office January 20, 1969, and dedicated his final few years to peace resolution.

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Jordan

THE HASHEMITE KINGDOM of Jordan is located between Israel and Saudi Arabia. A small nation with a small population, it lacks adequate supplies of national resources such as water and oil. The PERSIAN GULF WAR of 1990–91 aggravated Jordan's serious economic problems, forcing the government to stop most debt payments.

In 2000 B.C.E. Semitic Amorites settled around the Jordan River in the area called Canaan. Over the centuries many different groups invaded and settled the region, ending with the British. At the end of WORLD WAR I after the breakup of the Ottoman Empire, the League of Nations awarded the mandate over this territory (which included ISRAEL, the West Bank, Gaza, and Jerusalem) to the UNITED KINGDOM. In 1922, the British established the semiautonomous Emirate of Transjordan to be ruled by the Hashemite Prince Abdullah (who was assassinated in 1951). This mandate ended on May 22, 1946. Three days later, the country became the independent Hashemite Kingdom of Transjordan.

In 1948, Jordan assisted Palestinian nationalists in their attempt to prevent the creation of Israel, leading to war. An armistice agreement was reached on April 3, 1949, and as a part of this agreement, Jordan had control of the West Bank. In June, 1967, Jordan participated in the war between Israel and an array of Arab states including SYRIA, EGYPT, and IRAQ. During the war, Israel gained control of the West Bank, and by 1988, Jordan renounced all claims to the area. During the October 1973 Arab-Israeli conflict, Jordan sent a brigade into Syria to fight Israel.

By the outset of the Persian Gulf War in the early 1990s, Jordan had had enough of conflict and turned toward the role of peacemaker, attempting to mediate between Iraq's Saddam Hussain, other Arab nations, and the West. In 1994, with the aid of the UNITED STATES, Jordan's King Hussein signed a peace treaty with Israel.

Today, Hussein's son, King Abdallah, continues peaceful relations with Israel and has focused his government on economic reform. Jordan has signed agreements with the INTERNATIONAL MONETARY FUND (IMF), practiced careful monetary policy to ensure membership in the WORLD TRADE ORGANIZATION (WTO), and has made agreements with the EUROPEAN UNION (EU). Productivity has improved in Jordan to the point the country enjoys growing foreign investment. In 2001, Jordan had a population of 5.3 million and a GROSS DOMESTIC PRODUCT (GDP) of $21.6 billion.

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J.P. Morgan Chase & Co.

RANKED AS THE 54TH LARGEST company in the world in 2002 by *Fortune* magazine, J.P. Morgan Chase & Co. was formed in December 2000, after the Chase Manhattan Corporation acquired J.P. Morgan & Co., Inc. Both were leading banking firms, with the former a commercial and retail bank and the latter an investment bank. This acquisition became possible through the Gramm-Leach-Bliley Financial Services Modernization Act of 1999, federal legislation that repealed the main provisions of the NEW DEAL's Glass-Steagel Act. This 1933 law had prohibited a company from offering both investment banking and commercial banking. Once the federal government lifted this ban, a number of mergers and consolidations between commercial banks and investment banks occurred.

Chase's acquisition of J.P. Morgan strategically combined the two firms' strengths and was based on the belief that capital size was related to the size of investment banking transactions. J.P. Morgan & Co. could handle larger investments with the added capital of Chase Manhattan and Chase could cross-market J.P. Morgan's investment services to its many commercial banking clients. In addition, the newly created bank could achieve economies by staff reductions in support areas. Results in the first two years after the acquisition did not live up to pre-acquisition expectations.

The histories of these firms that merged to form the second largest financial services company in the UNITED STATES are integral to America's economic and commercial history.

J.P. Morgan & Co. traces its history to the early 19th century. George Peabody, an American businessman, opened a London merchant banking house in 1838. Junius S. Morgan became Peabody's partner in 1854 and in 1864 took over the firm and renamed it J.S. Morgan & Co. In 1861, J. Pierpont Morgan, Junius' son, opened a New York office of his father's firm and named it J.P. Morgan & Co. In 1895, J.P. Morgan consolidated all of the family's holdings, including European operations, and became senior partner. During the 1890s and early 20th century, J.P. Morgan was one of the most powerful bankers in America. During the DEPRESSION of 1893 President Grover CLEVELAND asked Morgan for a personal loan to help the United States avoid defaulting on its obligations. In 1901, Morgan bought Carnegie Steel and merged 200 steel operations into the new United States Steel Corporation, America's first billion-dollar company that controlled more than three-fifths of the nation's steel production.

When Morgan died in 1913, his son J.P. Morgan, Jr. replaced him as senior partner. The Glass-Steagel Act of 1933 forced banks to divide their commercial and investment banking operations. In 1935, J.P. Morgan & Co.'s American investment operations formed a new investment-banking firm, Morgan Stanley & Co., while it concentrated on commercial and retail banking. Until 1989, J.P. Morgan & Co. targeted the upper income sector. That year the Federal Reserve Bank granted it the right to once again deal in corporate underwriting. J.P. Morgan made a strategic decision in 1996 to concentrate on investment banking, competing with Wall Street firms. In 2000, J.P. Morgan & Co. accepted an offer from Chase Manhattan Corporation to form J.P. Morgan Chase & Co.

Chase Manhattan Corporation in 2000 resulted from numerous mergers of famous banks in New York City. The earliest entity was the Manhattan Company, founded in 1799 by Alexander HAMILTON, the first U.S. Treasury secretary, and Aaron Burr, vice president in the Jefferson administration. The precursor of Chemical Bank of New York was established in 1823. Hanover Bank was founded in 1851 and eventually became Manufacturers Hanover Bank. In 1877, Chase National Bank was created and named after President Abraham Lincoln's Treasury Secretary Salmon P. Chase. In 1930, Chase National Bank bought Equitable Trust Company from the Rockefellers, making them among the largest stockholders in the merged firm. In 1955, Chase bought the Manhattan Banking Company and became Chase Manhattan Bank. Hanover Bank acquired Manufacturers Bank in 1961 to create Manufacturers Hanover Trust Company. In 1991, Chemical Bank bought Manufacturers Hanover, and in 1996 acquired Chase Manhattan Bank and assumed its name. It became the largest bank-holding company in the country. In 2000, when Chase Manhattan Bank bought J.P. Morgan & Co. and formed J.P. Morgan Chase & Co. it became the second largest financial services company in America after Citigroup. The company reported revenues of over $50 billion in 2001.

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K

Kahneman, Daniel (1934–)

AMONG THE TWO RECIPIENTS of the 2002 Nobel Prize in Economics (the other was Vernon L. SMITH), Daniel Kahneman was awarded "for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty."

Kahneman, regarded as a psychologist despite winning the prize traditionally given to economists, used his keen understanding of human psychology to develop a theory of how economic decision-makers function. Using a series of studies, Kahneman and his colleagues, including the late Amos Tversky, whom Kahneman credits for being his collaborator on his prize-winning work, were able to conclude that under certain decision-making circumstances, where complex data is used and future consequences are undetermined, people are more likely to disregard some important data and rather rely on "a rule of thumb," or analytical shortcuts to make the decision. In one experiment, two groups of people were chosen, one given a coffee mug and the other nothing. The first group was given the choice of keeping the mug or trading it in for money. The second group was given the choice of a mug or money. Results showed that those without the mug were willing to accept less money than those who were required to give it up.

Born in Tel Aviv, ISRAEL (PALESTINE at the time) in 1934, Kahneman lived in FRANCE during WORLD WAR II and returned to Israel in 1946, where he began his formal education. Studying at Hebrew University in Jerusalem, Kahneman received his B.A. in psychology and mathematics in 1954, and then served in the Israeli Army, where he pioneered a new-recruit interview process, before receiving his Ph.D. in psychology at the University of California, Berkeley, in 1961.

Kahneman's early work was not limited to a select number of fields, as he studied various forms of psychology including vision, attentiveness, the study of counterfactual human emotions, and psychophysiology. It wasn't until the late 1970s that his most significant work was accomplished by collaborating with Tversky as they contributed a number of general psychological analyses dealing with judgment and choice. Together, they would win the Distinguished Scientific Contribution Award of the American Psychological Association in 1982, as the new field of economic behavioral science began to win over more and more adherents.

In the 1990s, Kahneman continued his research while a professor at Princeton University, where he held the dual positions of the Eugene Higgins Professor of Psychology and Professor of Public Affairs at the Woodrow Wilson School of Public and International Affairs. In 2000, Kahneman and Tversky published *Choices, Values, and Frames* elaborating further on their research into economic choices and studies of CONSUMER BEHAVIOR.

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Kantorovich, Leonid (1912–86)

LEONID KANTOROVICH IS, in all likelihood, the only Lenin Prize-laureate included in this *Encyclopedia* *of Capitalism*. Considered by many to have founded Soviet ECONOMETRICS, the use of mathematical and statistical methods to solve economic problems, Kantorovich shared a 1975 Nobel Prize in Economics prize with Dutch-born Tjalling KOOPMANS, for independent "contributions to the theory of optimum allocation of resources." Koopmans, a wartime statistician at the Combined Shipping Adjustment Board in Washington, D.C., before joining the economics faculty at Yale University, developed a linear programming technique in order to minimize transportation costs. As Koopmans' conclusions were similar to Kantorovich's earlier, published work, the Nobel Committee attributed innovations in linear programming to both.

When Kantorovich was awarded the prize, a journalist from the Soviet news agency TASS asked him why the Nobel Committee, in a capitalist country such as Sweden, would honor the contributions of a researcher in socialist economics. Kantorovich's answer firmly fixed his research in the economics of socialism: While such work was applicable to "any economically developed country," mathematics "must be considered most valuable and more appropriate for the socialist system of economy, where scientific planning plays an immeasurably greater role."

Following his assertion, it would be most appropriate to place Kantorovich's contributions to economics in the chronology of the SOVIET UNION's state economy. Kantorovich's biography extends from establishment of Soviet authority in industrialized urban communities, through nation-wide industrial transformation, economic planning for national defense during the World War II, and the extension of state research institutes during the postwar era. The same year that Kantorovich was awarded the economics prize, Soviet physicist A. Sakharov received the Nobel Peace Prize for his extended unofficial campaigns on behalf of human rights and disarmament.

As Kantorovich wrote in his citizen's formulaic autobiography or *anketa*, "I was born in Petersburg (Leningrad) on January 19, 1919. My father, Vatilij Kantorovich, died in 1922 and it was my mother, Paulina (Saks), who brought me up." During the privation of World War I, Kantorovich's family removed themselves to Byelorussia; their son returned and entered Leningrad State University's Mathematical Department at the age of 14. Kantorovich held a professorship in the same institution between 1944–60. In 1960, he left his academic chair to become director of mathematical economic methods at the prestigious, newly formed Siberian Division of the Soviet Academy of Sciences. He was awarded the Lenin Prize in 1965, and the Order of Lenin in 1967. In 1971, he was appointed laboratory head within the Institute of National Economic Management, in Moscow.

In 1938, while a lecturer at Leningrad State University, Kantorovich consulted in applied mathematics for the Plywood Trust's laboratory. Responding to challenges in raw materials deliveries, Kantorovich demonstrated that many problems of economic allocation could be understood as maximizing a function subject to constraints, maximizing linear functions on a convex polygon. This work was published as *The Mathematical Method of Production Planning and Organization*, the following year. John HICKS (Britain) and Paul SAMUELSON (United States) independently demonstrated that certain equation coefficients could be regarded as input prices in capitalist economies; Samuelson, like Kantorovich, showed that certain coefficients in the equations should be input prices.

Published during socialism's economic liberalization of the early 1960s, Kantorovich's most widely recognized book, *The Best Uses of Economic Resources* (1965), developed a common vocabulary for economic planners in socialist states and in market economies. According to Kantorovich, even centrally planned economies should use prices to allocate limited resources. As trade-offs between present and future costs concerned planners in socialist economies, then interest rates were as necessary to economic calculations under socialism as in capitalist economies.

In developing a mathematical solution for the transport problem, Kantorovich demonstrated that many problems of economic allocation should be restated in mathematical terms. Unknowingly, Kantorovich's mathematical solution for distribution of transport flows contributed to A. Tolstoy's approximation of the Monge problem from 1930, later developed by F. Hichcock as the Hichcock Transportation Problem. By the time the Nobel Committee recognized Kantorovich's work, it—along with that of Dantzig and Von Newman—had come to be considered the basis for theories of linear programming. The Central Bank of Sweden established an Alfred Nobel memorial economics prize in 1968, following Kantorovich's most significant contributions by a number of years.

Kantorovich was buried in the cemetery of Moscow's Novodevichy convent, appropriately among Soviet intellectual and political leaders. His neighbors in death include near-contemporaries N.S. Khrushchev and D.D. Shostakovich. Kantorovich was honored with publication of a memorial volume, *Functional Analysis, Optimization and Mathematical Economics*, published in 1990—as the history of the Soviet Union drew to a close.

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Kennedy, John F. (1917–63)

IN POPULAR MEMORY, the assassination of President John F. Kennedy remains a painful scar on the American past. The first president born in the 20th century, Kennedy brought youth, energy, and charisma to the White House. Though his administration lasted just over 1000 days, and though historians have carefully revealed the complexity of his character, Kennedy's personality and political initiatives left a permanent mark on American culture.

The second son of the wealthy and powerful Joseph Patrick KENNEDY and his wife, Rose Elizabeth Fitzgerald, Kennedy enjoyed a privileged childhood. Educated at the prestigious Choate School in Connecticut, Kennedy went on to Princeton University until he had to withdraw for health reasons. He later enrolled at Harvard University and graduated *cum laude* in 1940. Following his graduation, as America closely monitored the escalating military conflict in Europe, Kennedy entered the U.S. Navy.

While serving in the Solomon Islands in 1943 during WORLD WAR II, his boat was sunk by a Japanese destroyer. Although he suffered serious and permanent injuries to his back, Kennedy managed to lead his fellow survivors to safety.

Returning from military service, Kennedy entered politics through the ranks of the Democratic Party. In 1945, he was elected to the House of Representatives, where he served until he was elected to the Senate in 1953. Not long after becoming a senator, Kennedy married Jacqueline Lee Bouvier, a socially prominent woman 12 years his junior. Also, during his first term as senator, Kennedy achieved national fame when his book, *Profiles in Courage*, won the Pulitzer Prize in History. He was re-elected to the Senate in 1958 as speculation grew about a potential bid for the presidency in 1960.

At the Democratic National Convention in 1960, Kennedy gained the nomination for president. Millions of Americans watched him and his Republican opponent, Vice-President Richard M. Nixon, in the first nationally televised presidential debate. In one of the closest popular votes in American history, Kennedy gained the necessary majority of electoral votes and won the election. At age 43, he was the youngest man and the first Roman Catholic elected to the office.

With his inspiring inaugural address that told Americans to "ask not what your country can do for you, ask what you can do for your country," Kennedy reinvigorated the American spirit. Labeling the new age of scientific technology and social relations the "New Frontier," Kennedy dared Americans to rise to the challenges of the 20th century.

But much of Kennedy's initiatives, foreign and domestic, can be seen as functions of the international hostility known as the Cold War. The Cold War originated immediately after World War II as a struggle between Western, capitalist nations, led by the United States, and the communist nations, led by the Soviet Union. American leaders feared that the expansion of Soviet power would be a threat to the rest of the world but also predicted that peaceful competition would lead to the triumph of societies committed to democracy and capitalism. To bolster American might in the event of military conflict, Kennedy improved U.S. infrastructure through increased support of engineering, education, and corporations.

Kennedy's support of civil rights, though undoubtedly a genuine interest, can also be understood within the context of the Cold War. Concerned that the Soviet Union could use American internal strife as a form of propaganda, Kennedy intensified improvements to the status of African-Americans. Moved by the brutal televised images of Southern racism, Kennedy ordered federal troops to the University of Mississippi to end anti-desegregation rioting in September 1962. And on June 11, 1963, on national television, he declared the segregation of the University of Alabama to be "moral issue." His concerns for civil and human rights also extended beyond domestic borders. In 1961, he created the Peace Corps, a program that sent skilled and idealistic Americans into third-world countries to develop their public health and agricultural procedures.

Consistent with his capitalist imperatives, Kennedy introduced economic programs that helped launch the United States into its longest period of sustained growth since World War II. He expanded Social Security coverage and benefits, raised the minimum wage, furthered public HOUSING initiatives, increased measures to clear the slums, and lowered tariff barriers.

Kennedy's 1961 Area Redevelopment Act directly benefited economically depressed areas and the 1962 Manpower Development and Training Act retrained destitute farmers and unemployed workers. Despite these legislative successes, Kennedy faced serious opposition from the conservative coalition in Congress on issues relating to tax reduction, federal aid to education, medical care to the elderly, and civil rights.

However, Kennedy's administration is particularly remembered for its foreign affairs, especially the incidents that reflected the Cold War. Kennedy's first foray into the international conflict occurred in April, 1961, when he authorized American-trained Cuban exiles to invade Cuba at the Bay of Pigs and overthrow Fidel Castro's communist regime. The invaders were quickly repulsed. Soon after the Bay of Pigs disaster, Kennedy made a poor showing at the Vienna Conference and led Soviet Premier Nikita Khrushchev to believe that the young president could be easily manipulated.

Khrushchev thus stepped up the Soviet Union's campaign against West Berlin. Kennedy responded to Khrushchev's aggression by offering support to West Berlin. The heightened hostilities between the Soviet Union and the United States over Germany culminated on August 13, 1961, with the erection of the Berlin Wall, which divided the communist bloc of East Berlin from West Berlin. The wall symbolized the ideological differences and sharp tensions between the two superpowers—tensions that were further played out through the Cuban Missile Crisis.

In October 1962, American spy planes discovered that the Soviet Union was building missile sites in Cuba. Kennedy ordered a naval quarantine on all offensive weapons bound for Cuba. For two weeks, the world teetered on possible nuclear war until Kennedy's stand forced the Soviets to back down and remove their missiles from Cuba. Not since the WAR OF 1812 had an American president faced such a tangible threat from a foreign nation. Kennedy's leadership during the Cuban Missile Crisis was a critical moment of his presidency and it demonstrated his commitment to curtail the threat of nuclear war. To this end, Kennedy negotiated the 1963 Limited Nuclear Test Ban Treaty in which the United States, Great Britain, and the Soviet Union agreed to ban all but underground nuclear tests.

Kennedy's policies in southeast Asia, however, left a far less favorable effect. In an attempt to curtail the influence of communist Soviet Union and China, Kennedy increased military aid to the government of South Vietnam, which was struggling against a communist insurgency from North Vietnam. By late 1963, Kennedy's policies in South Vietnam laid the groundwork for what was to become one of America's most tragic foreign-policy failures, the VIETNAM WAR.

On November 22, 1963, Kennedy was assassinated, and though the circumstances and motives behind his murder continue to arouse debate, his death resulted in an outpouring of grief across the globe. Unflattering details about his private life and his health have emerged in recent years, but many historians believe Kennedy was on the threshold of political greatness. By re-energizing American ideals and committing the United States to the opportunities of the 20th century, Kennedy seemed to many to embody the best image of American liberty and democratic capitalism.

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Kennedy, Joseph P. (1888–1969)

BORN THE SON OF A saloon keeper and ward boss in Boston, Massachusetts, Joseph P. Kennedy became the patriarch of the politically powerful and wealthy Kennedy family. He showed his ambition early on, delivering papers and doing chores in the neighborhood. He attended Catholic schools and Harvard University, where he was popular, successful in the classroom, and refused entry into the elite clubs due to his Irish-Catholic background. His Harvard experience motivated him to become a millionaire and to show up the Protestants who rejected him. By age 25, he was president of a small bank, comfortable but not yet rich.

He had help from his wife, Rose Fitzgerald, daughter of Boston's mayor, and the political connections the marriage brought. Married in 1915, they had their first son, Joe, Jr., later that year. Rose and nannies reared the nine Kennedy children while Joe was becoming wealthy in commercial and investment banking, motion-picture production and distribution, and shipbuilding. Kennedy was known as a womanizer, and at one point, during his highly publicized affair with actress Gloria Swanson, had her as a guest in the family home.

During WORLD WAR I, Kennedy was the number-two man in a shipyard that employed more than 2,000 workers. After the war, he became a stockbroker. He was adept at insider trading and stock manipulation, especially the then-legal stock pool in which traders worked together to inflate a stock's value, selling out when the bubble was about to burst. Kennedy also sold his movie interests just in time to avoid the industry's consolidation, clearing $5 or $6 million in the process. And he withdrew from the stock market before the 1929 crash, sold short, and made money from a collapsing market.

Scholars disagree over the extent, but generally agree that Kennedy smuggled illegal LIQUOR from Europe to the UNITED STATES during Prohibition. His father, after all, was in the liquor business, and, whether or not he was a high-dollar rum-runner, he unquestionably set himself up in the liquor-importing business just before repeal of Prohibition.

Kennedy was not extremely rich prior to WORLD WAR II. Still, he had enough wealth to be respectable. And he was politically active. He supported the Democratic presidential candidate, Franklin D. ROOSEVELT, in the election of 1932. Roosevelt appointed him the first chairman of the SECURITIES AND EXCHANGE COMMISSION (SEC) in 1934, where he served until 1935. In 1936 and 1937, he was chair of the Federal Maritime Commission. In 1938, Roosevelt appointed him the first-ever Irish-American, Catholic ambassador to Great Britain. Kennedy's presidential aspirations seemed realizable.

Kennedy was an isolationist and probably an appeaser of Hitler. He wanted the United States to be neutral in any British-German conflict. He supported the position of British Prime Minister Neville Chamberlain. His views were not palatable to many British, especially Winston Churchill, and Kennedy resigned under pressure when war was inevitable in 1940.

The war years took the lives of two of his children. Joe, Jr. died as a pilot over Germany, and Kathleen, the eldest daughter, died in a plane crash shortly after the war. Another Kennedy daughter, Rosemarie, had problems that led Kennedy in 1941 to authorize a prefrontal lobotomy; it went poorly, and reduced her to the level of an infant. In later years, Kennedy revealed he suffered from this decision.

Kennedy's presidential aspirations died with the American entry into the war, and his hopes for Joe Jr. died over Germany. Kennedy focused his ambitions on his second son, John Fitzgerald, war hero, soon-to-be senator from Massachusetts.

Though his domestic life suffered, Kennedy continued to have success in business, especially in real estate, amassing a fortune upward of $100 million. And his philanthropic interests took much of his time. His main philanthropy was the Joseph P. Kennedy, Jr., Memorial Foundation. The foundation's purposes were to improve society's manner of dealing with the mentally retarded and to find and disseminate methods of preventing the causes of mental retardation. Emphasizing the multiplier effect, the foundation provided seed money for projects demonstrating innovative and new service and support capabilities. It stressed that both research and individual service were vital. Kennedy also authored *I'm for Roosevelt* (1936.)

In the close election of 1960, Kennedy's money may well have provided the difference that brought his son to the White House. Kennedy was able to see John become the United States' first Roman Catholic president, but shortly thereafter he had a series of disabling strokes that forced him to watch helplessly as his dreams died with the deaths of sons John and Robert and the destruction of son Edward's presidential aspirations at Chappaquidick (a scandal involving the death of one of Edward's girlfriends). Kennedy died in 1969 at the age of 81.

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Kenya

A REPUBLIC IN EAST AFRICA, Kenya is a member of the Commonwealth of Nations. With its capital at Nairobi, Kenya is located on the Indian Ocean neighboring ETHIOPIA to the north, Tanzania to the south, and Uganda to the west. Kenya covers approximately 225,000 square miles of land.

Nearly all of Kenya's 31 million people are African. Europeans, Arabs, and Asians make up only 1 percent of the population. The population density is 53 people per square mile and, with an annual population increase of about 3.4 percent, it is one of the highly populated countries in the world. Sadly, even with such a high birth rate the country has a young population; 50 percent of Kenya's population is under the age of 15, and life expectancy in the country is 47 years old.

Geologically, Kenya has many features worth noting. The country is volcanic and faulting has split the land. The best-known fault is the Eastern Rift of the Great Rift Valley. Topographically, the country has several zones as well. Beginning at the coastline, which is fringed with coral reefs, then coastal plains and tropical forest, and, as you go west, the terrain rises through a series of plateaus gaining elevation from sea level to 10,000 feet. The Equator also runs through the country from east to west. Also worth noting, Lake Victoria, the second-largest freshwater lake in the world, after Lake Superior in the United States, sits at the southwest corner of Kenya.

Kenya's main natural resource is its land: 30 percent of the land is covered in forest. The country has many rivers that provide hydroelectricity; 8 percent of the land, mostly in the southern areas, is being used for cultivation.

Upon Kenya's great lands roam some of the world's most exotic animals. Kenya is best known for its game parks that protect wildlife. These reserves attract large numbers of tourists and create state revenue.

In 2002, Kenya had a GROSS DOMESTIC PRODUCT (GDP) of $31 billion with a population of 31 million, making per capita purchasing power $1000. While suffering through numerous droughts over the past decade, Kenya has had substantial help from the INTERNATIONAL MONETARY FUND (IMF) which has cut off aid periodically as Kenya's economy struggled with anti-corruption measures.

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Keynes, John Maynard (1883–1946)

JOHN MAYNARD KEYNES, the most influential economist of the 20th century, was born in 1883 to an English family that prized intellectual pursuit. His father taught political economy and logic at Cambridge University, and his mother was a celebrated writer and social reformer. His parents provided him with tutors in addition to his general education; and by the age of 11, Keynes was winning prizes for mathematics. He entered Eton in 1897 at the age of 14. After obtaining a degree from King's College Cambridge, Keynes worked in the India Office and became an expert on the Indian monetary system. He decided to continue his academic studies and returned to King's College in 1909. Keynes later maintained that a master economist should be a mathematician, a historian, a salesman, and a philosopher.

At the age of 30, Keynes was named secretary of a Parliamentary commission on Indian Finance and Currency, but the following year WORLD WAR I began. Keynes hated the war, which changed his life forever. He wrote that civilization had become a "thin and precarious crust." By 1915, Keynes was working for the British Treasury as a deputy for the chancellor of the exchequer in the Supreme Economic Council. It was as a Treasury representative that he attended the Versailles Peace Conference to help negotiate a peace agreement. Keynes resigned in 1919, convinced that the government was demanding reparations from GERMANY that the country could never repay. In *The Economics of the Peace,* Keynes reminded the Allies that they had agreed not to seek retributions or punitive damages from the Germans. He blamed French Prime Minister Georges Clemenceau (1841–1929) for trying to totally destroy the Germans. It should be understood that France suffered considerably more financial losses than any other Allied country. Keynes estimated French losses at $4 billion. Keynes believed that the key to reparations, however, was to re-establish Germany as a producer of goods so that they would be able to make reparation payments. Some people believe that WORLD WAR II could have been avoided if the world had listened to Keynes in Versailles.

Keynes lost favor with the British government because of his views on war and peace, but he regained prominence with his "Treatise of Probability" in 1921, which some consider to be his most significant work. Others, however, contend that Keynes' *General Theory of Employment, Interest, and Money* is more important because of its continued impact. Keynes was particularly determined to counteract the influence of Jean-Baptiste SAY's (1767–1832) theory that supply creates its own demand. Keynes' writings on the economy signaled a shift in the perceptions of economists, academia, government, and the general public.

After World War I, Keynes became intrigued with developing ways for governments to function in the new world order; and by the 1930s, Keynes had come to believe that government was obligated to take an active role in the economy in order to maintain stability. The resulting clash between Keynesians and anti-Keynesians continued throughout the 20th century. The introduction of the social welfare state in the UNITED STATES as part of President Franklin ROOSEVELT's NEW DEAL policies established the importance of Keynes' economic theories to the American political and economic systems, to the point that President Ronald REAGAN's reliance on the economic theories of Milton FRIEDMAN could not totally dislodge them. Keynes believed that economic cycles are constantly changing, and each cycle has a distinct impact on INCOME, employment, prices, and output. He pointed out that individuals are different, as are their economic needs and habits. Some people put their money in banks while others choose to invest. He believed they acted from different motives and expected different results. If people lost trust in the economic system, he argued, they would begin to hoard money, and the ripple effect would create high unemployment and economic crisis. Therefore, the government had a responsibility to increase its own spending and reduce taxes to stimulate the sluggish economy. For example, if the government spends money on a construction project, new workers are employed who then spend more money, which improves the economy for everyone.

Before the United States entered World War II, Keynes served as an advisor to the lend-lease deals whereby Roosevelt supported Great Britain's war effort with essential war materials. Keynes was honored for his contributions to Great Britain and was named to the British peerage in 1942. His voice was also well respected in international circles, and Keynes served as a representative to the BRETTON WOODS Conference in Bretton Woods, New Hampshire, and was instrumental in establishing the INTERNATIONAL MONETARY FUND (IMF) and the WORLD BANK created by the conference. This 1944 conference, attended by 44 nations, also established the International Bank for Reconstruction and Development.

The politics of Margaret THATCHER, British prime minister, who led the Conservative Party from 1979–87 signaled a rejection of Keynesianism, but the politics of Prime Minister Tony Blair of the Labour Party revived them to some extent in 1997. Scholars do not agree on the validity of Keynes' work. Supporters, such as Keynesian scholar Robert Skidelsky, believe that Keynes was a "beacon of light in a benighted world," while critics argue that his ideas were unsound and chaotic. No one can argue that he continued to affect economics around the world long after his death from a heart attack in 1946.

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Keynesian economics

A BODY OF ECONOMIC theory that draws from the insights of John Maynard KEYNES (1883–1946) has evolved into Keynesian economics. Keynes, generally regarded as the greatest economist of the 20th century, played a pivotal role in the foundation of the branch of economics (macroeconomics) that focuses on national economic issues such as INFLATION and UNEMPLOYMENT. Though it no longer enjoys the consensus it once commanded, Keynesian economics remains to this day one of the major schools of macroeconomic thought.

Background. Although all strands of Keynesian economics trace their origins to *The General Theory of Employment, Interest, and Money* (Keynes' 1936 masterpiece), there is a surprising degree of controversy regarding what actually constitutes "Keynesian economics." Indeed, an assortment of schools of Keynesian economists have emerged with names such as "neo-Keynesian," "post-Keynesian," and "new-Keynesian." Though the various kinds of Keynesians are in disagreement as to what Keynes "really" meant, they all agree that market forces cannot always be trusted to deliver full employment, and therefore markets may benefit from active government intervention in times of economic crisis. This general view shared by all Keynesians stands in sharp contrast to the classical assumption that the invisible hand of the marketplace will best deliver the socially optimal result if left to its own devices. This latter view is commonly associated with a laissez-faire (or "leave markets alone") role for government policy.

Keynes wrote his *General Theory* at a time of global economic malaise. By 1936, the UNITED STATES had spent over half a decade in DEPRESSION. Unemployment had averaged over 20 percent for each year since 1930, and the GROSS NATIONAL PRODUCT (GDP) had fallen more than 30 percent from the start of the Great Depression in 1929 to its low point in 1933.

Indeed, unemployment in the United States would remain above 10 percent each year until 1941. Great Britain's economic woes dated back even further, in large part due to the 1920s effort to return to the GOLD STANDARD. From 1922 to 1936, the British unemployment rate was above 9.5 percent every single year.

Keynes contended the prevailing economic theory of his time was mistaken in its belief that full employment was the norm and any economy that departed from full employment would quickly return to that optimal state simply by relying on the invisible hand of the market. His challenge to the prevailing laissez-faire mentality was one of the most important characteristics of Keynes' *General Theory*.

The neo-Keynesians. Unfortunately, Keynes did not develop a formal model in *The General Theory*, leaving that task to others. This explains the widespread disagreement that ensued among economists persuaded by Keynes' message. Some of the earliest and most widely accepted models of Keynesian economics were developed by the neo-Keynesians who sought to integrate the insights of Keynes into traditional (or neoclassical) economics, particularly in the context of models that generate an equilibrium state. The neo-Keynesian perspective is sometimes referred to as the Neoclassical Keynesian Synthesis.

Neo-Keynesian models emphasize overall demand for goods and services in the economy as the driving force for determining the economy's performance. Examples of these models include Paul SAMUELSON's Keynesian Cross model and the IS-LM framework developed by John HICKS and Alvin Hansen.

Samuelson's Keynesian Cross model, a standard component of introductory economics textbooks for decades, focuses on the various categories of spending (i.e., consumer spending, business investment, government spending, and exports) that comprise aggregate demand. In this model, aggregate (or total) demand determines national output (i.e., gross domestic product) as well as the level of employment. Consequently, any effort to alter the level of employment requires manipulating the level of aggregate demand, either explicitly through changes in government spending, or by encouraging greater levels of consumer spending or business investment (through tax policy.) Both government spending and tax policy represent categories of FISCAL POLICY, a favorite tool of neo-Keynesians in the early decades following WORLD WAR II.

An earlier but more complicated attempt to integrate Keynes with neoclassical economics was offered by Hicks in his 1937 paper "Mr. Keynes and the 'Classics:' A Suggested Interpretation." In this paper, Hicks constructed the IS-LM model that was to become the standard interpretation of Keynesian economics for generations. The IS-LM model also emphasizes aggregate demand, but unlike the Keynesian Cross, this model explicitly incorporates a market for money. The IS-LM model identifies equilibrium values of the interest rate and the level of output such that both the market for goods and services (the IS component) and the market for money (the LM component) are each in a state of balance. From this position of equilibrium, IS-LM theorists demonstrate how various fiscal and monetary policies can be used to manipulate the two separate (i.e., product and money) markets and thereby alter the overall level of output (and hence employment.)

The Phillips Curve. By manipulating aggregate demand through fiscal-policy tools (government spending and tax policy) or monetary-policy tools (i.e., increasing or decreasing liquidity in the banking system to alter the magnitude of the money supply), neo-Keynesians believed it was possible to fine-tune the performance of the economy. This belief was strengthened by the discovery (mid-1950s) and application (early 1960s) of the PHILLIPS CURVE. The original curve uncovered an empirical relationship between changes in employment and the rate of wage inflation. Subsequent research by Samuelson and Robert SOLOW extrapolated these findings to a relationship between unemployment and the rate of inflation.

When Samuelson and Solow discovered a stable, negatively sloped relationship in 25 years of U.S. data, they concluded the Phillips Curve could be used to identify macroeconomic policy options. Indeed, the empirical findings of the curve made a strong case for the demand-oriented approach and active role for government the neo-Keynesians advocated. As a result, neo-Keynesian economics enjoyed widespread acceptance by the end of the 1960s. Indeed, U.S. President Richard NIXON remarked in 1970 that, "We are all Keynesians now." Ironically within a decade this widespread consensus would fall apart because of three challenges, two theoretical and one empirical.

Challenges. The first theoretical challenge came in the form of the natural rate hypothesis. Milton FRIEDMAN, long a critic of Keynesian economics, published an important critique in 1968 (similar insights were developed and published at the same time by Edmund Phelps.) In his work "The Role of Monetary Policy," Friedman claimed that active government intervention to manipulate the BUSINESS CYCLE might enjoy temporary successes (primarily by acting contrary to the public's expectations) but the policy would fail to permanently alter the economy's level of unemployment (because eventually public expectations would adjust to the new policy direction).

Dubbed the "Fooling Model" (because government success required "fooling" the public), this new approach contended that government policy efforts paid a high price for their temporary gains against unemployment: the gains came with accelerating inflation. Friedman claimed this relative ineffectiveness of government policy was because the economy had a "natural rate of unemployment" around which market forces would gravitate. He predicted that the active government policies of the 1960s would not have a permanent effect on unemployment levels although they would result in higher levels of inflation. Friedman's prediction was to prove accurate. In addition to raising serious doubts about the neo-Keynesian approach, it also cast a permanent shadow on the use of fiscal policy to alter the performance of the macroeconomy.

Friedman's approach was also important because it uncovered an apparent weakness in the neo-Keynesian approach, the absence of "microfoundations." While Friedman's model carefully considered the role of individual decisions, the neo-Keynesian approach had largely ignored individual behavior (or MICROECONOMICS), in developing its macroeconomic insights. Keynesian economists operating within the mainstream of the economics profession would henceforth feel compelled to develop microfoundations to accompany their macroeconomic models.

The second theoretical challenge came in the form of "rational expectations." This view had its origins in a 1961 article by John Muth but achieved prominence with the work of Robert LUCAS in the 1970s. Lucas, like Friedman before him, emphasized microeconomic decision-making in modeling and analyzing macroeconomic policy. The rational expectations hypothesis contends that economic agents effectively utilize all available information and therefore can never be systematically "fooled." Labeled the "Lucas Critique," this approach went further than the Friedman model by suggesting that "fooling" the public was not even an option in the short run.

The empirical challenge to the neo-Keynesian consensus came in the form of two periods of simultaneously high levels of inflation and unemployment. This phenomenon, known as stagflation, occurred in 1974 and again in 1979–80. Because the aggregate demand analysis employed by the neo-Keynesians could explain either rising inflation or rising unemployment, but not both simultaneously, this new development cast serious doubt on the ability of the neo-Keynesian theorists to successfully manage the macroeconomy. Indeed, stagflation was not possible according to the Phillips Curve tradeoff between inflation and unemployment.

The timing of stagflation's first appearance could not have been better for Friedman, delivering the results he had predicted several years earlier: rising inflation without evidence of permanent decreases in the unemployment rate. In fact, the simplest way to explain stagflation was by focusing on "supply shocks," shifting the analysis from the demand-side of the economy (the Keynesian approach) to the supply-side (a more classical orientation).

The combination of Friedman's natural rate hypothesis, the rational expectations hypothesis, and stagflation paved the way for the resurgence of classical economics and a supply-oriented approach to macroeconomics in the late 1970s and 1980s. This theoretical challenge to Keynesian economics resulted in the emergence of the "new classical" approach to macroeconomics.

New-Keynesians. Since the neo-Keynesian models had totally dominated the textbook versions of Keynes, the demise of the neo-Keynesian view was widely viewed as the end of Keynesian economics. This prognosis proved to be premature. Although new classical economic thought flourished in the 1980s, within a decade a resurgence of Keynesian theories had returned, this time in the form of new-Keynesian economics.

New-Keynesians also rely on an equilibrium approach to macroeconomic analysis. Unlike their neo-Keynesian counterparts, these theorists embrace the rational expectations hypothesis and acknowledge the natural rate hypothesis Friedman developed. As a result, new-Keynesians are far less enthusiastic about the active use of fiscal policy such as government spending to counter downturns in the business cycle.

In response to the new classical criticisms, new-Keynesians have integrated micro-foundations into their work. This task has been accomplished by modeling wage and price "stickiness" (i.e., failure to adjust completely) to explain why markets sometimes fail to clear. A variety of specific models have been developed using concepts such as relative wages, efficiency wages, implicit contracts, long-term labor contracts, menu costs, and increasing returns to scale to explain price rigidities.

Wage and price rigidity (or stickiness) is the key component in new-Keynesian models that combine rational expectations with macro market failures. Just as the neo-Keynesians of an earlier era attempted to synthesize neoclassical general equilibrium theory with insights from Keynes, the modern new-Keynesians have sought to integrate the rational expectations hypothesis with Keynesian thought.

Like the neo-Keynesians before them, the new-Keynesians accept the classical notion that money is "neutral," particularly over the long run. If money is neutral then changes in the money supply will not affect the long run magnitudes of output nor employment (both output and employment are real variables), but instead monetary changes will only affect the overall price level (i.e., inflation.) This assumption of money neutrality is one of the important areas of disagreement between the two Keynesian schools already examined and the post-Keynesians.

Post-Keynesians. With a view of Keynesian economics very different from the frameworks developed by the neo-Keynesians and the new-Keynesians, post-Keynesians, in large part, reject neoclassical economics and rational expectations. Post-Keynesians believe the key to understanding Keynes is to recognize we live in a "monetary production economy," where money is not neutral because it provides a vital link between an unchangeable past and an unknowable future. In the post-Keynesian tradition, money has important and unique properties, uncertainty is more than probabilistic risk, and disequilibrium processes merit more attention than equilibrium states.

Post-Keynesians adopt an endogenous view of money, contending economic conditions determine changes in the money supply rather than central bank policy.

They believe central banks are obliged to accommodate the monetary needs of the economy and thus lack precise control over the money supply. Consequently, the post-Keynesians are skeptical of the effectiveness of monetary policy, instead seeing the money supply as an economic outcome rather than as a policy tool.

Conclusion. Today, the new-Keynesian paradigm strongly influences macroeconomic discussion, though it does so against relatively strong new classical forces. Post-Keynesian analysis continues to develop, though largely outside the mainstream of the economics profession and rarely receiving attention in textbooks. All three perspectives (new-Keynesian, new classical, and post-Keynesian) operate on the assumption that they each have the correct set of assumptions and models that best describe the workings of the macroeconomy. Given the complex and evolving nature of the economy as well as the phoenix-like quality of the business cycle, this continued struggle between theoretical approaches is likely to persist for the foreseeable future.

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Klein, Lawrence (1920–)

WHEN MANY PEOPLE meet an economist, they immediately ask him or her to predict where the economy is headed. How fast will it grow or shrink? What will be the inflation rate? These questions are the legacy of Lawrence Klein, winner of the 1980 Nobel Prize in Economics, who pioneered the application of statistical methods to understanding and forecasting the behavior of the macroeconomy.

Klein's experience of growing up during the Great DEPRESSION had a deep impact on his professional career, drawing him to the study of economic fluctuations. After studying economics and mathematics at the University of California, Klein completed a Ph.D. in economics at the Massachusetts Institute of Technology (MIT) in 1944, under the direction of Paul SAMUELSON. His dissertation became *The Keynesian Revolution* (1947), which attempted to reveal the genesis of John Maynard KEYNES' economic ideas and to interpret them into a more precise mathematical model.

As Klein put it: "The Keynesian economic system is essentially a machine which grinds out results according to where the several dials controlling the system are set. The functional relations are the building-blocks of the machine, and the dials are the parameters (levels and shapes) of these functions."

The book became very influential in Keynesian circles, but critics panned it as ideologically extreme and naively technocratic. In his early writings, Klein even suggested that "capital accumulation in relation to the profit motive, a purely capitalist phenomenon, is the root of all economic evil," contrasting it with the "smooth operation of a socialist economy." It was during this period that Klein briefly became a member of the U.S. Communist Party, a mistake that he later attributed to "youthful naivete." Ironically, later in his career he worked for the nation's leading business school and advised major corporations.

After MIT, Klein became a research associate for the Cowles Commission at the University of Chicago, where he joined a team that put together one of the first econometric models of the American economy. Klein's task was to translate the Keynesian model into statistical terms. His accomplishment was to build "the original Model T Ford," the first useful model of a national economy that others subsequently copied and adapted. Klein's lifelong work became building successively larger, more sophisticated macroeconomic models, which estimated a series of simultaneous equations representing relationships and feedbacks between economic forces and sectors.

These models were then used to explain economic events and outcomes, simulate the impact of policies (such as tax cuts) and events (such as wars), and forecast the economic future. His journal essay, "A Post-Mortem on Transition Predictions of National Product" (1946), grabbed professional attention by explaining why the American economy didn't return to massive unemployment after World War II. During an appointment with the Survey Research Center at the University of Michigan, he expanded this work with *Economic Fluctuations in the United States, 1921–42* (1950), published a pioneering textbook in econometrics (the application of statistical methods to the empirical estimation of economic relationships), and developed (with Arthur Goldberger) the Klein-Goldberger model which brought macroeconomic modeling into mainstream practice.

Klein left Michigan for political reasons and found his permanent academic home, after a stint in Europe, at the University of Pennsylvania in 1958. There he became the first editor of the *International Economic Review*, and extended his modeling activities to make quarterly forecasts which included a role of expectations. He established the Wharton Econometric Forecasting Unit (1963), which provided economic forecasts to business clients, plowing revenues back into funding research and student support. The capstone of Klein's modeling program is Project LINK, which he co-founded (1968) and directed. It explores the international transmission of economic forces by developing and linking econometric models of over 40 nations and regions.

In 1976, Klein served as the chief economic advisor to Jimmy CARTER's presidential campaign. While he turned down Carter's invitation to head the COUNCIL OF ECONOMIC ADVISORS, he continued to advise the administration and wrote columns for leading newspapers and magazines.

Critics contend that Klein's modeling exercises have spread the wrong message about how the economy works—that these models are too ad hoc and are divorced from the microeconomic decisions of households and businesses—and that they don't have a very good track record in forecasting economic events. For these reasons, macroeconomic forecasting has lost much of its prestige among economists and the public. However, it is still an important tool, and its practitioners, including the FEDERAL RESERVE, can trace their models directly back to the work of Lawrence Klein.

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kleptocracy

THE TERM *KLEPTOCRACY*, sometimes also spelled *cleptocracy*, literally means rule by theft. It was originally coined to refer to the regime of Mobutu Sese Seko, the Zairian dictator, who, over three decades, carefully transformed the public resources of Zaire into private wealth, while using CORRUPTION, coercion, and violence to thwart all movements for change. Zaire's debt at the end of his rule had increased to $5 billion, a sum almost equivalent to the dictator's personal fortune. Kleptocracy often implies the impoverishment of the people, the destruction of the national infrastructure and the enrichment of leaders and their officials. The methods include diverting international funds to the dictators' supporters, bribing foreign governments and officials, and seizing foreign and local assets to increase personal wealth.

Because of its original association with Mobutu's regime, the term was first applied to dictatorships, especially in developing and Third World countries, which originally prospered thanks to the political climate of the Cold War. Yet, despite its recent origin, the term has enjoyed vast currency, and almost every nation is exposed as being ruled by different forms of kleptocracy. With the rise of anti-global movements in the 1990s, kleptocracy has become a synonym of global capitalism and Western economic imperialism.

Even the writings on kleptocracy that still focus on Third World countries have finally started to take into account that corruption requires two parties, the briber and the bribed. Thus, political and economic analysts have called attention to the complacency of the so-called developed and industrialized nations with the system of corruption in Third World countries. For example, Steve Askin and Carole Collins have argued that hundreds of millions of dollars have disappeared annually from the treasury of Zaire under Mobutu "without even an indication of how, when, or why the funds were taken. A 1989 World Bank study showed that fully 18 percent of the year's state expenditures went on unexplained 'other goods and services'; in 1986 these absorbed $269 million. According to World Bank experts who have examined Zairian state financial records, much of this money appears to have been spent on luxury purchases or superfluous military hardware."

Despite this knowledge, though, loans were still given to Mobutu's as well as to other dictatorial regimes. Because of this the activity of the WORLD BANK has been challenged by important analysts such as the Nobel-prize winner Amartya SEN: "An integrated analysis of economic, social, and political activities, involving a variety of institutions and many interactive agencies are needed. The roles and interconnections between certain crucial instrumental freedoms, including economic opportunities, political freedoms, social facilities, transparency guarantees and protective security need to be examined when providing assistance."

Askin and Collins complement their description of the regime that gives kleptocracy its name by stating clearly the connivance of Western governments: "Western governments and multilateral institutions have known at least since the mid-1970s that money lent to the Mobutu regime was likely to disappear without explanation." In spite of their knowledge, European countries and the UNITED STATES continued to support Mobutu for many years and agreed to loans to the dictator in exchange for his political and military favors: in 1983, to name but one of the numerous events of this kind, Zaire sent troops to defend U.S.-backed Chadian President Hissen Habre. Mobutu earned President Ronald REAGAN's praise for what the American president described as a "courageous action."

The example of Mobutu's regime is representative of the active interests that Western countries have to keep Third World kleptocratic governments alive. In face of this fact, the various meetings on poverty and industrial development held in New York (2000), Genoa (2001), and in the Canadian Rocky Mountains (2002) have come under strong criticism as ineffectual and expensive summits to ease the West's post-imperial conscience and win domestic contracts. The financial aid that Western countries give to Third World regimes does nothing to stop their corruption as it often does not go any further than the officials' bank accounts. Western countries still display an imperial mentality and treat Third World countries as still infant political economies to which they are willing to give aid, but not trade. The resources of so-called developing countries, from diamonds to oil, are often prey to the rapacious behavior of Europe and the United States. As Simon Jenkins has put it, "[. . .] the poorest on Earth can take their aid and say thank-you. But they must stay poor."

Radical analysts have also pointed out that the international consensus of the left and the right seems to be supporting the continuation of looting and corruption, both favoring those policies that reward the practitioners of self-enrichment, and particularly those who use absolutist power to pile up personal wealth for themselves and members of their circles.

Yet, the capitalist solution calling for PRIVATIZATION of public resources does not offer a better solution. Two realities must be taken into account, considering privatization, that undermine the efficacy of the process. First, the sale of public resources to private interests usually takes place for less than the actual value of the resource. Second, the sale is often, if not exclusively, to those who are well connected to the regime in power. In addition, once the resource has been sold, it is no longer a resource to the public, and becomes a resource to a private interest. The end result of both of these policies is the provision of enormous personal fortunes to dictators and dictatorial regimes, and their associates, at the expense of citizens in developing and developed countries alike.

People in Western democracies are often scandalized by the plight of poor Africans under Mobutu, of Philippinos exploited by Ferdinand Marcos, of Iraqis by Saddam Hussein, or of Central Americans oppressed by Baby Doc Duvalier or military juntas. Yet, they do not always have to look that far to be scandalized. Some experts say Western powers have vested interests in keeping these regimes alive and, as the economic scandals of the early 2000s might indicate, global capitalism may soon be replacing democracy with kleptocracy, corruption, and corporations.

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Knight, Frank H. (1885–1972)

ONE OF THE PIONEERING economists of the early 20th century, Frank H. Knight's insights have appeared in more than 100 published works in his lifetime. His most famous theory, written early in his career in *Risks, Uncertainty, and Profit* (1921), made an economic distinction between insured and uninsured risks in a capitalist market. In his preface, he said, "There is little that is fundamentally new in this book. It represents an attempt to state the essential principles of the conventional economic doctrine more accurately, and to show their implications more clearly, than has previously been done. That is, its object is refinement, not reconstruction; it is a study in 'pure theory.'" Knight's "pure theory" would be studied in economic courses several generations later, and other economists would later use derivations of it to formulate new economic theories.

Born in McLean County, Illinois, Knight had a humble farming childhood until 1911 when he received his B.A. in economics at Milligan College in Tennessee. Knight studied at the University of Tennessee and earned his Masters, then moved on to Cornell University where he received his Ph.D. in economics. It was at Cornell that professors inspired and molded Knight's beliefs into the ideas that would make up the bulk of his many books.

At the outset of his 30s, Knight's educational opportunities had peaked, so he sought to inspire future economists. He began teaching at the University of Chicago and soon was heading the Department of Economics, which gained so much prestige during the 1920s and 1930s that it became simply known as the CHICAGO SCHOOL. The department would feature future Nobel laureates Milton FRIEDMAN, James BUCHANAN, and George STIGLER, all of whom had been students and had attended Knight's lectures and speeches.

Despite Knight's great penchant for understanding an economy, much of the economic doctrines that he created were rooted in his philosophical and societal beliefs. During a time when President Franklin D. ROOSEVELT was restructuring America's economy with public works programs and governmental intervention in the economy, Knight opposed the idea of the NEW DEAL, saying that the economy is a very fragile and unstable thing, and that government programs were too simplistic to grasp and adhere to the complexities of a capitalist system. LAISSEZ-FAIRE economics, he argued, were necessary because of the individual freedoms it guarantees, and that the removal of such freedoms would be disastrous.

Knight continued to publish works involving topics not necessarily related to economy, branching out into such subjects as the ethics of LIBERALISM, the effect of religion on the economy, and political doctrines. His last book, *Laissez-Faire: Pro and Con*, was published in 1967.

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Koopmans, Tjalling Charles (1910–85)

ECONOMIST, PHYSICIST, and author, Tjalling Koopmans of the NETHERLANDS won the Nobel Prize in Economics in 1975 for his contributions to the theory of optimum allocation of resources. His work stemmed from his many years' researching the field of theoretical physics as applied to economics. He shared the 1975 prize in economics with the Russian mathematician, Leonid KANTOROVICH, whose work somewhat paralleled Koopman's.

The third son of schoolteachers Sjoerd and Wijtske, Koopmans was born in Gravelands, the Netherlands. He grew up in a poor but scholastic atmosphere. "School was Bible," he later recalled. At age 14, he received a study stipend from the St. Geertruidsleen of Wijmbritseradeel fund, awarding him monies to continue his education.

Attending the University of Utrecht at age 17, he initially sought a degree in mathematics. But, swayed by the intellectual and curious upheavals of the Netherlands at the time, he began reading external literature, mostly of a philosophical nature. Searching for a field more appropriate to his nature and thirsting for a field closer to his mathematical training, he chose theoretical physics. His idol became Hans Kramers, a well-known theorist and one of the university's teachers; Kramers nurtured Koopmans' interest and mentored him along the way. As the months passed, the student became more aware of the tenuous nature of the economy and, in brief, the possibilities existing to stabilize the science of economics.

He graduated from college in 1933 and went on to complete his graduate degree in physics. While engaged in pursuing his doctorate, he wrote the first of what would be a long series of major scientific/economic essays. The first, popularly called Koopmans' Theorem, presents an analysis of quantum mechanics still in use today.

After receiving his doctorate in 1936, he married Truus Wannigen, whom he tutored in mathematics. That same year he and his wife relocated to Geneva, Switzerland, where he constructed a BUSINESS CYCLE model for the League of United Nations. When WORLD WAR II broke out, his project was discontinued. Fearing for his family's safety in a Europe fraught with Nazism, he moved to the United States.

During the war, Koopmans worked as a statistician for the British Merchant Shipping Mission in Washington, D.C., then as an economist with the Cowles Commission of the University of Chicago from 1944–55. When the Commission relocated in 1955, he followed it to Yale University, where he was appointed professor of economics. He retired in 1981.

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Korea, North

IN 1946, NORTH KOREA'S Communist Party, the Korean Worker's Party (KWP), was formed under the leadership of Kim Tubong and Kim II Sung. In 1948, the Democratic People's Republic of Korea (DPRK) was proclaimed and Kim II Sung was named its first premier. In 1949, he became the chairman of the KWP and served in that capacity until his death in 1994.

North Korea's population is approximately 22.3 million and is one of the most homogenous in the world. After the Korean War, the population roughly doubled in size between 1953 and 1980. Although the rate of population increase has slowed since 1970, it is nearly twice that of South KOREA. North Korea, however, can be considered underpopulated by east Asian standards, with an overall density of about two-fifths that in the south.

The population, however, is unevenly distributed, with most living near the coastlines and only sparse settlement in the interior. Exacerbating this imbalance has been the government's emphasis on industrialization, which has led to rapid urbanization, with approximately two-thirds of the total population living in urban areas. This industrialization has also produced a severe farm-labor shortage.

North Korea's economy is a command or centralized economy, which means that the government controls production and sets the economic development plans. Since 1954, a series of national economic plans have determined the economic policy. Early on, the plans gave high priority to reconstruction and developing heavy industries. Subsequent plans focused on resource exploitation and improving infrastructure, technology, and mechanization. Until the 1970s, little attention was paid to AGRICULTURE and only in the late 1980s has any effort been made toward improving the quality and quantity of consumer goods.

The country has failed to meet its stated economic goals and the production statistics the government quotes are often inflated. In the first decade after the Korean War the economy grew rapidly, but since then growth has been slow or imperceptible. By the early 1990s, North Korea was in the midst of an economic decline, due largely to the demise of the SOVIET UNION and Europe's communist nations, all of whom had been the country's major trading partners. At present, North Korea faces dire economic conditions. As a result of years of under-investment and spare-parts shortages, its industrial capital stock is nearly beyond repair and its industrial and power output has similarly declined. Thus, despite its stated policy of self-reliance, North Korea has had to import essential commodities and open up the economy to limited foreign investment and increased trade. Since 1995–96, massive international food aid has allowed the nation to escape mass starvation, but the population continues to be vulnerable to extensive malnutrition and deteriorating living conditions.

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Korea, South

IN 1948, THE REPUBLIC of Korea, or South Korea, was created. It occupies the southern half of the Korean Peninsula, while North Korea occupies the north. It is separated from North Korea by a demilitarized zone (the DMZ) that runs for roughly 150 miles and can be found at the 38th parallel. South Korea occupies about 45 percent of the Korean Peninsula.

The population of South Korea is approximately 48.3 million. Like North Korea, the population is highly homogenous. However, in urban areas the number of foreigners is increasing, especially from CHINA and southeast Asia. The South Korean constitution guarantees freedom of religion and there is no national religion. Modern Korean culture stems from a melding of shamanism, Buddhism, and Confucianism, and was strongly influenced by the Chinese. Every effort is made to respect and preserve this culture. However, as South Korea continues to build relationships with the West, this has become more difficult.

The majority of South Korea's population can be found in the coastal areas to the south and west. While the population has more than doubled since 1950, the annual rate of increase has declined from more than 3 percent in the 1950s to less than 1 percent by the mid-1990s. During this period, there was a vast shift in South Korea's population demographics away from rural areas and to developing and expanding urban regions. Thus 75 percent of South Korea's population can be classified as urban with the majority living in the country's six largest cities. This accounts for South Korea having a population density about two-and-a-half times greater than North Korea's.

Prior to World War II, large numbers of Koreans (both North and South) emigrated to Manchuria and Japan. After the war, about half of the Koreans living in Japan returned to South Korea. Shortly after the establishment of North Korea, approximately two to four million North Koreans immigrated to South Korea. This high number was offset somewhat by the emigrations of South Koreans, mainly to JAPAN and the UNITED STATES. As South Korea's economy and political conditions began to improve, the emigration rate slowed and many of those that emigrated began to return.

In 1950, in an effort to unify the Korean Peninsula, North Korea, with the aid of China, invaded South Korea. In order to defend itself, South Korea called upon the support of United States and United Nations armed forces. President Rhee used the military to force the legislature to conduct popular elections for president, and in 1952 he was re-elected. In 1953, South and North Korea signed an armistice that created the DMZ, thus dividing the peninsula in two. Even with aid from the United States, the years shortly after the war saw a slow recovery on the part of South Korea. Rhee, though, was able to use his power to win re-election in 1956 and again in 1960. In 1960, however, Rhee was forced to resign amid numerous protests and allegations, proven true, of widespread election malfeasance.

After Rhee's resignation, power was transferred to the office of Prime Minister Chang Myon. Though the Chang regime initiated numerous efforts at reform, the economy still lagged. Chang was unable to stabilize

South Korea's political arena and to form a majority of support for his regime. In 1961, and before a complete program of reforms could be launched, a coup was staged by military elements within the government.

Park Chung Hee and his military junta dissolved the National Assembly, banned political activity, imposed martial law, and governed by decree until 1963, at which time he was elected president. Park instituted vigorous economic reforms and, despite hefty opposition, entered into a treaty with Japan that, in exchange for economic aid, dropped demands for war reparations. Soon thereafter, Japanese capital began to come into South Korea. During the VIETNAM WAR the country also sent troops and workers to the aid of the United States. The effect was a rapid increase in industrialization and economic growth.

Park and his Democratic Republican Party closely controlled funds and, via surveillance and intimidation, overwhelmed all opposition. In 1972, Park declared martial law and instituted a new constitution (*Yushin* or "revitalizing reform") that allowed him to stay in office indefinitely. Numerous emergency measures were imposed which restricted civil liberties and removed political opposition. In 1978, Park was re-elected president. Though the economy continued to grow at a spectacular rate, political dissatisfaction and unrest increased throughout Park's tenure.

In 1979, Park was assassinated. Under the Yushin Constitution, Prime Minister Choi Kyu became acting president and later that year was formally elected president. However, General Chun Doo Hwan seized control and instituted martial law. In May 1980, through the use of severe violence, Chun thwarted major demonstrations by dissidents and students and ousted Kyu as president.

In August 1980, Chun was elected president. In 1981, martial law was lifted and a new constitution went into effect that retained many of the Yushin control mechanisms, but also called for one seven-year term. Chun's regime was marked by numerous successes, including being designated the host of the 1988 Summer Olympics and having Japan pledge $4 billion in low-interest loans to help finance development. However, it was also marred by several scandals and events, including the North Korean bombing in Burma that killed several members of South Korea's government, and the shooting-down of a Korean Air Lines jet by the SOVIET UNION. By the mid 1980s, relations with North Korea had improved enough for the border to be opened to allow family visits for the first time since the Korean War.

By 1987, dissatisfaction with the government was prevalent. Chun was forced to accept a constitutional reform program that re-established the basic civil rights and institutions that martial law had taken away. The new constitution also reduced the presidential term from seven to five years and called for a direct popular presidential election. Chun lost the election to Roh Tae Woo and opposition parties captured the majority of the National Assembly.

In 1990, Roh successfully merged competing political parties to create the Democratic Liberal Party (DLP), which commanded a vast majority in the National Assembly. In 1991, local elections were held for the first time in 30 years. Later that year, North and South Korea were admitted to the United Nations as separate countries. Three months later, North and South Korea entered into a non-aggression pact. In 1992, the Japanese Premier, Miyazawa Kiichi, visited South Korea and apologized for actions undertaken toward Koreans during the Japanese occupation. During this time, Roh also established diplomatic ties with Hungary, Poland, Yugoslavia, and the Soviet Union, and was able to establish full diplomatic ties with China as well.

In 1992, amid allegations of election wrongdoing, Roh stepped down as head of the DLP. Later that year, Kim Young Sam was elected president and instituted an anti-corruption reform program. In 1993, the government opened the Korean rice market to imports. In 1995, Kim renamed the DLP the New Korea Party (NKP) in an effort to disassociate it from the regimes of Chun and Roh. Also, in 1995 Chun and Roh were arrested and, in 1996, were convicted. In 1996, Kim admitted that he had accepted political donations but denied that they were bribes. Subsequently, a former aide to Kim was arrested for bribery, thus casting doubt on Kim's anticorruption efforts only weeks before the elections. Though the NKP lost control of the National Assembly, it was able to recruit enough independent legislators to regain its majority. In 1997, new scandals rocked the government and led to a cabinet reshuffling.

In 1996, North Korea declared that it would no longer comply with the armistice that ended the Korean War and sent armed troops into the DMZ. South Korea and the United States proposed a four-party peace negotiation, with China and the United States serving as mediators. South Korea agreed to invest in North Korea and to provide food aid. In 2000, South Korea's President Kim Dae-Jung and North Korea's leader Kim Chong-il participated in the first South-North summit. Later that year, Kim Dae-jung was awarded the Nobel Peace Prize for his commitment to democracy and human rights in Asia.

Between the early 1960s and 1990s, South Korea's economy grew at an average rate of 9 percent, its gross national product more than doubled, and its per-capita income increased more than one hundredfold. South Korea, along with Singapore, Hong Kong, and Taiwan, is now considered one of East Asia's "Four Tigers." However, it was not always this way.

Prior to the early 1960s, South Korea's economy was predominantly agrarian and undeveloped. In the early 1960s, however, the military junta committed the government to economic development. This economic expansion was driven in large part by the development of export-oriented industries, initially through the development of textile and light manufacturing, then through the development of heavy industries such as chemicals and steel, and still later, via the development of, among others, shipbuilding, bioengineering, aerospace, automobile, and electronic industries.

In order to maintain control over industrial development, the government gave most of its support to giant-size conglomerates, or chaebols, that were emerging. The result was that smaller, privately managed industries had difficulties finding financing and became dependent on the chaebols for survival. At the expense of consumer goods, the government promoted the import of raw materials and technology and encouraged savings and investment over consumption. By 1980, the government was gradually removing itself from direct involvement in industry and these anti-consumer policies began to be reversed. In the 1980s, labor unions gained significant wage increases, which contributed to the growth in consumer consumption.

As South Korea converted to an urban, industrialized nation, its farm population decreased to the extent that less than one-quarter of its land is cultivated and the percentage of the national income derived from agriculture is a fraction of its 1950s percentage. Increasing farm productivity has been hampered by several factors, including a shortage of farm labor due to an aging rural population, and the fact that fields are typically small and mainly cultivated via manual labor. Rice is the most important crop and constitutes, in value, about 40 percent of all farm production. Barley, wheat, soybeans, potatoes, cabbages, garlic, and maize, among others are also important crops, and it is not uncommon for double-cropping to occur.

Though its deposits of graphite and tungsten are among the worlds largest, South Korea's mineral resources are scarce. And most of its crude oil and metallic mineral needs are imported.

In the 1960s, South Korea nationalized all banks, but by the early 1990s this was reversed, with most banks being returned to private ownership. The Bank of Korea is owned by the government and is the county's CENTRAL BANK. It oversees all banking activities and issues currency. In 1992, foreigners were allowed to trade on the Korea Stock Exchange.

After 1960, South Korea drastically expanded and improved its transportation system. It built a modern highway network and established a nationwide air service. Prior to 1960, rail travel was the predominant means of travel, but now the bulk of passenger travel and freight transport is via road transport. Since the early 1960s, internal air transportation has increased, with most major cities having connections. With the growth in trade, port facilities have undergone substantial expansion.

To fuel its industrial expansion, South Korea borrowed heavily from international financial markets, much of which was repaid because of the success of its exports. However, Asia's financial crisis of 1997–99 exposed longstanding weaknesses in South Korea's financials. Growth plunged in 1998, but recovered to post significant growth in 1999 and 2000. However, in 2001 growth again declined due to the slowing global economy, falling exports, and the sense that South Korea's corporate and financial reforms had stalled.

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Kroger

A PIONEERING GROCERY retailer founded by Barney Kroger in Cincinnati, Ohio, in 1883, Kroger supermarkets became the largest American grocery chain. To better serve its customers, Kroger established quality assurance programs, opened the first grocery-run bakery, became the first grocer to offer an in-store meat department, and employed the first electronic scanner checkout system.

Bernard Henry "Barney" Kroger (1860–1938), the son of German immigrants, began selling groceries in Cincinnati as a door-to-door salesman for the Great Northern and Pacific Tea Company. After flourishing for several years, Kroger noticed that his sales were dropping and traced the problem to the store-owner cutting quality while continuing to charge full price for inferior goods. This experience taught Kroger that people could not be fooled by food and that goods must be priced in keeping with the level of their quality. These principles would shape the course of his career.

In 1883, Kroger joined with a friend to open the Great Western Tea Company and offered about 300 items, typical for a grocery of that day. He soon gained a reputation for being a demanding buyer who pretested his products to guarantee the quality of the goods. Kroger bought out his partner in 1884 and began to expand into new locations. By 1893, Kroger owned 17 stores, all of which showed substantial profits in that depression year.

Kroger saw an opportunity to increase his income by manufacturing the products that he sold (today, a common practice known as private label), as a well as a chance to improve the quality of his groceries. In 1901, he became the first grocer to operate a bakery. In the following year, the firm incorporated as The Kroger Grocery and Baking Company with 40 stores and $1.75 million in annual sales. In this era, customers typically bought meat only at butcher shops, but in 1904, Kroger bought a meatpacking house and a butcher chain to begin selling both meat and groceries under one roof. The move brought much opposition from butchers who had been accustomed to a considerable amount of independence in setting their own working conditions and their own prices, often perhaps with the aid of a thumb on the scale.

In the early days of the company, Kroger followed a long-established pattern by having clerks personally assist customers as they shopped. In 1916, the firm became the first grocery business to adopt self-service. Kroger would open its first supermarket style of gigantic self-service stores in 1935. In the 1950s, the company attracted national attention with a "merchandising democracy" program that allowed customers to vote on store-by-store marketplace decisions. Technological innovations would continue through the years, with the introduction of symbol-reading scanners in 1972.

As it expanded, Kroger continued to focus on quality. It became the first grocer to establish strict specifications for its private-label products. To ensure that these standards were met, it opened its own quality-assurance laboratories for testing products sold under the Kroger label. Samples of Kroger products, made for the company by outside food manufacturers, would be removed from store shelves and tested on a regular basis. The first food retailer to establish a consumer-research department, Kroger learned that its customers wanted nutritional labeling. In 1972, the company placed such labels on Kroger-brand goods.

Through a series of mergers, Kroger emerged as the largest food-retailer in the United States by the end of the 20th century. The company's emphasis on quality and customer service reached throughout the industry while its innovations were much copied. In 2002, Kroger ranked as number 56 on *Fortune* magazine's Global 500 (largest companies in the world) with revenues of over $50 billion.

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Krugman, Paul (1953–)

EDUCATED AT YALE University and the Massachusetts Institute of Technology (MIT), Paul Krugman has made valuable contributions in the area of international economics. His first contribution was to provide a theoretical explanation of the phenomenon of intra-industry trade in differentiated products. Intra-industry trade cannot be explained using traditional trade models. Long before Krugman, some economists had pointed out the possibility that this type of trade could arise from product differentiation. Krugman acknowledges their contributions but offers a more tractable, simple, and elegant model. Another contribution was to create what is now called the "new trade theory." The new trade theory is a mixture of industrial organization and international trade theory based on the concepts of increasing returns and imperfect competition.

Krugman has also contributed to international finance with theories about target zones. A target zone is an exchange-rate regime that allows the exchange rate to vary only within a specific range. When the exchange rate ventures outside the range because of market forces, the monetary authority (mostly in coordination with other central banks) intervenes in the foreign-exchange market to bring back the exchange rate within the range. Krugman showed that a target zone provides a framework for exchange-rate stabilization, since the volatility of the exchange rate (in the presence of monetary shocks) in a target zone is smaller than would be the case if it were allowed to float free.

Krugman's final major theoretical contribution has to do with the creation of the field of economic geography, which he defines as "the location of production in space." Economic geography is, at its core, about the concept of multiple equilibria and increasing returns. This field attempts to provide an explanation of why some economic activities are clustered in cities and regions; Krugman shows that producers enjoy an economy of scale as long as they are clustered within the same region or city. He argues that the emergence of economic activity is not random but chaotic; that is, there is an underlying pattern to economic activity, though this pattern is based on the principles of non-linear dynamics (i.e., chaos). For example, in the case of high-tech clusters, the availability of transportation and communication systems, of core competencies, and of the adequate research infrastructure are variables that confer a self-reinforcing set of advantages on a certain area.

Krugman has also contributed to our understanding of economic policy. He showed that there is almost no gain for a country to engage in industrial policy, which is basically done by closing some key domestic industries to foreign competition through trade protection. It is worth pointing out that Krugman did reach this conclusion on empirical grounds only, using the case of Japan. On a theoretical note, he did however show that granting protection to an industry could promote export under certain conditions.

In 1991, Krugman wrote *The Age of Diminished Expectations*, addressing issues such as the productivity slowdown in the United States, INFLATION, UNEMPLOYMENT, and the DOLLAR among many others. He explained to a general audience why the gap in the distribution of income widened in the previous two decades, despite the robust economic growth of the Clinton era. Unlike some prominent economists who believe that the answer lay with globalization, Krugman proposed the reason had to do with productivity. Indeed, some economists believe that with the increased globalization, U.S. trade with countries where labor is cheap has put downward pressure on wages in the United States. Krugman partially shares this view but believes that the bulk of the answer lies in new technologies that require more well-educated, well-paid workers and less of the unskilled.

As a writer for *The New York Times,* Krugman is sharing his views with a broader audience. With all his important contributions, he was awarded the prestigious Bates Clark medal in 1991, a prize given every two years to a "brilliant economist under the age of forty who is believed to have made a significant contribution to economic knowledge." He is also viewed as a possible future Nobel-Prize laureate for his contribution in international trade.

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Kuwait

LOCATED AT THE HEAD of the Persian Gulf bordering IRAQ and SAUDI ARABIA, Kuwait's modern history began in the 18th century with the founding of the city of Kuwait by a section of the Anaiza tribe who had wandered north from Qatar.

Fearing that the Ottoman Empire would tighten-up its regional authority, the head of Kuwait, Mabarek al-Sabah, signed a treaty with Great Britain in 1899 that made the small territory a British protectorate. This relationship persisted until 1961 when Kuwait gained its independence from Great Britain. At the time of independence, Iraq stated that Kuwait was historically part of Iraq based on old Ottoman records. The only obstacle that prevented the Iraqi government from acting was the presence of British military forces.

In 1963, Iraq recognized Kuwait's independence but it did not totally renounce any claims to Kuwaiti land. During the eight-year Iran-Iraq War in the 1980s, the government of Kuwait supported Iraq. Due to its location, Kuwait has always been vulnerable to regional disputes and disruptions. On August 2, 1990, Iraqi troops stormed into Kuwait. While the Iraqis claimed they were only retaking territory that was historically theirs, in reality the invasion was due to Iraqi economic problems.

Iraq owed a significant debt to Kuwait, which Kuwait refused to forgive. In addition, Kuwait was exceeding its oil production quota as set by the ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES (OPEC). The resulting low global oil prices did not help Iraq recover from its economic troubles. After the invasion, Iraq announced that it was annexing Kuwait; it would become Iraq's 19th province.

Through U.S. efforts, a multinational coalition of nearly 40 nations was assembled, and, under UNITED NATIONS auspices, initiated military action against Iraq to liberate Kuwait. Many Arab states supported Kuwait by sending troops to fight with the coalition, or donated equipment and financial support to the Kuwait cause. By early March 1991, the U.S.-led coalition force had driven the Iraqi army from Kuwait and occupied much of southern Iraq. After the conclusion of the war, the multinational coalition helped with the reconstruction of Kuwait.

Before the Iraqi invasion, Kuwait had a small military force, most of which was destroyed by the Iraqis, but since then Kuwait has made significant efforts to increase the size and modernity of their armed forces. The government has also improved their defense arrangements with other Arab states, as well as with the UNITED STATES. Though Kuwait is a small country, it has massive oil reserves. In the 1970s, Kuwait benefited from the dramatic rise in oil prices. The economy suffered from the triple-shock of a 1982 securities-market crash, the mid-1980s drop in oil prices, and the 1990 Iraqi invasion. The Kuwait government-in-exile depended upon its $100 billion in overseas investments during the Iraqi occupation.

With a GROSS DOMESTIC PRODUCT (GDP) of $31 billion and a population just over 2 million, the government has sponsored social welfare, public works, and development plans financed with oil revenues. But as a desert country, Kuwait must import or distill 75 percent of its potable water. Despite calls for political reform, the ruling family continues to hold all major ministerial posts and severely limits women's rights and suffrage.

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Kuznets, Simon (1901–85)

WINNER OF THE 1971 Nobel Prize in Economics, Simon Kuznets is noted as one of the architects of national income accounts and for an "empirically founded interpretation of economic growth which . . . led to new and deepened insight into the economic and social structure and process of development," according to the Nobel citation. Kuznets was born in Russia, of Jewish parents. He fled to the UNITED STATES during the RUSSIAN REVOLUTION and completed his education with a Ph.D. in economics from Columbia University in 1926. After graduation, he joined the research staff of the National Bureau of Economic Research (NBER), remaining affiliated for over three decades. His first academic appointment was at the University of Pennsylvania (1931–54), followed by professorships at Johns Hopkins University (1954–60) and Harvard University (1960–71).

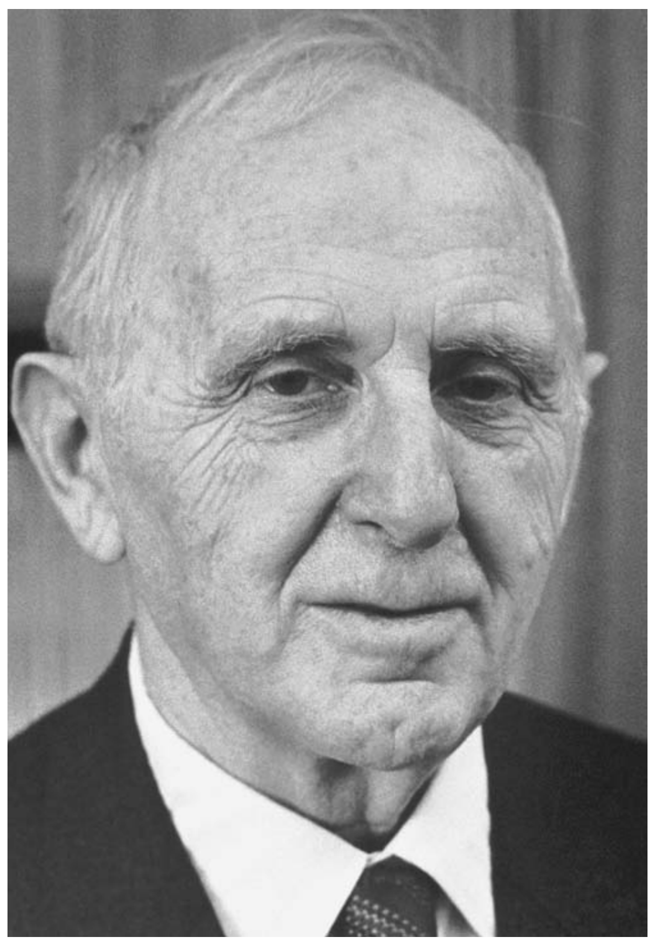
At the NBER, Kuznets worked on a pioneering series of BUSINESS CYCLE studies. *Cyclical Fluctuations* (1926) analyzed the cyclical patterns of wholesale and retail trade as the economy goes through expansions and recessions. It presented a theory of how business cycles are transmitted, with changes in consumer demand magnified both by the speculation of retailers and wholesalers, and by the existence of lags and differences in their responses. *Secular Movements in Production and Prices* (1930) looked at long-term cyclical changes in the American economy beginning with the Civil War, while *Seasonal Variations in Industry and Trade* (1933) examined causes and solutions to economic fluctuations from season to season.

In 1933, Kuznets wrote a groundbreaking article that carefully considered how to define and measure national income. The article led the U.S. Department of Commerce to construct official estimates of national income for the first time, with Kuznets overseeing the project. His subsequent work on historical national income showed that the long-term ratio of consumption to income remains nearly constant, and led to the development of modern theories about the behavior of consumption, such as those by Milton FRIEDMAN and Franco MODIGLIANI.

During World War II, Kuznets worked with his former student Robert Nathan at the War Production Board, using his extensive knowledge of the economy to locate areas of slack that could be switched over to the munitions program, directing the flow of materials, and scheduling production to maximize wartime output. Some historians conclude that the Kuznets-Nathan team played a key role in expanding output during the war.

During the last half of his career, Kuznets turned his focus to the nature and causes of historical economic growth and inequality. His work was noted for its relentless quantification, carefully handling each piece of data "with the delicate patience of the archeologist," and for broadening the normal scope of economic investigation to include analysis of demographic, political, and institutional factors. Culminating in works such as *Modern Economic Growth: Rate, Structure and Spread* (1966) and *Economic Growth of Nations: Total Output and Production Structure* (1971), Kuznets codified a new understanding of the patterns and process of economic growth around the world.

He concluded that economic growth requires both technological change and institutional response within each society and that it often initially triggers increasing


Simon Kuznets' work on national income and business cycles led to modern theories about the behavior of consumption.

economic inequality (and with it political instability) before it spreads the benefits of progress to all, and inequality subsides—known as the Kuznets U hypothesis.

Another important Kuznet finding was that, contrary to Malthusian pessimism, rising population does not seem to harm economic growth, perhaps because it increases the number of talented individuals and, thus, opportunity for technological advance.

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L

labor

THE FACT THAT human beings work in order to create the world around them is not the most unusual proposition to make. Indeed, this proposition forms the universal basis of most moralistic claims under capitalism. Poverty, homelessness, starvation, lack of education, are all explained, with common sense, as an individual's (or a community's) incapacity or unwillingness at some stage of life to be hard-working. Given the importance accorded to work in social consciousness, it would be only natural to assume that the idea that human labor forms the basis of wealth in society would be easily acceptable under capitalism. It is, however, completely inadmissible in public rhetoric. The "provider of work" is seen as the source of wealth as opposed to the person who actually performs the work. How did this inversion in perception come about?

There is an inversion regarding labor at the very heart of capitalism. A human being's capacity to labor, to work upon nature in order to change it, has formed the basis for human history. Human labor, consequently, has taken a variety of forms through time. Hunting and gathering, agriculture, the herding of animals, are all, in this basic sense, the same as attaching wheels to the body of an automobile, in that they are all forms of labor. All pre-capitalist societies, however, differed from capitalism in one vital respect as far as work was concerned. The goal of work in pre-modern societies was the immediate satisfaction of people's needs. Granted that the needs of the ruling elite took priority over the those of the great majority of people, it still remains true that the slave, peasant, or handicraft worker worked to produce goods that would immediately be used either by themselves or by the elite. Under capitalism, however, very little production is for immediate use. The Ford autoworker does not produce cars for her own immediate use or even for the immediate use of her managing director. She produces cars so that they can be sold. Goods under capitalism thus have a strange peculiarity: before they can be used, they have to be exchanged against money, which in turn can then be exchanged for other GOODS.

It is this act of exchange for money that transforms "goods" into "commodities" under capitalism. The appreciation of goods lies in their exchange value thus inverting the basic logic of normal production. No longer are goods valued for their intrinsic qualities but for the amount that they fetch when exchanged. Labor embodied in the goods becomes the invisible quotient that goes perpetually unnoticed and consequently disregarded.

The scrutiny of work. With the rise of the new discipline of political economy in 18th-century Europe, work, as a theoretical concept, came under renewed scrutiny. Between the *Tableau économique de la France* (1759) of Francois QUESNAY, founder of the PHYSIOCRATS, and Adam SMITH's *Wealth of Nations* (1776), there emerged the idea of work in general, that is, work considered separately from all its particular forms in agriculture, manufacturing, or commerce.

Karl MARX is given most credit for having rediscovered the hidden value of commodities to be the labor of human beings. Marx, in *Capital*, asks what it is that two very different objects that cost the same amount of money have in common, say a pair of socks and a loaf of bread. The answer cannot lie in their respective qualities (weight, color, shape, utility), but would have to be sought elsewhere. According to Marx, the item that both have in common was the amount of labor that went into making them, and this labor actually was something that determined their values.

Marx did not chance upon this explanation on his own; 18th- and 19th-century economists, Smith and David RICARDO in particular, drew partially similar conclusions before Marx. Smith argued that "the proportion between the quantities of labor necessary for acquiring different objects," was "the only circumstances which can afford any rule for exchanging them for one another." This claim is further consolidated by Smith with the famous example of the beaver and the deer:

> If among a nation of hunters . . . it usually costs twice the labor to kill a beaver which it does to kill a deer, one beaver should naturally exchange for or be worth two deer. It is natural that what is usually the produce of two days or two hours labor, should be worth double of what is usually the produce of one day's or one hour's labor.

Ricardo introduced in this mix the question of ownership of the means of producing wealth:

> All the implements necessary to kill the beaver and deer might belong to one class of men, and the labor employed in their destruction might be furnished by another class; still their comparative prices would be in proportion to the actual labor bestowed, both on the formation of capital, and on the destruction of the animals.

The separation of the worker from the means of creating wealth is yet another novel development under capitalism not experienced by either the peasant or the slave in previous eras. In Europe in the late Middle Ages and throughout Africa and Asia at the time of European colonization in the 18th and 19th centuries, most people had some direct access to the means of creating a livelihood. Peasants grew food on their own land and craftsmen made goods in their own workshops.

The rise of capitalism was initiated by a primeval act of robbery, some economists say, where masses of people were forcibly de-invested of control over the means of production. Acts such as the "enclosures" in England and Wales, the "clearances" in Scotland, or the "Permanent Settlement" in India were all part of the same historical process to bring about the separation of a large and growing proportion of the laboring population from means of production that could provide them with an adequate subsistence. This was by no means a gradual, harmonious process but involved force, suffering, and popular resistance.

British proponents of enclosure, for instance, were remarkably forthcoming. Common rights and access to common lands, they argued, allowed a degree of social and economic independence and thereby produced a lazy, dissolute mass of rural poor. Once deprived of the commons, wrote one Mr. Bishton in a report prepared for the Board of Agriculture in 1794, "the laborers will work every day in the year, their children will be put out to labor early" and "that subordination of the lower ranks which in the present times is so much wanted, would be thereby considerably secured."

Labor, under capitalism, was thus historically freed in two crucial ways: It had been freed from the control of the feudal landowners; it had also been freed from any access to the means of production and hence free to sell its labor power to the highest bidder.

In Marx's account of capitalism, the essential nature of the system is defined by a unique relationship of production: that between "owners of money, means of production, means of subsistence" on the one hand, and "on the other hand, free workers, the sellers of their own labor-power, and therefore the sellers of labor." Labor power, a term coined by Marx, refers to the human being's capacity to work, as opposed to the work that they actually perform. Labor power depends on physical and mental sustenance to be able to labor. Smith put it succinctly:

> There is a certain minimum below which it is impossible to reduce for any considerable time the ordinary wages of even the lowest species of labor. A man must always live by his work, and his wages must be enough to maintain him. They must even on most occasion be somewhat more; otherwise it would be impossible for him to bring up his family and the race of his workmen could not last beyond the first generation.

The wage or salary of the worker hence is directly related to the cost of replenishing labor power. Smith is unconsciously paraphrased in our daily media everyday. "Many managers realize," the *Financial Times* reported in 1995, "that unless their staff take their holidays and maintain a life outside work they will fail to perform effectively."

The value of labor. Like all commodities under capitalism, the value of labor power depends on the amount of labor needed to produce it. But the amount of labor needed to produce the goods for sustenance (food, shelter, clothing) for a worker, is substantially less than the amount of labor performed on any given work day by an average worker. Herein, according to Marx, lies the root of profit. It may take four person-hours of society's total labor to produce one family's food, shelter and clothing. But most people put in more than eight hours of work every day. The surplus labor hours that the worker puts in for "free" for her employer, was baptized by Marx as surplus value: the source of profit, rent, and interest.

The history of capitalist development is punctuated by the history of the development of the labor movement. The latter has tried, successfully or unsuccessfully, at every instance to resist the development and growth of the former at its expense. Theoretical concepts such as labor power and surplus value, outlined above, have been and continue to be, best illustrated by the actual struggles and trials of working men and women.

Since the dispossession of peasants and artisans from the means of production was a precondition for capitalist development, 17th-century England saw a series of struggles waged by small peasants, artisans, and laborers against rural magnates to secure for a time the survival of many small holdings and common rights. Landless or near-landless peasants struggled to retain their common rights in order to avoid becoming completely dependent on wages and losing their independent way of life. The agitations among the rank and file of the London artisan guilds and companies in the 1640s and 1650s were a major element in the English revolution. They addressed class-conscious manifestos to the rich merchants of the city, in tone and content pre-empting Marx's theory of labor power:

> You of the city that buy our work must have your tables furnished, and your cups overflow; and therefore will give us little or nothing for our work, even what you please, because you know we must sell for monies to set our families on work, or else we famish. Thus our flesh is that whereupon you rich men live, and wherewith you deck and adorn yourselves.

The 19th century saw the slow but steady emergence of worker's own organizations, or trade UNIONS. This, despite the fact that with the sole exception of Britain, trade unions and strikes were legally prohibited almost everywhere in Europe. Trade unions in the loose sense of the word were to be found in Britain as far back as the 17th century. One of the earliest instances of a permanent trade union was in tailoring, in 1720. In the first half of the 19th century, many trade unionists were inspired by the utopian socialism of Robert Owen and the demands for democratic rights embodied in the People's Charter of the Chartist movement.

The turbulent changes and the economic instability of the early stages of the INDUSTRIAL REVOLUTION encouraged militant trade unionism and revolutionary politics. Some unions, such as the Amalgamated Society of Engineers (1852) and the Amalgamated Society of Carpenters and Joiners (1860) in Britain, even commanded membership on a national scale.

Socialist labor. By the middle of the 19th century, the industrial proletariat had created for itself a permanent niche in world historical development along with an ideology that was to be enduringly associated with it, namely SOCIALISM. The International Workingmen's Association (1864–72), founded in London under the leadership of Marx and Friedrich ENGELS, propagated international solidarity among all working people in the famous slogan "workingmen have no country."

The International formed, in part, the inspiration for the first mass working-class political party, the powerful Social Democratic Party (SPD) of Germany in 1875. The International, however, was much more effective in strategizing and leading movements. From 1868 onward, a wave of labor unrest swept through Europe either led or inspired by members of the International. A surge of industrial actions led to strikes in almost all the leading European countries: RUSSIA (1870), GERMANY (1868), FRANCE (1868), BELGIUM (1869), ITALY (1871) and the UNITED KINGDOM (1871–73). The crest of the wave, undoubtedly, was the Paris Commune of 1871, the first display of insurrectionary governance by ordinary workers.

Workers' movements have been historically involved in a collective problem-solving activity. Various leaderships and members have shaped and reshaped their forms of organization, their own capacities, and the tasks they set for themselves. All the while, they were practically testing various theories concerning the nature and possibilities of their own movement and the character, interests and the capabilities of their antagonists. It is worth mentioning that the leading theories about labor or labor movements are in actuality the direct generalization of the real experiences of the working class. Marx reformulated his theory of the "dictatorship of the proletariat" in the *Communist Manifesto* after the Paris Commune. In the Commune, it was revolutionary workers themselves, who demonstrated for Marx some of the basic principles of a worker's democracy: payment of all officials at workers' wages; election and recall of all delegates; replacement of the standing army by armed workers; and so on.

The Commune lasted for less than two months, and more than 30 years were to pass before the working class experimented yet again with methods of governance, this time in the form of the soviets or workers councils, in Russia during 1905. The soviets were yet another instance of the working class creating its own mode of organization and protest well ahead of theoreticians and leaders.

By the early 20th century, it had become customary, in western Europe, for workers and their organizations to see a division between the fight against the state for political change, and the trade union struggle to win economic improvement from employers. In Russia, on the other hand, no such separation existed due to the repressive nature of the Tsarist regime. Even the most "bread-and-butter" trade union struggles came under severe surveillance and coercive tactics. In such a political climate trade unions grew up fully conscious of the fact that the overthrow of the autocracy was a basic precondition for the improvement of worker's fortunes.

The soviets, or workers' councils, set up by the workers of Petrograd during the revolution of 1905, were uniquely suited to the expression of workers' power. The fact that its formation came straight from the shop floor, and not from any theoretical leader, cannot be over-emphasized. The majority of the Bolsheviks, with the exceptions of Leon Trotsky and Vladimir LENIN, were actually opposed to the workers' soviets. The great merit of the soviet was that it was based not on the worker as an individual citizen in a geographical area, but on the worker as a part of a collective in the work place, or the unit of production. The soviets also expressed a fusion of economic and political demands that was common to the whole of the Russian labor movement. One of the main slogans of the 1905 revolution, "Eight hours and a gun," combined the ideas of both the economic struggle for a shorter working day and the political struggle against the Tsarist regime.

Workers' revolution. The October Revolution of 1917, that finally swept the Bolsheviks into power, has been either celebrated or reviled as the singular instance of workers' power in the history of capitalism. For our purposes, suffice to say that it was certainly a mass uprising that ended in the horror of the civil war (1918–21), the isolation of the Revolution, and the gradual and tragic substitution of the actual working class by the Bolshevik party. From the point of view of the majority of workers, except for the brief heady days of October, the Revolution was far from a bed of roses. The immediate aftermath of the Revolution was the invasion by some 16 armies of the leading European countries intent on crushing the Bolsheviks.

Approximately eight to 10 million people died in the ensuing civil war between the defenders of the revolution and the remnants of the Tsarist regime, and from hunger and disease that came in its wake. The crisis can be seen at its deepest in Petrograd, once the crucible of the revolution. The population of the town fell from 2.4 million in 1917 to 740,000 in 1920, a fall of nearly 70 percent. The numbers in the industrial working class fell even more. Most had to leave work to go and fight in the Red Army. As a class, the Russian workers had practically ceased to exist. The grotesque transformation of the revolution into the Stalinist dictatorship was the final cruel irony that history had to offer to the Russian labor movement.

Since 1917, there have been a series of revolutionary experiences for the modern working class: Germany from 1918–23; SPAIN during the civil war from 1936–37; HUNGARY against the Stalinist regime in 1956; POLAND under *Solidarnosc* from 1980–81; to name a few. They have been relatively protracted processes, involving retreats and advances, skirmishes and confrontations. Not until the 1980s, however, was the entity of the working class as a whole denied existence in both the popular media and also academic writing.

The Financial Times, in 1981, welcomed the emergence of the Social Democratic Party in Britain as an "example of the political system beginning to catch up with societal change. . . . There is a new class which [now] outnumbers either the stereotypes of working class or capitalists." The 1980s saw a series of developments that were seen by many as the final triumph of capitalism.

In Britain and the United States the electoral victories of Margaret THATCHER (1979) and Ronald REAGAN (1980) ushered in an era of aggressive neo-conservatism. Welfare benefits were cut to the levels of 50 years earlier or even abolished in some American states. The 1970s carried unpleasant memories of industrial militancy for capital, and both Thatcher and Reagan became symbols to soothe the fears of "union power" for big business.

Average output per head in the 1980s grew at less than half the rate of the early 1960s. Unemployment reached virtually unimaginable levels, commonly staying above 10 percent for years at a time, and rising close to 20 percent in places such as Spain and IRELAND. Lower rates in the United States in the early 1980s and late 1990s were driven by welfare cuts, which forced people to take jobs at poverty wages, the poorest 10 percent earning 25 percent less than the equivalent group in Britain.

Labor strikes. Contrary to popular opinion about the 1980s being the era of the "yuppie," the decade actually saw some very big, and sometimes violent, class confrontations as workers tried to prevent the decimation of jobs in old established industries. Some of the more remarkable of them were the struggles by steel workers in France and Belgium, the year-long strike of over 150,000 miners in Britain, and a strike of similar length by 5,000 British print workers, a five-day general strike in DENMARK, public-sector strikes in the NETHERLANDS and a one-day general strike in Spain.

The more spectacular triumph for the neo-liberals was the collapse of eastern Europe and the SOVIET UNION. The actual spectacle of the fall of the Berlin Wall, or the execution of the Romanian dictator by his own generals, seemed to signal the ultimate victory of Western capitalism in terms of ideology as well as material reality. The war between capital and labor seemed to be truly over according to the media pundits, no doubt to the advantage of the former.

What did this "victory" for capitalism translate as in real terms? Across Asia, Africa, and Latin America, bureaucrats and politicians who had made their careers sponsoring versions of eastern Europe and Russia, switched over to praise free markets. Most third-world governments showed their commitment to this new approach by signing up to the "structural adjustment program" of the WORLD BANK and the INTERNATIONAL MONETARY FUND (IMF). Seventy-six countries implemented adjustment program on "free market" criteria in the 1980s. In 1990, 44 percent of Latin America's population was living below the poverty line according to the United Nations economic commission, which concluded that there had been "a tremendous step backwards in the material standard of living." In Africa, more than 55 percent of the rural population was considered to be living in absolute poverty by 1987.

The unleashing of the forces of the global market was to have global consequences by the end of the 1990s. The first indication of this was the ANTI-GLOBALIZATION protest in Seattle, Washington, in November 1999, that succeeded in shutting down a session of the World Bank. The significant presence of labor unions at the protest was only the first signal that the post-Cold War Washington consensus was not as consensual as it appeared. The war between capital and labor, yet again, seemed not to have been won.

After Seattle, similar protests took place in Washington, D.C., Melbourne, Quebec City, Prague, and most recently in Genoa. Two elements common to these protests stand out in their significance. The first is regarding the holistic nature of the opposition. For the first time perhaps in the history of capitalism, there were protests taking place at various corners of the world that were against the system as a whole. The new generation of activists styled themselves as anti-capitalists. The second relevant development for this movement is the increasing involvement of organized labor. There have been large contingents of trade unionists at most of these protest gatherings since Seattle. Italy had its very own general strike soon after the demonstration at Genoa at the G8 SUMMIT. Labor was also central to the explosion of protests against World Bank and IMF policies in the global south in the year after Seattle. Large numbers of organized workers either struck or demonstrated against PRIVATIZATION and austerity program in ARGENTINA, Bolivia, BRAZIL, COLOMBIA, Nigeria, Paraguay, and SOUTH AFRICA to name a few.

E.P. Thompson, in his seminal work on the English working class, remarked that "[The working class] did not rise like the sun at an appointed time. It was present at its own making." The history and theory of the labor movement, like the class itself, is one that is always in the making. There exists an enormous gap today between the objective existence of a world working class and its becoming an active political force of the kind hoped for by the leaders of the labor movement. The confluence of events of the recent decades, however, in no way suggests that it is an impossible project.

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Laffer Curve

ARTHUR LAFFER, AN ECONOMIST from the University of Southern California, was having dinner at a restaurant. The discussion turned to high tax rates. It was 1974 and, at that time, the highest marginal federal individual income tax rate was 70 percent. Laffer started sketching a graph on a napkin. Laffer's drawing depicted the relationship between tax rates and the total revenue generated by the federal government. The graph indicated that the revenue generated by the federal government rises gradually with the higher tax rates until a certain threshold is reached. Upon reaching this threshold, the curve reverses its direction, and total revenues fall. This tax paradox applies to all tax rates above the threshold. However, no one knows where the optimum point is located or the actual shape of the curve itself.

Laffer wasn't the first economist to claim that tax cuts would increase government revenue. In 1776, economist Adam SMITH stated, "High taxes, sometimes by diminishing the consumption of the taxed commodities and sometimes by encouraging smuggling, afford a smaller revenue to government than might be drawn from more moderate taxes."

Although the term "Laffer Curve" is not widely known outside of economic circles, Laffer is credited with being the chief architect behind President Ronald REAGAN's supply-side economic plan, dubbed "Reaganomics." The Laffer Curve was the cornerstone of the plan.

The Keynesian demand-management policies dominated economic thinking from WORLD WAR II until the early 1970s. The Keynesian theory, named after its originator, John Maynard KEYNES, was conceived during the

Great DEPRESSION of the 1930s. It is based upon the demand side explanation of business cycles. Keynes believed that a recession is created when there is a decrease in aggregate demand. As the country's consumption and investment spending declines, so does production and employment. To stimulate demand, government should increase spending and cut taxes across the board.

Both Presidents John F. KENNEDY and Lyndon JOHNSON wholeheartedly adopted the Keynesian philosophy. President NIXON declared himself a Keynesian in 1971. Beginning in the 1970s, the country was hit with "stagflation." That is, a combination of stagnation and INFLATION. During this period, there was slow economic growth, rising prices, and rising unemployment. Economists attributed this phenomenon to an excessive expansion in the money supply coupled with sharp increase in resource costs, especially oil. Economists concluded that Keynesian demand-side was unable to solve the stagflation problem. This opened the door for supply-side economics.

The roots of supply-side economics can be traced back to French economist Jean Baptiste Say, who provided the original logic behind the classical school of economics. Underlying SAY'S LAW was the maxim, supply creates its own demand. "The modern application of the law can be seen in the argument that an increase in savings, induced by tax cuts, will not only stimulate an increased supply of goods and services, but also create sufficient demand to purchase them."

When Reagan took office in 1981, he embraced supply-side economics. Supply-siders reasoned that the U.S. progressive tax system provided a great disincentive to work, save, and invest. Lowering the tax rate would stimulate savings and production. It would also result in an increase in federal government revenue as demonstrated by the Laffer Curve.

The reduction in marginal tax rates does not bode the same for middle-class taxpayers or the poor. To begin with, these groups have a lower marginal tax rate. They are not proficient savers, and the lowering of the marginal tax rate does little to stimulate savings or production. This gave ammunition to opponents of supply-side economics. They blasted it as a proposal to solely benefit the rich.

Supply-siders argued that the middle class and the poor indirectly benefited from lowering the top marginal tax rates. The increased government revenue would stimulate production and jobs. This would benefit the middle-class and the poor. Opponents of supply-side economics derogatorily labeled this as the "trickle-down economic theory."

Whether Reaganomics was a success or not is subject to debate. The primary goal of Reaganomics was to stimulate economic growth. For the years 1981–88, the growth rate averaged almost 3 percent, less than the Reagan administration forecast of 3.9 percent. However, it did exceed the growth rate averaged for the previous seven years, which was 2.7 percent.

Reagan lowered the highest marginal tax rate from 70 percent to 35 percent. This did result in a large increase in disposable income. Consumer optimism rose and as a result, personal savings actually dropped. The increased spending resulted in an additional 13 million jobs. The unemployment rate fell to less than 6 percent.

When Reagan assumed office, inflation was a staggering 12.1 percent. It dropped to 4.8 percent in 1988, a 60 percent decrease. Interest rates also dropped by approximately 31 percent.

The federal budget deficit soared in the 1980s. Reagan's plan was in addition to a tax reduction, to reduce federal spending, and decrease government regulation. Reagan's plan called for a large increase in defense spending, while keeping social security payments intact. However, Congress did not match spending cuts with the tax cuts, and the deficit ballooned.

The debate continues. However, both economists and politicians agree to a much greater extent that higher marginal income tax rates have a negative impact, albeit marginal, on incentives.

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laissez-faire

A FRENCH PHRASE that literally means "let do," and translates better as "let a person alone," laissez-faire was applied to economics by English and French thinkers of the 17th and 18th centuries. The phrase generally applies to the same conditions in modern as in pre-modern times. Proponents of laissez-faire believe that government controls on economic behavior—trade, competition, prices, wages—curtail the freedom of the individual, not just in his economic life, but in all aspects of life, since economics is often closely tied to social status, moral behavior, and religious beliefs. Laissez-faire philosophy has been associated with both liberal and conservative political philosophies depending on whether it is the liberal, or the conservative thinker, of a given time who puts the most emphasis on liberty in economic matters.

Early proponents of laissez-faire. The origins of the phrase are unclear except that it was apparently in use by the time Adam SMITH (1723–90) wrote *The Wealth of Nations* in 1776. Indeed, Smith became one of the early proponents of the doctrine. Previous to Smith, one finds isolated remarks by English and French observers that MERCANTILISM hampers natural liberty. Mercantilism was (and is) the doctrine where a government imposes rules on trade, particularly international trade. A famous example of mercantilism involves the control of the trade of the British-American colonies in the colonial period before 1776. The British government passed a series of Navigation Acts that curtailed the freedom by which an American producer could export his crop. As a result, farmers in the American south were forced to sell their produce to English merchants at a reduced price. Clearly such restrictions seemed to curtail economic potential and the freedom of the individual producer to exchange goods for the best price. Under mercantilism, the British were less apt to restrict domestic trade, which could reveal to any insightful observer the advantages of such liberty.

John LOCKE (1632–1704), the English philosopher of the Glorious Revolution anticipated Smith, the greatest proponent of laissez-faire economics, in his *Second Treatise of Civil Government*. Locke argued that humans, though concerned with self-interest, tend to do good, and join together into governmental or economic associations for mutual benefit, but not at the expense of natural liberty. The earth is, as it were, a public domain set aside by God for all humans to enjoy equally. The apparently endless plenty of nature allows for each person to acquire sufficient materials for his needs. Excess is against the plan of the Creator, hence immoral. Competition among humans for their share of the public domain is natural, yet not harmful, as long as there is more than enough to satisfy every person's needs. Private property, one of Locke's fundamental natural rights shared by all humans, derives from a person putting forth labor to acquire goods from the public domain. Private property is therefore not evil, rather a good, as is the competition and labor that results in its acquisition.

Another group that anticipated Smith was the group of diverse intellectuals known as the PHYSIOCRATS. During the mid-18th century the French economy was still very much beholden to the old-regime economy of aristocratic landowners and peasant laborers. The Physiocrats believed that such a dominant, almost feudal, structure limited the exchange of goods and use of capital in the French countryside. Part of the problem they identified was the extensive impositions by the French government on trade and the heavy taxes imposed on farmers. By removing restrictions and reducing taxes, that is by the government accepting a "hands off" or laissez-faire policy, exchange of goods and capital would flow more freely in FRANCE; economic liberty would be commensurate with more political liberty.

Smith observed as much, agreed with the Physiocrats that government policies should give way to the natural liberty of economic production and trade, and agreed with Locke that private property is a sanctified right as a consequence of human labor, and that competition, even for private interests, is valuable and good. Smith despised the contrast of mercantilist policies with free trade. Smith believed that human self-interest is not a barrier to altruism because humans use reason to temper their acquisitiveness. This rational self-interest meant that economic competition would occur according to natural laws of human behavior instructed by reason. There was no justification, therefore, for government to impose restrictions on economic behavior. Such restrictions would be necessary only if humans irrationally engaged in destructive competitive behavior, which was clearly not true to the Enlightenment-mind of Adam Smith.

Smith is usually identified as a proponent of economic LIBERALISM, because he combined his optimistic view of economic competition and restrained self-interest with the liberal assumptions of man's inherent goodness and collective goal to work for the interests of the common good. Unlike modern liberals, Smith believed that economic behavior did not require government intervention to achieve the maximum good for society. Goodness could not be imposed, but rather would be a natural consequence of human behavior.

American laissez-faire. The 18th-century American counterpart to Locke, the Physiocrats, and Smith was Thomas JEFFERSON (1743–1826). Jefferson was the epitome of the Renaissance man, talented in architecture, music, philosophy, government, history, literature, and economics. He was one of the most complex men of his time, being simultaneously one of the great liberal thinkers of all time yet a slave owner, a proponent of laissez-faire economics yet the president who pushed for the trade embargo of 1808, a believer in limited government yet one of the architects of the UNITED STATES. Jefferson epitomized 18th-century economic liberalism in his advocacy of limited government-involvement in economic affairs, his ideas of free trade among all nations, his opposition to protectionism and tariffs, and his support of the agricultural way of life.

To Jefferson, as he wrote in his *Notes on the State of Virginia* (1784), the farmer is the most virtuous of humans because of the inherent liberty of the farming way of life. The farmer pursues self-interest but not at the expense of the common good. The farmer is the best republican because he votes his mind and believes that what is good for him is good for the whole. Jefferson feared the INDUSTRIAL REVOLUTION because he feared a nation of entrenched urban wage-earners who could not exercise their natural liberty in economic matters, and who would become aggressively self-interested without a thought for the common good because of the intense competition waged for limited resources.

Jefferson's powerful ideas came to be adopted by many 19th-century liberals in America. Jeffersonianism became synonymous with laissez-faire liberalism. It must be said, however, that the Jeffersonian philosophy was altered over the course of the 19th century.

Interpretations of laissez-faire. The aggressive competition and exploitation consequent upon the Industrial Revolution in Europe and America resulted in a host of philosophies that contradicted classic economic liberalism. Karl MARX (1818–83), for example, reacted to the perceived class competition between the proletariat and bourgeoisie by advocating (in the *Communist Manifesto*, co-written with Friedrich ENGELS in 1848) the abolition of the free market and the embracing of government controls over the economy. At the opposite spectrum, English and American philosophers reacted to Darwin's theories of natural selection and survival of the fittest by developing a theory to explain human competition. Social Darwinism advocated the notions of the free market and the common good built upon the victory of the strongest and fittest over the weakest. Some Social Darwinists, such as Andrew CARNEGIE, tempered these ideas by arguing that the strongest, hence wealthiest, should eventually give back to the community by means of philanthropic behavior.

One of the strangest interpretations of laissez-faire philosophy involved the Populists of the 1890s. The Populists were a political party made up of farmers of the American South and Midwest. Suffering from the exploitation of railroad monopolies that set high prices for transporting farm produce, the Populists advocated government intervention to establish a society and economy consistent with Jeffersonian principles and economic liberalism. In other words, the Populists believed that economic self-interest among farmers resulted in activities for the common good, but corrupt industrialists, monopolists, and politicians were thwarting traditional American economic liberalism. The situation could be remedied only by involvement of the federal government in the economy by means of government ownership of railroads and other utilities, a rejection of the monetary GOLD STANDARD, and the adoption of a national income TAX.

The Populist political program only succeeded with the rise to political power and socio-economic influence of the Progressives. The Progressives possessed the heritage of American economic liberalism but at the same time realized and wanted to address the varied problems brought about by the Industrial Revolution. It was under the influence of the Progressives that the first two decades of the 20th century in America witnessed the onset of the income tax, legislation putting restrictions on business practices and monopolies, a constitutional amendment to make United States senators more directly answerable to the people, the creation of the FEDERAL RESERVE, and the achievement of women's suffrage.

Similar occurrences marked English politics of the 19th and early 20th centuries. Jeremy BENTHAM (1748–1832) and John Stuart MILL (1806–73), the two most important English utilitarian philosophers, mitigated the classical laissez-faire theory of Smith to take account of industrialization and its negative consequences. The utilitarians believed that private interest working for the common good—the essence of laissez-faire economics—should continue to be the driving principle behind the relationship of government to the economy. But sometimes the common good demanded government intervention to aid the plight of the poor, to restrict unfair corporate practices, and the like.

Laissez-faire and politics. The ironic twist that laissez-faire took around the turn of the 19th century is best illustrated by the example of American political parties. The Republicans, formerly the Whigs and before that the Federalists, had long advocated government involvement in the economy. Alexander HAMILTON, for example, proposed the federal support of investment in the economy, the accumulation of federal debt (assuming it from the 13 states), and the promotion of manufacturing. The Whigs of the 1830s advocated the American system of federal investment in America's infrastructure. Abraham LINCOLN, and the early Republicans, promoted the interests of American corporations and sought a strong and united economic union. But industrial changes and the growing protests of wage-earners and the poor put the Republicans into a defensive posture, so that they increasingly returned to a defense of laissez-faire economic policy to prevent government restrictions on American capitalists. The hands-off policy of the American government reached a climax during the 1920s and the Republican administration of Calvin COOLIDGE.

The Democrats, on the other hand, who had long promoted the interests of the individual and the state, by 1900 demanded the tempering of laissez-faire economics with government intervention. The initial programs of the Populists and Progressives bore fruit during the 1930s with the Franklin Delano ROOSEVELT administration. The Democrat Roosevelt, who cut his political teeth on Progressive and Wilsonian politics, realized that the Great DEPRESSION symbolized the bankruptcy of laissez-faire economics.

The NEW DEAL of the 1930s followed by the Fair Deal of the 1940s and 1950s, and the New Frontier and

Great Society of the 1960s, revealed the commitment of the Democratic party to government taking over the pursuit of the common good. Twentieth-century philosophers such as John Maynard KEYNES declared that the once positive assumptions of economic liberalism had fallen short, that private interest did not somehow miraculously work for the common good, that it was up to government to temper private interest for the good of all people.

The Great Depression of the 1930s and its effects were the watershed in the history of laissez-faire economics. The Depression caused such panic and anxiety, weakened and destroyed the economies of great nations, that no Western industrial government would advocate a return to the principles of laissez-faire. Even the conservative Republicans of American politics and the Tories in the UNITED KINGDOM were forced to concede the failure of economic liberalism. Pure laissez-faire economics had come to an end, for now.

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land

ATTEMPTS TO EXPLAIN the dominant global economic position of modern Western civilization are many and varied. Most arguments center on the emergence of capitalism in the 19th and 20th centuries and cite Adam SMITH's *The Wealth of Nations* in 1776 as the model. The role of resources, especially land, is a key component of the model. A historical overview of the role of land and the emergence of capitalism provides insight into the complex relationship between the two.

Arguments used to explain the emergence of capitalism in the West, and not elsewhere, include technology advancement, seafaring superiority, the gunpowder revolution, the INDUSTRIAL REVOLUTION, cultural traits or belief systems, slave labor, and colonialism to name a but a few. All the arguments have some drawbacks: For example, the Chinese first invented printing and gunpowder weapons before 1000 C.E., experienced a military and industrial revolution around 1000 C.E. and launched huge sailing expeditions with large economic impact by 1400 C.E. The rise of Japanese and other east Asian economies has been cited to refute cultural arguments, or to argue for their adaptation as the reason for success. Slave labor and colonial arguments are often argued against because of the failure of certain slave-labor colonies to become economically dominant, such as those of Latin America.

Whatever position one takes, the role of land and the emergence of capitalism it seems, is always just beneath the surface of the argument. So what role did land play historically in the rise of capitalism?

First, there was land. From the start of human history, land has been the key resource of human societies, cultures, and civilizations. Everything associated with our survival and success is also tied to the land in one way or another. Water, flora, fauna, minerals, marine resources, even air, are accessed by land. So land control, in the form of access and OWNERSHIP, is a key foundation of western civilization's rise of capitalism that is based on consumption and production of those resources.

Most early humans were nomadic as hunter-gatherers, pastoralists, or fishing folk, and accessed the land and its resources on a timely basis. Later, as farming became the norm for sedentary groups, land control moved from access to ownership and conflict between nomadic and sedentary groups became common. This conflict played an important role in the emergence of capitalism, with its need for surplus production only possible on a large scale with more sedentary practices.

During ancient history, land was often controlled by a few elites, usually associated with political and religious institutions. Peasants and slave labor were used to access product from land resources in these agrarian economies. In the medieval period, land ownership was often dispersed among lesser elites and nobility, or controlled by local institutions such as churches or peasant villages. FEUDALISM in a broad sense was prevalent around the globe and governed land ownership and access. Communal lands for the use of all became common, as a means to balance private ownership and ensure access to needed land. This concept remains in the modern world, as evidenced by one-third of all land in the United States being publicly owned (federal, state, and local).

The spread of western civilization by sea, led to colonization of new lands in the Americas, AUSTRALIA, Africa, and Asia. Eventually the seafaring, global colonial empires, with Western mercantile economies, replaced Asian empire markets for global dominance. Examples include the Portuguese, Spanish, Dutch, English, and French between 1500 and 1800.

Control of land was achieved by conquest and assimilation, as nomadic forms of land-access in parts of the Americas, Africa and Australia was replaced with land ownership. Mercantilism involved the colonies harvesting and shipping back land resources to the colonial mother countries in Europe. Elsewhere, sedentary empires were conquered and their agrarian economies transitioned to mercantilism. Examples include the Spanish conquest of the Inca and Aztec Empires in the Americas, the British and French conquest of the Mughal Empire in India, the Kingdom of the Congo in Africa, the collapse of the Ottoman Turkish Empire in Africa and Asia, and the Manchu Chinese Empire in Asia. Native-American, African, and Asian labor was used to harvest the land resources while much of the wealth and resource flowed back to Europe.

Other European groups such as the Portuguese and Dutch became known as middlemen in the mercantilism economic period. The Dutch especially, helped form a new system of economics that would become known as capitalism. Banks, mediums of exchange with set rates, stock markets, private enterprise companies, shipping of goods, and private land ownership, as well as personal freedoms all became common in this period, at least for some segments of Western civilization.

Colonial strife, competition, and rebellions eventually brought an end to mercantilism but not to land ownership and land-access issues. The American, French, and Industrial Revolutions in Western civilization all involved issues of land resources as part of the change they embodied. The Industrial Revolution in particular, relied heavily upon land resources. Production for subsistence or survival and trade wealth for a very few had been the norm. During the Industrial Revolution, the mass production of all types of products, led to a surplus of goods available for an emerging middle class. Labor was freed from the land by the mass surplus production, and more time-saving products available than ever before. Local-market, agrarian-economy barter systems tied to the land began to be replaced with banks, stock markets, and urban market stores.

The new center for civilization was no longer the land and rural villages, but the emerging urban areas with industry as the core. Most people no longer needed the land for subsistence; industry now needed the land for raw resources such as minerals and fuels. From the Industrial Revolution came surplus production, a diffusion of labor-saving products, and the shifting of humans from land ties toward industry ties. Complex financial, production, and delivery-system needs led to the development of a civilization infrastructure of unrivaled complexity in world history. Capitalism had arrived and the role of land was changed forever.

During the 20th century, land changed from a needed resource for survival to the key natural resource in surplus production of finished goods for early capitalistic societies. Land was now needed for cities to grow upon, industrial and post-industrial resources to be harvested from, and goods to be moved across. Most industrial economies of the last century saw land-based agriculture, as a share of GROSS DOMESTIC PRODUCT (GDP), drop from 60 percent or more to less than 15 percent, on average. In some extreme cases, as in Germany, agriculture accounts for as little as 1 percent of the GDP today. Correspondingly, industry share of the GDP rose exponentially to over 60 percent in some industrialized countries during the 20th century.

American land. In the UNITED STATES, the history of land ownership is representative of these mercantilist changes. Early English colonies in North America were allotted by kings as land grants to powerful or disaffected groups in England. Native-American losses of eastern seaboard territory during wars, such as the Pequot War of 1637 and King Philip's War of 1676, resulted in gains of land in the Appalachian Mountains for many English settlers. It also meant the native groups lost control of port areas where European ships exchanged goods. Now, European merchants could dictate economic terms to native groups for native products such as tobacco, fur, and timber. The growing population of the English colonies soon meant loss of production control of key native crops and resources, often completely excluding the native people from the emerging mercantilist system of the colonies.

In 1620, there were approximately 25,000 people of European descent in North America, by 1700 there were over 250,000, and by 1776 there were approximately 2 million European people mostly in the 13 English colonies, the Spanish colonies in Florida and New Mexico, and the French colonies around Québec in Canada. Tobacco plantations with first native slave labor, and later African slave labor became the major economic variable in the middle colonies such as Virginia. Cotton plantations with first native slave labor, and later African slave labor became the major economic variable in the southern colonies such as South Carolina. In both areas, production of Indian crops, including corn (maize), tomatoes, peppers, chiles, and much more also formed a key export. In the New England colonies, timber for ships and rich fishing areas became key cogs in their regional economic systems. Fur trade and fruit production in French Québec, sugar plantations in the English colonies of the Caribbean Sea, Brazilian food plantations controlled by the Portuguese, and Latin American *encomiendas* or Spanish land grants producing silver, potatoes, chiles, manioc and other food stuffs, rounded out the emerging mercantile economic system of new-world colonies. Most importantly, these European colonies were linked to other European empire possessions around the globe by seafaring.

Known as the Columbian Exchange, the exchange of products, goods, ideas, and people around the globe changed the balance of economic power from Asia to the Americas, from the western Pacific and Indian Ocean to the Atlantic Ocean. New-world chiles showed up in food from India; Andean potatoes in European diets; and liquor, Southeast Asian bananas, and rubber trees in the Amazon.

SLAVERY also became a tragic economic factor with indigenous slaves often replaced by African slaves in the Americas, after terrible disease episodes eradicated much of the native population. Elsewhere, slaves from India were imported to South Africa, China, and Indonesia. Chinese workers, effectively in near-slave status, eventually were spread across parts of the globe as well. The toll on human life is best summed up by statistics from the Americas. Up to 90 percent of the native peoples died from farm-animal diseases between 1492–1800. The pre-Columbian Americas had only turkey, llamas, and dogs to domesticate, and farm animals of the old world like cows, sheep, goat, and chickens were unknown. The diseases the farm animals spread to humans were well known and genetically adapted to in the old world but not in the new world of the Americas. To replace this lost labor, slave traders (e.g., Portuguese) and slave sellers (e.g., Dutch and English) brought over 10 million Africans to South America, 1 million to the Caribbean colonies and several hundred thousand into North America.

The Columbian Exchange. The list of exchanged flora, fauna, disease, and human lives from the Columbian Exchange is enormous. For better or for worse, the mercantile system, predecessor to capitalism, was built on the back of this exchange. It laid the groundwork for capitalism by emphasizing bullion and treasure (silver, gold, rubies, emeralds, etc.) cash crops (tea, spices, fruits, rubber, etc.) and farm animals as well as addictive products like tobacco, opium, and liquor over simple agrarian economies that had dominated the medieval period. The slave and servant based system of mercantile labor also changed labor relations and ruined local economies where slaves were from. In some cases, political power was used to manipulate the economic system so that the expanding European empires could gain control. Examples include opium trade between India and China, the flooding of African markets with mass-produced European cloth, and guns that were made inferior to European guns and traded to local groups.

The key to all of this exchange of global power and the emerging mercantile economy was land. It is what the Europeans acquired in the Americas, or New World, and what the Asian and African peoples lost control of in the Old World. On the land were the raw materials that fueled the global trade. Mercantilism had some of the earmarks of capitalism with trade goods of high value emphasized in a global market and complex monetary systems to handle the exchange. Dutch banks and credit houses, private enterprises such as the DUTCH WEST INDIA COMPANY rounded out the capitalistic field.

However, the mercantile system of colonial land-based goods flowing back to the European countries had a flaw. Control of colonial lands far across the seas was only possible if the colonies were economically dependent on the mother countries for finished products. In a purely capitalistic sense, it was not efficient to harvest raw materials from your own colony, ship them back to Europe for production as finished goods, then have the good shipped back to you, where you then paid for the finished product. Mercantile empires attempted to control their colonies by restricting finished-good production, requiring shipping only on empire ships, and forbidding trade with unfriendly mercantile empires and colonies even if they were next door with needed products.

This was only possible by military force and control of vital necessities such as food production. In the well-documented North American case, the English mercantile empire attempted to keep the 13 colonies in North America dependent on food produced in the Caribbean Sea English colonies. Eventually the growing populations of the 13 colonies made this unfeasible; meanwhile the colonies became self-sufficient in food production, finished goods, and military forces. The AMERICAN REVOLUTION that followed helped spur economic and social changes in the mercantile system that would lead to capitalism, in part due to another revolution in the West, the Industrial Revolution of the 19th century.

A similar collapse occurred in the Spanish Empire with its Latin American colonies. The pattern has been repeated numerous times since in world history, leading to the end of mercantilist economies and opening the door for capitalism as the dominant economic system. Both types relied heavily upon land as the foundation resource.

Land capitalism. The U.S. economy is an excellent example of the rise of land capitalism. Agrarian at first, then mercantile, and finally capitalist with the importing of the Industrial Revolution from Europe, it grew fast and furious under President Thomas JEFFERSON in the early 1880s. The survey and land-grant policy of the U.S. government was used to promote the growth of the nation westward to the Mississippi River by awarding lands to settlers, albeit lands indigenous groups still occupied. These land grants allowed settlers to establish farm and homesteads. The lands were usually well watered, fertile, and forested. These land-based resources became the backbone of early agrarian economics in the

United States. Even as the nation began expanding westward after the Revolution and the War of 1812 to the Mississippi River, the Industrial Age of the nation began to emerge in the eastern seaboard.

Cities such as Boston, New York City, Philadelphia, and Charleston became urban hubs for rural cottage industries such as textiles and gun-making. The seaboard ports moved fibers, including cotton and hemp from the southern, slave-based plantation economic system to the northern textile mills near ports. Inland, the river systems of the Ohio and Mississippi moved goods from the homestead land grants out to the Gulf of Mexico at New Orleans, an international port by the 1830s.

The Great Lakes between CANADA and United States along with the St. Lawrence River moved goods east to the Atlantic Ocean through French and Huron Indian territory, that became British-controlled after the Seven Years' War (French-Indian War) of 1756–63. President Andrew JACKSON (1824–32) fueled further growth west of the Mississippi River. Huge land acquisitions were made with the annexation of Texas in 1845, the spoils from victory in the MEXICAN-AMERICAN WAR of 1848, and the acquisition of Alaska and Hawaii by the end of the 19th century. In the interior of the U.S., farms and ranches came into conflict over land use, as was the case in Australia.

Farm sizes in the United States went from 160-acre tracts granted by the federal government with the Northwest Ordinance to over 350 acres on average by the end of the 19th century. The Industrial Age of the east with its power equipment of internal-combustion engines (tractors and trains) was catching up with the agrarian economy of the west. Soon mining interests had replaced the agrarian farm and ranch conflicts in the west of the United States. The economy was now linked as three regions. The rural, agrarian, slave plantation in the south providing cotton to textile mills in the north, and the west providing raw materials from mines to the industries of the north and east. This strained economic relationship between the three regions eventually helped spawn the AMERICAN CIVIL WAR of 1861–65. The economic use of the land was a key component as witnessed by the number of business professionals who were associated with Lincoln's cabinet. The war was a case study in the industrialized, capitalistic economy of the North *vs.* the agrarian, mercantilist economy of the South. Capitalism, with its emphasis on surplus production through industry, persevered and set the U.S. economy on course toward full-scale capitalism that would spread around the globe in the 20th century.

Cattle barons, industrial farms, railroad magnates, the linkage between political power and the economy, urbanization, and civilization infrastructure of rail, road, car, skyscraper, self-powered ships, mass production and mass consumption, and the middle class all followed in the 19th and early 20th centuries in the United States. Big business under Andrew CARNEGIE, big finance under J.P. MORGAN, and government intervention under President Theodore ROOSEVELT all signified the age. WORLD WAR I and II just added further evidence that capitalistic economies in the Industrial Age had gained control of the reigns of power globally.

The United States, JAPAN, and Great Britain all emerged from World War I as evidence of this while old agrarian-based economies like the Ottoman Turkish Empire, the Manchu Chinese Empire and the Russian Empire collapsed.

Through all of this change, land has maintained its value and importance because of its pre-eminent position as the resource for civilization and humanity. While the way capitalistic and post-industrial civilizations view land has changed from mercantile and agrarian times, the value of land as a resource inextricably tied to civilization has remained. Examples today include the stock market REITS (Real Estate Investment Trusts) that create profit by large real-estate holdings and the surplus income produced. The consistent rise of the cost of housing in the United States for the entire 20th century is another example. Land as the physical resource for civilization, tends to rise steadily in value in a capitalist system. Although this relationship may eventually change, the role of land as the stabilizer in all economic systems past and present, including capitalism, will not soon be usurped.

Until humans figure out how to manufacture land, and lots of it, land is a finite resource covering about a fourth of the planet; 60 percent of Earth's land is in poor-climate regions or poor-soil regions, lacking suitable qualities for civilization. So the remaining sectors will always be highly valued by a human population that is approaching 7 billion people.

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Latvia

THE REPUBLIC OF LATVIA has a population of 2.42 million, and is located on the Baltic Sea and bordered by ESTONIA, RUSSIA, Belarus, and LITHUANIA. With a rich and long history of changing governments and populations, Latvia currently has a parliamentary democracy centralized in Riga, the capital. Comprised of 26 counties and seven municipalities, the country gained its independence from the Soviet Union on August 21, 1991.

Latvia's GROSS DOMESTIC PRODUCT (GDP) in 2001 was $18.6 billion and its major capitalistic industries are buses, vans, street and railroad cars, synthetic fibers, agricultural machinery, fertilizers, washing machines, radios, electronics, pharmaceuticals, processed foods, and textiles.

Latvia is poised to join the EUROPEAN UNION (EU) in 2004. The country has been and continues to be a major trade route between what are now western Europe and Russia. Latvia's major trading partners are Russia, GERMANY, the UNITED KINGDOM, SWEDEN, and Finland.

Latvia is expected to enter into the ranks of the North Atlantic Treaty Organization in 2004. Although NATO is primarily a military and political organization, countries that join usually experience an economic boost and a greater sense of "well being." Small countries, such as Latvia, are vulnerable to world markets and global military movements. However, when Latvia is formally introduced into NATO, it will become part of a larger whole that includes such partners as the United Kingdom, France, Spain, Germany, Turkey, the United States, Greece, Denmark, and Canada. With these strong military and trading partners in place, the Latvian economy is expected to steadily rise in the coming decades.

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Lenin, Vladimir (1870–1924)

VLADIMIR ILYICH ULYANOV, WHOM HISTORY would later baptize Lenin, was the second son of a school inspector, Ilya Nikolaevich Ulyanov. When Lenin was born, RUSSIA was a country with only two major cities, St. Petersburg and Moscow, hardly any industry, and only a small middle class. Under the Tsarist regime, there were no elections, no freedom of press, right of assembly or right to strike, much of which had been already won by this time in western Europe. The Ulyanov family lived in Simbirsk, a small town on the banks of the river Volga. The area was not without a revolutionary history: Simbirsk was witness to an enormous peasant revolt a century earlier ending in the public execution of its leader Pugachev in Moscow. Lenin's childhood, compared to the past of the town and his own future, was comfortable and relatively uneventful.

In 1887, a 17-year-old Lenin first came face to face with the realities of the Tsarist autocracy. His elder brother Alexander was arrested and hung for his part in a plot to assassinate the Tsar, Alexander III. Lenin never let it be known in later life what his reactions were to his brother's death, but there seems no doubt that the incident left its mark.

At the end of June 1887, the Ulyanov family moved to Kazan where Lenin started to study law at the university. This undertaking, however, was cut short, as he took part in a student demonstration and was expelled from the university and the city for his efforts. Four years were to pass before the young Lenin was allowed back into a university, this time at St. Petersburg.

Lenin arrived in St. Petersburg in the autumn of 1893 and joined a Marxist study circle. At the time, the industrial working class was only just beginning to form and organize in St. Petersburg. Large textile mills and engineering factories were being built and, throughout the 1890s, Russian industry began to develop rapidly.

It was with these factory workers in the Russian capital that Lenin, in the period 1893–95, gained his first political experience. He began a study circle, wrote leaflets, and distributed them outside the factory gates. Workers joining these circles (*kruzhki*) showed an insatiable thirst for knowledge. A leading Marxist of the time Plekhanov, described the sort of worker who came to such groups:

> After working at the factory 10 to 11 hours a day, and returning home only in the evening, he would sit at his books until one o'clock at night. . . . I was struck by the variety and abundance of the theoretical questions which concerned him. . . . Political economy, chemistry, social questions, and the theory of Darwin all occupied his attention. . . .

Lenin adapted himself to the needs of industrial agitation. Krupskaya, his wife-to-be, recounted in her memoirs how many of the intellectual Marxists of the time "badly understood the workers" and Lenin would read them "a kind of lecture." Lenin did not shrink from the more difficult tasks of education, instead he read Karl MARX's *Capital* with the workers in the study circle. He also published a number of pamphlets on strikes, factory acts, fines, and industrial courts that related theory to practice and Marxist ideas to worker conditions.

At the end of 1895, the Tsarist police caught up with Lenin and after a year in prison he was sentenced to three years' exile in Siberia, the barren far east of Russia where political militants were sent. Krupskaya soon received a similar sentence, and while they were both in Siberia they got married.

Upon his release, Lenin decided to leave Russia. He had joined the Russian Social Democratic Workers' Party, and he saw his principal task as writing and producing the Party's paper, *Iskra* (Spark). This was an impossible task within Russia so Lenin and Krupskaya lived in Munich, then London and Geneva, indeed anywhere, where the police would leave them to work uninterrupted.

In 1903, at the second congress of the infant Social Democratic Party, the party split into two sections: the Bolsheviks, meaning the majority, and the Mensheviks or the minority. This historic split contained seeds of several arguments that, in later years, were to distinguish both Lenin as an individual and the Bolsheviks as an organization. Lenin's idea of the new party was of a tightly knit organization whose members were subject to its discipline. The Mensheviks were happy with a looser structure. It is perhaps worth mentioning that Lenin insisted, as far as conditions allowed, on tolerance for opposition and political discussion within the Bolshevik Party.

Both the Bolshevik and Menshevik idea for a revolutionary organization was to be put to a real historical test very shortly. In January 1905, a peaceful procession of workers bearing a petition signed by thousands marched through the capital toward the Tsar's residence, the Winter Palace. The petition demanded an eight-hour working day, the recognition of workers' rights, and a constitution. The Tsar ordered his troops to shoot at the demonstration, and the incident became known as Bloody Sunday. It sparked off a revolution. There were general strikes in St. Petersburg and Moscow and many sailors in the Russian Navy came over to the side of the revolution. The army, however, remained loyal and Tsar Nicholas II, having at first made concessions, brutally crushed the movement killing over 15,000 people and imprisoning 79,000 others.

The Bolsheviks had been unable to have any decisive influence on the events of 1905. Lenin had to flee for his life pursued by the secret police. The most outstanding occurrence of the revolution was the emergence of the soviets, or workers' councils. The first of these were set up by ordinary workers in St. Petersburg at the height of the revolution. It was a new and unique expression of working-class governance linking the production process from the shop floor to the highest level of decision-making in the state by transparent democratic methods of election and recall.

The aftermath of the failed revolution of 1905 was perhaps the most difficult period in Lenin's life. Party membership dropped and it became difficult to keep any organization going. Even so, Lenin continued to work, from Geneva and Paris, trying to hold a movement together.

The period 1911–14 saw a great revival of militancy in Russia and a corresponding growth in the Bolshevik Party. Trade Unions grew rapidly as did Bolshevik influence in them. By the outbreak of the WORLD WAR I, the Russian labor movement was stronger than ever.

The Russian rulers entered the war with hopes of being able to stave off revolution at home by victory abroad. By 1917, these hopes had been dashed. Lenin, unlike the vast majority of European socialists, had been a strident opponent of the war. He took the initiative to unite socialists who held similar antiwar views, and in so doing emerged as a leader of international significance. Even so, he was no prophet, and could certainly not foresee how dramatically Russia was to change. In February 1917, in a speech to a Swiss audience, he said, "We the old shall not live to see the revolution." Two weeks later the RUSSIAN REVOLUTION broke out. The army this time supported the workers' riots in St. Petersburg and the Tsar fell from power.

At the age of 47, Lenin was faced with the decisive months of his life. Everything he had done up to this point had been in preparation for the situation that now faced him. In Russia, a bourgeois government had been established with the support of all the left-wing parties. But side by side with this government, and disputing its authority were the soviets that had sprung up all over Russia. It was a situation of "dual power."

Lenin managed to get back to Russia in April 1917, and in his famous April Thesis declared that the Bolsheviks did not recognize the middle-class government and that the way was open for the workers to seize power. He stressed that a proletarian revolution could be achieved, provided the peasantry supported them and the Russian Revolution set off similar revolutions in western Europe. Lenin's two most influential slogans: "all power to the soviets" and "bread, peace, and land" summed up the revolutionary situation in terms of both its theoretical orientation and tactical moves.

By September 1917, the Bolsheviks had a majority in the Petrograd Soviet and popular feeling was in their favor across the country. By the beginning of October, Lenin judged the moment to be right for revolution and won a majority on the decision at the Bolshevik Central Committee. With the support of the workers and soldiers of Petrograd and the backing of the city soviet, the Bolsheviks stormed the Winter Palace and seized power. Lenin went to address the All-Russia Congress of Soviets and, to thunderous applause, leaning over the rostrum said: "Comrades, we shall now proceed to construct the socialist order."

Lenin now had less than six years before his death in which to turn his famous words into reality. Though the soviet state made a costly peace with Germany at Brest-Litovsk, it faced invasion from foreign powers intent on restoring the monarchy. The remnants of the Tsarist regime assembled the White Army to regain power. Lenin himself narrowly escaped death when a would-be assassin shot at him.

The survival of the Bolshevik Revolution through these severe counter-currents carried a very high price. Russia emerged from the civil war in chaos. Industrial production had fallen drastically and the working class had been decimated. The communists had increasingly taken on state power and the party had replaced the soviets as the decision-making body. The fear of a peasant revolt forced Lenin to introduce the New Economic Plan in 1921 by which capitalism was restored to certain sectors of the economy.

The reality contrasted sadly with the hopes that Lenin had held in 1917. His health gave way and in May 1922, he suffered a severe stroke and was partially paralyzed. Between 1922 and 1923 he wrote his last notes and articles, including his controversial will, in which he warned the party against Josef Stalin and advised them to find a new general secretary. In March 1923, Lenin suffered a final stroke and died 10 months later, at the age of 53. His place in history as the leader of the first successful socialist revolution was firmly established.

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Leontief, Wassily (1906–99)

IN 1973, WASSILY LEONTIEF won the Nobel Prize in Economics for his development of the input-output method and its application to important economic problems. The method he created analyzes how changes in one sector of the economy affect others. Since its formulation, the input-output has been considered a mainstay of economics and economic policy throughout the world. One example of his legacy includes the fact that introductory textbooks in international economics include a section on Leontief's Paradox, a result of his work that questioned the conventional wisdom of countries exporting commodities that exploit their resources.

Leontief was in St. Petersburg, Russia, where he spent his youth amid the turbulence of the aftermath of the RUSSIAN REVOLUTION. Despite riots in the streets, shouts of angry insurgents and their angry bullets and angrier posters, Leontief dreamed of a better life away from the hands of the new and austere communist government. In retrospect, his future calling seemed mandated, as his father taught economics in the city. When a mere 15 years of age, Leontief entered the University of Leningrad. At first studying philosophy and sociology he eventually switched his major to economics, receiving his degree of Learned Economist in 1925.

After being forced to leave St. Petersburg because of his anti-communist sentiments, Leontief traveled to Berlin, Germany, where he pursued his Ph.D. There, his mentors and peers began to note his individuality. The subject that Leontief chose for his thesis focused on the derivation of statistical demand-and-supply curves. This train of thought would later blossom into the formula that would earn him his Nobel award 40 years later. In his paper, Leontief concluded (as he later wrote), "that so-called partial analysis cannot provide a sufficiently broad basis for fundamental understanding of the structure and operation of economic systems."

After receiving his doctorate in 1929, Leontief planned to take the concept introduced in his thesis a step further, but for the moment accepted a position as advisor to the Ministry of Railroads in China. Throughout his 12-month tenure as a freelance economics advisor, he consulted with the Chinese government on a series of wide-ranging transportation-related projects. The relationship he helped create garnered him high respect and esteem from grateful Chinese officials.

Western counterparts were equally taking notice. Leontief, returning to Berlin, received an invitation to join the National Bureau of Economic Research in New York City. Once in the United States, a country he says he immediately loved, Leontief moved on to a staff position with the department of economics at Harvard University in 1932. Leontief would remain with the university for many years, culminating in his appointment as professor of economics in 1946.

Leontief's ambition to formulate a general-equilibrium theory capable of a universal input-output spectrum never wavered. While still with the Bureau of Economic Research in 1931, he received a long-term grant to compile the first input-output tables, using as its basis the American economy for a 10-year period, 1919–29.

In his autobiography Leontief recollects, "I began to make use of a large-scale mechanized computing machine in 1935." As well, he worked with the Mark I, the very first electronic computer.

With the publication of his *Structure of the American Economy, 1919–1929*, Leontief resumed his research to implement his main concept, a working input-output theory with real-time applications.

The model sought by Leontief would show "the extensive process by which inputs in one industry produce outputs for consumption or for input into another industry," explains *The Concise Encyclopedia of Economics*. The matrix devised by Leontief in 1941—the accomplishment for which he would win the Nobel Prize—did indeed show the effects of a change in production on the demand for inputs.

Leontief found an inclusive method of determining a real value in machine production. Thanks to his efforts, industrial nations were now able to more accurately forecast their production (output) and plan their results ahead of time. The input-output scales opened a new door for PLANNING in economics.

Leontief was a man of simple tastes and his thirst for his work never interfered with a private life he cherished. In 1932, he married poetess Estelle Marcks, and had a daughter, Svetlana (now a professor of history). Away from his academic life, Leontief's passion was fishing.

He remained with Harvard for 44 years, until 1975, then accepted the directorship of the Institute for Economic Analysis of New York University. Even after retirement in the early 1990s, he continued to teach, almost daily until his death at age 93 in February 1999.

Leontief, throughout his lifetime, was an active member of many organizations, including the American Economists' Association and the Academy of Arts and Sciences. An author of hundreds of journal articles, he also wrote several books, still consulted by economists today.

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leverage

THE TERM *LEVERAGE* MEANS to measure a company's debt against its assets. It refers to a company's capital structure and is often considered synonymous with gearing. A company is able to access capital through various sources such as EQUITY, preference shares, debentures, and long-term DEBT. The two main sources of capital can be classed as debt and equity. Capital structure refers to the weight given to each of these sources as a proportion of the company's total capital. A firm is considered highly leveraged if its debt is a large proportion of its assets or total capital, because the use of debt capital acts as a lever of sorts that allows the equity capital to access more than its weight in assets.

There is a significant debate about the existence of an ideal division of capital between debt and equity, such that a company has the lowest possible cost of capital. The Modigliani-Miller Theorem plays a significant role in this discussion. According to Franco MODIGLIANI and Merton H. MILLER, a company's leverage decision is irrelevant to its cost of capital. This argument can be illustrated with the example of Company X, whose capital is composed entirely of equity, and Company Y whose capital is evenly dividend between debt and equity. Company Y pays Z percent annual interest on its debt capital. In this example, Company X and Company Y generate the same net operating income (or profit) each year of $1000. If an individual buys 5 percent of the equity capital in Company X, his annual return will equal 5 percent * $1000 = $50. If an individual buys 5 percent of the equity capital and 5 percent of the debt capital (DC) of Company Y, his annual return will equal 5 percent * ($1000 – Z percent * DC) + 5 percent * (Z percent * DC) = $50. The return on each investment is equal. Miller once used a simpler example: if you cut a pizza into 4 slices you have the same amount of pizza as if you cut it into 8 slices or left it whole.

The Modigliani-Miller Theorem relies on several assumptions, and ignores several factors, that have subsequently caused its conclusions to be challenged. The most frequently discussed of these factors are the consequences of corporate taxation and the costs of bankruptcy or financial distress. In the case of corporate taxation, it is argued that interest deductibility can motivate leverage decisions that favor greater levels of debt rather than equity capital. On its own, this argument would suggest that the optimal capital structure would consist entirely of debt financing. However, it is noted that the advent of corporate taxation did not cause an increase in corporate-debt financing. In fact, the level of corporate long-term debt as a proportion of total capital remained the same after WORLD WAR II as it was in the first decade of the 20th century, prior to the introduction of corporate taxation. Moreover, this conclusion ignores the greater risks inherent in debt versus equity financing. These risks are best exemplified by the costs of bankruptcy or financial distress. In countries where these costs are not as high, such as JAPAN, corporate leverage is often observably higher.

Other discussions of corporate leverage take into account individual investors and the motivations behind their investment decisions. Some scholars maintain that it is necessary to consider the effects of personal taxation on investors' holdings. This theory claims that individual investment decisions are determined by the net income generated post everything, including personal taxes on equity income, capital gains, and debt income. For example, in its simplest form, the individual's return on debt will equal 1 less the personal tax on debt income. The individual's return on equity will equal 1 less the personal tax on equity income * 1 less the corporate tax (this takes into account a firm's opportunity cost in choosing equity financing versus deductible-debt financing). Therefore, in an environment where heterogeneous tax rates exist, there is not necessarily an advantage for investors in higher corporate leverage. Separately, it is argued that individual investment decisions can be motivated by factors other than returns, in particular diversification and risk.

In 1974, Joseph STIGLITZ wrote a proof for the Modigliani-Miller theorem. His proof requires three major limitations: no bankruptcy, personal borrowing must be a perfect substitute for corporate borrowing, and differing capital structure or leverage decisions must not affect individual investors' expectations of futures earnings or prices. This last assumption, that investors must believe that a firm's future profit is not related to or determined by a firm's financial structure, has subsequently been challenged. The existence of asymmetric information is acknowledged (the likelihood and magnitude of the firm's future profit or loss is not common knowledge, but is known by the firm's management). However, it is argued that investors can take corporate-leverage decisions as an indication of the managements' expectation of future returns. A management of a company is more likely to choose higher leverage if their expectations of future returns are high.

Leverage can refer not only to capital structure, but also to the characteristics of certain financial instruments such as options, futures, and forwards. Options, futures, and forwards are securities that allow an investor to buy or sell something at a specified future date and price. In the case of futures and forwards, this purchase or sale is unconditional, while for options it is conditional (or optional). As a consequence, futures and forwards may have negative values, while options may not. These instruments provide the investor with leveraged exposure to the underlying instrument. Because the initial investment of capital is small, the absolute return on the investment is magnified as a proportion of invested capital.

In 1973, the Chicago Board of Exchange (CBOE) established the first organized options market for options on single stocks. The initial success of this market eventually caused the expansion of option underlyings to fixed income securities, commodities, stock indices and currencies. These instruments and all their variations are more broadly called DERIVATIVES, and they are a specialized but increasing proportion of financial market trading. Derivatives are not the only way for investors to achieve leveraged exposure to financial markets. The ability to trade on margin also provides a similar magnification of risk and return.

These instruments and their consequences meet with a mixed reaction within the financial community. Their proponents argue that they allow investors to better meet their risk-return preferences, generate greater investment into information gathering and financial analysis, and therefore create more efficient asset pricing and more liquid financial markets. However, their detractors argue that they often contribute to financial market instability by creating speculative bubbles, and are not backed by sufficient capital to prevent solvency problems during market instability or corrections.

Although options are still a relatively small proportion of financial markets, option-pricing theory is more generally applicable to financial and economic theory. In the simplest example, shares in a company that are partially financed by debt have a payoff structure similar to a call option. Moreover, it is possible to value different elements of a company's capital structure (leveraged equity or various permutations of corporate debt) using option-pricing theory. In this way it is possible to see the connection between leverage in its different forms: financial instruments and capital structure.

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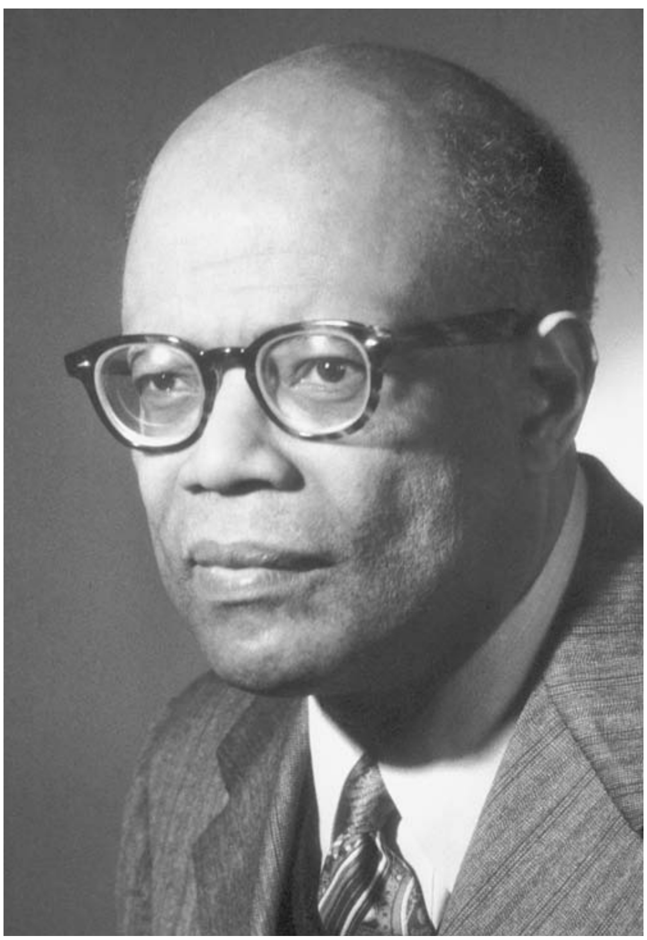
Lewis, Sir Arthur (1915–91)

MUCH OF THE RESEARCH of Sir Arthur Lewis focused on the economics of development, clearly a major concern to a majority of the world's population. The central question is why some countries are successful at initiating, and then sustaining, rising productivity and living standards whereas other countries are caught in a vicious cycle of poverty from which no sustained progress is made. Yet until the 1950s, the economics of underdevelopment was an intellectual backwater within the discipline of economics. For his pioneering work that did much to rectify this situation, Lewis was awarded, along with Theodore SCHULTZ of the University of Chicago, the Nobel Prize in Economics in 1979.

Such an auspicious scholarly achievement is not usually expected of one from such humble origins. Lewis was born on the island of St. Lucia, British West Indies, to parents of very modest means, both of whom were schoolteachers. He was further disadvantaged because his father died when he was seven years old, leaving a widow to care for five children. A disciplined and brilliant student, Lewis completed high school at 14 and began work as a clerk in the civil service. From there, he succeeded in winning a scholarship to the London School of Economics, taking a first class honors degree in 1937. His scholarly promise was quickly recognized at the London School and he was awarded a scholarship to study for a Ph.D., completing the degree in 1940. From 1938 to 1947, Lewis was a lecturer at the London School and quickly made his way up the academic ladder. In 1948, at age 33, he was made a full professor at the University of Manchester. In 1959, Lewis accepted a position as principal of University College of the West Indies. In 1963, he accepted a professorship at Princeton University, remaining there until his retirement in 1983.



Sir Arthur Lewis' work focused on improving economic theories relating to growth in underdeveloped countries.

Lewis was awarded the Nobel Prize in recognition for his leading role in improving economic theory relating to underdeveloped economies. Specifically, in articles and his classic book *The Theory of Economic Growth* (1955), he developed two relatively simple, but highly innovative theories that offer significant insights into the workings of Third World economies. The first is Lewis's theory that seeks to elucidate the process by which underdeveloped, essentially subsistence agricultural economies, are transformed to more modern urban economies with substantial production and employment in the manufacturing and service sectors. In large measure, Lewis employs a neoclassical theoretical framework but makes an important departure in one respect. Unlike standard neoclassical models where rising LABOR productivity leads to proportionate increases in wages, Lewis sets forth a model in which, at least for a long period, the close link between rising labor productivity and wages is broken. According to Lewis, poor economies should be seen as having a distinctly dual nature, a small but relatively high productivity industrial sector in conjunction with a large, overpopulated subsistence agricultural sector characterized by zero marginal labor productivity. In other words, agricultural labor is assumed to be in surplus since workers can be withdrawn effectively with no decrease in output. Based on this assumption, underdeveloped economies are characterized by an "unlimited supply of labor" that is available to flow into the industrial sector at a constant wage linked to the low productivity existing in the backward agricultural sector.

The essence of development in this context is that the unlimited supply of cheap labor to the industrial sector allows high profits to be reaped in the industrial sector. High profits, in turn, are assumed to finance increasing industrial investments, leading to rising production and employment growth in the industrial sector over time.

Lewis also saw a dual nature to the world economy and the trading relations between rich and poor countries. In his view, a strong tendency exists for international trade to favor rich countries. Again, Lewis uses the assumption of unlimited supply of agricultural labor to model the determinants of the terms of trade—the ratio of a country's average export price to its average import price—between the rich industrial countries and the poor, subsistence economies. The surplus labor assumption gives rise to a model where the terms of trade between a rich and a poor country depend upon the relative productivity of agriculture in the rich versus the poor country. In essence, the unlimited supply of labor in many Third World economies results in cheap agricultural prices for their exports on the world market, and deteriorating terms of trade over time.

Lewis' theoretical research was motivated by his intense interest in improving the economic policies implemented in Third World economies. In particular, his research made him strongly critical of the kind of agricultural policies pursued in most of the Third World. He was critical of the failure by policymakers to recognize the importance of economic incentives and entrepreneurship in agriculture, even in the poorest, most distressed economies.

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liberalism

GENERALLY SPEAKING, liberalism refers to a system of thought that focuses on the good of the whole of society as opposed to its neglect in the service of the restricted few. Liberalism began at a time of rejection of traditional feudal values, structures, and institutions; the opposition to hierarchical forms of government; and the attack on aristocratic privilege. Liberals have supported modernizing change as leading to increased freedoms for the individual, the establishment of democratic governments worldwide, and the development of the idea of government as a guide and protector of human happiness.

Liberalism's first great apostle was the English philosopher John LOCKE (1632–1704). Conflict, crisis, and civil war dominated the political history of England during the 17th century. In 1660, after more than a decade of exile, Charles Stuart was restored to power in England as King Charles II. Thomas Hobbes, the English philosopher, defended the Restoration of the monarchy in England. Humans, sinful by nature, require the strong imposition of government authority, Hobbes argued. Strong central government is necessary to corral the passions of humans, to impose order upon chaos. Hobbes' vision was fulfilled during the reign of Charles II. It was a different story for his successor James II. Parliament, representing the English people, forced James from power in what the English called the Glorious Revolution. A new king, William, agreed to limitations upon his power. Centuries of struggle by the English people had come to a conclusion in the conquest of royal oppression and the accession of law as the true ruler of England.

The Glorious Revolution. Locke was the philosopher of the Glorious Revolution of 1688. He had experienced the vast changes that England underwent during the 17th century, not only in politics but in the English economy and thought as well. The power of the landed English aristocracy was slowly waning in light of the continued expansion of manufacturing and trade. Merchants involved in rudimentary corporations employed workers intent on achieving material success. The English economy was breaking away from a landed, agrarian base toward a money economy rich in opportunity for entrepreneurs willing to take risks with capital to invest and to build. Some investors supported colonies in America and Asia; hard-working commoners traveled to such far away places to make their fortune. Political philosophers worked out the theory of MERCANTILISM to justify colonial expansion, arguing that colonies would provide raw materials and serve as markets for English goods. Capitalistic expansion and the consequent attack on the old aristocratic, feudal structures was reflected in politics. After centuries of struggle the English Parliament of the 17th century, representing the people of England, stood equal to the King.

Locke's *Second Treatise of Civil Government* provided the philosophical underpinning for the dramatic political, social, and economic changes occurring in England. Locke sought from the beginning to distance himself from the thinking of his predecessors, particularly Hobbes, who in Locke's words believed "that all government in the world is the product only of force and violence, and that men live together by no other rules but that of beasts, where the strongest carries it, and so lay a foundation for perpetual disorder and mischief, tumult, sedition, and rebellion." On the contrary, Locke argued that government is not an angry paternal authority, rather an extension of the goodness of human nature itself. Humans in the state of nature, Locke believed, are competitive but not violent toward one another. They discover soon enough that by joining together they can more successfully take what they need from nature to survive. This mutual need for greater survival, even happiness, is the basis of government.

Locke's theory of property was as follows: He believed that God the Creator endowed the world with sufficient resources to care for all humans. Locke thought that humans should use care with the creation, practice economy with the world's resources, use only what is necessary and spare the rest for another's use. Private property was one of Locke's natural rights (the others being life, liberty, and health). Since humans are inherently free and equal, the resources of creation are therefore equally available for the use of all humans. When, however, a person forages for an item of food, such as acorns, which are initially in the public domain, upon retrieving the acorns by one's own labor, the acorns become a possession of the one who retrieved them. Labor toward the accumulation of goods that are initially open to all human use is the basis of private property. The entrepreneur is the one who expends the most labor to accumulate the most goods. But Locke was adamant that one must labor to achieve only what is necessary, and nothing more.

Early American liberalism. England's Glorious Revolution, as Locke understood it, stood for freedom, equality, liberty, the open society, the good of society and of man, and a government that works for the people rather than to accentuate its own power. These were precisely what Thomas JEFFERSON, the early American philosopher, third president of the UNITED STATES, founder of the University of Virginia, and architect of the Declaration of Independence, believed about the rights of Americans living under the British government. Jefferson, and other Americans, believed that King George III and the English Parliament had, by 1776, generally rejected the principles of its own government as defined by Locke and implemented during the Glorious Revolution.

Jefferson followed Locke's thinking closely when he proclaimed: "We hold these truths to be self-evident, that all men are created equal; that they are endowed by their Creator with certain unalienable rights; that among these are life, liberty, and the pursuit of happiness. That, to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed; that, whenever any form of government becomes destructive of these ends, it is the right of the people to alter or to abolish it, and to institute a new government, laying its foundation on such principles, and organizing its powers in such form, as to them shall seem most likely to effect their safety and happiness." There is no better statement of liberal philosophy than these words of the Declaration of Independence.

Actions do not, however, always follow the precise meaning of grand words. Jefferson, for all of his great ideas, was a slave-owner throughout his life, not manumitting his slaves until his death 50 years later in 1826.

French liberalism. More striking is the example of the FRENCH REVOLUTION. French thinkers such as Jean Jacques Rousseau were inspired by Locke to press for a government and society in France based not on the privilege of birth, but on human equality. The French people broke the compact with the French monarchy in 1789, creating, in time, a government based on the principles of equality. The Declaration of the Rights of Man and Citizen, echoing Jefferson and Locke, proclaimed that "men are born and remain free and equal in rights. Social distinctions can be based only upon the common good." Freedom, unfortunately, can sometimes reduce itself to anarchy, as American and French conservatives often feared. The French Revolution degenerated into a power struggle and blood bath that had hardly anything to do with the rule of law, so dear to Jefferson and Locke.

English liberalism. Liberalism in England continued to focus on the ideas of Locke even as Great Britain fought to retain its empire. Adam SMITH, a Scottish philosopher who wrote *The Wealth of Nations* in 1776, argued that self-interest among humans resulted in healthy competition that did not need government regulation. This was in contrast to the British mercantilist system of the 16th and 17th centuries, the advocates of which believed in strict government supervision of trade.

Nineteenth-century liberals continued to voice the concerns and develop the ideas of the 18h-century Enlightenment. In England, Jeremy BENTHAM and John Stuart MILL expanded on the moral thinking of Smith, creating the philosophy of utilitarianism, which sought the greatest good for the greatest number in a society. The INDUSTRIAL REVOLUTION and new technology deriving from changing ideas of science inspired the same sense of optimism and dedication toward continued progress among 19th-century thinkers that had defined previous expressions of liberalism.

Liberal thinkers generally embraced the opportunities for social and cultural change suggested by the new philosophies of the 19th and early 20th centuries. The social and behavioral sciences became important professional fields for those who sought ways to reform social structures, institutions, and human behavior. The challenges of the Industrial Revolution—such as the increasing poverty; class disparity between bourgeosie and proletariat; and urban crowding, crime, and pollution—were treated as challenges incumbent upon the process and progress of modernization. Socialists such as Sidney and Beatrice Webb, Progressives such as Jane Addams and Woodrow WILSON, and humanists such as Bertrand Russell and John Dewey, embraced new ideas and their implications for society. Naturalism, the philosophy inspired by Charles Darwin; behaviorism, inspired by Sigmund Freud; materialism, the product of Karl Marx; relativism, the offshoot of the theories of Albert Einstein; existentialism, the vague catalog of ideas identified with Soren Kierkegaard and Friedrich Nietzsche; and the dada movement and other such nihilist philosophies, tended toward the aim of the common good, social justice, free will and freedom, a rejection of traditional ideas and assumptions, and the value of diverse, open societies.

Political liberalism. Politics and economic policies reflected the changes in modern society. In both England and America, conservative politics (signified by the Republicans in America, and the Tory party in Great Britain) gave way after the turn of the century to the liberal politics of reform—the Democrats in America and the Labor party in England. LAISSEZ-FAIRE economic policy was slowly discarded as liberal politicians, such as David Lloyd George and Ramsay McDonald in England and Woodrow Wilson and Franklin Delano ROOSEVELT in America, adopted interventionist policies wherein government would have a more direct role in economic development and bring government into the fight of the common person for good wages, good working conditions, help when ill or aged, and the general promise of a satisfying material existence.

Roosevelt's NEW DEAL, for example, began decades of social and economic reform conforming to a liberal agenda of broadened government policies and agencies to help the poor, disadvantaged, unemployed, retired, and disabled. The New Deal was in direct response to the Great DEPRESSION, which caught the Republican Herbert HOOVER administration by surprise. The Democrat Roosevelt further implemented the initial liberal policies of Wilson to fight the Depression of the 1930s. Roosevelt's consequent "alphabet soup" of acronyms for a dizzying number of social and economic programs still inspires today's liberal politician. The New Deal churned out the Banking Act, creating the Federal Deposit Insurance Corporation (FDIC) to back investor's deposits in case of bank runs and closures. Farmers were helped with the Agricultural Adjustment Act (AAA), which paid farmers to destroy crops and increase land lying fallow so to lessen agricultural supplies and raise farm prices.

The New Deal helped the unemployed with a variety of programs. The Civilian Conservation Corps (CCC) brought young men out of the urban areas into the countryside to work on conservation and forest projects in return for a bed, three square meals a day, and a little money. The Works Progress Administration (WPA) and Public Works Administration (PWA) provided government funds to employ men in public works projects, helping to build the infrastructure of America and helping the confidence of fathers and husbands who were glad once again to bring home good wages to wives and children. The Social Security Act (SSA) created the Social Security Administration (and the Social Security Number and Social Security Card) to protect America's senior citizens from ever knowing the same degree of want as had older Americans during the Great Depression.

Subsequent liberal presidents were inspired by the New Deal to continue its policies and programs. President Harry TRUMAN's Fair Deal and President John KENNEDY's New Frontier culminated in President Lyndon JOHNSON's Great Society, which brought to America the liberal vision of civil rights. These Democratic presidents were not so successful in foreign policy. Johnson's decision to escalate the war in Vietnam resulted in the dawn of the New Left, the venue for student radicals.

Today's liberal continues to embrace issues and actions that conservatives find offensive and controversial, but which to the liberal seem appropriate for people concerned with individual rights and government leadership of social and economic reform. The liberal continues to embrace modernization and its consequences, finding in relativism and secularism opportunities for continued human progress.

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Liberia

LOCATED ON THE northwestern coast of Africa, Liberia is bordered by Sierra Leone and Guinea, Côte D'Ivoire, and the Atlantic Ocean to the west. The capital of Liberia is Monrovia and the official currency is the Liberian dollar, which has been exchanged equally for the U.S. dollar since 1940.

Founded in the 1800s by freed American slaves, they now make up less than 5 percent of the local population. The vast majority of Liberians are indigenous Africans who comprise a dozen different ethnic groups. Most people live in coastal cities and towns.

Liberia has an agricultural economy; minerals and forest products are its most important resources. Rich in biodiversity, Liberia was almost entirely forested until recent decades. The forest and woodlands now cover about 36 percent of the land. The country is suffering from deforestation, water pollution from mining, and soil erosion. In the late 1980s plans for conservation of land was put on hold due to a civil war.

Civil war from 1989-96 destroyed much of Liberia's economy and infrastructure in and around Monrovia.

Prior to the war, Liberia was developing its rich natural resources, however, without foreign investors the economy has slowed to a halt. Revenue has been reduced to a small amount generated by registering merchant ships. The principal port reopened in 1993 and the export of rubber and timber resumed.

Principal trade partners for export were BELGIUM and LUXEMBOURG, UKRAINE and the NETHERLANDS. Leading sources for import were SOUTH KOREA, JAPAN, and FRANCE. In 2001, Liberia had 3.2 million people and a $3.6 billion GROSS NATIONAL PRODUCT (GNP).

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libertarian

IN THE MODERN WORLD, political ideologies are largely defined by their attitude toward capitalism. Marxists want to overthrow it, liberals to curtail it extensively, conservatives to curtail it moderately. Those who maintain that capitalism is an excellent economic system, unfairly maligned, with little or no need for corrective government policy, are generally known as libertarians.

Libertarians hasten to add that by "capitalism" they mean LAISSEZ-FAIRE capitalism, not the status quo economic system of the UNITED STATES. Unlike conservatives, who primarily resist new forms of government intervention, libertarians advocate a massive rollback of existing intrusions into the free market, an across-the-board program of privatization and deregulation. Libertarians typically favor the abolition of Social Security, Medicare, welfare, public education, quality and safety regulation, tariffs, immigration restrictions, subsidies, antitrust laws, narcotics prohibition, pro-unions laws, and, of course, the minimum wage. The most common libertarian position is minarchism, the view that government should be limited to its "minimal" or "night watchman" functions of police, courts, criminal punishment, and national defense, but many libertarians endorse a somewhat broader role for government, and a vocal minority of "anarcho-capitalists" insist that the functions of the minimal state should be privatized as well.

An overwhelming majority of the world's voters would obviously reject such proposals out of hand. But libertarianism enjoyed sharp growth over the past 50 years, largely because it generated many knowledgeable and articulate advocates, such as Milton FRIEDMAN, Ayn RAND, Robert Nozick, Ludwig von MISES, Murray Rothbard, David Friedman, Charles Murray, Thomas Sowell, Walter Williams, and a long list of fellow travelers including Nobel laureates F.A. HAYEK, Gary BECKER, George STIGLER, and James BUCHANAN.

Much of the libertarian case for laissez-faire is rooted in standard economics. Many economists recognize that competition tends to align private greed and the public interest, given appropriate circumstances. Libertarians go further by minimizing the exceptions to this rule. Even when the number of competing firms is small, libertarians believe that new entry and potential competition provide effective discipline. Though most acknowledge the existence of externalities, libertarians argue that their magnitude and extent is overstated. They are similarly optimistic about markets' ability to function in spite of imperfect information. Even when they concede that the free market falls short, libertarians point out that government exacerbates its failings rather than solving them. For example, libertarians see great irony in the antitrust laws' effort to "increase competition," when other branches of the government are busily restricting competition with tariffs, licensing, and price supports.

Other prominent arguments point to the moral superiority of laissez-faire capitalism. Libertarians heavily emphasize the voluntary nature of the market, appealing to two related moral intuitions: First, that an individual has the right to do what he wants with his own person and his own property so long as he does not violate others' rights to do the same; second, "violation" should be interpreted narrowly as use or threat of physical force.

Libertarian ethicists also frequently appeal to merit. Those who are financially successful under laissez-faire earned what they have and deserve to keep it. While libertarians are not opposed to private charity, they believe that the worse-off are presumptuous to angrily demand "their share of the wealth." The free market already gave them their share. If they are unhappy with its size, they should figure out a way to raise their own productivity instead of complaining that the market mistreats them.

Libertarians routinely highlight the hypocrisy of government programs to "help the poor." Progressive tax systems at most transfer income from, for example, the American rich to the American poor. By world standards, though, the American poor are well-off. If helping "the poor" is the real objective, why not send welfare checks to Haiti instead of America's inner cities? Instead, U.S. immigration restrictions deliberately close off the opportunities the free market provides the Haitian poor to better their condition. A low-skill U.S. job would pay vastly more than they could ever hope to earn in Haiti. Libertarians conclude that the "hard-hearted" 19th-century policy of free immigration and minimal welfare did more for the truly poor than any government has done since.

The 20th century was marked by a great debate between social democrats who wanted to reform capitalism and socialists who sought to abolish it. The collapse of Communism and revelations of its massive inefficiency and brutality have settled this question. If the 21st century has a great debate, it will probably be between social democrats who want to "reinvent" government, and libertarians who maintain that laissez-faire is not only more efficient but also more just.

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Libya

LOCATED IN NORTH AFRICA on the Mediterranean Sea, Libya shares a large eastern border with EGYPT, a western border with ALGERIA, a southern border with Chad, and minor borders with Tunisia, Niger, and Sudan. With a population of 5.5 million people, most reside in north-coast cities such as the capital city of Tripoli (1.5 million) or Benghazi (750,000). Although association with terrorism brought worldwide economic sanctions against Libya in the 1990s, cooperation by leader Muammar Al-Qadafi has led to a lifting of sanctions and resurgence in the oil-based, Libyan economy since 2000.

In 2002, the Arabic speaking, Berber Muslim nation had a per capita GROSS DOMESTIC PRODUCT (GDP) of $5,000, but 30 percent unemployment and 24 percent inflation have taken their toll on the economy. Foreign debt sits at $3.8 billion but heavy investment in oil and gas projects by companies such as the Italian ENI, French TOTALFINAELF, and British Lasino are equal to that debt and promise to keep Libya fiscally sound despite its troubles in international politics.

Oil exports make up 95 percent of Libya's export wealth and 50 percent of all government revenue. Together mining and hydrocarbon extraction account for 35 percent of GDP and employ 10 percent of the workforce. Libya is the second-largest oil producer in Africa behind NIGERIA with proven oil reserves of 30 billion barrels of high quality, light crude. Agriculture is limited to only 1.2 percent of all land but accounts for 8 percent of the GDP and employs 20 percent of the workforce. The "Great-Man-Made River Project" takes water from underground in the Sahara Desert and brings it to the agriculture oases and coastal ports to support this workforce. Small industries now make up 18 percent of GDP and employ 15 percent of the workforce. A $5 billion investment in building up the tourist infrastructure is scheduled for completion in 2005. Railroads, coastal tourist resorts, and developed ancient ruins such as the Roman town of Leptis Magnus promise to increase this component of the Libyan economy. However, the negative perception of Libya in international politics, despite recent efforts at image control, are expected to limit tourism.

The Libyan economy is run ad hoc despite state control of industry, banking, and development that ranks among the best in Africa. Continued sanctions by the United States against large investment in Libyan oil still have an impact on EUROPEAN UNION (EU) countries that are Libya's largest trading partners. Since 2000, Egyptian construction contractors have been steadily replaced by European contractors, but U.S. sanctions have led to many small contracts and a slower pace of development in Libya.

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Liechtenstein

THE PRINCIPALITY OF Liechtenstein is a small state in central Europe, situated between AUSTRIA and SWITZERLAND. Though its geographical location and diminutive size make it a somewhat anonymous state, its independent political climate gives rise to an exemplary model for the study of political and economic phenomena.

Once a part of the Holy Roman Empire, Liechtenstein gained its sovereignty in 1806 when it was admitted as a member of the Confederation of the Rhine. It rose to the status of an independent state in 1866, and as a result, it became the master of its own fate. Its standing army was abolished in 1868, and this marked the beginning of its long-standing neutrality position within Europe's geopolitical ambit.

Upon its independence, Liechtenstein's interests abroad were maintained by Austria until the collapse of the Austro-Hungarian Empire in 1918. At this time, Liechtensteiners recognized that a break with the politically unstable Austria was imminent, and so they turned toward their neighbors to the west in Switzerland. The fiercely independent principality sustained its neutrality throughout WORLD WAR I, and shortly thereafter, it adopted the Swiss currency and entered into a customs agreement with Switzerland, and since that time, Switzerland has represented Liechtenstein in international matters.

This German-speaking principality is governed by a hereditary constitutional monarchy, and in fact, it is often referred to as a representative republic. According to its modern constitution, state power proceeds from the ruling prince and the people. With its 11 municipal areas and a population of 33,000, its constitutional neutrality proviso requires that it refrain from all foreign aggression and political alliances.

In the post-WORLD WAR II era, Liechtenstein underwent an industrialization in which it developed into one of the world's wealthiest countries. Its refusal to bow to rigorous banking regulatory oversight, while maintaining the secrecy of its financial institutions, has made Liechtenstein into a prospering financial haven along the lines of neighboring Switzerland.

Finally, its magnificent wealth creation is helped along by a lack of public debt and low tax rates. Minimal taxes are imposed on multinational corporations, making it a popular refuge for international business headquarters. In spite of the low tax rates, the government of Liechtenstein derives much revenue from its authentication as a thriving financial and business center.

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Lincoln, Abraham (1809–65)

THE 16TH PRESIDENT of the United States, Abraham Lincoln was born in rural Kentucky. His family moved to Indiana a few years later and moved again to Illinois when he was 21. Like the children of most poor frontier families, Lincoln received almost no formal education. However, he did learn to read, write, and do basic math. He became an avid reader, always looking for new books to borrow from friends and neighbors.

For much of his childhood, Lincoln worked on his family farm. When there was not much work, his father hired him out as a manual laborer to neighbors. When he was older, Lincoln ran a flatboat down the Mississippi River to New Orleans, and later worked as a store clerk. His athletic ability and storytelling made him quite popular in his community.

Lincoln enlisted in a volunteer regiment being created to fight Native Americans in 1832. He was elected captain but his unit never saw any service. After returning from the war, Lincoln ran for election to the state legislature with the Whig party but lost. He tried again two years later and won. In office, Lincoln tended to support the party line on most issues, including the Bank of the United States, high tariffs, and infrastructure improvements. He also drafted a resolution on slavery that reflected his early views: "The institution of slavery is founded on both injustice and bad policy; but that the promulgation of abolition doctrines tends rather to increase than to abate its evils." Further, "the Congress of the United States has no power, under the constitution, to interfere with the institution of slavery in the different states."

This moderate position was criticized by Abolitionists before the war and by future generations who thought any compromise with slavery was unacceptable. But while Lincoln was clearly an enemy of slavery, he recognized that Abolitionists would only force slaveowners to become more intractable and prevent any solution. Lincoln recognized, and later said while running for U.S. Senator in 1858, that "this government cannot endure permanently half slave and half free" and that "it will cease to be divided. It will become all one thing, or all the other." By preventing its expansion, Lincoln hoped to lay the foundation for a time when the antislavery forces would far outweigh the pro-slavery forces and allow for slavery's extinction.

Lawyer and congressman. While serving in the legislature, Lincoln studied law and began to practice in 1836. Because no state courts met permanently year-round, the judges and lawyers traveled together around the state trying cases. During these years Lincoln developed his oratory, logic, and his reputation for honesty. In 1843, he left his job in the legislature and practiced law full time, also remaining active in politics.

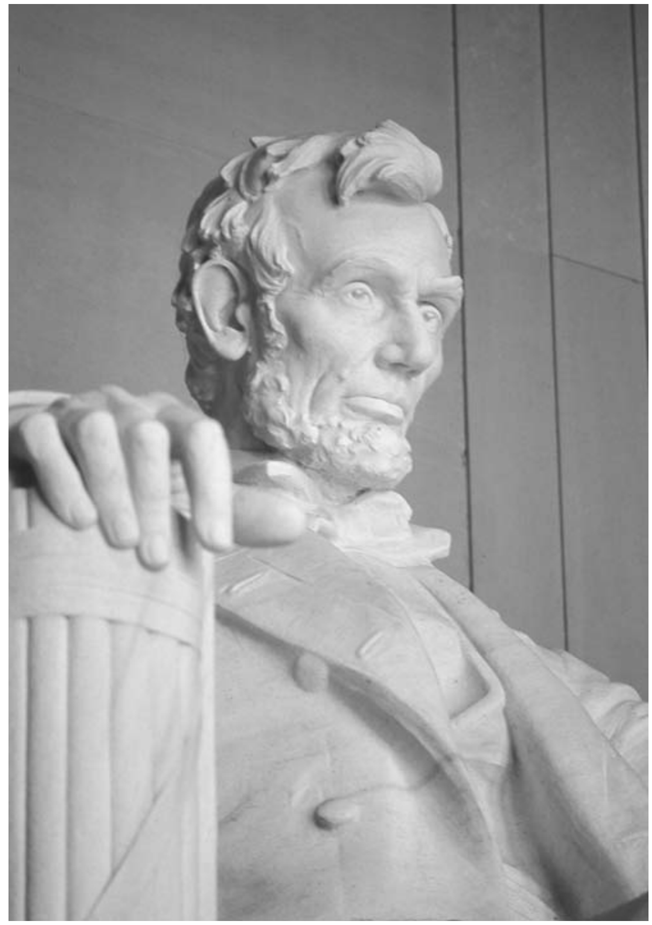
Lincoln first considered running for the U.S. Congress after the 1840 elections. There were three young Whig politicians who wanted the position. They came to an understanding that each would serve one term. When Lincoln's turn came in 1846, the incumbent decided to run for re-election. Lincoln, however, out-maneuvered him and won the nomination and election anyway.

During his one term in Congress, Lincoln voiced strong opposition to the MEXICAN-AMERICAN WAR, although he did vote for appropriations to support the soldiers in the field. While he opposed the war, he did recognize the legitimacy of Texas' earlier decision to secede from Mexico. In a speech opposing the war, he made the following statement:

> Any people anywhere, being inclined and having the power, have the right to rise up, and shake off the existing government, and form a new one that suits them better. This is a most valuable, a most sacred right—a right, which we hope and believe, is to liberate the world. Nor is this right confined to cases in which the whole people of an existing government, may choose to exercise it. Any portion of such people that can, may revolutionize, and make their own, of so much of the territory as they inhabit.

The war was popular in Lincoln's district, so his opposition hurt him politically. At the end of the war, he supported the Wilmot Proviso, which prohibited slavery in the territories ceded by Mexico. This was consistent with his longstanding view that the evils of slavery should not be allowed to expand into new territories.

In 1848, Lincoln campaigned for Zachary TAYLOR for president in hope of getting a job with his administration. However, when nothing of interest arose after the election, he returned home to resume his private practice.



Abraham Lincoln guided the abolition of slavery through the course of the American Civil War.

Return to politics. In 1854, Illinois Senator Stephen Douglas engineered a repeal of part of the Missouri Compromise to allow slavery in northern territories if those living in the territories supported it. Lincoln campaigned heavily against these measures and was therefore considered for the U.S. Senate that year. Senators were selected by the state legislature. The anti-slavery Whigs and anti-slavery Democrats had enough combined votes to defeat the pro-slavery candidate. While Lincoln was the favorite for the nomination, when the anti-slavery Democrats refused to support him, he had his supporters vote for the anti-slavery Democrat John Trumbull rather than let their division cause the seat to go to the pro-slavery candidate.

By 1856, it was clear that the Whig Party was dead. Lincoln joined the new Republican Party where he was briefly considered for the vice-presidential nomination. In 1858, Lincoln challenged Senator Douglas for his Senate seat. The two held a series of seven famous debates, primarily over the expansion of slavery. While Lincoln had more popular support, Douglas' support in the legislature allowed him to win re-election.

The debates, however, brought Lincoln to national prominence. In February 1860, he gave a speech at the Cooper Union in New York City to meet eastern leaders of the anti-slavery movement. His speech opposing expansion of slavery was wildly popular. A few months later, he received the Republican presidential nomination.

In the general election, the Democratic Party fractured: northern Democrats favored Stephen Douglas while southern Democrats supported John Breckenridge. The Constitutional Union Party nominated John Bell. Lincoln received the electoral votes of all free states except New Jersey and no slave state votes. But that was enough for an electoral majority.

Secession and Civil War. After his election but before he could take office, Southern states began to secede from the Union. In his inaugural address, Lincoln tried to appeal to the South to reconsider, that while he was opposed to the expansion of slavery into the territories, he would not interfere with it in the states: "I have no purpose, directly or indirectly, to interfere with the institution of slavery in the states where it exists. I believe I have no lawful right to do so, and I have no inclination to do so." He also made clear that he did not consider secession legal and that, unless it was withdrawn, civil war would be the result.

A few weeks later, Southern troops fired on federal soldiers who refused to surrender Fort Sumter in Charleston harbor. The nation was at war, the AMERICAN CIVIL WAR. Although President Lincoln had hoped to resolve the secession issue peacefully by appealing to the South, he showed no hesitation in prosecuting the war effort in both the North and the South.

Political leaders who opposed Lincoln's policies were frequently arrested and imprisoned without charges. Newspapers opposed to the war were closed by military order. For the first time income taxes were levied and a military draft was enacted to support the war effort, both considered constitutionally suspect at the time. As the war dragged on and casualties reached unprecedented numbers, he was frequently (falsely) criticized for being callous to the suffering and death caused by the war.

Since Lincoln's entire presidency was consumed by the war, it is impossible to say how his administration would have acted in peacetime. Lincoln's overriding concern throughout his presidency was keeping the Union intact, no matter the cost.

There were certain barriers he would not cross, however. Many supporters called for Lincoln to suspend the 1864 presidential elections. They feared he would lose re-election and the winner would make peace by permitting the Confederacy to secede. Despite dim prospects for re-election, Lincoln permitted the elections to proceed. The Republicans had lost heavily in the 1862 mid-term elections. For a time, it seemed he might not even receive his own party's nomination. However, by the fall of 1864, a string of Union victories convinced most that the war would soon be won, and Lincoln won all states still in the Union except for Delaware, New Jersey, and Kentucky.

The Emancipation Proclamation. Throughout the first years of the war, Northerners debated whether the war should be about slavery or simply to preserve the Union. Many Northerners either did not object to slavery or believed, as Lincoln had often said, that the federal government had no authority to do anything about it. Among these people was General George McClellan, commander of the Union Army. Four states loyal to the Union still permitted slavery. Many working-class Northerners also feared that emancipated slaves would migrate to northern cities and compete for their jobs.

For at least a year, Lincoln focused on preserving the Union and keeping slavery from becoming a war issue. When several generals proclaimed that they would free any slaves owned by rebels that fell into Union control, Lincoln quickly countermanded those orders and issued public statements that federal policy would protect slavery in those states where it was legal. The primary concern seemed to be keeping the four border states from seceding, which—with Maryland being one of them—would have left Washington, D.C., well behind enemy lines. During this same time, Lincoln advanced several proposals to pay those states to free their slaves gradually, and to be compensated for property losses as a result of emancipation. State leaders firmly rejected those proposals.

However, at least by early 1862, Lincoln was already considering forcible emancipation. He distributed a draft proclamation to his cabinet in July. Yet, he did not make the draft public based on Secretary of State William Seward's argument that because the Union had lost most of the major battles to that point, the Proclamation might be seen as an act of desperation by the losing side.

When, on September 17, 1862, the armies clashed at the battle of Antietam/Sharpsburg and the Confederacy was forced to withdraw, Lincoln used that victory to issue the Proclamation five days later. The Proclamation actually freed no slaves since it only applied to areas not under federal control. However, after the Proclamation was issued it became hard to imagine a conclusion to the war without universal emancipation.

The immediate effect of the measure was to keep the UNITED KINGDOM and FRANCE from supporting the Confederacy. Although both countries would have benefited from a weaker and more divided North American continent, strong anti-slavery sentiment in both countries prevented them from supporting the Confederacy, once the main war issue became slavery.

Some have argued that emancipation was designed to disrupt the Southern economy by encouraging slaves to flee northward. If this was a goal, it failed since slaves were unable to leave in any significant numbers. Some have also argued that it was meant to help solidify support for the war in the North. However, in some cases it had the opposite effect. Most Abolitionists already supported the war. On the other hand, emancipation upset many Northerners who supported the war, but believed the government had no authority over slavery. They saw the Proclamation as a move toward unconstitutional despotism. Indeed, the Proclamation was a factor in the draft riots in northern cities. Moreover, some of the heavy losses of the Republicans in the Congressional elections, held two months after the Proclamation was issued, may be attributed to the issuance of the Proclamation. There was also little support for the Proclamation in the west and among high-ranking democratic appointees in the officer corps of the Union Army.

The politically astute Lincoln was aware of the political consequences and acted in spite of them. By the end of the war, popular support favored Lincoln's emancipation policies and the states ratified the 13th Amendment, permanently outlawing slavery in the United States.

Plans for Reconstruction. As the war came to a close, many in the North wanted to punish the South for starting such a costly conflict. Proposals were made to confiscate all land from former slave-owners and anyone else who participated in the rebellion, to deny voting rights to former rebels, and to maintain military control of the South indefinitely. Lincoln, however, recognized that if the Union was to remain a democracy, the South had to be rebuilt and brought back into the fold as a full partner. He chose a Democrat from the Southern state of Tennessee, Andrew JOHNSON, as his vice president and sought a quick return of the former Confederate states back to their full status within the Union.

We will never know for certain the direction Lincoln's postwar policies would have taken. In particular, Lincoln's views on suffrage are somewhat in doubt. It is not known how the president, who had advocated colonization for freed slaves before the war, would have approached this issue in the wake of the war. Days after the South surrendered, Lincoln and his wife attended a play at Ford's Theater. There, an actor and Southern sympathizer named John Wilkes Booth shot the president in the head. Lincoln died later the following day, never having regained consciousness.

Johnson became president. Although he seemed to have shared some of Lincoln's views on Reconstruction, the radical Republicans in Congress were in no mood to work with a Southern Democrat. Congress overrode numerous vetoes. Military occupation of the South would remain for 12 years.

Legacy. The Civil War profoundly changed the nation. The federal government, empowered by the 14th and 15th Amendments, gained much more control over state governments. The abolition of slavery ended a major sectional rift, as well as provided a true birthright of freedom to all Americans. Although always controversial during his presidency, in death, Lincoln took on a heroic, if not a messianic status. He is consistently ranked as one of the greatest presidents in America's history.

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liquor

AN ALCOHOLIC BEVERAGE that is made through the process of distillation, liquor is the strongest of alcoholic beverages. Alcoholic beverages such as beer and wine are made using the process of brewing and fermentation, and as such they are not considered liquors. However, many distilled liquors may be made from other alcoholic beverages that contain a lower alcohol content. An example of this is brandy, a liquor made from wine.

Though fermented alcoholic drinks such as wine and beer are not liquors, their history is important to understanding the development of the industry of distilled alcoholic beverages. The presence of wine can be traced back to the Neolithic period. In the northern Zagros Mountains of Iran a vessel used to contain wine has been found in a building dating to ca. 5400–5000 B.C.E. By at least the third Dynasty (ca. 2700 B.C.E.) there was a royal winemaking industry in Egypt. Wine production was controlled by the nobility and most commonly enjoyed by the ruling class and in religious ceremonies. By 1700 B.C.E., the Greeks had developed a process that made locally produced wine viable. Because the drink was now open to the common people it was used on a more regular basis. People consumed the drink at social gatherings, as an integral part of daily meals, and wine was used as a medicine to treat pain.

The cultivation of vines was introduced to the Italian peninsula most likely by Greek settlers. Wine had become the Romans' most popular beverage by the 1st century B.C.E. It was not only a favorite drink, but wine was also a staple of the Roman economy. Wine became one of Rome's most important domestic industries and was an important source of government revenue. The making and selling of wine was not a privately owned industry; the government had control over production and trade. For example, Roman emperor Domitian, fearing the overproduction of wine, enforced a program that decreased the number of vineyards, thus stabilizing Rome's wine industry.

During the early Middle Ages, only monasteries had the stability, security, and economic resources to enable the large-scale production of wine. The monks were able to improve upon the wines of old and to produce high-quality beverages. Franciscan monks were also responsible for beginning the California wine industry: The monks brought their knowledge and history of winemaking to California when they established the first missions in the 1700s.

The process of distilling alcohol was first recorded by Abul Kasim, an Arabian physician, in the 10th century. Though the process had been known for some time, it was only introduced to Europe around 1250. Distilled alcoholic beverages, or liquors, did not become popular until the 1700s. The first liquors were produced and sold in small quantities by apothecaries, monks, and physicians, mainly as medicines.

Water of life. One French professor of medicine, Arnald of Villanova, referred to distilled spirits as *aqua vitae* or water of life and encouraged the use of wine and spirits for medicinal purposes. Spirits were used as protection against the plague, as painkillers, energy boosts, and as a way to keep healthy in damp and cold environments.

Soon drinking liquor primarily for medicinal purposes faded and consuming liquor as a social pastime became common. The tavern, an institution seen as early as the ancient Greeks, re-emerged in the towns and cities of Europe. These taverns became social centers where the drinking of liquor was not only tolerated but encouraged. One of the reasons for the success of the taverns was the increased variety of liquors: brandy, gin, rum, vodka, and whiskey. In these early times, a method for testing the strength of liquor was developed. A sample of the liquor being tested was mixed with an equal amount of gunpowder. This mixture was then burned and observed. If the flame produced from the burning was steady and blue it was considered proved. This is the origin of the term proof that is used today when discussing and classifying liquor. Later, more advanced tests were used to prove that liquor is made up of about 50 percent alcohol, which is considered 100 proof.

Different types of liquors are achieved by distilling other organic materials. Brandy, one of the first liquors to be developed, is produced by the distillation of grape wine and is then matured by aging in wooden casks. Gin is distilled from grain and gains its flavor predominantly from the addition of juniper berries to the distillation process. Rum is made by distilling various fermented cane sugar products, the most common being molasses or sugar combined with water. Vodka is usually distilled from a wheat mash. Whiskey, whose name is derived from terms meaning "water of life," is distilled from the fermented mash of cereal grains.

As time progressed new advances in technology allowed liquors to be produced in mass quantities. Because liquor could now be made in such large quantities and fairly cheaply it could be sold to a large market of people. The drinking of liquor became excessively popular and formed a large market, a market ripe for capitalist producers. With the growth of the liquor industry came profits, and with these profits came taxes from governments who wished to control the growing problems associated with the overindulgence of alcohol, and to have a part in the money being made.

Liquor and taxes. In 1736, England's government passed the Gin Act, making the favored liquor prohibitively expensive. There was a high duty placed on gin per gallon, and the government raised the cost of a spirit license. Many opposed the act, including some people in high government positions who feared the act could not be enforced against the will of the common people. This fear was accurate. The Gin Act of 1736 led to riots and the gin trade went underground. Within the six years that the act was in place, only two gin licenses were sold, yet production of gin increased 50 percent. As a result of the widespread and open breaking of the law, in 1743 the government loosened the restrictions.

In 1791 the UNITED STATES government placed an extremely high tax on all whiskey sold in the country. This angered many private-farm owners, because whiskey was a commodity produced and sold by the citizens themselves, and accounted for much of their profits. By 1794, the resistance had reached such a point that the national government chose to get involved. President George WASHINGTON ordered a militia to be formed and was able to put down the rebellion. This was the first time that a militia was called into federal service, and the incident entered the history books as the Whiskey Rebellion.

As time progressed and the consumption of alcohol increased, worries began to develop surrounding the morals of drinking alcohol. In the United States by the 1820s, each person was drinking, on average, seven gallons of pure alcohol per year. A growing group of religious and political leaders were coming to see drunkenness as a national curse. Many states passed laws to restrict the consumption of alcohol but during the AMERICAN CIVIL WAR, from 1861 to 1865, many of these laws were repealed or ignored. When the Civil War ended there were more than 100,000 saloons in the country. Because there was so much competition in the saloon business entrepreneurs began to offer other services as well. To lure customers, saloons began to offer gambling and prostitution along with alcohol, feeding an increase in public unruliness and violence.

American Prohibition. By the early 1900s, millions of U.S. citizens shared a hostility toward saloons and came to think of the consumption of liquor as a threat to society. The Anti-Saloon League of America (ASL) was formed in Ohio and was able to lead such people into political action, helping to back congressional members who supported Prohibition. By 1917, members of Congress who supported Prohibition outnumbered those who opposed it by more than two-to-one. Using this majority, supporters of Prohibition pushed for an amendment to the Constitution that would ban the production and sale of liquor except for religious ceremonies and medicinal purposes. In January 1919, the 18th Amendment to the Constitution was ratified prohibiting the manufacture and sale of intoxicating beverages in the United States.

America was not the only country to try to repress the sale of liquor. Most Protestant nations had come to view the drinking of alcohol as a social sin, and the British government passed laws that made it illegal to sell alcoholic drinks except during a few early-evening hours. The citizens of towns and villages in Scotland had the option to vote out drinking establishments. In SWEDEN, the movement against liquor had been strong since the 1830s. The government was astute in realizing one of the problems with the abundance of liquor was that there was such a high profit in it for the private producers. In 1922, Sweden took care of this motivation to sell liquor by nationalizing the production and sale of it. Sweden then went a step further by restricting sales of liquor to one liter per family per week. CANADA also had several laws passed restricting the use of alcohol.

There were many unintended side effects of Prohibition in the United States. A new UNDERGROUND ECONOMY was created and tremendous profits were made by smuggling and selling liquor. Bootlegging, the practice of illegally transporting or selling intoxicating liquors, became a profitable business: Prohibition laws made the supply of liquor decrease and yet the demand still remained. Because there was no equilibrium between supply and demand, high prices could be charged. Speakeasies, places where people gathered to imbibe the illegal beverages, began to pop up throughout the nation. Entrepreneurial salesmen started to sell garter flasks, hollow heels and books where illegal liquor could be hidden.

Liquor produced in Canada could be snuck in to the United States fairly easily. Canada had repealed its laws against liquor before Prohibition was enacted in the United States. A major reason for this was economic pressures: Canada recognized the abundance of economic opportunities stemming from selling liquor to the "dry" United States.

Many people, including those who had previously been law-abiding citizens, took up home-brewing to make a profit. As in the case of Britain's Gin Act of 1736, officials learned that it was impossible to fully enforce laws that went against the will of the common people.

Another side effect of Prohibition in the United States was the emergence of organized crime. GANGSTERS such as Al Capone took advantage of the market created by Prohibition to make vast fortunes. Many gangsters cornered the market on bootlegged liquor and the facilities that served it before branching out into prostitution, drugs, and racketeering.

Finally, by the late 1920s most citizens of the United States realized Prohibition was not working and, in fact, was probably causing more harm than good. Many other countries that had laws restricting liquor production had lessened the restrictions and repealed some of their laws. In the early years of the Great DEPRESSION, an economic, rather than moral argument was brought to bear: It was argued that Prohibition limited the number of jobs to be had, and decreased the amount of revenue the government and individuals could be collecting. Prohibition came to be seen as a contributor to economic stagnation. Other arguments against Prohibition stressed that the government was encroaching on the tradition of individual freedom, a cornerstone of the American capitalist economic system.

The 21st Amendment to the Constitution, proposed in February 1933, gave control of the liquor traffic back to the individual states. By December, a majority of the states had ratified the Amendment and it became part of the Constitution. Prohibition had come to an end.

Prohibition and capitalism. Though Prohibition in the United States was a failure it did have some unplanned positive results to many capitalist ventures. The Seagram Company, Ltd., is one capitalist company, as an example, that owes some of its success from profits made during Prohibition. Today, Seagram is the leading manufacturer and distributor of distilled liquor and fruit drinks. The company sells more than $2 billion worth of liquor each year and it has 600 brands marketed in more than 175 countries.

The Seagram Company's origins can be traced back to two separate Canadian liquor companies. One company was owned by Joseph Emm Seagram who, in 1883, purchased a distillery in Waterloo, Ontario. His company was named Joseph E. Seagram & Sons and, by 1900, was one of the leading whiskey distillers in Canada. In Montreal, another capitalist had begun his career in the beverage industry. Samuel Bronfman purchased the Bonaventure Liquor Store Co. in 1916. Bronfman and his brother joined together to form Distillers Corporation Limited in 1924. This move allowed them to operate their own distillery. The Bronfman brothers benefited greatly by Prohibition in the United States during the 1920s: They were able to smuggle a great amount of liquor and earn large profits. Only in 1934, after Prohibition ended, were members of the Bronfman family caught by Canadian officials for smuggling, but even then, they were not convicted.

In 1928, the Bronfman's Distillers Corporation Limited purchased Joseph E. Seagram & Sons, and the new company was renamed Distiller Corporation-Seagrams Limited. The new company focused its marketing campaigns toward highlighting its smooth, blended whiskeys. By the 1930s, the Distillers Corporation-Seagrams had grown to such a size it needed to expand. Several U.S. distillers were bought by the company. In 1939, a new type of whiskey was created by Samuel Bronfman named Crown Royal whiskey. It was named in honor of the British royal family's visit to Canada that same year.

The Distillers Corporation-Seagrams continued its growth. In the 1940s, the corporation purchased wine, champagne, and rum companies. As the corporation grew so did its interests. In the 1950s, the company began to branch out by purchasing different types of businesses such as shopping malls, supermarkets, and petrochemical enterprises. In 1975, the corporation was renamed as The Seagram Company. Continuing its growth, Seagram bought Tropicana in 1988 and Dole's juice business in 1995. Seagram then merged the two businesses and formed Tropicana Juice Beverages.

To further spread out its interests, in 1994 Seagram bought 80 percent of Universal Studios, then known as MCA. In 1997, the company bought out USA Networks and went into a joint venture with another company concerning USA Networks, retaining a large stake in the venture. In recent years, The Seagram Company has had some difficulties resulting from mergers yet it still remains a major player in the business field. The Bronfman family still operates one of the largest family-controlled capital pools in the non-Arab world. The Seagram Company's success is a good example of how a small business, in this case a liquor business formed because of Prohibition, can grow to be a large force in a capitalist economy.

Seagram is not the only liquor business that has flourished in a capitalist economy. The Brown-Forman Corporation was founded in Louisville, Kentucky, in 1870. In 2002, it employed 6,550 people and earned $1.6 billion in sales. Another example of the capitalist economic system at work can be found in the story of Distillers Company. Based in Edinburgh, Scotland, it was once one of the most powerful and important companies in the UNITED KINGDOM. The company controlled almost 75 percent of the world's market in scotch whiskey. The company ran into problems, though, as competition became more aggressive and its markets began to shrink. In 1986, the company could no longer continue running independently and was purchased by Guinness.

A capitalist economy highly favors competition. This characteristic encourages innovations and benefits the consumer by keeping prices down. This characteristic also makes businesses highly motivated to make their products as visible as they can in the market. This is why advertising plays such a large role in the success of any business. When a consumer is faced with a choice between two products that are of equal price and quality the consumer usually chooses the product that they are most acquainted with. The importance of advertising is at the center of an ongoing struggle between hard-liquor companies and the broadcast media.

Selling liquor. In the modern United States, a debate continues over whether or not hard liquor should be advertised in all areas of the broadcast media. The debate involves moral issues and what modern-day American society deems acceptable. In many states, it is illegal for radio and television stations to have liquor advertised on their programs. Opponents of advertising explain advertisements for liquor would encourage underage drinkers to break the law. Proponents of liquor advertising view the question another way. They feel that liquor is a legally produced product and should be allowed to advertise as any other common product. Many point out that malt beverages, such as beer, are the most common alcoholic beverages consumed by underage drinkers. Yet, malt beverages are allowed to advertise in the broadcast media.

Many liquor producers are getting creative to circumvent this debate, introducing malt beverages that carry their brand and logo. Most distillers deny that the introduction of these new products is a plan for the name-brand recognition to carry over to the distilled liquors and boost sales. However, most do admit that this would be a pleasant side benefit.

The sale of liquor has generated billions of dollars for governments around the world. Throughout history, governments have raised money by taxing the sale of liquor. In the United States, almost half the price of an average bottle of liquor is taxes put in place on the federal, state, and local levels. Though such a huge sum of money is made by the sale of liquor, most governments regulate how it is distributed and sold. Studies have shown that alcohol can distort a person's thinking and reasoning skills, and in some cases lead to violence. Many governments impose taxes on liquor hoping to reduce and control alcohol abuse. Age limits are also enforced hoping to curtail the drinking of alcoholic beverages by the young. Most experts agree that young people are less able to moderate their drinking and are more vulnerable to the harmful effects that can occur from the overindulgence of alcohol.

In the American capitalist economy there are many privately owned businesses that deal with liquor. These businesses are highly regulated by both state and local governments, including types of retail outlets, hours of sale, and minimum age for consumers. In some states, and in certain nations, the government actually operates retail liquor stores. Regulations on the liquor industry also come from the federal government under the jurisdiction of the Bureau of Alcohol, Tobacco, and Firearms. The bureau is in charge of controlling the production, labeling, and advertising of alcohol products. The agency also regulates the relationships between producers, wholesalers, and retailers who deal with alcohol, and is in charge of protecting consumers against alcohol products that may be impure, incorrectly labeled, or have some other irregularity.

The largest producers of liquor in the world are the United States, the United Kingdom, Canada, RUSSIA, and JAPAN. All of these countries, excluding Russia, export a great deal of the liquor they produce. Because of the great varieties of alcohol concentrations in different liquors it is hard to determine an accurate amount of alcohol consumed in the world. One survey, conducted by the Industry of Distilled Drinks, looked at 45 countries and their relationships with liquor. It was found that liquor is only responsible for about one fourth of the alcohol consumed. The United States was ranked 22nd in the total alcohol consumed per capita and 11th for liquor consumption. The nations with the highest rates of liquor consumed per capita in 1991 were listed as GERMANY, HUNGARY, POLAND, Czechoslovakia (before its breakup), and Bulgaria. The countries with the lowest consumption were TURKEY, ARGENTINA, ITALY, MEXICO, and PORTUGAL.

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Lithuania

THE REPUBLIC OF LITHUANIA has a population of approximately 3.6 million (2002) and borders Belarus, LATVIA, the Kaliningrad portion of RUSSIA and the Baltic Sea. It has a parliamentary democracy, and is divided into 10 counties. Lithuania declared its independence from the SOVIET UNION on March 11, 1990, but it was not until September 6, 1991, that the Soviet Union officially recognized its secession.

In 2001, Lithuania's GROSS DOMESTIC PRODUCT (GDP) was approximately $27.4 billion. During the same year, its GDP real growth rate was 4.8 percent, due in part to Lithuania's membership in the WORLD TRADE ORGANIZATION (WTO). Lithuania is also set for membership in the EUROPEAN UNION (EU) and the North Atlantic Treaty Organization (NATO) in 2004. The country's largest industries are metal-cutting machine tools, electric motors, television sets, refrigerators freezers, petroleum-refining, shipbuilding, furniture-making, and textiles.

Lithuania's largest trading partner is Russia. Due to the country's economic dependency on Russia, Lithuania felt the full force of the Russian economic downturn in 1998. Lithuania has bounced back well from the recession and is in a position to potentially become a growing service-based economy.

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Lloyd, Henry Demarest (1847–1903)

DRAWING ATTENTION TO the activities of the industrial elite, and in particular, to the threat that MONOPOLY posed to the welfare of the nation, Henry Demarest Lloyd gained fame as a crusader for justice during the late 19th century. Born in New York City, he attended Columbia University and Law School. He worked at various jobs that allowed him to develop the skills he would use in his reform efforts.

As a field agent of the American Free-Trade Association, he canvassed the public, distributed pamphlets, wrote newspaper articles and advertisements, and became an outspoken advocate of tariff reform. In the early 1870s, he became active in a movement to lower the dues and increase the hours of the New York public libraries, and worked against the corruption of Tammany Hall leader "Boss" Tweed. He then moved to Chicago and joined the staff of the *Chicago Tribune*, where he eventually became chief editorial writer.

After more than a decade at the newspaper, however, Lloyd ultimately decided to leave to independently pursue writing and research. His article "The Story of a Great Monopoly" appeared in *The Atlantic Monthly* magazine in 1881. Lloyd's analysis of the business practices of Standard Oil and its collusion with the Pennsylvania Railroad became a model of this type of journalistic exposé. The article, the first of a series critiquing laissez-faire capitalism and the dubious ethics of the "robber barons" of the Gilded Age, gained national acclaim and that issue of the magazine went through six reprints.

Lloyd described the dangers of such a concentration of wealth and power, arguing, "In less than the ordinary span of a life-time, our railroads have brought upon us the worst labor disturbance, the greatest of monopolies, and the most formidable combination of money and brains that ever overshadow a state . . . Americans as they are, they ride over the people like a juggernaut to gain their ends."

Lloyd was notable for his willingness to take up any cause, to attempt to right any wrong. He and his wife Jessie opened their home in Winnetka, Illinois, to a varied group of reformers, intellectuals, and artists. In 1886, Lloyd attended the trial of eight anarchists accused of setting off a bomb during a labor rally in Haymarket Square in Chicago. The trial was one of the most controversial of the era, and after the defendants were sentenced to death Lloyd actively campaigned to the governor for clemency for the condemned men. He also became an outspoken advocate of trade unionism, believing that it was one of the only defenses against the power of big business. Lloyd gave speeches at rallies for the Eight Hour Movement, and wrote about the abuses suffered by locked-out coal miners in Spring Valley, Illinois. He became involved in the settlement house work of Jane Addams at Hull House, and also worked to bring the message of the rural Populist Party to urban audiences, particularly workers.

Yet even as he pursued these disparate projects, Lloyd remained fascinated by the problem of monopoly. He returned to the subject in a book-length examination of Standard Oil, *Wealth Against Commonwealth*, published in 1894. The 600-page tome used four case-histories of the victims of Rockefeller's companies, including a poor widow, an independent businessman, and an old inventor. Critics charged that his prose was sentimental and moralistic, but Lloyd managed to rally his readers against the "oil trust" that raised the price of commodities.

Lloyd's style of writing inspired others to draw the public's attention to scandal and corruption in business and government with the hope of correcting abuses. For this reason, he has been called "the first of the muckrakers," a term given to Progressive Era journalist-reformers by Theodore ROOSEVELT. In some ways, he was slightly ahead of his time: the debate over trusts in the American economy that he prompted would continue well into the 20th century. Lloyd died on September 17, 1903, while organizing another campaign against monopoly, this time advocating municipal ownership of the Chicago Streetcar Company.

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Locke, John (1632–1704)

THE ELDEST SON OF a landowner, John Locke's life, as well as much of his philosophy, parallels the rise of the middle class. He attended Oxford University, where he also lectured in Greek and moral philosophy. He studied medicine on his own initiative and became interested in politics and economics through a friendship with Anthony Ashley Cooper, who later became the first Earl of Shaftesbury.

Locke entered civil service, and was soon spending more time in London than in Oxford. Though he was not associated with the business world in any way, he became acquainted with practical matters of trade, and was appointed as secretary to the Council of Trade and Plantations, and eventually commissioner for promoting colonial trade. As a cautious supporter of the opposition to King James II, Locke was deprived of his academic appointment in 1683, and was briefly driven into exile. He found refuge in Holland until William and Mary had assumed the crown following the Revolution of 1688–89. By the time Locke returned to England, he was already an established scholar. He spent the remaining years of his life writing, including the *Essay Concerning Human Understanding* (1690) and *Two Treatises on Government* (1690) while holding minor government positions and occasionally advising political leaders. He was responsible for organizing the Board of Trade in 1695 and served as a commissioner of the Board until 1700.

Locke is generally considered a major figure in the history of political thought and political theory because his ideas paved the way for the ascendancy of political liberalism, and modern representative government. However, the realization of self-interest as the motivating force of conduct, which is inherent in his entire political philosophy, also played a profound role in the breakdown of state regulation of economic life and the development of modern economic doctrine. The decline of state intervention in the economy went hand-in-hand with the erosion of the monopolistic interests of MERCANTILISM and the GROWTH of competition.

In the history of economic thought, the labor theory of property that Locke developed in his masterpiece *Two Treatises* provided a philosophical foundation for the classical labor theory of value, as well as more generally for the conditions of the new economy. Interestingly, by anchoring property in labor but upholding unlimited accumulation, Locke's theory of property appealed not only to the rising capitalist class of his time, but to socialists of a later age as well. He made some of his most notable contributions to monetary theory with *Some Consideration of the Consequences of the Lowering of Interest and Raising the Value of Money* (1692) and *Further Considerations concerning Raising the Value of Money* (1695).

Whereas 17th-century writers had usually addressed themselves exclusively to practical questions and policy proposals, Locke attempted to formulate the general principles of value and price. This very modern approach to economic questions, that had significant implications for the development of contemporary thought, provides an interesting and stark contrast to his defense of mercantilism and failure to recognize its underlying fallacy.

During Locke's time, the field of economics had no name or position of its own among scientific disciplines, but there did exist a substantial literature, and it has been estimated that his own library contained at least 115 titles on economics, including William Petty's *Treatise of Taxes and Contributions*. After Lord Ashley was appointed chancellor of the Exchequer, Locke first offered his views about interest and monetary policy in a memorandum in 1668. The memorandum was eventually published in revised and expanded form more than 20 years later as *Considerations* when the issue of a reduction in the legal maximum interest rate again came under debate.

Locke's position was that any statute contrary to natural law was inappropriate, and so natural law, not laws made by humans, should determine interest rates and monetary value. Moreover, he argued that interest-rate legislation would be evaded by individuals unwilling to give up the opportunity for gain. This process would drive the effective rate of interest higher than the market-determined rate, cause shortages of loanable funds, hamper trade, and redistribute wealth in unmerited ways. Though written to address the specific ideas suggested by the title, the pamphlet dealt with broader issues such as the nature and function of money and a derivation of the implications of the quantity theory of money as a special case of the demand and supply theory of price determination. Though Locke's arguments failed to convince Parliament to defeat the bill to lower the legal rate of interest from 6 percent to 4 percent, his first economic essay did become a classic work in the development of monetary thought.

Locke applied the theory of price determination that he developed in the *Considerations* to all exchangeable GOODS, including MONEY, although he regarded money as a special good. The model, though primitive by today's standards, was innovative for his own time and was reasonably accurate in predicting qualitative effects on price in response to various types of change. Locke also demonstrated that quantity demanded was negatively related to price and quantity supplied was positively related to price. He formulated the concept of an EQUILIBRIUM price, and in fact used the term equilibrium in certain contexts consistent with modern usage.

Locke recognized two functions of money: as a measure of value and as a claim to goods. He believed that the latter function required gold and silver, at least for international transactions, because of the generally agreed-upon intrinsic value of precious metals. His monetary economics generally focused on the ratio of a country's monetary stock to its volume of trade. Locke argued that comparisons of this ratio between countries determined international price levels. Contrary to the typical mercantilist preference for low prices as a stimulus to exports, Locke warned of the danger of prices at home falling below those abroad.

Consequently, his views concerning monetary requirements for international purposes represented the extreme mercantilist position that a favorable balance of trade was necessary to avoid the dire effects on trade, agriculture, employment, wages, terms of trade, and population movements that a relative drop in money stock would cause. He is credited, along with Petty, with the introduction of the concept of velocity of circulation to what is now called the quantity theory of money. His formulation of the theory was much more refined than it had been previously, even though it led him to the fallacious and inconsistent conclusion concerning the continuous inflow of specie. The fact that one of the best minds of the 17th century failed to see that a country is unable to accumulate treasure indefinitely may be due to his belief that the world's money stock had risen significantly and, as a consequence, home prices had fallen substantially below that of other countries. Eventually Locke's argument concerning specie flows and the role of trade was rebutted by David HUME's description of the automatic specie-flow mechanism.

Locke's justification of private property originated in the natural-rights doctrine. His fundamental premise was that each person is endowed at birth with property in his/her person. As such, the person is entitled to the product of his/her labor, and by applying that labor to the earth, the yield of the earth becomes the individual's property as well. In Locke's view, virtually the whole value of the products of the soil were due to labor, the remainder being a gift from nature. Implicitly, there was also the view that man has a duty to be industrious, and industry, in turn, would produce private property. However, even though in a state of nature, limits to accumulation existed, and the introduction of commodities of greater and greater durability, and ultimately, the introduction of money made the unlimited accumulation of property possible.

The same introduction of money which provided a store of value to prevent waste, also made greater and greater inequality possible. Locke did not resolve the issue of wealth inequality with the equal rights given by nature. Moreover, he avoided a direct admission that a conflict could exist between the law of nature and what humankind arranged by consent. He may have had in mind that the government should moderate such inequality, but he did not make that explicit. Locke's defense of private property was not intended to be a deliberate attack on landed interests, but taken as part of his entire philosophy, the effect was to undermine the claim of landowners to special status. This perspective later helped establish acceptance of private property as an institution of capitalism.

Later writers relied upon a utilitarian-based argument to justify private property rather than the labor theory-based argument developed by Locke. However, Locke's conception of the guarantee of liberty in society, secured by the requirement that government be established by the consent of the people, and designed for the good of the people, had an important impact on the development of later economic thought, particularly through the influences of Adam SMITH and Francois QUESNAY.

Locke did not specify what constituted the good of the people, and so did not tie his political philosophy to an economic structure. Had he done so, his ideas likely would not have such long-lasting significance since his own general acceptance of mercantilist economic views certainly formed a clear contrast with the LAISSEZ-FAIRE position of Smith. To Smith, Locke's natural liberty with statements about the rights of individuals against government and his own concept of laissez-faire were inseparable. He constructed his *Wealth of Nations* on the premise that the pursuit of self-interest guided by the invisible hand of competition would produce the good of the people, whereas government intervention in the economic arena would inhibit it.

The equal right of all to pursue self-interest, but not to infringe upon the rights of others incorporated by Smith throughout the *Wealth of Nations* was very similar to Locke's conception. Moreover, since government alone could strip persons of their property, the sanctity of private property became yet another argument in favor of laissez-faire economic policy. Hence, the virtues of Locke's natural law were transformed into the requisites of capitalism.

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Lucas, Robert E., Jr. (1937–)

AT ROBERT LUCAS' Nobel Prize ceremony in October 1995, the honors committee praised his advancement of the field of world economy. "He is the economist who has had the greatest influence on microeconomic research since 1970," read the citation issued by the Swedish Academy of Sciences. The Nobel award honored, chiefly, his work in developing and applying the hypothesis of rational expectations, thus transforming MICROECONOMIC analysis and deepening the world's understanding of economic policy.

This rational-expectation hypothesis formulated by Lucas earlier in his career is the assumption that people make use of the best available information about government policy when making their decisions, rather than committing the systematic errors assumed by earlier theories.

The eldest child born to Robert Emerson and Jane Templeton Lucas, he enjoyed a quiet childhood in Yakima, Washington. Lucas spent his earliest years helping out in his parents' business, a popular ice cream shop near the center of town. The shop failed in the 1938–39 economic downturn and the Lucases relocated to Seattle where both parents took up new occupations.

To keep his family fed, Lucas' father grabbed whatever job he could find. A man of high principles, ambition, and intelligence, he eventually became president of the Lewis Refrigeration Company, where he began only a few years earlier as a mechanic. "I remember many technical and managerial discussions with him," Lucas recalls of his father. "When I took calculus in high school he enlisted my help on a refrigeration design problem . . . and actually used my calculations. It was my first taste of real applied mathematics."

In 1955, Lucas' excellent high school grades earned him a scholarship to the University of Chicago. He graduated with a degree in history, intent to pursue his studies on a graduate level. But, after receiving a Woodrow Wilson Doctoral Fellowship that took him to the University of California to study classical history, he soon became aware of, and eager to learn more of the history of economics. Ancient Greeks and Romans put aside, Lucas pursued a graduate degree in an entirely new career.

Returning to Chicago, he immersed himself in economics, mathematics, and calculus. By 1963, Lucas' post-graduate work caught the attention of Pittsburgh's Carnegie Mellon Institute, which offered him a faculty position. It was at Carnegie that Lucas became interested in dynamics and the formation of expectations. He focused his attention on modern general equilibrium, functional analysis, and the probability theory. During the following years, as he returned to his academic roots in Chicago, he authored a number of academic writings explaining his findings and theories.

In 1980, Lucas was named the John Dewey Distinguished Service Professor at the University of Chicago.

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Luxembourg

A TINY COUNTRY (less than 1,000 square miles) with its roots in the Middle Ages, Luxemburg's history is closely tied up with that of the neighboring Low Countries. In 1830, the duchy became officially part of the newly formed country of BELGIUM until an 1839 international conference declared it to be an independent, and perpetually neutral nation in its own right.

Despite its independence, Luxemburg did share in the Belgian economic boom of the 19th century and was among the first European countries to participate in the INDUSTRIAL REVOLUTION, building a steel industry on the basis of considerable coal reserves discovered in 1850. Luxembourg joined the Prussian Zollverein and was able to make use of rapidly expanding railway systems throughout central Europe. Most of its steel exports were handled by a single company, ARBED (Acieries Réunies de Burbach-Eich-Dudelange), which is still the largest employer in the country.

Because of its small size but wide economic interests, Luxemburg has been active in working toward European unification. In 1921, it worked with Belgium and the NETHERLANDS to form the economic union Benelux. Luxembourg was a founding member of the European Coal and Steel Community, a precursor to the EUROPEAN UNION (EU), which was headquartered in Luxemburg's capital. Many important institutions of the EU are, as of 2003, located in Luxemburg, including the European Investment Bank, the European Court of Justice, the European Court of Auditors, the Nuclear Safety Administration, and the General Secretariat of the European Parliament.

Since the 1950s, the government has been actively courting new businesses by providing tax and other incentives for companies willing to relocate there. There has been moderate success, especially in the satellite and hydro-electric fields. Despite these efforts to promote industry, however, the modern economy of Luxemburg is shifting toward the service sector. For example, the country is home to over 220 banks and 1,300 investment funds and provides a host of ancillary investment services. With a population of nearly a half-million people, Luxembourg had a GROSS DOMESTIC PRODUCT (GDP) of $20 billion in 2002.

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Luxemburg, Rosa (1871–1919)

A POLISH-BORN COMMUNIST THEORIST and revolutionary, Rosa Luxemburg was born the youngest child of a lower middle-class Jewish family in Russian-occupied POLAND. She became involved in activism against the Russian Empire while still in her teens; in 1889 she was forced to flee RUSSIA at the age of 18 for fear of imprisonment for her revolutionary activities. As did many of her contemporaries, she fled abroad, joining a number of other notable exiles committed to revolutionary change in Russia.

She went first to Zurich, Switzerland, where she studied politics and law, receiving her doctorate in 1898 with a dissertation on the industrial development of Poland. There she also became involved in the international socialist movement, coming to know Russian radical intellectuals such as Georgi Plekhanov. In Zurich, the basic form of her later theoretical work began to take shape, as she argued for an internationalist form of SOCIALISM, charging that the nationalism favored by many

Russian and Polish radicals remained mired in harmful bourgeois attitudes. With a group of like-minded socialists she founded the Polish Social Democratic Party (later the foundation of the Polish Communist Party).

Luxemburg married a German in 1898 to gain German citizenship, and moved to Berlin, the center of European socialist politics at the time. She entered into the divisive debates then raging within the German Social Democratic Party (SPD), championing Marxist orthodoxy alongside Karl Kautsky against the revisionist challenge mounted by Eduard Bernstein. Kautsky and Luxemburg held that revisionist socialism (working within the parliamentary system to affect change) was ineffectual and only true proletarian revolution could achieve the transformation of society from capitalist to socialist.

The outbreak of the Russian revolution of 1905 convinced her that advanced industrial countries like GERMANY were no longer the only possible locations for the beginning of a proletarian revolution, and that the relatively undeveloped Russian Empire was ripe for change. She went to Poland to agitate for revolution, but was jailed in the Tsar's successful crackdown. While imprisoned, she drew upon her experience to refine her theoretical approach, stressing the value of the mass strike as the main weapon of the proletariat. She returned to Berlin after her release in 1906 and taught at SPD schools until the outbreak of WORLD WAR I in 1914.

When the SPD cast its lot with the German government at the start of the war, the anti-militarist, internationalist Luxemburg openly split with the party. With Karl Liebknecht, she founded an opposition group in 1916, calling for an end to the war through revolution and the establishment of a proletarian state in the aftermath. The organization was named the Spartakusbund after the Roman slave who broke his chains and led an insurrection for freedom. This Spartacus League did not achieve much success during the war and Luxemburg once again was imprisoned.

Upon her release in November 1918, during the chaos of the German revolutionary movements, she quickly sought to mobilize the workers of Berlin to create a leftist government for Germany. With Liebknecht, she formed the German Communist Party shortly thereafter. On January 15, 1919, both Luxemburg and Liebknecht were arrested. While the exact details of what followed remain unknown, Liebknecht and Luxemburg were shot sometime shortly thereafter by troops of the paramilitary Freikorps and dumped into the Spree river.

Luxemburg's principal works include *Reform or Revolution* (1889), a staunch defense of orthodox Marxism; *The Mass Strike, the Political Party, and Trade Unions* (1906), her statement of the crucial place of mass strikes in political action; *The Accumulation of Capital* (1913), her major theoretical work on the failures of capitalism; *The Crisis in German Social Democracy* (1916), a statement of principles for what became the Spartacus League; and *The Russian Revolution* (1917), a work highly critical of the nationalist and dictatorial tendencies she saw in the Bolshevik Revolution in Russia.

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MacArthur, Douglas (1880–1964)

SON OF U.S. ARMY GENERAL Arthur MacArthur, Douglas MacArthur grew up on military posts around the world. Both his father's success and his mother's ambition sent him to the U.S. Military Academy at West Point, where he graduated in 1903 at the top of his class and began a career that would span half a century.

His combat experience in WORLD WAR I earned him recognition for his bravery and leadership, and his postwar revitalization of the near-moribund academy established his administrative competence. He served as chief of staff under both Herbert HOOVER and Franklin ROOSEVELT, becoming quite controversial for his decision to destroy the shantytown housing of the Bonus Expeditionary Force. Veterans of World War I were camped in Washington, D.C., attempting to get a promised bonus early and MacArthur had them rousted. He survived the controversy, moving on to become military advisor to the Philippine Commonwealth before retiring in 1937.

After Pearl Harbor, MacArthur returned to active duty, escaping the Philippines before they fell, then leading troops in the slow drive across the southwest Pacific to Japan. At war's end he presided over the Japanese surrender ceremonies aboard the battleship *Missouri* in Tokyo Bay.

With the war ended, MacArthur headed the occupation force that rebuilt Japan. Already a legend with over 30 years' service, MacArthur made probably his most lasting contribution to history during his five-and-a-half years as Supreme Commander of the Allied Powers in Japan, when he oversaw the development of capitalism in the conquered nation.

Japan's surrender was unconditional, leaving the Japanese in no position to negotiate their reconstruction. MacArthur was charismatic and willing to rule by fiat. Although theoretically subordinate to the allied command, MacArthur ran Japan pretty much as he chose. It was a one-of-a-kind, not-to-be-repeated episode in which MacArthur's power was likened to an American Caesar, as some historians noted later.

Planning for the occupation began as early as the immediate aftermath of the Japanese attacks of December 1941. The Potsdam Proclamation of July 1945, spelled out general objectives to demilitarize and democratize Japan, but it left the details to the on-scene commander, MacArthur. And MacArthur delegated to his extensive staff. He largely rejected the experts on Japan, preferring his own people, and much of the work that those people did rested on their earlier experience in the NEW DEAL environment. Land reform did away with tenancy, labor was organized, and the constitution outlawing war also provided quite progressive civil rights, some of which went beyond those enjoyed in the United States. MacArthur's staff reorganized the schools, rewrote the textbooks, and rewrote the laws.

Making this happen was a staff of 5,000–6,000 people, moving in and out as tours began and ended. Mostly, they worked in Tokyo, but there were offices throughout Japan. Tens of thousands of bilingual Japanese served in support functions. And there was the backdrop of a military presence, more than 100,000 men. And, above all, MacArthur's radical remaking of Japan rested on the revival of Japanese prewar traditions of democracy and the continuance of the Japanese bureaucracy from the central ministries to the village administrators. Consistently, the defeated either tolerated or actively accepted MacArthur's vision and made it happen.

During MacArthur's remaking of Japan, his authority rivaled, and in some instances exceeded, that of the emperor. He certainly had stronger authority in Japan than the governments he represented and the government of the defeated enemy. Through his staff, he implemented policies and processes that brought devastated Japan from the ashes to a leading position in the world's economy. He designed and his staff wrote the constitution that brought democratic government to Japan. He preserved the emperor, sheltered him from the war crimes trials, and defined the nature of Japan's democracy. He made Japan a demilitarized, non-aggressive, non-threat to its neighbors.

MacArthur went on to command the UNITED NATIONS forces in South KOREA, to challenge President Harry TRUMAN's limits on that war, and to get fired in 1951 for insubordination. MacArthur returned to America a hero and presidential contender or at least pretender. The Korean War dragged-on until the inconclusive armistice of 1953.

A brilliant soldier and administrator, MacArthur was also vainglorious, arrogant, self-serving, and intolerant of criticism. All of those characteristics combined to make him one of the most remarkable individuals of a remarkable century.

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Machiavelli, Niccolo (1469–1527)

RENAISSANCE FLORENTINE diplomat, politician, and scholar, author of treatises, satires, and plays, Niccolo Machiavelli is most well known for his authorship of *The Prince*. Employed by the republican government of Florence on numerous diplomatic missions, Machiavelli sought to enhance the reputation of Florence and elevate it above other Italian city-states. When the Florentine republic collapsed to be succeeded by a Medici dictatorship, however, he was barred from public life. *The Prince* is dedicated to the Medici prince, Lorenzo the Magnificent (1492–1519), in hopes of paving the way for Machiavelli's return to public service in Florence.

The Prince is written in the form of an advice manual to the would-be sovereign on how to attain and retain the greatest amount of power in the most efficient and effective way. Machiavelli conceptualizes humans as actors caught between the randomness of circumstance (*fortuna*), that cannot be controlled, and prowess or skill (*virtù*, literally manliness), defined as the human capability to act creatively in the face of fortune. Thus, the successful prince must be both skilled in his choices and benefit from a certain amount of good luck, but his skill is decisive. This balance can best be achieved by appearing to be acting in good faith, according to moral and religious principle, while all the while being willing to act solely in one's own interest, without regard to the moral consequences of such action.

Machiavelli takes as his model Cesare Borgia (1476–1507), whom he met at an embassy in 1502. Cesare was the duke of Romagna and ultimately, ill-fated son of Pope Alexander VI (Rodrigo Borgia) who managed to unite the Papal States and viciously trick his own mercenaries into obedience before his fortunes crumbled after the death of his father. In the end, Machiavelli turns to a diagnosis of the problems of Italy, arguing that Italian princes have lost their states due to their inability to inspire the loyalty of their nobles or the good will of their subjects, or foster sufficient military strength. The whims of chance can never be a sufficient explanation for the failure of a prince, he argues, for the decisive quality of a leader is his ability to deal successfully with circumstance.

The Prince was typically understood by contemporaries as disgusting, immoral manual of *Realpolitik*, and was condemned by Pope Clement VII and placed on the *Index of Prohibited Books* in 1559. It was rumored to be a favorite book of Otto von BISMARCK, and served to justify the reason of state politics throughout the 19th century.

If read solely on the basis of *The Prince*, Machiavelli's politics can be seen to advise directly that the only basis for successful political action can be the ground of optimized political expediency. Machiavelli recommends that the prince be cruel, that he manipulate his subjects, and that he never admit his true thoughts; he also notes that the true prince is only hampered by immutable moral or political allegiances. Still, Machiavelli is merely formalizing and legitimizing a strategy of political behavior that is as old as humanity; as Leo Strauss noted, his contribution was the attempt to make such behavior politically defensible.

It would be simplistic, however, to assume that the surface meaning of the text so objectionable both to contemporaries and moderns is the only or primary interpretation to be observed, for rhetorical playfulness was the hallmark of the Renaissance philosopher, and Machiavelli was the author of several satires and dramatic works. Particularly his extended praise of the failed Cesare Borgia was read by some contemporaries as sarcastic; on the other hand, many commentators have read the praise of Cesare as serious and interpreted the conclusion of the text as a call for the unification of Italy. Moreover, a letter of Machiavelli's admits to his hopes of currying favor with Lorenzo, which casts further doubt on the sincerity of the content. Modern interpreters have drawn multiple conclusions from this very pliable text; for instance, the sort of behavior recommended to Machiavelli's prince can be viewed along with Thomas Hobbes' politics as the basis for non-cooperative game theory, and Machiavelli's thought also had a substantial influence on the writings of Benedict Spinoza.

In the later 20th century, Machiavelli's thinking spawned a rash of business books that promulgated and popularized the literal interpretation of *The Prince* as a basis for effective leadership and decision-making. A fuller picture of Machiavelli's thought can be gained from reading his other works, in particular *Discourses on the First Ten Books of Titus Livy,* which argues for virtue as the basis of successful democracy.

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macroeconomics

PART OF ECONOMICS that studies aggregate behavior of the economy, macroeconomics especially relates to the determination of national income, interest rates and the price level, long-run growth and business cycles and government fiscal and monetary policies.

Macroeconomics is widely believed to have originated with the work of John Maynard KEYNES, although Keynes never used the exact term. The approach he took in his famous *General Theory of Employment, Interest and Money* (1936), however, definitely inspired macroeconomics as a discipline.

In the 1930s, the capitalist world experienced the worst DEPRESSION in its history, with output and income falling 30–40 percent and unemployment reaching 25 percent of the workforce. The SOVIET UNION, in the meantime, seemed to be achieving spectacular rates of economic growth especially in its industrial sector, while Adolf Hitler and his allies threatened democracy and political stability from the extreme right. It is not perhaps surprising that, under those circumstances, even staunch believers in economic freedom and the efficiency of markets were taking an increasingly pessimistic view about the chances of a system based on economic freedom to survive.

Prior to Keynes, economics was focused mostly on the determination of prices that would make SUPPLY automatically meet DEMAND. In particular, the price mechanism was supposed to lead to equilibrium in the labor market that would guarantee full employment. At the time when this prediction seemed to be completely failing, Keynes claimed that employment was a function of total output, which was determined by forces outside of the price mechanism, and that previous theory was useful only in understanding how total output was allocated among different uses and distributed among different factors of production, not how much of output is produced in the first place. Total output (income) was governed instead by quantity relationships, including consumption and saving as a function of income, on the one hand, and "animal spirits" of investors and liquidity-preference determination of the interest rate governing the volume of investment, on the other hand. In Keynes' view, the level of total output (income) determined thereby need not correspond to the total output level needed to maintain full employment. His claim was that economic theory before him had been dealing with a special case in which these two levels happened to coincide, while his was a more general theory (hence, the title of his book). Keynes also proposed policy measures, such as increased government spending that could be implemented by a proactive government in order to deal with economic disasters like the Great Depression, thereby breaking away from a century-old tradition of the economic profession to advocate LAISSEZ-FAIRE (unfettered play of competitive supply and demand) in economic policy.

Post–World War II years and neoclassical synthesis (the IS-LM model). Keynesian views won over the economic profession and government policy-makers in an amazingly short period of time. To a large extent this was due to a skillful presentation of his theory by others, most prominently by John HICKS and Paul SAMUELSON. Hicks' article, "Mr. Keynes and the Classics," introduced the basic ideas of the IS-LM interpretation of Keynes which became orthodoxy in macroeconomics for decades, while Paul Samuelson, working in the same spirit, completed the neoclassical synthesis, that is, a synthesis of Keynesian quantity relationships with the neoclassical equilibrium analysis.

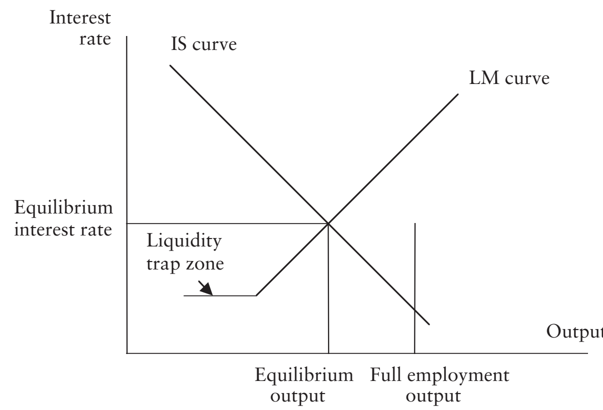
The key ingredients of the IS-LM (neoclassical synthesis) model of macroeconomics were the consumption function, the investment function and the money-demand function.

According to the IS-LM theory of total-income determination, a stable relationship links consumption and saving (as the difference between income and consumption) to income. When income changes, people tend to change their consumption in the same direction, but the changes are less than one-to-one with the corresponding changes in income. Investment is determined through the investment function, which is obtained by equalizing the return on investment ("the marginal efficiency of capital," in Keynes' terminology) to the interest rate.

The main difference with the neoclassical theory is that saving is not a function of the interest rate, so that the interest rate does not act to equalize desired savings to desired investment. Instead, once investment demand is determined from the investment function, the volumes of consumption and of saving adjust through total income changes, bringing savings equal to investment. Hence, to each interest rate determining the amount to be invested corresponds a unique income level that generates the amount of savings equal to investment. Since investment demand goes down when the interest rate goes up, a higher interest rate would generate excess saving as compared to investment. Hence, total income has to go down in response to a higher interest rate. This is reflected in the downward sloping shape of the IS (investment-saving) curve.

The INTEREST RATE is determined in the market for money. The supply of money is given exogenously (by the decision of the CENTRAL BANK), while its demand depends positively on income (because more income means more demand for money as a means of servicing real transactions) and negatively on the interest rate (because higher interest rate increases the opportunity cost of holding money, and not investing it in bonds or other interest-bearing instruments). A given quantity of money can be allocated between two alternative uses (transaction demand and liquidity preference) only by having higher income (increasing the transaction demand) correspond to a higher interest rate (reducing liquidity preference). This is reflected in the upward sloping shape of the LM (liquidity-money) curve.

The intersection point of these two curves uniquely determines the equilibrium level of the interest rate and output (aggregate income). The level of output could not be above the full employment level (because that would be unfeasible and produce only inflation without any increase in real output) but it could well be below the full employment level. The policy implications are that whenever equilibrium output does fall below full employment level, government needs to intervene by increasing its spending (which would shift the IS curve to the right in the diagram below) or by increasing money supply (which would shift the LM curve to the right). In theory, both ways would lead to the restoration of full employment; in practice, it was argued, government-spending programs are more effective because they affect effective demand directly while increasing money supply works only indirectly through the effect of lower interest rates on liquidity preference. In particular, in deep recessions liquidity preference may be so high that the economy would fall into the "liquidity trap," a situation in which increasing money supply does not lead to lower interest rates and is thus completely ineffective in increasing effective demand and output level.



Stagflation of the 1970s and the monetarist counterrevolution. By the late 1960s, it seemed that Keynesian macroeconomics had completely won over the profession, both intellectually and in terms of policy. Samuelson in his famous introductory economics textbook claimed that with the advent of macroeconomics, the government, using a proper mix of fiscal and monetary policies, could completely eliminate the kind of depressions that capitalism had suffered earlier in its history. Despite this and other similar claims, it was precisely around that time that the neoclassical synthesis macroeconomics started breaking down as a policy guide, and also became increasingly challenged theoretically.

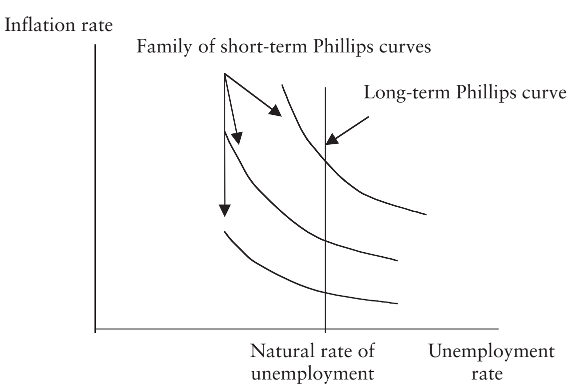
A popular artifact of Keynesian macroeconomics was the PHILLIPS CURVE. This curve first made its appearance in 1958 when a British economist, A.W. Phillips found a negative statistical relationship between the rate of changes in money wages and unemployment in Britain. Keynesian economics transformed the wage-unemployment relationship into inflation-unemployment relationship and developed the notion of a trade-off between price stability and full employment. If the government wanted to promote full employment, it had to pay the price of higher inflation and vice versa.

The 1970s brought about a situation that had never been observed before and that was certainly not consistent with the IS-LM macroeconomics and with the Phillips Curve: a combination of a RECESSION and high INFLATION. Under such conditions, orthodox macroeconomic policy of the time became completely paralyzed: fighting recession and UNEMPLOYMENT called for expansionary fiscal and monetary policies, but that would exacerbate inflation, and vice versa.

One more negative effect of macroeconomic intervention by means of increasing government spending that became increasingly realized at that time was the increasing share of government spending in most market economies (for example, in the United States from less than 20 percent of the GROSS DOMESTIC PRODUCT in the 1940s to 28 percent in the 1960s). This increase in expenditure and in the tax burden (and/or government deficits) was blamed for diluted incentives for hard work and private investment.

With the IS-LM macroeconomics, and policies based on it, seriously compromised, a different trend in macroeconomic theory represented by monetarism and supply-side economics rapidly gained popularity. According to MONETARISM, the liquidity preference theory of the demand for money is flawed because it does not take enough account of the choice of holding wealth in the form of commodities and capital goods, rather than only in the form of bonds and other financial assets or money. Monetarism also places emphasis on the role of expectations, in particular, inflationary expectations in shaping the macroeconomic equilibrium. The leading monetarist Milton FRIEDMAN argued that the negatively sloped Phillips Curve was only true for a short period of time (from several months to two years), while in the long run the curve was actually a vertical line passing through the point of the "natural rate of unemployment," determined by non-monetary factors (institutional and other aspects of the labor market itself).

If the government tried to increase employment beyond that natural rate by injecting more money, the trade-off between inflation and unemployment would be recreated at ever-increasing levels of both inflation and unemployment. What is worse, after a while the public will learn to adjust its expectations much faster and the overall disruption to the monetary exchange can actually even make inflation and unemployment positively related to each other.



Supply-side economics complemented monetarism by focusing on negative effects of government expenditure. If borrowing covers the increase in government spending, this leads to higher interest rates, and it "crowds out" private investment and also consumption. If it is covered by higher taxes, it dilutes incentives to work and to invest in technological innovation. Supply-side economists favored reducing the government sector and the tax burden, especially on corporations and on high-income people to help rebuild fundamental strength of the market economy.

Dynamic disequilibrium approach to macroeconomics. Another challenge to the orthodox version of macroeconomics came from a minority of Keynesian economists strongly opposed to the neoclassical synthesis from the point of view completely different from monetarists and supply-side economists. In the view of this group of macroeconomists (sometimes called "the new Keynesians"), macroeconomics is essentially about the capitalist economy being constantly in a situation of dynamic disequilibrium rather than neoclassical EQUILIBRIUM.

A neoclassical equilibrium model basically assumes that the market acts as an impersonal auctioneer that constantly adjusts prices so that demand always equals supply, and that no transactions take place at wrong (that is, non-market-clearing) prices. This view is shared by the neoclassical synthesis version of Keynesian economics with the only difference being the possibility of some price rigidities, especially in the labor market and/or the liquidity trap.

The dynamic disequilibrium perspective rejects this whole approach and replaces it with the notion that since business conditions (and expectations thereof) are constantly changing, market transactions inevitably have to be carried out under non-market-clearing prices. In this view of the economic world, discrepancies between supply and demand decisions are omnipresent and universal. Whenever demand is less than supply or vice versa, the actual volume of transactions is "rationed" by the smaller of the two, leaving some consumers or some suppliers with unsatisfied demand or unsold supplies. The general guiding principle is that "money buys goods but goods do not buy money," so that income and effective demand depend on monetary factors and liquidity preference. Some ideas from this dynamic disequilibrium approach (although recast in equilibrium terms) have been since absorbed into modern macroeconomics in the form of cash-in-advance models and models incorporating concepts from search theory.

Modern (new classical) macroeconomics. Although monetarism and supply-side economics may no longer exist as independent schools of thought, modern macroeconomics has definitely absorbed them and has moved away decisively from the Keynesian quantity-adjustment-liquidity-preference theory. Economic models of modern macroeconomists are very similar to those used by microeconomists, and they consist of descriptions of consumers and firms, their objectives and constraints, and analyze those models and try to fit them to data using methods very similar to microeconomics. The focus, however, is on issues like long-run growth and business cycles rather than the explanation of relative prices. It is this difference in focus, rather than in method that still distinguishes macroeconomics from microeconomics. In other words, macroeconomics remains a separate field within the broad discipline of economics in that it deals with the overall effects on economies of the choices made by all economic agents, rather than with the choices of individual consumers or firms.

The key concept of the new classical macroeconomics is that of rational expectations. Rational expectations is an assumption according to which all information that is available in the market gets built into agents' expectations, so that no predictable change in economic parameters can have any, even short-term effects on the outcomes. In particular, no predictable change in government expenditure or money supply can affect the real economy. Hence, stabilization policies are meaningless in principle.

For example, agents with rational expectations will anticipate that an increase in government expenditure, even if it is covered by borrowing, will lead to an increase in future taxes and will save to provide for that anticipated rainy day (the Ricardian equivalence). It is only by complete surprise that changes in government policies can affect the real economy, and since government policies are closely monitored and analyzed by the market, such surprises are very unlikely to succeed. Moreover, even if surprises were possible and the government could, in principle, conduct macroeconomic policies aimed at stabilizing the economy, the value of such stabilization, it is argued, would be very limited and the government resources would be better spent elsewhere.

Instead of effective demand management, the largest part of modern macroeconomics concentrates on the study of factors affecting long-run growth, such as the accumulation of capital (including human capital) and changes in total factor productivity caused by technological progress, institutional changes and the like. This branch of modern macroeconomics is not only quite distinct from Keynesian macroeconomics in its method of analysis; it is actually its complete antipode since Keynesian macroeconomics was explicitly focused on a very short period during which the capital stock was assumed to be fixed.

The theory of long-run growth starts from the basic assumptions about utility maximization by the representative consumer (either assumed to be infinitely lived or representing a certain generation in the overlapping generation model) and it then goes on to analyze the consumption-investment decision, the accumulation of capital, technological change, and so on. The interest rate is determined by the rate of return on the capital good (real investment) and the portfolio choice of a representative agent allocating savings among various assets, financial and tangible. The neoclassical theory of growth is currently becoming more and more prominent as the leading form of macroeconomics of the 21st century.

Another branch of macroeconomics, the theory of the real BUSINESS CYCLE is more related to Keynesian macroeconomics in that at least it also focuses on the same time horizon. However since it builds the theory from micro-principles and assumes that supply equals demand in all markets, including the labor market, the method of analysis and the conclusions are completely different. In particular, unemployment, which was caused by not enough effective demand in the Keynesian system, is explained in terms of job search and other structural factors related to the labor market itself. More generally, the business cycle in its modern interpretation has a real, not monetary character in that it is generated by various exogenous and unanticipated shocks. Those shocks, through a complex mechanism of interactions produce cycle-type repercussions in investment, interest, and unemployment rates. Modern theory of the business cycle thus shares with the growth theory its skeptical attitude to government stabilization policies.

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Madison, James (1751–1835)

THE FOURTH PRESIDENT of the UNITED STATES, James Madison, was born into a wealthy Virginia planter family, and graduated from the New Jersey College at Princeton in 1771.

At that time, issues over British control of America were reaching the boiling point. Madison joined the patriot cause, serving on the local Committee of Safety. In 1776, he participated in the Virginia Convention that declared independence and drafted a state constitution. Madison was elected to the Governor's Council in

1777, where he served under Governors Patrick Henry and Thomas JEFFERSON.

In 1780, Madison became a delegate to the Continental Congress, operating under the Articles of Confederation. He was quickly frustrated with its inability to accomplish anything substantial, and became a leading proponent for more powerful government. After four years, Madison returned to the Virginia Legislature, where he supported Jefferson's Bill for Religious Freedom and other reforms.

By 1787, Madison was a leading advocate for a convention to reform the Articles. When a convention was called in Philadelphia, Madison arrived with a draft that formed the basis for the new U.S. Constitution. Almost as important, Madison encouraged a reluctant George WASHINGTON to attend. Without Washington's prestige, the Convention's work probably would not have been ratified. Madison took detailed notes at the Convention, which, published after his death, are the best record of the debates.

Opposition to the proposed Constitution was widespread. Opponents objected to the powers given to the central government. Madison worked with Alexander HAMILTON and John Jay to draft a series of articles that would become known as the Federalist Papers to push New York's ratification. Madison's debates against Patrick Henry at the Virginia Ratifying Convention were critical to that State's ratification.

Although Madison succeeded with ratification, he lost his subsequent effort to become a U.S. Senator. Instead, he was elected to the House of Representatives, and only won that election (defeating James MONROE) by promising to enact a Bill of Rights—something he had opposed during ratification. Madison proposed 19 Constitutional Amendments. Twelve were sent to the states for ratification. Ten became the Bill of Rights, while another was eventually approved centuries later as the 27th Amendment in 1992.

For years, Madison had been an advocate of stronger federal government. However, as a Congressman, he began opposing measures to strengthen government. Two of his main adversaries were his coauthors of the Federalist Papers. He vehemently opposed Hamilton's plan to assume state debts from the Revolution, toning down his opposition only after Jefferson brokered a deal between them. Madison opposed the Jay Treaty involving trade, which he saw as favoring Great Britain.

Madison also opposed the creation of the Bank of the United States, which he argued was unconstitutional, and was against creating a large standing army or navy. He allied himself with Secretary of State Jefferson, and the two fought Hamilton's influence over Washington's presidency.

When John ADAMS became president, Madison discouraged Vice President Jefferson from cooperating with the administration, arguing that he should be a voice of opposition. He also anonymously wrote the Virginia Resolutions, arguing that a state could nullify unconstitutional federal actions.

Upon Jefferson's election in 1800, Madison became U.S. Secretary of State. During this time, Britain and FRANCE were at war giving Madison the opportunity to negotiate the Louisiana Purchase, doubling the size of the nation. The war, however, also proved costly to the United States. Both Britain and France seized American ships with impunity, often forcing American sailors to fight on foreign naval vessels. Because the United States had no navy of significance, it could not resist these actions. Madison proposed an embargo, simply ending all trade with both countries in the hope that this would force them to compromise. Instead, most of the harm fell on New England, which depended heavily on such trade. By the end of Jefferson's second term, some New Englanders were threatening secession. Congress eventually voted to end the embargo over Madison's objections.

Despite the controversy over the embargo, Madison won the 1808 presidential election overwhelmingly, winning most states outside of the New England coastline. However, British outrages on the high seas continued. By 1812, Madison urged Congress to declare war. Madison hoped to capture CANADA and force Britain off the continent forever. However, the small U.S. armies, made up primarily of militiamen, were not up to the task. The British invaded all along the coastline, including a raid on Washington, D.C. Madison attempted to direct defenses, escaping only just ahead of British troops who burned the White House.

The only, early victories came from the small U.S. Navy that Madison had opposed for so many years. The Navy captured or destroyed several British vessels in the Great Lakes and in the Atlantic, but their small numbers assured that Britain would continue to dominate the seas. The Americans successfully repulsed an invasion into New York State, and the biggest victory ironically came in 1815, when Andrew JACKSON defeated the British in the Battle of New Orleans, not having heard that the Treaty of Ghent had ended the war a few weeks earlier.

With the war over, Madison focused on a domestic program that repudiated many of his earlier positions on small government. Thus, he supported a stronger professional army and navy, a re-chartering of the Bank of the United States (which he had allowed to lapse in his first term), a tariff to protect U.S. industries, and using federal money to build roads and canals to bind the nation together.

Madison left office in 1817 after the election of his Secretary of State James Monroe. As a private citizen, he continued to support the tariff and the Bank of the

United States. He also repudiated his earlier views on state nullification. In 1829, he came out of retirement to support reforms at the Virginia Constitutional Convention. Madison died in 1835, the last survivor of the Constitutional Convention.

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Malaysia

LOCATED IN SOUTHEAST Asia, Malaysia consists of two non-contiguous regions. Occupying most of the Malay Peninsula, Peninsular Malaysia or West Malaysia, borders Thailand in the north and is across from SINGAPORE in the south. Approximately 400 miles east across the South China Sea from Peninsular Malaysia, East Malaysia occupies most of the northwestern coastal part of Borneo. East Malaysia shares Borneo with the sultanate of Brunei and with the Kalimantan region of Indonesia.

Malaysia's population is approximately 23.8 million (2001), with the vast majority living in Peninsular Malaysia. There is great ethnic, religious, cultural, and linguistic diversity among the population. This diversity is the result of centuries of immigration and trade, particularly with INDIA, CHINA, and Arab nations. Furthermore, there was very little homogenization of cultures, the result being that each culture has remained basically intact.

The majority of Malaysians live in *kampongs* (a village or community of houses) that consist of dwellings on stilts. The four main forms of settlements are fishing villages, paddy or wet-rice villages, mixed-crop villages, and cash-crop villages. The other forms of rural settlements are primarily associated with those who settled in Malaysia since the early 19th century. The introduction by the British of the plantation system, and the subsequent cultivation of rubber and palm oil, changed the face of rural Peninsular Malaysia and led to the development of large towns and cities centered around the tin and rubber belt along the peninsula's west side.

The early history of Malaysia is scarce. What is known is that there was early contact with China and with Hindu influences from India. Politically, Malaysia was subdivided into small kingdoms and chiefdoms. Beginning in the 18th century, Great Britain became active in the area and, by the early 19th century, had gained control of Peninsular Malaysia and most of northern Borneo. As more and more people immigrated to Malaysia a pluralistic society developed.

The occupation of Malaysia by Japan during WORLD WAR II caused economic disruption and exacerbated communal tensions. After the war, some local self-government was introduced, which led to the creation in 1948 of the Federation of Malaya (which occupied what is now West Malaysia) and in 1957 culminated in the Federation of Malaya achieving its independence from Great Britain. In 1961, Malaya's first prime minister, Tunku Abdul Rahman, proposed a federation consisting of Malaya, Singapore, Sarawak, Sabah, and Brunei. All but Brunei joined in 1963. In 1965, due to economic and political disputes, Singapore exited the federation.

Since independence, Malaysian politics have been marred by numerous ethnic disputes. However, these disputes have not prevented Malaysia from experiencing rapid economic growth. Since the early 1970s, Malaysia has transformed itself from a producer of raw materials into one of the fastest-growing economies in Southeast Asia, and has led economists to include the country among Asia's "newly industrialized economies" (NIEs). While primary production is important (Malaysia is the largest producer of rubber and palm oil), Malaysia has focused on export-oriented manufacturing (particularly electronics) to drive its economic growth. This emphasis on manufacturing has led to the development of a variety of heavy industries, including steel-making and automobile assembly. Peninsular Malaysia accounts for the majority of the country's manufacturing output.

Since the early 1970s, the Malaysian government has implemented a social and economic restructuring plan, initially known as the New Economic Policy (NEP), which attempts to strike a balance between the goals of economic growth and the redistribution of wealth. The government has also encouraged the private sector to take a greater role in restructuring, leading to the privatization of many public-sector activities, including the national railway, airline, and telecommunications company.

Malaysia's economic growth has created a demand for labor, which has tended to increase wages. However, despite economic incentives, there has been a limited flow of workers from East to Peninsular Malaysia, thus prompting an interest in recruiting foreign workers.

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Malta

THE REPUBLIC OF MALTA is an independent republic of the Commonwealth of Nations, a small group of islands consisting of Malta, Gozo, Kemmuna, Kemmunett, and Filfla. The Maltese archipelago is located in the Mediterranean Sea, south of Sicily.

The Republic of Malta consists of the islands of Malta and Gozo and has a combined area of approximately 199 square miles, with a population of 391,700 in 2002. Located on the island of Malta is the capital, Valletta.

Valletta is the leading port of the country. Manufacturing for export, ship construction and repair, and tourism are Malta's chief industries. Shipping-related industries are vital to Malta's economy, including repair facilities and transport centers.

Malta's $1.2 million trade deficit each year makes the island highly dependent on foreign markets and services. Primary purchasers of Maltese products are FRANCE, UNITED STATES, GERMANY, SINGAPORE, and the UNITED KINGDOM. Principal exports include clothing, basic manufactures, and machinery. Principal imports are machinery, textiles, chemicals, raw materials, food, and fuels. Leading sources for imports are Italy, France, United Kingdom, Germany, and the United States.

In 1964, a new constitution, substantially amended in 1974, has brought the Maltese government to a parliamentary democracy. Malta is among the candidate countries set to join the EUROPEAN UNION (EU) in 2004.

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Malthus, Thomas Robert (1766–1834)

ALTHOUGH SOMEWHAT controversial, Thomas Robert Malthus was an important figure in the development of classical economic thought. He addressed several topics in political economy, but is most widely remembered for his treatments of population growth and the potential inadequacy of aggregate demand.

The growth of population was the topic of his *Essay on the Principle of Population* that first appeared in 1798 and established his enduring fame. His most significant other volume was *Principles of Political Economy*, published more than 20 years later. Only since the 1930s, when aggregate demand again was recognized as constituting a central problem in economics did John Maynard KEYNES and others recognize Malthus as a forerunner of modern thought.

Malthus was the son of Daniel Malthus, a distinguished English scholar who prided himself on his advanced ideas and friendships with such leading intellectuals of the period as David HUME and Jean-Jacques Rousseau. Malthus grew up during the Enlightenment, was 10 years old at the onset of the American Revolution, graduated from Jesus College, Cambridge, in 1788 and was ordained a minister of the Church of England that same year. However, the Reign of Terror that followed in the wake of the FRENCH REVOLUTION stimulated discussions between the younger Malthus and his father concerning the possibility in human affairs of the extensive diffusion of liberty and happiness.

The father subscribed to an optimistic belief in the perfectibility of humankind and society that had been in popular esteem. Robert Malthus was far more pessimistic, and attributed the vices and misery that plagued society to the prolific fertility of the human race, rather than to evil institutions. Malthus' theory asserted that population, when left unchecked increases geometrically, while subsistence increases (at best) only arithmetically. By emphasizing the strict dependence of population growth on the food supply and by explaining poverty in terms of a simple race between population and the means of subsistence, the Malthusian theory of population growth became an integral part of classical economics and a point of departure for virtually every discussion of population problems. (This also earned economics the appellation of the "dismal science.")

In his *Principles*, Malthus examined the causes of economic growth and perceived that there could be difficulties in maintaining full employment. His concerns stemmed from the view that the while the process of saving leads to a reduction in the demand for consumer goods, the process of investment leads to an increase in the production of consumer goods. He concluded that because there was insufficient effective demand from the laborers and the capitalists, the difference had to be filled primarily by landowners since they consumed goods, but did not add to production.

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manifest destiny

MANY AMERICANS in the 19th century thought they had a special, God-given mission to eventually take over all of North America; this belief was known as manifest destiny. The expansionist impulse had been pulsing for a while; right from the founding of the nation, Americans had pursued new lands and expressed a confidence in the republic's distinct calling. President James MONROE acquired new territory in Florida, and in 1823 issued a statement of policy that asserted the nation's prominence in North America. Beyond declaring American neutrality from foreign conflicts, the Monroe Doctrine affirmed that the UNITED STATES would oppose any further colonization of the western hemisphere by European nations, and would view any incursion into the continent as a threat.

The idea that the United States had a special role to fulfill in North America would take on new significance in the late Jacksonian period. Democrats saw land as key to the very survival of republican government: new territories would provide room for the growth of settlement, and preserve the agrarian character of the nation. In 1845, New York journalist John O'Sullivan used the phrase "manifest destiny" to refer to the notion that Americans were providentially ordained to settle the entire continent. O'Sullivan believed that readily available land would ensure that America did not suffer some of the negative consequences of industrialization that were plaguing nations like Britain, including overcrowding and class unrest. Although the notion of manifest destiny was initially applied to the lands west of the Mississippi, the concept would eventually be broadened as a rationale for American expansion abroad.

Manifest destiny proclaimed Americans were providentially ordained to settle the continent west to the Pacific Ocean.

In 1843, President John TYLER opened secret negotiations with Texas for admission to the Union, but faced opposition from Northern abolitionists, worried about the expansion of slavery, and moderates, fearful of war with Mexico. The issue was revived by the 1845 election of Democrat James K. POLK, an outspoken expansionist. Polk hoped to acquire for the United States not only Texas but Oregon, and the territories which make up present-day New Mexico, Arizona, and California. A deal was struck with Great Britain to secure Oregon, but tensions with Mexico reached a breaking point in 1846. When Mexican troops crossed the Rio Grande to meet American soldiers led by Zachary TAYLOR, Congress declared war. U.S. forces invaded northern Mexico and eventually took New Mexico and California. A weakened Mexico agreed to cede all claims to Texas in the Treaty of Guadalupe Hidalgo, and established the Rio Grande as the United States's southern border; the size of the nation grew by 20 percent.

Belief in manifest destiny also implied a conviction of the superiority of the white race. American Anglo-Saxons, in this view, had a mission to bring the forces of progress and democracy to those already inhabiting the land. Journalists and politicians argued that the American people were obligated to extend their democratic principles from the Atlantic to the Pacific. In practice, however, much of this process of expansion was anything but democratic. Native Americans were driven relentlessly from territories desired by whites. In the southwest, Mexican settlers were dismissed as shiftless and undeserving of the land they inhabited. Both natives and Mexicans were depicted as inferior races unable to properly make use of the land. These racial beliefs helped to justify the aggressive efforts by white Anglo-Saxons to remove all other groups from disputed territories. Some expressed doubts that either natives or Mexicans could ever be fully integrated into the United States as citizens, and should instead be treated as colonial subjects.

The spirit of manifest destiny waned somewhat in the years after the Mexican-American War. While the acquisition of vast new lands seemed a triumph for the expansionist cause, dispute over the status of slavery in these territories would intensify sectional conflict within the United States, and contribute to the outbreak of the AMERICAN CIVIL WAR.

During the 1850s, many Southerners were attracted by the idea of acquiring Cuba. President Franklin PIERCE asked his secretary of state and three diplomats to recommend a course of action. The Ostend Manifesto, produced in 1854, suggested that America pursue purchase of Cuba from Spain, and asserted that if Spain refused to sell, the United States would be justified in seizing the territory. Reaction both at home and abroad was decidedly negative, and Pierce had to abandon the scheme as

Northerners accused him of trying to acquire another slave territory to appease the South.

By 1860, the larger, continentalist dimension of manifest destiny no longer seemed practical. Few suggested that America should push to acquire either British North America (which would involve going to war with Great Britain) or Mexico (where a racially mixed population raised uncomfortable questions about the inclusiveness of American democracy).

But the expansionist impulse would not remain dormant. In 1867, America negotiated the purchase of Alaska from Russia. By the last years of the 19th century, Americans expressed concern that there was nowhere left on the continent where they could expand. Historian Frederick Jackson Turner declared that the American frontier was officially closed, as white settlement had moved westward to the Pacific. The nation would need to find new outlets for its growth. Presidents Benjamin HARRISON and Grover CLEVELAND aggressively courted Latin America. Business leaders actively pursued foreign markets for goods, and identified certain lands as strategically desirable. Hawaii, with its sugar production and strategic location as a stepping-stone to Asia, was annexed in 1893 after the removal of nationalist Queen Liliuokalani. Samoa was the next possibility for American expansionist tendencies.

The most dramatic example of this new, international expression of manifest destiny would be in Cuba, where nationalists hoping to achieve independence from Spain were asking for American assistance. The United States remained neutral until after the election of William MCKINLEY, despite the efforts of sympathetic journalists to whip up public support for the Cubans. The explosion of the battleship *Maine* in 1898 in Havana Harbor propelled the United States into the war, and after ten weeks the fighting was over. America easily defeated the Spanish forces.

America's quick and relatively painless victory would set off a national debate about the future of the newly acquired territories of Guam, Puerto Rico, and the Philippines. Cuba was granted independence by Spain, but these other colonial possessions were judged unprepared for self-government. Critics charged that the United States had repudiated its own history by becoming an imperial power. A movement led by Emilio Aguinaldo hoped that the United States would recognize the independence of the Philippines, and waged guerrilla warfare against American authorities.

Yet business interests as well as many other groups including religious missionaries insisted that America should take an active role in shaping the future of these territories. By the early 20th century, America took on a new role as overseer of colonial territories.

Manifest destiny was an idea that emboldened Americans over a span of decades to actively pursue a strategy of territorial expansion. These initiatives were, at times, the subject of heated debate, and could have negative consequences for other groups who did not necessarily agree with America's sense of mission. Throughout the 19th century, this impulse to expand persisted—a peculiarly American combination of optimism, ambition, self-confidence, and capitalism. And once the possibilities for expansion within the continent were exhausted, a similar impulse drove American expansion around the globe, not only in the acquisition of new lands but also in the pursuit of new markets.

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Marcuse, Herbert (1898–1979)

A MAJOR 20TH-CENTURY political philosopher, Herbert Marcuse applied a combination of Marxist theory and Freudian analysis to the study of modern Western politics, culture, and society. His focus on individual liberty and the deconstruction of modern society's repressive cultural institutions helped make him an icon of radicalism and an important intellectual influence on the New Left in 1960s and 1970s Europe and North America. He was born on July 19, 1898, in Berlin, GERMANY and died on July 29, 1979, in Starnberg, West Germany.

After serving in the German army during WORLD WAR I, Marcuse began university studies in Heidelberg where he also became an active member of the Social Democratic Party. He took his doctorate in literature in 1922 and after a short career selling books, he returned to Heidelberg in 1928 to study under one of the major philosophers of the time, Martin Heidegger. Marcuse remained there until 1933 when he accepted a position with the Institute for Social Research (the Frankfurt School), a Marxist think tank based in Frankfurt (but that later opened branches in Geneva and then New York). As a Jew and a political activist, Marcuse fled Germany soon after the rise of the Nazis to power, going first to Geneva in 1933 and then in 1934 to the UNITED STATES.

Marcuse settled in New York City, where he continued his intellectual work with the Frankfurt School. After the United States entered WORLD WAR II, Marcuse served his adopted country in the Office of Strategic Services and within the U.S. State Department, a role he continued into the 1950s. He then returned to academia, accepting professorships at Columbia and Harvard (1951–54), Brandeis University (1954–65), and the University of California, La Jolla (1965–76). From within the American academy, Marcuse launched a series of articles, books, and lectures in which he refined his Marxist-Freudian inquiry into reflections on capitalism and modern society's effects on the individual.

His trenchant critiques brought him to the height of his popularity and influence in the 1960s and 1970s. His major works included *Eros and Civilization* (1955), *One-Dimensional Man* (1964), *An Essay on Liberation* (1969), and *Counterrevolution and Revolt* (1972).

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marginal analysis

MANY, IF NOT MOST, economic decisions can be viewed as choosing the magnitude of a variable associated with both costs and benefits. For example, each month households must choose how much of their disposable income to save. SAVING brings benefits in increased consumption possibilities in the future, but at a cost that can be reckoned in foregone consumption today. Similarly, firms must choose how much to produce. Extra production brings the possibility of increased revenue, but will typically require increased input employment and, therefore, increased production costs.

Marginal analysis is a particular method for making this type of choice. Specifically, marginal analysis involves considering the relative merits of a given choice, by asking whether a net improvement could be achieved by making a slightly larger (or smaller) choice. So, for instance, we ask whether saving a little bit more of today's disposable income would be better, rather than jumping directly to the question of what amount of saving is best.

The answer to the question depends upon whether the benefits made available by increasing (or decreasing) the size of the choice variable by a small amount exceeds the extra costs incurred. If the benefit exceeds the extra cost, the original choice under consideration cannot be optimal, in which case the decision-maker can eliminate it from consideration and move on to consider the relative merits of a slightly larger (or smaller) choice. Continuing in this way, the decision-maker will eventually be led to the optimal size of the variable under consideration.

The label "marginal analysis" comes from terminology economists have developed to distinguish the incremental effect of a change in a choice variable on associated benefits or costs from the level of total benefits or total costs. Economists call the extra benefit associated with a small increase in the size of the choice variable, the marginal benefit. If one additional dollar's worth of saving today enables one to consume an extra \$1.10 worth of goods tomorrow, the marginal benefit of saving (measured in dollars of tomorrow's consumption) is \$1.10. Similarly, the extra COST incurred when a choice variable is increased by a small amount is called the marginal cost.

In short, then, marginal analysis can be defined as comparing the marginal benefit and marginal cost of a small change in the magnitude of a choice variable for the purpose of determining whether such a change would result in a net improvement.

For most economic problems, marginal benefits tend to decrease as the choice variable becomes large, while the marginal cost begins to rise. As long as that pattern holds, marginal analysis suggests a simple rule that decision-makers should always follow, which is sometimes called the equimarginal principle, as explained by economist Steven Landsburg: Select the choice variable size that equates marginal benefit with marginal cost.

Provided that marginal benefits are declining in the size of the choice variable (or at least not rising) and marginal costs are rising (or at least not declining), and provided that the value of the choice variable at which marginal benefit equals marginal cost is among the available options, the optimal size for the choice variable will be the size at which the equimarginal principle is satisfied.

This follows from the fact that the equimarginal principle is no more than the first-order condition for maximization of the net benefit function, where net benefit is defined as total benefit less total cost. Hence, as long as the choice variable is continuous and total benefit and total cost are both continuous, the equimarginal principle will identify any inflection points of the net benefit. Decreasing marginal benefits and increasing marginal cost will ensure that the inflection point is unique and a local maximum rather than a local minimum.

One of the most surprising and frequently cited implications of marginal analysis is that the price and production quantity that maximize a firm's profit will be unaffected by changes in certain types of costs. Specifically, fixed costs (costs that are independent of the amount of output produced) will have no impact on a firm's optimal price and production quantity. For example, if the amount of property TAX a firm pays each year rises, a profit-maximizing firm will not adjust the price at which it sells its output or the amount it produces.

This follows immediately from the equimarginal principle. At the profit-maximizing production level, the marginal cost of production will just equal the extra revenue that selling another unit of output would provide. While an increase in property taxes would affect the total cost of production, it would not affect the marginal cost. Since the property taxes would have to be paid regardless of the amount the firm produces, the extra cost of producing another unit of output is independent of the size of the tax.

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market

MARKETS ARE SITES where economic exchange occurs: physical locations, such as farmer's markets, malls, or downtown shopping areas or virtual sites, such as the internet or the postal system. People go to markets to find commodities that meet their needs or to find customers whose needs can be met with products they own and are willing to sell. Either way, people go to the market to engage in exchange or, at the least, to pursue the possibility of such an exchange. The exchanges that define sites as markets can be commodity for commodity exchanges, otherwise known as BARTER, or commodity for money exchanges.

Barter and local exchange trading systems. Barter exchange continues to be a significant process in many communities, although it has ceased to be the prevalent mode of exchange in virtually all communities. In contemporary societies, barter may sometimes provide traders with a means for evading tax authorities. For example, a plumber may agree to fix a faulty pipe for an auto mechanic in exchange for the auto mechanic repairing a busted exhaust system on the plumber's automobile. The exchange of good for good is not accounted for in any records, and does not result in an increase in the identifiable taxable income or sales for either of these two parties. However, tax evasion is not the only, or the most important, reason for the persistence of barter exchange.

Barter continues to play a role in exchange relationships in many rural communities, as well as in impoverished urban areas, because it provides a means for trade to take place without the need for money as the medium of the exchange. By definition, impoverished communities suffer from a relative scarcity of currency. However, the lack of money does not mean that these communities lack tradeable skills or resources. Barter markets can, under certain conditions, provide the mechanism for a community to realize hidden wealth.

Nevertheless, barter has, over time, given way to exchanges involving goods trading for money. These monetized exchanges make it much easier to carry out trades. It eliminates the famous necessity of a coincidence of needs, where party A must simultaneously have what party B wants and need what party B has. An elementary form of a monetized market results from a local exchange trading system (LETS). LETS allows economic agents in local communities to exchange with each other without the need of a national currency as medium of exchange. The first LETS was developed in Canada in 1983 as an adaptation of a barter exchange system. LETS reveals the importance of money to the growth of market transactions. It is simply too difficult to meet all local needs and tap local talents with barter alone.

LETS aside, monetized exchanges employing national (or multinational) currencies also facilitate long-distance transactions, since state-sponsored currencies are typically very portable. This allows for the expansion of market transactions across larger geographical spaces and, more recently, into cyberspace.

Global markets. Indeed, in the contemporary world exchanges for money increasingly take place across national boundaries and often involve multiple currencies. Money can change hands via electronic transmission, although goods continue, at least for the foreseeable future, to require more traditional means of transport. It is possible for a telecommunications firm in Kuala Lumpur to purchase equipment from a firm in Kansas City by mail, telephone, or, increasingly, the internet. The market for telecom equipment is, therefore, global. And this is made possible by a wide range of technological inventions and innovations, both in terms of hard technology and changes in how the institutions are organized. For example, the money transfers required to conduct long-distance trade are typically facilitated by computerized systems of accounting for currency flows across national borders. The banks and other financial institutions that manage these monetary flows are increasingly transnational and supported by nation-based central banks that keep reserves of many national currencies and act as intranational and international clearing institutions. Thus, while barter exchange is one end of the market spectrum in terms of complexity, international market exchanges are on the opposite end.

The complications to market expansion posed by multiple national currencies have been reduced, in part, by a tendency toward trade in a small number of hard currencies. The U.S. DOLLAR, the Japanese YEN, and the EURO are examples of such hard currencies. The reasons that certain national currencies have been internationalized in this way are similar, in many ways, to the reasons for the rise of monetized exchange as a substitute for barter exchange. If a national currency, like the U.S. dollar, becomes widely accepted in exchanges in many nations, then the utility of the dollar as a medium of exchange is greatly enhanced. The greater the utility of the dollar, the greater its value vis-à-vis other currencies. The reverse also holds. Thus, the ascendance of a currency to the status of hard currency creates a virtuous cycle. This virtuous cycle benefits both the nation issuing the hard currency and those nations that use it. To the extent the U.S. dollar achieves hard-currency status, the greater the global demand for the dollar in currency markets.

The stronger the dollar the more attractive U.S. financial and other asset markets become, because U.S. assets are not only denominated in dollars but generate future cash flow in this hard currency. And the hard currency status of the dollar would also benefit markets within and between other nations. For example, if the U.S. dollar is accepted in both countries A and B, but their domestic currencies have more local acceptance, then it may be easier to make exchange agreements between firms in the two countries if the monetary terms are denominated in U.S. dollars. Thus, the rise of hard currencies has the side effect of generating increased international transactions and more globalized markets.

Indeed, the U.S. dollar was, from its inception, a catalyst for the development of both local and cross-border markets, helping to forge a single market among the constituent states of the UNITED STATES, replacing the British pound, one of the world's first truly hard currencies, which had played a similar role in the American colonies. Today the euro is playing a similar role in uniting the economies of the EUROPEAN UNION (EU). Because the euro is readily accepted in exchange within the EU and the EU represents, collectively, one of the world's largest economies, the euro was born as a hard currency.

Markets in cyberspace. The growth of markets in cyberspace is speeding up the globalization of market exchange and creating increased pressures on political and economic authorities to lower impediments to such exchange. Financial markets, in particular, have been significantly extended within cyberspace. A side effect of the growth of financial market transactions within cyberspace has been to pressure financial institutions to provide 24-hour services to their cyberspace clients. It has become commonplace for brokerages, for example, to offer "after hours" trading, and for banks to make it possible for their customers to pay bills, transfer funds, and carry out other financial transactions outside of normal banking hours. Thus, the market has grown not only in spatial terms, but in temporal terms, as well.

Labor markets are also being transformed and extended within cyberspace. The buying and selling of the potential to perform specialized labor is the defining characteristic of capitalism. As it becomes possible to link buyers and sellers of laboring potential across larger geographic distances, due to internet-based labor markets, the difficulties of matching DEMAND and SUPPLY in the labor market should be significantly reduced. In addition, pressures to reduce, though not necessarily eliminate, some of the differentials between same-skill wages across geographic regions increase. Over time, the ability to lower these market differentials will depend critically upon both the ability of workers to relocate and their willingness to do so. The expansion of labor markets across international borders remains particularly problematic as multilateral trade agreements have not, in general, included free-labor mobility alongside free-capital mobility as an important condition.

Markets and political boundaries. The impediments to the growth of international labor markets points out the fact that the presence of monetized exchange is not a sufficient condition for expanding markets across the political boundaries separating nation states. Other barriers to international markets include TARIFFS (taxes imposed on imports) and QUOTAS (quantitative restrictions on imports), administrative rules, monopolized merchant systems, poor infrastructure for the transport of goods and the transmission of data, and discriminatory exchange-rate systems. These impediments to expanded markets can only be eliminated by the signing and enforcement of agreements between national governments.

Since the end of WORLD WAR II, there has been a trend toward such agreements, both bilateral and multilateral, to reduce and, in some cases, completely eliminate barriers to international markets. The multilateral agreements have been particularly important in reshaping global exchange relationships and domestic/national market conditions. The first such major multilateral agreement was the GENERAL AGREEMENT ON TARIFFS AND

TRADE (GATT). More recently, this movement toward globalized markets was reinforced and moved forward by creation of the WORLD TRADE ORGANIZATION (WTO).

Hard currencies, technological changes that facilitate the rapid electronic transmission of data, the development of international laws governing contracts, GATT and WTO, and other such institutional developments have all worked to facilitate expanded, more globalized exchange processes. Have there been benefits from these expanded markets? The expansion of markets across international boundaries makes it possible for producers in country X to respond not only to demand in country X, but also in countries Y and Z. The enlarged market for producers in country X creates the potential for expanded production, more employment, and higher national income in that country. And what about costs of expanded markets? Certainly expansion in global markets has hurt specific industries in certain countries as firms in these industries found it difficult to compete with similar firms with lower cost structures in other nations.

In capitalist economies, market competition can often lead to bankruptcies of firms, including widespread collapse of entire industries, and employment problems for workers with skills linked to those firms and industries. The pressures to compete in the global marketplace may push national governments to implement public policies that reduce the costs of doing business in certain industries, or for business as a whole, in order to make domestic firms more competitive, and to avoid the ill effects of bankruptcies and layoffs. This may, however, result in a shift in public policy priorities away from such issues as environmental protection, worker health and safety, and/or income redistribution, even if a majority of the domestic population favors such policies. In this sense, globalized markets may conflict with democratically determined political priorities.

The nexus between markets and the larger society. Markets do not exist in isolation from other social processes. Markets are always important determinants of other social processes, including political processes, and vice versa. For example, labor markets influence the way school schedules are arranged and, more generally, our perception of time and space, or popular opinions about appropriate dress and behavior. Markets for consumable goods influence architecture, transportation systems, and the language we use. And, in turn, markets are necessarily shaped, directly or indirectly, by a wide range of political, cultural, environmental, and other economic processes. For example, the environmental movement has spawned new markets in biodegradable products, natural clothing, and organic foods.

Indeed, it is this interaction of the market with other social processes that makes it such an important catalyst for economic growth and development. Because the market exists as a series of transactions between unique economic agents, it becomes a mechanism for signaling and mediating differences of perception. If economic agents are dissatisfied with an existing array of products, they can signal this displeasure through their market activities. Other economic agents, picking up on these signals, can respond by offering alternative products. This can result in new invention and innovation, as part of the response to these signals. Similarly, economic agents may respond favorably to the lower cost and/or higher quality of products generated by new, experimental technologies, resulting in the more widespread adoption of such technologies.

Thus, the market can motivate economic agents to take actions that have benefits for the larger society, stimulating higher productivity, better quality products, more rapid economic growth, and the sort of transformation in underlying technology that is described in the economics literature as economic development.

But the signals that markets send are not always positive or even benign. Because the market is nothing more than the collection of transactions of real human beings, then markets can only signal certain of the innermost desires of those human beings who engage in trading, with some human beings having access to more resources with which to signal their desires than others. This, in and of itself, indicates that markets are not innately fair. But it also indicates that market transactions reproduce the prejudices of those economic agents who are in a position to act as traders. If traders are prejudiced against the French, for example, then they may be unwilling to buy French products no matter how high the quality or how low the price. Their actions signal that French products are less desirable, perhaps resulting in a drop in French production, regardless of whether or not these products are better than the favored alternatives. There may be no way to know, by observing the market, if the prejudices are shaped by perceptions of differences in quality or prejudices based on more irrational factors. The market cannot tell us this.

Similarly, if economic agents are addicted to nicotine, their purchase of cigarettes may be a relatively involuntary response to their addiction, rather than a signal that cigarettes are a desirable product. Nevertheless, the demand for cigarettes may generate a higher production of a good that has significant negative social impact.

And because markets bring together unique human beings, or groupings of human beings, to engage in transactions, there is never a market within which the two parties are equal. By definition, in the real world, there will be differences in knowledge, social connections, MARKET POWER, and other relevant factors that will influence the transaction at hand.

Markets in theory and practice. This opens up the question of the difference between the markets we encounter in the real world and the markets that are postulated within economic theory. Theorizing the way markets work, and the role of markets in the larger society, have been an important aspect of all the major economic theories of the past three centuries. Dating back to the works of Adam SMITH and David RICARDO, and then elaborated in a new way by Karl MARX, the market-exchange process was seen as the realization in monetary terms of underlying relationships between different kinds of human labor.

The relative social value of the labor was reflected in the relative prices of commodities in the market. Human labor is valued according to the demand for the products of that human labor, and the value of the products are determined by the value of the human labor embodied in them. This is a tautology. The decision to define the value generated in market exchange in this way was a function of the underlying morality of the theorists. Marx, in particular, wanted to argue that the apparent equality of market exchange, as depicted in orthodox theories, was only a surface illusion masking an underlying relationship of exploitation. The wage rate is determined in the market for labor, but it actually reflects the relative powerlessness and lack of CAPITAL of workers. The price of other commodities reflects the real value of this labor, as well as the value of the material inputs consumed in production.

For Smith, Ricardo, and Marx, the market served not only as a means of satisfying needs and allowing producers to realize monetary returns, but was, in some fundamental way, the manifestation in social exchange of more complex social relationships. A key consequence of the approach of Smith, Ricardo, and Marx was to draw attention to the contingent and contested nature of market exchange and production.

Neoclassical ECONOMIC THEORY was developed to counter the Marxian conception of the market, and restore the notion of the market as the real reflection of underlying equality in society. The normative conclusions of neoclassical economic theory depend critically upon this alternative conception of market exchange.

HOMO ECONOMICUS (HM), the economic agents who engage in market transactions in the neoclassical model, are assumed to be relatively simple-minded entities, shaped by a thought process called UTILITY maximization, which is constrained at the level of decision-making by a limited budget. In the strict version of the theory, HM has access to the same information as the other participants in market exchange relationships (symmetric information); is able to correctly assess the effect of market transactions upon his well-being and future budget constraints; does not lie or cheat; is consistent and unemotional in his preference orderings (rationality); and his preferences are uninfluenced by all possible manner of non-market processes (including peer pressure), among other restrictions. It is typically assumed that the transactions between these economic agents result in all the observable prices and quantities in real-world markets.

In other words, the real world is believed to be understandable by reference to the model of the market constructed based on HM. The most utopian version of this model results in PARETO OPTIMALITY: the best of all possible worlds created by market exchanges. It is from this model that the popular conception of the "free market" originates. The neoclassical conception of the market has become an important polemical tool in public policy debates, particularly those involving the role of government in shaping and enforcing rules of market exchange.

The market remains a contested concept. A wide range of heterodox (non-neoclassical) theories have developed alternative conceptions of the market. Often the argument in favor of the alternatives is that they incorporate more real-world characteristics than the neoclassical orthodoxy. This has been the case with behavioral-finance theorists, for instance, who have set themselves the very pragmatic and testable task of making sense of price movements in real-world financial markets. The financial markets represent a wonderful laboratory for the analysis of markets. These markets come as close as any to meeting certain market-condition assumptions of the strict form of the neoclassical model, yet frequently (if not every day) violate many of the conclusions of that model.

The corporate-finance version of neoclassical economic theory, the efficient-market hypothesis, predicts that markets will be fairly valued at any particular moment in trading. However, markets frequently go through significant revaluations that indicate rapidly shifting opinions about fair value. These shifts are not sufficiently explained by shocks external to the market. In other words, the behavioral-finance theorists have come to recognize that the participants in real-world markets are not HM, but emotional and often inconsistent economic agents, highly sensitive not only to non-market processes, including cultural processes (hubris, fear, uncertainty, fads), but are often hypersensitive to the emotional waves of other market participants.

In other words, the traders in the markets hypothesized by behavioral-finance theorists are capable of engaging in irrational trades. The resulting understanding of the market may not be as aesthetic as that in the neoclassical conception or lead to as unambiguously non-interventionist public policies, but behavioral-finance theorists argue that it would likely have more utility in decision-making involving market behavior, such as portfolio-management decisions involving publicly traded securities.

Markets and capitalism. Perhaps one of the reasons for the disagreements over the concept of markets is the important role that markets have played in the rise to prominence of capitalism. Capitalism, as an economic system founded upon the free wage-labor relationship, can only exist if there are markets for the buying and selling of the capacity to perform labor, that is, labor markets. Thus, most immediately, capitalism requires the existence and expansion of such labor markets. In labor markets, this capacity to perform labor is the commodity that is exchanged, typically, for currency. No wage-labor markets, no capitalism.

The existence of labor markets may, in turn, depend upon the existence of widespread markets in consumer goods. Labor markets cannot exist without a significant number of people willing to work for a wage. But it is widely accepted within both orthodox and heterodox economic theories that people work for a wage because the wage embodies a bundle of useful goods, of consumption goods. Thus, the wage may be paid in kind, where the worker directly receives as part of the wage such consumer goods as food, clothing, shelter. If the wage is monetized, then there must be sufficient goods available for purchase in money such that the worker can buy these goods with her wage. The wage is, therefore, only of indirect value to the worker. Perhaps, then, the idea that markets are critical to capitalism is well-grounded. The labor market may be linked by definition to capitalism, but perhaps widespread consumer-goods markets are conditions for the existence of the labor market. Thus, markets and capitalism are closely linked.

On the other hand, it would be a mistake to assume a one-to-one correspondence between markets and capitalism. While capitalism may need markets to exist and growth in markets to expand, this does not mean that markets need capitalism. Indeed, non-capitalist economic systems have often been highly dependent upon market exchange. Markets have been, under certain circumstances, conditions for the existence of self-employment, SLAVERY, and FEUDALISM. Slavery in the United States, for example, was a particularly market-oriented system of production, with most slave plantations producing goods for export outside of the local region, and many plantations exporting to foreign markets. It would, therefore, be problematic to see the rise in market exchange as necessarily leading to the rise in capitalism. These are two different sets of social conditions.

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market efficiency

THE NOTION THAT THE prices of financial assets reflect all the available information on those assets is referred to as MARKET efficiency. In an informationally efficient market, the PRICE of an asset exactly reflects the value of the asset based on available information. Therefore, any change in price will only occur following the arrival of new information. Since such new information is not predictable, movements in stock prices cannot be predicted on the basis of current information. Thus, except for the normal increase necessary to induce investors to bear the risk inherent in holding stock, stock prices in an efficient market will follow a "random walk." A random walk is a process in which stock returns in successive periods are independent and identically distributed. This would imply that stock returns should follow no particular trend and would therefore have zero serial correlation.

The Efficient Markets Hypothesis (EMH) refers to the proposition that stock markets are informationally efficient. There are three versions of the hypothesis. The weak form of the EMH states that stock prices reflect all historical information pertaining to the prices and trading volumes. Under this hypothesis, any attempt to discern and exploit patterns in stock price movements is unlikely to be profitable.

Technical analysis refers to the practice of identifying specific patterns in past stock price data that may be used to generate buy and sell recommendations. Technical analysts use a variety of techniques to identify such features in stock prices as momentum and reversal.

Momentum refers to the property for stock prices to continue to move in the same direction as in the recent past, while reversal refers to the tendency of stock prices to "correct" the past trend and move in the opposite direction. One way to test for the presence of such properties in stock prices is to examine the serial correlation of stock returns. Momentum implies that today's returns would be positively correlated with yesterday's returns, while reversal implies a negative correlation. Studies indicate that stock returns display mild momentum over short and intermediate horizons ranging from a week to several months. Accordingly, market participants have developed several trading strategies to exploit these properties.

One such strategy uses the filter rule, that prescribes buying stocks whose prices have increased by a fixed percentage in the recent past, and selling those whose prices have decreased. Stock returns also appear to follow strong trend reversals over periods of several years, leading to the development of the contrarian strategy of investing, which involves buying stocks which have performed poorly in the past few years and selling those that have done well.

Under the weak form of the EMH, trading strategies such as those based on filter rules and the contrarian strategy will not be profitable. Since past price information is available to all market participants, any such patterns would also be observed by the rest of the market, precluding their use as signals to beat the market. Studies in foreign currency and stock markets appear to indicate that relatively simple trading rules based on past prices, such as the moving-average rule might produce abnormally high returns (i.e., beat the market). The moving-average rule involves buying those stocks whose current prices are below the average price over a certain fixed period in the past, such as the previous 100 days, and selling those whose prices are above the moving average.

If markets systematically tend to overreact, then such a strategy would identify those stocks whose prices have been pushed too high or low in reaction to past events. One common problem with such studies is that the risk inherent in these strategies is not easily measured. Therefore, it is not possible to confirm whether any returns to these strategies are over and above the level necessary to compensate for their risk.

The semi-strong form of the EMH states that stock prices incorporate all publicly available information, which includes past price information as well as non-price information such as the status of the company. Fundamental Analysis refers to the practice of studying the financial statements and market prospects of a company in order to make a judgment as to its attractiveness as an investment. In deciding whether to invest in a stock, analysts look at several financial indicators such as the P/E ratio which is the ratio of the price of the company's stock to its earnings per share (EPS), the Dividend Yield, which is ratio of the dividends per share to the share price and the book-to-market ratio, which is the ratio of the book value of a share to its market value. According to the semi-strong form of the EMH, none of these indicators is likely to yield a profitable investment strategy, since all of them are based on publicly available information. Studies have shown that several indicators such as the firm size, book-to-market ratio, dividend yield, earnings yield and the P/E ratio have predictive power for stock returns, implying that they may be usable in trading strategies to generate abnormal returns. These results are referred to as anomalies in the market. However, alternative explanations have been suggested for these results that do not rely on market inefficiency.

The strong form of the EMH suggests that all information including insider information is incorporated in stock prices. Under this version, even insider information would not be useful as a trading tool to beat the market. Studies have indicated a tendency for stock prices to rise after aggressive purchases by insiders and to fall after aggressive insider selling, indicating an ability on the part of insiders to make abnormal profits. However, studies also indicate that attempts to mimic INSIDER TRADING by following the SECURITY AND EXCHANGE COMMISSION's (SEC) "Official Summary of Security Transactions and Holdings" may not be profitable, implying that markets quickly incorporate the information in these reports.

One technique commonly used to test whether markets are efficient is the event study. This method involves isolating the effect of an informational event on the stock price, by studying the trend in stock returns prior to and after the event. Under this method, stock returns are first predicted assuming normal circumstances (i.e., absent the event). If the event had a significant impact on the stock price, then the stock returns post-event would have to be abnormally high or low relative to the predicted returns in the absence of the event. Therefore, the cumulative abnormal return (CAR) over a given post-event period such as week or two weeks would be a measure of the impact of the event.

Event studies have been used to analyze the impact of dividend and earnings announcements by firms. In an informationally efficient market, an announcement of unexpectedly good or bad performance (the event) must be quickly incorporated into the stock price, leading to a sudden change in the stock price around the event. Thus, the stock return should be abnormally high or low immediately following the event, but should not continue to deviate from the predicted value for much longer. In other words, there should be no continued drift in the CARs. However, studies of earnings announcements by firms find such a drift: the CARs continue to grow for up to two months after the announcement, implying a slow reaction on the part of the market to earnings surprises. This appears to indicate some form of market inefficiency.

A direct test of market efficiency is whether it is possible for market participants to make consistently high profits. Studies of mutual fund performance indicate that fund managers do not consistently outperform the market, once risk is appropriately accounted for. For example, while funds that invest only in small stocks will likely yield higher average returns than large stock funds, these higher returns are due to the higher risk inherent in these stocks. Overall, it appears that markets are largely efficient.

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market power

MARKET POWER REFERS to the ability of MARKET participants to substantially affect prices to their own benefit. While one usually thinks of sellers possessing market power, the definition also applies to situations in which a buyer has the ability to substantively affect the prices paid for a good or service. This is often the case when the government is the sole purchaser of a good, for example, or when a large company is dealing with small suppliers for certain inputs.

Market power thus contrasts with perfectly competitive markets, in which market forces determine prices and individual buyers and sellers have little or no power to affect them. The most extreme form of market power is usually associated with MONOPOLY.

Market power is of concern when it is directed against consumers in final goods and services markets. Indeed, it is a major indication of unfair, and possibly illegal, trade practices. Hence, it is important to have guidelines that establish how market power can be detected. There are two competing formalizations of market power. Both rely on comparisons between the cost of producing something and the price that the firm is charging.

The marginal cost approach to market power. The first formalization is conceptually quite sophisticated, and considers mark-ups of prices above marginal costs. Marginal costs are the costs that are incurred when producing the final unit of a good or service. These include all the material and labor costs that go into producing that unit, but usually do not account for overhead expenses, as these costs are incurred even if units were not produced. Economists generally prefer this method because in price negotiations, the only cost considerations that matter to the firm are marginal costs, as all other costs will be incurred regardless of the sale under consideration.

The average- or unit-cost approach. The second formalization relies on average (unit) costs, and attempts to measure the degree by which prices exceed the unit cost (a cost measure that accounts for all the costs incurred in production). Due to its simplicity, policy-makers and administrators usually prefer this formalization. The main drawback to this approach, however, is that many costs are subject to accounting interpretations and can be very subjective.

Both concepts may be hard to apply to many cases of interest, though, particularly if marginal costs are extremely low compared to unit costs. Consequently, other proxies are often used to determine the presence of market power. To illustrate, briefly consider two industries: computer operating systems, where market power was purported to be detected via market share; and airline travel, where market power was detected by price comparisons in different markets.

In 2000, the Antitrust Division of the United States Justice Department brought a suit against MICROSOFT, alleging—among other things—that Microsoft had established a monopoly in computer-operating systems. The Microsoft operating system, Windows, is used in approximately 80 percent of computers worldwide. Such a high market share was presumed to indicate significant market power. While Microsoft did not contest this figure, it strongly disputed its significance, claiming that despite having a virtual monopoly, it did not have any market power. In particular, Microsoft argued that it faced effective competition from four sources that limited its market power:

1. Competition from other (small) providers that were currently in the market

2. Potential new entrants who would immediately enter the market if Microsoft were to charge a high price

3. If Microsoft were to increase their prices, people would simply remain with the previous (and now slightly outdated) version of the operating system

4. The possibility existed to pirate their software if it were priced too high.

In addition, Microsoft presented evidence that the monopoly price for their operating system would be somewhere between $900 and $2000 (in contrast to the approximate $100 they were charging). While this may be somewhat compelling evidence, it appears clear-cut that Microsoft used its dominant position in order to gain advantages for its other products. Ultimately, the Justice Department and Microsoft settled out of court in November 2001.

In AIRLINE travel, the traditional measures of market power are also hard to assess. If a plane is to fly a given route, then the marginal cost of letting one more passenger on board may be negligible, yet no one would expect airline tickets to be sold for next to nothing. However, the unit cost may also be hard to assess, given varying fleet utilization rates and other complicating factors. Finally, the complicated fares and schedules that most airlines offer make it hard to determine the relevant price. However, in 1993, a government investigation found that airfares out of airports that were served by a single airline were almost a third higher than in those served by several airlines. By the early 2000s, between the terrorist attacks, war news, disease alerts, and the resulting drop in air travel, airlines' market power became more a matter of survival, as shocks to the airline industry often resulted in large losses to airlines (and sometimes lead to bankruptcies).

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marketing

RESEARCH ABOUT MARKETING is at the intersection of three disciplines: economics, social psychology, and communication studies. Usual definitions of marketing often include standard formulations such as "marketing is a process that identifies, anticipates and satisfies customer requirements profitably." This means in order to maximize sales and profits, producers of goods and services must simply try to give the customer what she wants. In order to reach this goal (and to know exactly what the customer really wants), marketing experts can use different methods to understand how the consumer would be fully satisfied and adjust production plans accordingly. Different approaches are possible: surveys, laboratory tests, consumer satisfaction services, focus groups, and comparisons with other labels and trademarks, among other tools.

Opposing concepts. Although it is an important part of every organization's strategy and PLANNING, in order to succeed marketing's aims and methods cannot be reduced to just a simple formula, such as "The right product, at the right time, in the right place, at the right price." Endless competition among manufacturers (and as well among retailers) creates distortions between producers, consumers, and intermediaries, all along the production chain. Moreover, this idealistic conception of a fluid producer-consumer relationship with constant feedback is sometimes challenged by the down-to-earth facts of day-to-day reality. This explains why marketing can be conceived in two opposite ways. Is marketing a responding attitude toward the customer's real needs or, on the other hand, an active attempt to suggest new products to a potential consumer, who wasn't aware of those needs, or not even looking for anything in particular to buy?

This second definition corresponds to the other side of marketing, which is, now and then, presented as a kind of invisible method of creating new desires, and therefore new needs for new consumers. According to this contested approach, marketing would make you want something you don't absolutely need (or something you can't really afford). Vance Packard wrote, in 1957, an alarming and famous book about the hidden potential powers of marketing, *The Hidden Persuaders: What Makes Us Buy, Believe—and even Vote—the Way We Do*.

Even if Packard's book was a huge success that sold more than a million copies, these arguments and demonstrations are to be taken with moderate doubts, knowing that mass psychology and behavioral studies have evolved in recent decades. Nevertheless, we have to admit that many products that are sold almost everywhere are not the best, or the more valuable ones in their respective field. The adequacy between quality, availability, and convenience is not automatic, and changes from one to another. For instance, fast-food restaurants are to be found everywhere, but fine-cuisine restaurants, or meals made with only natural products, are available only in specialized outlets.

On the other hand, we know that consumers do not necessarily compare all different products every time they go shopping. According to where they live and the stores they shop, some of these consumers do not always have access to all labels and specific products because of product DISTRIBUTION. Marketing is not just a method for reaching the customer in more than one way, it is also about how to create and sustain a hopefully durable relationship between the seller and the buyer.

Serving clients is a dedicated procedure. Gaining confidence and new customers is essential for a company to grow. This means either making people aware of what you have to offer in order to make them use it, or even attracting customers from your competitors by offering them something else, something more, i.e., better treatment or optimal conditions. But changing a CONSUMER's habits, even for the better, can be a complicated mission for a marketing agent. Client retention becomes the next challenge for marketing experts; satisfying a customer's requests and never taking her for granted.

This is why marketing is not simply a strategy to reach new customers, but also a way to get a broader market share, by convincing commercial partners to give a better visibility to one's products (in stores, in displays, in show cases, in promotions, in general advertisement). This preference over other labels can either be given, negotiated, traded, paid for (in cash, bonuses, or by sharing profits on a preferred scale). Consequently, this also means that a product's qualities are not always enough to reach the largest market share. According to aggressive marketing theorists, special arrangements, exclusive rights, and trade agreements are proven to be more efficient methods. Consumer behavior studies have proven that many people just choose what is easily within reach, without much questioning. They naturally rely on store managers' judgments to do the right pre-selection of products that are offered, no matter on what real grounds these choices are effectively based and made.

A marketing team must deliver more than the right product at the right time, place, and price.

History of marketing. Strategies for reaching new customers are even depicted in the Bible, but the systematic study of marketing is quite recent in universities and business schools. According to Morgen Witzel, the author of an 8-volume reference on marketing, "It was only in the early 20th century that marketing began to emerge as a coherent business discipline." Many theoretical reflections about the constant need to reach newer markets were written in the 19th century by Karl MARX and Adam SMITH.

Consumer relations have profoundly changed in a few centuries. We can easily imagine the figure of an old, hardworking craftsman from previous centuries, who built in his workshop either precise violins or tailored clothes for specific customers. When he was too busy or had too many orders at the same time, he just refused new customers. Today, mass-production often precedes sales, and builders do not always know who will buy the products at the time they are being made. The craftsman always knew for whom he was working. We now just have a general portrait of groups of customers, which are identified as "markets" that need appropriate packaging and labeling.

Strategies of persuasion. Advertising is a key element in marketing. We have to remember that one century ago, people said "propaganda" instead of "advertising," knowing the fact that there is, in every advertisement, a dose of persuasion. A message is not just informative; it can also try to promote and persuade potential customers. Professional publicists will often say that they don't sell a product but rather an image, a way of living, a selected position in social hierarchy. As French sociologist Pierre Bourdieu has explained, public taste can be analyzed according to social status, education, or salary. This explains why some marketing strategies choose to target precise groups (elder, ethnic groups, linguistic minorities) when they promote a specific product, not because it is only made for a small portion of the public, but because a particular group responds better to corresponding arguments and motivations

Some multinational corporations can have many different advertisements for a single product in the same country. For example in CANADA, advertisements and commercial spots in French, that used to be dubbed translations of an English message in many media (magazines, television) until a few years ago, are more and more produced locally by firms that are more aware of the local valued habits, fashions, and common tastes. In the UNITED STATES, some retailers project different images of their customers in advertisement spots and catalogs (for instance, by including more visible minorities, or using some overweight models), as they also try to target African American or Spanish-speaking customers with a specific approach.

In an era of GLOBALIZATION, new markets are not necessarily abroad and far away; organizations tend to identify and target the many specificities among a nation's various groups.

Ethics and commercial aims. Ethical issues have been raised about marketing strategies. Is there a limit to the search for new customers and larger market shares? For example, should a company offer imported sparkling water beverages in poor regions of the world, where populations can hardly afford them, and would rather need to drink milk or natural fruit juices? Should companies advertise beer and alcohol in the media (on television, in magazines, and newspapers), knowing the fact that a good portion of the population has to fight with a drinking problem? Should advertising about cigarettes and tobacco be controlled by the state? Should television stations be allowed to broadcast advertisements for toys on Saturday mornings, during programs scheduled for kids? Many countries have created rules and limits for certain advertising practices.

Offering a product can sometimes create a desire, but the desire is not always a response to a genuine need. One of the contemporary missions of some marketing strategists has been to provoke, to increase the artificial needs of consumers, in order to sell more, following the logic that says corporations have to fight and compete in order to get their competitor's customers. This can partly explain the appearance of consumer studies and the many consumers-advocate associations.

People are more aware about the possible creation of waste inherent to consuming; they care more about re-using, recycling, and protecting resources and environment. As author Andrew Crane explains, marketing and morality have to consider issues about pollution in the way they present new products.

Keep the customer satisfied. A successful marketing plan is often presented as a strategy to give more than what is asked for by the client. For instance, we hear that "McDonald's isn't really selling food but rather offering entertainment." This means the consumer will probably find something to eat through a privileged relationship, bound to be long-term, with the people she will interact with. It also means that a successful approach must consider marketing services rather than just selling products. To be fully successful, all employees must be aware of this vision. The need for a dedicated attitude of customer service adds a challenging mission to internet retailers, who have to create new ways of conviviality in virtual exchanges.

For some reason, some people never go to stores, never watch television, never go to bookstores, never check film listings in newspapers when they want to choose which movie to watch. There have to be special approaches to reach, in more different ways, these unusual customers who nonetheless are willing to buy products they are being offered. Book clubs, mail-order services from catalogs, internet retailer websites, and CD subscriptions are all examples of alternate strategies that can offer a relatively wide range of products to specific potential customers who cannot always compare brands, labels, or even prizes.

Some customers are not particular in their tastes and choices. They could say on some occasions: "I need a book to read during my next trip," or "We need some music for the party." They won't say: "I absolutely need the new boxed set of the Rolling Stones." Their respective requirements and criteria are, in some cases, simple: something to use (or read or listen to) that is not bad and not too expensive. Sometimes, consumers will just look at the bestsellers in each category of product to make their choice more rapidly.

Supply and demand. The adequacy between needs and availability, SUPPLY and DEMAND, is not always in perfect balance. There seem to be many more products and services available than ever before. In order to reach more customers and to offer more and more of what could be bought, companies try to occupy the largest area of space in stores. Knowing that, there are still products that are more difficult to find in any country: imports. Imported products usually occupy a domain where no equivalent exists. Imported products (food, wine, music) are supported by different advertising strategies, through alternate networks. But alternate artifacts sometimes become the new fashion, the new wave. One country's mass culture can be seen as alternate in another country: In 2003, Céline Dion's songs in French are a huge success in Canada and FRANCE; but these CDs have to be specially imported into the United States and can't be found everywhere.

What cannot be marketed. There are certain products and services that cannot be advertised as ordinary merchandise, such as legal and medical services. For example, it is not possible to offer a company's stock shares in an advertisement (with some exceptions such as Initial Public Offerings through a financial agent). Some drugs and vaccines cannot be advertised directly to the public, but personal representations and advice may be given by a drug company's representative to a dentist or a doctor who meet privately for this purpose.

In these cases, marketing strategies are conceived accordingly and include statistics, data, previous studies, and recent articles in scientific or medical journals. Physicians are solicited by different companies that compete with each other; they get samples of new products that sometimes guide their future medical choices. Many companies also try to influence (or convince) hospital leaders, professors in universities and institutions, professionals in research centers to reach certain agreements and exclusive partnerships. Marketing pharmaceutical services is a distinct universe as well, with its own rules.

Some legal services are also offered and made in appropriate methods. Some professional corporations (lawyers, engineers) try to set bounds to advertisement made by their members, because all of them are supposed to be equally competent and reliable.

The marketing of the president. Because there are nonprofit applications of marketing concepts, most marketing strategies work not only for products and services, but as well for persons, political parties, or nonprofit organizations to promote their ideas, candidates, and representatives. Motivations can range from elections at any level, raising funds for a charity, campaign finance, or any other "good cause." (Promoters say they always defend and advocate "good causes.")

Oddly, marketing methods for persons operate about the same as for objects; one has to state the person's qualities, advantages, but also his or her charisma, his or her image. These elements are usually constructed and packaged; they are selected according to the perceived preoccupations and expectations of the general public. For example, the construction of a public image (for a poster, on television, in public appearances) is used in order to show how the candidate already succeeds in what he or she promises, proving to combine essential qualities such as dignity, honesty, reliability, and popularity. Since a person always has an image (almost by default) when appearing in the media, people who prepare public relations prefer to impose the positive image they have planned, instead of having to change an unwanted, contested, controversial reputation. One has to only look at the packaging of presidential candidates in the United States during an election year to see the forces of marketing at work.

Institutional advertising and marketing. Some important marketing strategies are made for organizations that have nothing to sell or promote. Public services such as nuclear plants, police stations, non-profit associations, and charities sometimes pay for advertisements that only show their support to another cause. We say they promote their image, as some companies who take space in the media just to say they care about something, or just to wish a "Happy Holidays!" to everyone. The goal of most of these marketing campaigns is to win a positive sentiment over public opinion, or to improve an image and visibility. Nonetheless, these strategies have to be planned and targeted.

Institutions, public services, and governments at all levels often use what they call information campaigns or publicity campaigns to communicate and promote ideas, decisions, projects, new laws, and policies for the good of the population. Governments need to communicate with citizens who have the right to be informed. Basically, these messages are not harmful, but nor are they harmless. They project simple, elementary rules to control important issues and matters in a society where people have to live together and share a resources: Drive carefully; don't waste water when reserves are low; don't spit on the floor; please don't smoke.

More complex messages also exist, in order to change habits or to make people accept rules, such as neighborhood crime-watch organizations and "don't drink and drive" campaigns. Public sectors use these marketing approaches because they are efficient and can target specific audiences.

Marketing entertainment, media, and culture. Books, music, movies, and television programs often need to be marketed to specific audiences. The marketing of motion pictures is a good example to understand strategies behind cultural industries. In newspapers, movies ads often carry a few approving quotes, even the newest ones, saying nice comments, such as "A masterpiece; the best film of the year," and "One of the most moving pictures I have seen." These authoritative approvals are important; they testify to the value of the movie being promoted. But the quoted critic may be on the other side of the world. There is always one critic, somewhere, at some point, who will be moved or charmed by any film, and the marketers compile these critics' quotes to select only the very few words that glorify their film.

The same logic applies to publishing and book critics, who receive free review copies of recent (or forthcoming) books from publishers (or distributors). Since only the biggest firms can afford to give away so many free copies for promotion purposes, only those among the most important can obtain the main reviews. And since books that have received the most reviews usually attract more attention, critics just amplify the visibility of already successful works and authors. In fact, very few critics are doing research to locate alternate but valuable works to give them the appropriate attention and coverage.

New economy and new technologies. Since the early 1990s, branches of the new economy have modified the limits of what can be marketed. Consultants now sell business solutions, special advice and training for people and enterprises. Change, in itself, has become a motive and a goal; uninspired managers sometimes feel satisfied only if they have made frequent changes, no matter if they were justified or not. There are people who buy useless goods; in the same way that others ask for useless services and command useless changes. Marketing couldn't survive without the word "New."

Record companies have borne the brunt of marketing in the new economy. In 2003, many had to think of new strategies because of weak demand and poor sales, sometimes attributed to illegal music copying off the internet. In order to avoid piracy among CD users and buyers, some companies even offered free movie tickets to people who bought selected new CDs, instead of downloading music or copying a friend's CD.

With the progress of technology, scholars have made original theoretical developments and interdisciplinary links between marketing and cultural studies. In a collective book, British sociologists Paul du Gay, Stuart Hall, and others have observed how the famous Sony Walkman was conceived and perceived as a way of life for users, and not just as a useful portable machine to play music. The authors are also aware of what they call "the culture of production," presented as "an integral part of the company way of life, that informs the perceptions of outside observers."

Marketing is not just about goods and services; it is more and more about the lifestyles, images, consumer-related actions and behaviors of those who live in highly developed capitalist societies. Often, there seems to be an endless antagonism against much-criticized marketing studies and a seemingly more respectful conception enabled by consumer studies. In the end, ironically, it may be that marketing has to justify itself and market its own image and social pertinence.

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Markowitz, Harry (1927–)

AWARDED THE 1990 Nobel Prize in Economics with William SHARPE and Merton MILLER, Harry Markowitz was recognized for his theories on evaluating stock-market risk and reward and on valuing corporate stocks and bonds. Markowitz used statistical techniques to identify optimal portfolios or portfolios that diversify assets to maximize return while minimizing investment risk.

These portfolios could then be combined with a risk-free asset and graphed on the Capital Allocation Line which shows the trade off of risk versus expected rate of return. Markowitz's work laid the foundations for the Capital Asset Pricing Model, which was developed by William Sharpe, John Lintner, and Jan Mossin in the mid-1960s.

Markowitz was born in Chicago, the only child of Morris and Mildred Markowitz who owned a small grocery store. Growing up in Chicago, he had a wide range of interests from playing the baseball and violin to reading popular accounts of astronomy, physics, and philosophy. Markowitz enrolled at the University of Chicago where he obtained a Bachelor of Philosophy in 1947, a M.S. in 1950, and a Ph.D. in 1954. During his time at Chicago he studied under Milton FRIEDMAN, Jacob Marschak, Leonard Savage, and Tjalling KOOPMAN.

In 1952, Markowitz left Chicago and joined the RAND Corporation where he met Sharpe with whom he would share the Nobel Prize. At RAND, Markowitz worked on industry-wide and multi-industry activity analysis models of industrial capabilities with Alan S. Manne, Tibor Fabian, Thomas Marschak, Alan J. Rowe and others.

After leaving RAND, he held positions with Consolidated Analysis Centers, Inc. (1963–68); the University of California, Los Angeles (1968-69); Arbitrage Management Company (1969–72); and IBM's T.J. Watson Research Center (1974–83). He became a professor of finance at Baruch College of the City University of New York in 1982. In 1989, Markowitz was awarded the Von Neumann Prize in Operations Research Theory by the Operations Research Society of America and the Institute of Management Sciences for his works in the areas of portfolio theory, sparse matrix techniques and his development of the SIMSCRIPT programming language. He is also the co-founder, with Herb Karr, of CACI, a computer software company which supports SIMSCRIPT, a language used to write economic-analysis programs.

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Marshall Plan

ON JUNE 5, 1947, U.S. Secretary of State George C. Marshall addressed the graduating class at Harvard University after the commencement ceremonies. What he announced was a plan that would ultimately lay the foundation of Western Europe's unprecedented economic ascent after WORLD WAR II, and would also hasten the descent of the "iron curtain" separating the Communist Eastern from the democratic Western states of Europe.

The unconditional surrender of the German forces in May 1945, marked the cessation of armed conflict in Europe. The devastation in human and economic terms was truly catastrophic, and even after military action had stopped, misery and devastation continued as armies of refugees were displaced across Europe. The European economies seemed on track toward recovery through most of 1946, but then progress came to a standstill as key supplies proved lacking. Food was limited and there was a widespread shortage of coal—the main form of energy used in production and for heating.

The crisis deepened in early 1947. The winter had turned out to be unusually cold and long, increasing the demand for coal. At the same time heavy snowfalls seriously hampered the mining industry in England, further reducing the amount of coal available. Coupled with these shortages were also severe currency crises that threatened to devalue European currencies.

As a result of the economic hardship, communist parties gained considerable popular support and political strength especially in ITALY and FRANCE, and also elsewhere in Western Europe. There was a very real concern among U.S. officials that communism would take hold in the democracies of Western Europe and that these would subsequently align themselves with the SOVIET UNION.

In response to this situation the UNITED STATES already had a string of ad hoc bilateral agreements in place. However, it was becoming clear that these would not suffice to solve the problems due to their limited scale and scope. Moreover, what was needed were not stopgap measures and mere temporary relief, but a long-term strategy to secure economic and political stability.

When Marshall traveled to Harvard University to accept an honorary degree, he gave his speech in which he first summarized the gravity of the situation, and then made what he called "a suggestion":

> Aside from the demoralizing effect on the world at large and the possibilities of disturbances arising as a result of the desperation of the people concerned, the consequences to the economy of the United States should be apparent to all. It is logical that the United States should do whatever it is able to do to assist in the return of normal economic health in the world, without which there can be no political stability and no assured peace. Our policy is directed not against any country or doctrine but against hunger, poverty, desperation and chaos. Its purpose should be the revival of a working economy in the world so as to permit the emergence of political and social conditions in which free institutions can exist. Such assistance, I am convinced, must not be on a piecemeal basis as various crises develop. Any assistance that this Government may render in the future should provide a cure rather than a mere palliative. [. . .]
>
> It is already evident that, before the United States government can proceed much further in its efforts to alleviate the situation and help start the European world on its way to recovery, there must be some agreement among the countries of Europe as to the requirements of the situation and the part those countries themselves will take in order to give proper effect to whatever action might be undertaken by this government. It would be neither fitting nor efficacious for this government to undertake to draw up unilaterally a program designed to place Europe on its feet economically. This is the business of the Europeans. The initiative, I think, must come from Europe. The role of this country should consist of friendly aid in the drafting of a European program and of later support of such a program so far as it may be practical for us to do so. The program should be a joint one, agreed to by a number, if not all European nations.

The plan thus had two key features: First, to provide a coordinated effort that should be designed to restore confidence and lay the foundation for long-term growth. And second, the particulars of the plan should be drawn up in Europe with the idea of coordinating economic help across borders, and, if possible, with all European nations involved. Moreover, it was hoped that economic cooperation between European countries would remain in place well after the initial plan was implemented.

The reception of the Marshall Plan in Europe was very positive. The first meeting of foreign ministers took place in Paris. At this meeting, however, the Soviet foreign minister, V.M. Molotov, declined participation denouncing the plan as an imperialistic U.S. scheme. Eastern European countries were also pressured to decline participation. POLAND and Czechoslovakia, who had previously indicated their desire to participate, withdrew as well. Consequently, the Committee for European Economic Cooperation (CEEC) that was set up and began work on coordinating economic strategies, operated without Eastern participation.

Ultimately, this rift also solidified the division of GERMANY as West Germany moved ahead with a currency reform as part of its economic stabilization efforts that finalized the economic division of the two Germanys.

The Soviet response was not unanticipated, given that the plan was in part conceived in order to stabilize democratic forces in Western Europe and required economic cooperation, and thus economic disclosure, from the Soviet Union and its satellites. However, there is not nearly enough evidence to support the notion that the plan was specifically designed to lead to this kind of breach between East and West.

Europe was not the only place that Marshall's suggestion had to overcome opposition. In order to establish the Marshall Plan, Congress had to pass the Economic Cooperation Act (ECA) that established the European Recovery Program (the official name of the Marshall Plan). At the outset there was substantial Congressional skepticism concerning the costs and the effectiveness of the proposal. There was also political opposition to providing money to a country that had been an enemy only a few years earlier. However, in addition to working closely with legislators, Marshall lobbied the American people directly in a fashion that has been likened to a presidential campaign. In the end the ECA passed overwhelmingly, its fate having been decided largely by tremendous popular support.

During the years 1948 to 1952, the total amount of financial support to the 14 European recipients of Marshall Plan monies exceeded $13 billion. In the wake of the transfer of these funds and due to the cooperation across Western Europe, some of the most impressive economic growth in history took hold. Indeed, in West Germany the post-war recovery became known as the Economic Miracle. Another effect of the Marshall Plan was to forge strong economic and political ties between Western Europe and North America.

In 1953, Marshall was awarded the Nobel Peace Prize, which he graciously accepted as a representative of the American people.

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Marshall, Alfred (1842–1924)

ALFRED MARSHALL INHABITS a very peculiar place in the history of modern economic thought as it pertains to capitalism. He was well known in his own day as a professor of economics at Cambridge University in England, where he helped increase the academic prestige of economics, and authored the classic *Principles of Economics* (1890). Today he is less read or discussed. To a large extent that is because Marshall's world—the late Victorian era in British history—and its views of capitalism seem remarkably distant from our own.

But in certain ways Marshall belonged to our modern world. His life was framed by a youthful period of religious doubt and the influence of Charles Darwin. Marshall showed how the precise application of mathematics (a subject he studied intensely before turning to philosophy, then finally economics) could help economic study become more objective (think today of economists' diagrams and mathematical formulas; these are the concepts Marshall helped pioneer). At the same time, Marshall believed economics should not be divorced from ethics or history. Indeed, as one author sympathetic to his thoughts, Gertrude Himmelfarb, put it, Marshall believed "economics was a species of moral philosophy."

Marshall tried to provide a moral justification for industrial modern capitalism—the sort that marked England's history during his life. For example, Marshall did not simply stress the economic function of a diligent work ethic but argued for its moral necessity. He explained that "as human nature is constituted, man rapidly degenerates unless he has some hard work to do." Following this line of argument, he became famous for condemning alcohol abuse among the working class. Such abuse not only damaged individuals, Marshall maintained, it kept them oblivious to the actual state of their affairs and the gradual improvement of life via free-market economics and industrial ingenuity.

Indeed, progress was central to Marshall's social thought. He was known for introducing the idea of time into modern economics, and arguing against prior economic thought that worked from "statical" assumptions (his word). He believed increased technological efficiency nurtured "the steady progress of the working classes during the 19th century," since work would become less brutal. Everywhere he looked, Marshall saw industrialism's abundance and wealth helping to alleviate poverty.

Of course, Marshall knew full well that his arguments faced challenges from social critics and political activists. While Marshall was lecturing and writing, Marxists had grown more popular with their critique of capitalist exploitation and the increasing misery of the working classes. Marshall knew that any argument on behalf of modern capitalism needed to recognize its critics.

He also believed that capitalism had to be defended against the legacy of classical political economy. He argued against two of the most important predecessors in economic thought: Thomas MALTHUS and David RICARDO. Malthus argued that population growth foreordained an exhaustion of resources, while Ricardo believed workers' wages would stagnate as greedy landlords grew richer. Both visions struck Marshall as too pessimistic, too contrary to his own hopeful views on political economy. As his biographer, Peter Growenewegen, put it, Marshall "wished to jettison the pessimistic conclusions of classical economics" and hoped to "substitute a law of progress which included belief in the possibilities for improving human nature itself."

Marshall also developed a more complex theory of PRICE while working in the traditional framework of supply and demand. Some economic thinkers had believed that cost of production determined price while others stressed the utility of goods to consumers. Marshall combined both views into one. Each factor played a role, and more importantly each factor changed over time. With all of the different issues Marshall discusses in *Principles of Economics*, readers come away with a very complex understanding of market capitalism. Though complex, Marshall's views were extremely optimistic, believing everything would work out in the end.

Though an optimist, Marshall also believed capitalism needed to be reformed. He worked with the Charity Organization Society and supported self-help initiatives among workers trying to improve the quality of their lives. He hoped chivalry would correct the grosser abuses known to industrial capitalism. In these initiatives and ideas we can glimpse Marshall's deeply moral understanding of modern capitalism—an understanding that often feels quite foreign to our own.

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Marx, Karl (1818–83)

A PHILOSOPHER, AN ECONOMIST, and a sociologist, but perhaps most of all renowned as the founder of so-called scientific socialism and as a prophet of Marxism, Karl Marx was born in Trier, GERMANY, and died in London, England, in 1883, the year when, incidentally, two other great economists who wrote on the broad subjects of capitalism, Joseph SCHUMPETER and John Maynard KEYNES were born. Marx's two greatest contributions to the intellectual life of his time, and beyond it, were the *Communist Manifesto* written together with Friedrich ENGELS in 1848, and a three-volume treatise on the political economy of capitalism, *Capital* (1867–95).

Life and work. After school, Marx first entered Bonn University to study law but he soon transferred to Berlin University where he became interested in philosophy. He received his doctoral degree in 1841 in Greek philosophy. By that time, he was already deeply involved in radical political movement. In 1842, he became editor of a radical liberal newspaper, *The Rhenish Gazette,* which was banned by the authorities in 1843. In that year, Marx also got married and moved to Paris. It was in Paris that Marx met his lifetime friend and ally, Engels, and became a communist, based on his experience of mixing with workers' groups. In 1848, he and Engels wrote the *Communist Manifesto* that became the political credo of the communist movement.

Marx settled in London in 1849, where he spent most of the time in the reading room of the British Museum studying and developing his economic and political theories. He suffered from extreme poverty and was helped out by Engels, and other friends, and supporters who sent him money. He was a very hard worker but toward the end of his life his health failed him reducing his creativity and forcing him to leave *Capital*, his lifework unfinished. He died at the age of 64.

Despite the fact that for most of his life Marx was an academic scholar, his motto was "all previous philosophers only tried to explain the world, while the true task is to change it." He has certainly had a profound influence on changes in the world after him although we will never know if that was indeed the kind of changes that he would have approved of.

Economic interpretation of history. Although Marx is most well known as a prophet of communism, this aspect of his work is really important only to communists. We will come to it, but start with Marx's contributions that go beyond the political message of communism, and that continue to live on in modern-day social sciences.

The biggest such contribution is the economic interpretation of history, which in the words of Schumpeter was one of the greatest achievements in sociology of all times. The economic interpretation of history does not mean that people are motivated only or primarily by economic motives in their behavior. The true meaning of

Marx's message, in this regard, was that religions, philosophical concepts, schools of art, ethical ideas, and political movements are shaped by the economic conditions of their times and that changes in the economic conditions account for their rise and fall. Those changes (the "development of the productive forces" of a society) can be influenced by non-economic factors, but in the end the needs coming from the economic side will meld political and other institutions in a way that is required for their continued development.

At least part of Marx's vision is still alive today in works by economists and political scientists who have absolutely no sympathy for the political message of Communism (for example, in economics it is related to theories accounting for the formation of preferences and social institutions, as in the works of the Nobel Prize-winners Gary S. BECKER and George AKERLOF).

The theory of class struggle and the Communist Manifesto. The economic interpretation of history is closely related (although, by no means, identical) to Marx's theory of social classes and his understanding of the historic process as inherently driven by class struggle. Classes are defined in their relationship to material means of production (OWNERSHIP of factors of production, in modern terminology). The development of productive forces gradually changes the relative importance of factors of production and that is translated into relative changes in their power. As the ascending class fights against the declining class, the social order and the whole political and ideological landscape undergo drastic changes, often by means of a violent revolution. This logic is applied to past human history in the *Communist Manifesto* and it is extended to predict the future, in which the takeover by the ascending class under the bourgeois system, the proletariat, will eventually result in a classless society, and an unlimited potential for economic development.

Although the theory of class struggle is not accepted in its Marxist form by modern social sciences, many of its insights, including the role that competition for political influence plays in shaping institutions and government policies still live on. Also, although the prediction of an imminent collapse of the capitalist system and the proletarian revolution has not materialized, some of the most forceful passages in the *Communist Manifesto* actually refer to the greatest achievements of the "bourgeoisie" class, and to complete changes in the ways human history has been made after its ascendance to power (that is, after the advent of capitalism).

Marx can thus be credited with being one of the first thinkers to recognize the fact (widely accepted today) that the capitalist (free market) system represented one of the biggest breakthroughs in human history, since the dawn of civilization.

The theory of surplus value and exploitation. Marx begins the exposition of his labor theory of value (which is rooted in David RICARDO's labor theory of value) in *Capital* by asking a question, what it is that makes commodities comparable in terms of values. His answer is that it is the general fact that they are all products of labor. He does mention that a commodity must have value in use as a precondition to having any value at all, but he does not seem to be aware of the implications of this.

More precisely, when postulating that the value of commodities is governed by the number of hours of labor "socially necessary" to produce them, Marx refers to some standard, commonly prevailing production technology, apparently without noticing that one needs to know values (equilibrium of relative prices), before it can be determined what makes a production technology commonly prevailing in the first place. Modern theory of value (largely developed after Marx's death) explains relative prices by the interaction of "social necessity" (human wants) and the quantity of scarce resources (labor among them) used in their production, so that from a scientific point of view, the labor theory of value, including Marx's version, is side-stepped.

Modern economists point out the labor theory of value alone is not enough to purport Marx's political message that the proletariat (workers) are being exploited by the bourgeoisie (capitalists). Under the labor theory of value, it is still true that all producers get paid according to the number of labor hours embodied in their product, so there seems to be no room for extra profit (surplus value) accruing to capitalists. To get around this difficulty, Marx makes labor a special commodity. What hired workers (in contrast to self-employed artisans) sell in the market is labor force, not the product of their labor. The value of labor force is determined by whatever labor is "socially necessary" to produce it, that is, the value of food, clothing, housing, and other components of the "reproduction of labor force," according to Marx.

This socially necessary value of reproduction of labor force is always less than the value of the product of labor (Marx never explains why), so when capitalists hire labor they derive value from owning the product of labor, which is in excess of what they pay for the labor force.

Marx uses the theory of surplus value and exploitation to derive various laws governing the evolution of capitalism and to predict its eventual self-destruction. As the capitalistic way of production spreads, exploitation of the proletariat becomes a bigger and bigger fact of social life. At the same time, the accumulation of capital reduces the rate of surplus value (which is generated only by current labor, not by capital goods). In the end, private ownership of capital has to be abolished and the proletariat takes over the production process, eradicating exploitation.

Marx and Marxism. Marx's theory of surplus value was rooted in the empirical facts of his era, when labor was indeed paid very meagerly, while owners of capital enjoyed very high profit rates. Although Marx's theory was true, it only meant that a large part of the labor force was still employed in the pre-modern sector where their income was confined basically to subsistence level, and made possible the divergence between the "value of labor force" and the "value of its product." Only in the presence of a vast "reserve army of labor" could the determination of the wage rate be treated as exogenous to the capitalist production and its markets.

The very logic of capitalistic development, that Marx so well understood (as shown, in particular, by the *Communist Manifesto*), was pointing strongly toward changes making the theory of exploitation problematic. The spread of manufacturing and the retreat of traditional agriculture and artisanship brought the determination of the "value of labor force" into the realm of supply and demand in the capitalist sector. The accumulation of capital also led to the development of capital markets and to overcoming institutional barriers between workers and capitalists. Marx's predictions about the historical trend of capitalist development apparently failed to materialize.

This did not lead, however, to the demise of Marx's political message. Although radical followers of Marx hardly understood the depth of his theory, they were quick to seize its slogans. Some of the most repressive and intolerant regimes in human history were created in the 20th century in the name of "Marx," although Marx's original message was neither anti-democratic nor against individual freedom. The horrors of Josef Stalin's communism in the SOVIET UNION are no more, and no less, rooted in Marx than the horrors of the Medieval inquisition in Spain are rooted in the teaching of Jesus. Marx's message ended up being used by social reactionary forces; the locomotive of progress bypassed his vision, leading to the development of productive forces that Marx thought were only possible with the rise of proletariat and communism, in a completely different fashion.

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Matsushita Electrical Works

MATSUSHITA ELECTRIC, headquartered in Osaka, JAPAN, was founded in 1918, when 23-year-old Konosuke Matsushita started a small workshop with only two employees (his wife and brother-in-law) to design, make, and market an improved attachment plug.

Since then, the Matsushita group of companies has become a comprehensive, worldwide electronic-product manufacturer whose products range from digital components to consumer electronic products, home appliances, factory automation equipment, information and communications equipment, and housing-construction products. Ranked as the 45th-largest company in the world in 2002, Matsushita had nearly $55 billion in sales. Spanning a wide variety of fields, it serves residential housing, office complexes, commercial facilities, factories and assortments of public-utility structures.

Matsushita faces changes caused by an information-technology (IT) revolution, environmental concerns, and marked shifts in social demographics. As a result, the company has initiated four new business areas that are targeted to help solidify its customer base. These include: IT-related products and services; elderly care and support care products; stock renovation solutions for residential, commercial and public arenas; and "Green and Clean" environmentally sound products.

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McFadden, Daniel L. (1937–)

WINNER OF THE 2000 Nobel Prize in Economics (with James J. HECKMAN), Daniel McFadden is known for his theoretical and methodological research into the economic behavior of individuals and households. Chief among McFadden's contributions to capitalist economics is his development of theory and methodology to analyze consumers' choices among a finite set of alternatives. Such discrete choice analysis is used to examine many practical phenomena, including a commuter's choice of travel mode (car, bus, train, etc.) or a household's choice of telephone service plan.

McFadden was raised on a remote farm in North Carolina. He attended public schools until his suspension from high school in his junior year for circulating a petition. Entering the University of Minnesota by examination at age 16, he graduated with a B.S. in physics three years later. He began graduate study in physics, also at Minnesota. However, McFadden's interests in the study of human behavior shortly led him to enter the Behavioral Science Training Program at Minnesota, from which he earned his doctoral degree (with emphasis in economics) in 1962.

After a short post-doctoral position at the University of Pittsburgh, McFadden began his professorial career in the economics department at the University of California, Berkeley. In 1977, he moved to the Massachusetts Institute of Technology's (MIT) economics department, and from 1986 to 1991 directed the Statistics Research Center at MIT. In 1991, McFadden returned to Berkeley, where he established the Econometrics Laboratory (with computers named after his first grandchild, Emily) and remained a chaired professor of economics. In his non-academic life, McFadden owned a small farm in the Napa Valley, producing grapes, figs, wine, and olive oil.

While purely statistical methods for analyzing discrete choices were available before McFadden's work, his important contribution was to link the econometric models to an underlying theory of rational consumer choice. In this approach, an individual is assumed to evaluate the characteristics of the available choices and choose the alternative that yields the highest satisfaction, or "utility." Since the empirical researcher does not observe all the factors that the individual considers when making his choice, there is an unobserved (to the econometrician) component in the analysis.

McFadden showed that when the unobserved component has an extreme value probability distribution, then the resulting probability that the individual chooses a given alternative takes a particularly simple form. This econometric model is known as the conditional (or multinomial) logit model, and the consumer choice theory generating it is called a random utility model.

In subsequent work, McFadden and others generalized both the random utility model and the resulting empirical models. In the nested logit, generalized extreme value, and mixed logit models, less restrictive assumptions are imposed on the individual's choice problem. McFadden also developed the method of simulated moments, a statistical and numerical method that made the multinomial probit discrete choice model (developed by others) feasible to implement. With these advances, empirical researchers now have a panoply of econometric models from which to choose to analyze discrete choice problems.

Using these discrete choice models, McFadden has investigated urban transportation demand, demand for telephone and electricity service, and the elderly population's demand for housing. Other researchers have used tools provided by McFadden to examine a host of economic problems, including demand for recreational alternatives, choice among brands of consumer products and services as disparate as ready-to-eat breakfast cereals and airline travel, and even sociological phenomena such as occupational choice, marriage, and childbearing.

McFadden has made many other contributions to economic theory and methodology. He introduced duality theory (which shows that the cost and profit functions are alternative descriptions of a firm's technology, and that the expenditure and indirect utility functions are alternative descriptions of a consumer's preferences) to applied econometrics. He also developed methodology to quantify welfare losses from environmental damage, and used it to assess the value of the Alaskan environmental damage resulting from the Exxon *Valdez* oil spill.

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McKesson Corporation

A LEADING PROVIDER of healthcare supplies, information, and care-management products and services, McKesson Corporation traces its roots back to 1833, when John McKesson and Charles Olcott opened a small drug import and wholesale shop in New York City's financial district. The Olcott & McKesson business thrived, providing clients botanical drugs—herbs, roots, leaves, bark, and vegetable extracts. Early on, they brought Daniel Robbins on board and in 1853, after Olcott died, the company was renamed McKesson & Robbins.

By the turn of the century McKesson & Robbins persuaded many of the nation's largest wholesale drug distributors to become its subsidiaries. The result: a nationwide McKesson & Robbins network that rivaled the huge drug chains that were spreading across the country. For decades a pharmaceuticals wholesaler, McKesson increasingly looked to expand and meet demands of complex healthcare-delivery systems across the world.

McKesson's products are inclusive of the healthcare industry and include a vast array of products, from pills to surgical masks. Its pharmaceutical and supply distribution system reaches all parts of the healthcare-delivery system, from druggists to nurses to home-care providers. The company ranked as the 57th largest company in the world in 2002 with sales of $50 billion.

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McKinley, William (1843–1901)

THE 25TH PRESIDENT of the UNITED STATES, William McKinley was born in Niles, Ohio. In 1860, he enrolled in Allegheny College, but poor health and finances caused him to leave after one term. When the AMERICAN CIVIL WAR began, McKinley enlisted in the Ohio Infantry Regiment commanded by another future resident, Rutherford B. HAYES. Commended for his heroism at the Battle of Antietam, McKinley received a commission as a second lieutenant. By the end of the war he had become a brevet major.

After the war, McKinley briefly attended Albany Law School, but left after a year without graduating. He returned to Ohio and established a legal practice in Canton.

After a brief political career in Ohio, McKinley was elected to the U.S. House of Representatives in 1876. McKinley became chairman of the House Ways and Means Committee in 1889 where he sponsored the McKinley Tariff of 1890, drastically increasing tariffs. The public backlash of these increases resulted in a landslide Democratic victory in the 1892 Congressional elections, with McKinley losing his seat. The following year, however, he was elected governor of Ohio.

McKinley had been considered for the Republican nomination for president during the 1888 convention, but Benjamin HARRISON was ultimately nominated. In 1892, McKinley challenged the incumbent President Harrison, but lost the challenge and Harrison subsequently lost to Democrat Grover CLEVELAND. By 1896, McKinley was the leading choice for the Republican nomination.

The 1896 election focused on economics. At the time the country was going through one of its worst DEPRESSIONS. Democrats blamed, among other things, McKinley's 1890 Tariff. However, the main debate was one over monetary policy, as the country was experiencing strong deflation, with agricultural products hardest hit. Democrat William Jennings Bryan advocated replacing the GOLD STANDARD with a system in which silver (in addition to gold) was used to back dollars. Such a policy would most likely have resulted in INFLATION that would benefit debtors primarily in the south and west.

McKinley argued that a protectionist tariff was more important. The campaign also strongly advocated a hard-line gold standard that would create the financial stability necessary for a good economy. The Republicans argued that the depression, which occurred during a Democratic presidency, was the result of bad fiscal policies supporting silver.

McKinley had a major money advantage, raising about $16 million for his campaign, compared to $500,000 for Bryan. This contributed to the largest Republican victory since President Ulysses GRANT's. Nevertheless, economists now look upon Bryan's economic arguments during the campaign more favorably than those of McKinley.

Upon election, McKinley called Congress into special session to enact the Dingley Tariff, raising rates to the highest level they had ever been. It wasn't until shortly before the next presidential election that he delivered his promised Gold Standard Act of 1900.

Foreign affairs soon took center stage. Tensions between SPAIN and the United States had been rising for several years when, in 1898, the battleship *Maine* mysteriously exploded during a visit to Havana, Cuba (now believed an accident). A reluctant McKinley accepted Congress' declaration of war. The United States quickly captured CUBA, Puerto Rico, Guam, and the PHILIPPINES. A peace treaty granted independence to Cuba and gave the rest of the captured territories to the United States. Shortly thereafter, the United States also annexed Hawaii, and occupied Wake Island and part of the Samoan Islands.

With America's newly acquired Pacific territories, interest turned to CHINA. All major world powers (RUSSIA, UNITED KINGDOM, GERMANY, FRANCE, and JAPAN) were interested in China. Rather than fight for colonial control, Secretary of State John Hay established an "Open Door" policy where all the major powers would be entitled to equal trading rights. Many Chinese, however, did not accept the policy and tried to expel all foreigners in the Boxer Rebellion of 1900. McKinley sent in U.S. troops to crush the rebellion.

After his re-election, McKinley seemed poised to continue American expansion, focusing on building a canal to connect the Atlantic and Pacific Oceans. His plans, however, were cut short when an anarchist shot and killed him in September 1901, at the Pan-American Exposition in Buffalo, New York.

Ironically, the McKinley administration's expansion of the American dominion led to increased Republican opposition to tariffs, as they interfered with increasing foreign trade.

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Medici, Cosimo de' (1389–1464)

COSIMO "THE ELDER" de' Medici was the personification of the new class of noble: the merchant prince. By monopolizing both finance and government in Florence, he generated a fortune that he used in the service of his family, his city, and the rising tide of commercial activity that was shaping European institutions.

De' Medici grew up in the city of Florence that had become wealthy through the production, trade, and finance of the cloth industry for some two centuries. His family produced the famous red Florentine cloth, and had banking operations throughout Europe in which they developed many of the financial tools still in use today. In addition, the Medici had held several high positions in Florentine government and were thus both economically and politically influential. De' Medici was, therefore, well placed to straddle the worlds of commerce, finance, and government, and did indeed pioneer the issue of bonds for consolidating public debt.

When his father Giovanni died, de' Medici inherited profitable interests in cloth, agriculture, banking, and a political legacy that had popular appeal. This popular appeal is generally attributed to two characteristics: First, to his relatively amiable and humble public demeanor, and second, to a restructuring of the Florentine tax system that shifted the burden from commoners to the wealthy, including himself.

De' Medici was able to project himself as an advocate of democracy, while restricting the eligibility of candidates for public office to his clique. This power enabled him, working behind the scenes, to adjust the tax levy on his actual or potential enemies, to either bankrupt them, or to bring them under his direct control by extending loans to them. This monopolization of finance was leveraged to keep Florence, a city of 100,000 people without any defensive walls, safe and prosperous in the middle of a regional power struggle pitting Venice, Milan, the Pope, SPAIN, FRANCE, and assorted mercenaries.

Although not an intellectual, he had been educated in the style of the noble merchants of Florence. He was introduced to classical literature, had traveled extensively, and became acquainted with the emerging humanists of the era. He compensated for his unscrupulous methods of acquiring wealth by funding artists to refurbish and decorate the churches and monasteries of Florence. He was also the sponsor of numerous intellectuals and classical scholars, including bringing the greatest Greek sages, along with their libraries, from the Byzantine Empire to Florence. These initiatives challenged the medieval Christian perception of human nature with regard to wealth acquisition. While only part of a long and broad set of transformations ushering in the modern era, de' Medici was certainly paradigmatic in becoming a publicly involved businessman, not unlike the leaders of most capitalistic economies to this day.

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Mellon, Andrew (1855–1937)

ONE OF THE WORLD'S greatest bankers, industrialists, and philanthropists, Andrew Mellon was born in Pittsburgh, Pennsylvania, the son of an Irish-immigrant judge and banker, Thomas Mellon, and Sarah Jane Negley. He attended Western University of Pennsylvania (now the University of Pittsburgh), but left college to go into the lumber business with his brother, Richard.

In 1874, he entered the family's banking firm established in 1870. The brothers Mellon assumed control of the bank, T. Mellon and Sons, upon their father's retirement in 1886. By 1889, Andrew was head of the bank. He married Nora McMullen, in 1900, and they had two children. Nora Mellon disliked Pittsburgh and spent most of her time in her native Britain with their children. The Mellons eventually divorced.

Mellon has been called a financial genius, skilled in choosing growth industries for diversification and investment, thus enabling his family to continue to prosper in the face of downturns in any segment of the economy and even during widespread depressions. He expanded Mellon holdings with the founding of Union Trust Company and Union Savings Bank, and invested heavily in steel, iron, coal, oil, insurance, public utilities, public transportation, and construction. He was also instrumental in establishing Pittsburgh Coal Company, Gulf Oil Company, Koppers Gas and Coke Company, American Locomotive Company, Union Steel Company, and the Aluminum Company of America, and built the steel mill town of Donora, Pennsylvania. Unassuming, frail, and soft-spoken, he was known for his business integrity and for allegedly being the second richest man in the world behind John D. ROCKEFELLER.

Mellon became politically active during the debate over American participation in the League of Nations. Along with close friend Henry C. FRICK, he financed a "war chest" for the anti-League forces. His banks would also underwrite $1,500,000 of the Republican Party's 1920 campaign debt.

Mellon resigned as president of Mellon National Bank in 1921 when President Warren G. HARDING, who admired men of wealth and appreciated his support during the campaign, appointed Mellon, whom he called "the ubiquitous financier of the universe," secretary of the Treasury. The president predicted that he would be the greatest Treasury secretary since Alexander HAMILTON. Once in office, Mellon demonstrated independence, and in contrast to the many corruptions of the Harding administration, he protected his department from the spoils system and only hired officials based on merit.

On offering his resignation to President Calvin COOLIDGE on Harding's sudden death in 1923, Coolidge told Mellon to "forget it." Mellon soon developed a close working relationship with the new president, becoming Coolidge's most trusted cabinet member. A private line was even installed between their desks, and Mellon became a key figure in Coolidge's efforts to restore trust in government following exposure of the many scandals of Harding's presidency.

Mellon came to admire the honest, hardworking, and frugal Coolidge and his debt-reducing, tax-cutting, pro-business, small-government policies, policies Mellon helped to influence and forge. Together they dramatically cut income and corporate taxes and the national debt. Both were widely credited with the great prosperity of the 1920s; yet Democratic critics accused Mellon of favoring the rich.

As chairman of the World War Debts Commission, Mellon created a plan mandating full repayment of the foreign debts resulting from World War I, but worked to prevent oppressive repayment terms, and negotiated understandings with 13 debtor countries. After failing to convince Coolidge to run for another term in 1928, he continued as secretary of the treasury under President Herbert HOOVER until resigning after the Republican defeat of 1931. With the advent of the Great DEPRESSION many blamed him for the economic catastrophe, but some recent historians have looked more favorably upon his 11-year stewardship of the Treasury. Before returning to private life, Hoover appointed him ambassador to Great Britain. He briefly served in that post from 1932 to 1933 before returning to Pittsburgh.

In 1913, Mellon and his brother Richard founded the Mellon Institute of Industrial Research at Pittsburgh in memory of their father. In 1967, the institute merged with the Carnegie Institute of Technology, forming Carnegie-Mellon University.

During a "Grant Tour" of Europe and its museums with Frick in 1880, a right of passage for wealthy young Americans during the Gilded Age, Mellon began acquiring paintings. His collection would become one of the world's largest collections of masterpieces. Inspired by London's National Gallery, in later life he determined to give his collection to the American people and build a gallery for it. Therefore, through his A.W. Mellon Educational and Charitable Trust, he founded the National Gallery of Art in Washington, D.C., after stipulating that the institution not be named after him, and searched the globe for additional works to donate. For example, from 1930-31, he purchased 21 paintings from the Hermitage Museum in Russia and, in 1936, acquired another 42 masterworks of art. The gallery would become Mellon's greatest philanthropic legacy among many.

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Menger, Carl (1840–1921)

FOUNDER OF the AUSTRIAN SCHOOL of economics, Carl Menger published his groundbreaking *Principles of Economics* in 1871. Born in Nowy Sacz, a city in southern POLAND that at the time was a part of the Austro-Hungarian Empire, Menger was one of three sons from a prosperous family. His brothers Anton, a scholar of law and SOCIALISM, and the author of *The Right to the*

Whole Produce of Labour (1886), and Max, a member of the Austrian parliament, were well known in late 19th-century Vienna. Menger studied at the Universities of Vienna (1859–60) and Prague (1860–63) and earned his doctorate in law from the University of Krakow in 1867. He began his career in journalism, covering economic issues for newspapers in Lemberg, now the Ukrainian city of Lviv, and Vienna.

The publication of the *Principles of Economics* earned Menger a position as a lecturer at the University of Vienna in 1871 and as a professor in 1873. He developed a reputation as a popular lecturer and, in 1876, was asked to tutor the 17-year-old Archduke Rudolf, the crown prince of AUSTRIA and heir to the throne. The lectures were based on Adam SMITH's *Wealth of Nations*, and Rudolf's extensive notes, with Menger's corrections, were eventually discovered and published in 1994. Emperor Franz Josef approved Menger's appointment as chair of law and political economy at the University of Vienna in 1879. Menger retired from his position at the university in 1903.

Menger's greatest contribution to capitalist economics was the development of the marginal-utility theory of value. Along with two contemporaries who worked independently, William Stanley JEVONS and Leon WALRAS, Menger created the so-called marginal revolution by introducing a subjective approach to economics. The classical economists who preceded him considered the cost of production as the main determinant of value, a view that led to obvious contradictions.

Consider someone whose labor has clearly created nothing of value, a person digging a hole and then filling it in, for example. The classical view implies that the value of the hole is equal to the value of the labor used to create it. Menger resolved this apparent contradiction by explaining that the value of a good is not objective, but instead is subjective because it depends on the utility that human beings receive from it.

Menger also recognized that the value of a good depended not on its overall utility, but on the utility of an extra, or marginal, unit of the good. That insight, that marginal utility determines value, allowed Menger to explain paradoxes of classical economics such as the fact that diamonds, which had virtually no productive uses at the time, were valuable, while water, which was extremely useful, was almost worthless. Menger noted that the difference in value between the two goods is due to the abundance of water and the scarcity of diamonds. As long as large quantities of water are readily available, the value of receiving an extra unit of water is low. Diamonds, on the other hand, are quite rare so that the value from an extra unit is high. Thus, even though water is far more useful than diamonds, the latter are more valuable because their marginal utility is higher.

In addition to the direct impact of his work, Menger influenced the field of economics through the work of other distinguished members of the Austrian school of economics. His best-known students were Friedrich von Wieser and Eugen BÖHM-BAWERK. Wieser, who succeeded Menger at the University of Vienna when he retired in 1903, wrote *Social Economics* (1927) and is credited with inventing the term MARGINAL UTILITY. Böhm-Bawerk, who published *Capital and Interest* (1884) and *The Positive Theory of Capital* (1891), developed Menger's ideas in the areas of economic growth and capital theory. Later members of the Austrian school included Ludwig von MISES and Friedrich von HAYEK, both of whom credited Menger for the substantial achievements of the Austrian School of economics. The Nobel-laureate Hayek, for example, wrote of the Austrian School that "its fundamental ideas belong fully and wholly to Carl Menger."

Though economic historians debate the extent to which their achievements represent a revolution, there is no doubt that Menger, and his contemporaries Walras and Jevons, made an enormous contribution to the study of economics. Today, the field has thoroughly appropriated marginal-utility theory and most sophisticated economic models explicitly incorporate the subjective utility introduced by Menger.

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mercantilism

IN THE 15TH CENTURY, the monarchs of Europe began consolidating their territories. They brought more money to their coffers by overturning medieval trade restrictions that had created tolls at virtually every city or river crossing.

Having consolidated at home, they began attempting to extend their power into the world at the expense of their rivals. PORTUGAL and SPAIN, first to consolidate, were first to venture forth. Portugal explored around Africa to INDIA and CHINA and got a Papal gift, BRAZIL. Spain built an empire from the Philippines to the Americas. Spain had a larger population, and its New World possessions were rich in gold and silver, so Portugal faded over time while Spain persisted in imperialism through the 19th century. Spanish gold and silver aided other rising powers, the NETHERLANDS, FRANCE, the UNITED KINGDOM, as they built empires of their own.

But there was never enough bullion, and the states began to emphasize commerce: Buy little, sell much, and bank the difference. In the 17th and 18th centuries, Europe went through what Adam SMITH, in retrospect, would call mercantilism.

Mercantilism was a closed system in which each participant attempted to acquire as much tangible wealth, gold and silver, as possible. To do so, mercantilists discouraged unfavorable balances of trade, emphasized home self-sufficiency supplemented by colonial possessions that provided material the home could not make for itself and also provided guaranteed markets for home goods. The system required high tariffs on competing goods, low tariffs on colonial output needed at home. It also generated an activist government willing to impose navigation restrictions and tight, central controls over quality and types of goods produced. And colonial trade meant strong merchant fleets, usually armed, for both practical and symbolic reasons. The spread of the flag also made large populations desirable, both to produce at home and to populate abroad. Thrift was a mercantile virtue, given the finite stock of wealth. Applied mercantilism proved more difficult.

Spanish mercantilism. The rest of Europe had colonies throughout the world. Spain had the New World's gold and silver. All trade came through Seville, every ounce of Bolivian and Mexican silver. Spanish ship tonnage rose from 10,000 tons in 1540 to more than 40,000 tons in 1608; thereafter it declined. Silver imports rising sevenfold through the period allowed Spain a mighty military and an aggressive foreign policy, but Spain's failure to develop beyond agriculture meant Spanish silver also went into rival coffers, as Spain bought foreign finished goods (violating one of the tenets of mercantilism). Genoa, Italy, the Netherlands, England—all used Spanish wealth to expand trade into Scandinavia and other regions with small demand for the products of these countries.

England wasn't content to wait for Spanish silver to trickle through porous mercantilism. English pirates attacked Spanish ships from the 1530s, and by 1560, Sir John Hawkins and other "sea dogs" made a career bringing Spanish wealth to England. Queen Elizabeth I backed Sir Francis Drake's 1577–78 voyage through the Strait of Magellan, up west America, by the Spice Islands, through the Cape of Good Hope, thence to England. This voyage brought Elizabeth 264,000 pounds sterling. Investors realized a 4,000 percent profit. Drake became a knight.

Despite its flaws, the Spanish system lasted centuries. The new world had more than metal. The *encomienda,* or plantation system, gave ambitious Castilian nobles an opportunity to amass large estates. The land was good for agriculture and stock raising, and the indigenous peoples could be made to work. The system had a drawback, bureaucracy, but that was in Spain, and the colonials were far away.

Spanish America always had a population problem, failing another tenet of mercantilism, the large overseas population. As early as 1503, the indigenous population was insufficient for labor needs, so Spain began the *asiento*, contracting the slave trade to variously Spanish, Flemish, English, Portuguese, Dutch, French, and Genoese contractors. Attempts to control the trade below demand led to widespread smuggling, another leak in the system. Spanish Asia also employed the *encomienda* system, but the indigenous peoples provided enough labor that slavery was not required.

Manila, the Philippines, was the entrepot for trade between Mexico and China that lasted from the 16th through the 19th centuries—silver for silk and porcelain. Spanish mercantilism was hardly beneficent. It entailed exploitation of colonists and indigenous populations, brought inflation to Spain and much of Europe, and added little economic benefit to the masses of Spaniards. Still, it worked through the 19th century.

When the easy money disappeared and the mercantilist nations began debasing their coin and the easy expansion to Asia ended, the result was an economic crisis. A new approach was needed, and the Netherlands took the lead.

The Netherlands. Dutch merchants took over trade, introduced new banking and shipping methods and tools, cut costs, and dominated the older mercantilists, still state-driven. The Dutch controlled European commerce from 1648–72. They ran the Baltic trade, had a good share of the American and Asian, and dominated re-exports. Antwerp and Hamburg and Amsterdam were dominant trading cities because of their aggressiveness, innovation, and abilities to economize. They did not arm their vessels, they did establish joint-stock companies drawing large numbers of investors with small sums of capital. By the 1670s, the Dutch merchant fleet was larger than the combined fleets of England, France, Spain, Portugal, and Germany.

The Dutch turned the old Baltic trade's bullion drain into a positive trade balance. Dutch bankers also provided credit to other Europeans, bringing in additional wealth. The Dutch successes led to jealousy and a series of wars with the English in the 17th century. The Dutch lacked the military resources and strong leadership they needed, so their dominance faded, but their Asian empire would remain through much of the 20th century.

France. The French fought the Dutch using routine mercantilist tools: higher tariffs and port fees; a crackdown on smuggling; state sponsored companies to rival the Dutch East and West Indies Companies; and as a last resort a war. French mercantilism was the brainchild of Jean Baptiste COLBERT, chief minister to Louis XIV from 1661 to 1683. Colbert established strong central regulation, but he made sure that the middle-class prospered. He banned export of money, set tariffs high on foreign goods, and subsidized French shipping generously.

Colbert spread the French empire from the West Indies into Canada, Louisiana, Africa, and Asia. He made the French empire a closed system with French merchants buying from the colonies or home-sources only. He built a fleet of 300 ships, discouraged the taking of holy orders, and provided bounties for large families. Between 1715 and 1771, French trade increased eight times, almost catching the English level. Colbert made the decisions in France; in England central control was weaker.

England. The English effort began in the 1660s under the Stuarts. Finally, there came to be an emphasis on planning, maximizing industrial capacity, and the intricacies of international rivalries and diplomatic jousting. Despite the late start and the weaker central-policing, mercantilism did boost England out of its rural patterns; at its peak, the economic expansion was unlike any that had gone before.

English mercantilism took its most familiar form in the series of Navigation Acts. Sharing the assumption that colonies were to take home finished products and give raw materials and excess income, England promoted colonies for its own benefit, not the benefit of the colonies.

England, like the other mercantilist empires, attempted to control trade through navigation acts. And like the others, English success was mixed. England regulated shipping as early as the time of Richard II in the 14th century, but it was sporadic; as late as 1642 the Long Parliament was exempting American goods from import and export fees. Under Oliver CROMWELL, England enacted its first mercantile-era navigation act. This act restricted imports from America, Asia, and Africa to British ships only. Imports from Europe were restricted to ships of England or the producing country. This act was directed primarily at the Dutch, with little consideration given to its impact on the colonies.

The Navigation Act of 1660 tightened controls, restating the rules of the first act and also enumerating items that colonials could ship only to England or English territory. Because they competed with England's home manufacture, finished goods from the northern colonies suffered more greatly than raw materials from the southern ones. As time passed, though, England enumerated raw materials as well. The Corn Law of 1666 protected English grains at the expense of American ones, leading to a shift in New England to manufacturing. In 1672, another act enumerated items in inter-colonial trade. And import fees grew as well. Increasingly, England's protection of its home industries appeared to be damaging colonial interests. However, enforcement was lax, and smuggling was widespread among northern traders to the non-English West Indies. Also, at least some of the time, England defined colonial manufactures as equal to domestic ones, so colonials and home manufactures alike enjoyed the protection of England's protective tariff walls against European competition.

The Molasses Act of 1733 was extremely damaging. Directed against the French West Indies, this act set extremely high tariffs on sugar and molasses. It had the potential to destroy the New England export of flour, fish, lumber and livestock; these items were barred from England due to the Corn Laws, so there was no other market than the West Indies.

The English established a Board of Trade and Plantations in 1696, but it failed to control the colonies. Conniving customs officials and weak governors either abetted or ignored widespread smuggling, in the colonies as at home. And juries in admiralty court generally refused to convict smugglers. Colonial contempt of Parliament grew over time as it became increasingly obvious that the body had no ability to enforce its laws.

Although navigation acts sometimes benefited nascent colonial industries or providers of otherwise scarce and expensive raw materials such as ships' stores, overall the restrictions were highly lucrative for England. The New England balance sheet for 1759 showed £38,000 worth of exports against imports of £600,000. Cash flow was a colonial problem, but the illegal trade with the West Indies helped.

World. Mercantilism appeared to be an effective system: Tobacco, rice, coffee, sugar, and rice went to European cities such as Lisbon, Cadiz, Bordeaux, London and Liverpool, which re-exported unfinished products and shipped finished items to the colonial plantations. Some cities also grew wealthy as shippers of slaves.

Slave ports included Liverpool and Lisbon as well as those on the west coast of Africa. Cheap finished goods bought valuable live bodies that slavers packed tightly for the trip to the Americas, replacing them with cotton, tobacco, and other plantation crops from the Caribbean, American South, and Brazil. Over time, mercantile controls weakened. Growing populations and increased inter-colonial trade led to increasing autonomy, less willingness to heed the needs of the mercantile home.

In Asia, the mercantile approach was marginally successful. Initially, Europeans had less to offer than they wanted to buy, so they relied on new-world bullion to make up the difference. This violated the mercantilist tenets of preserving a favorable balance of payments and promoting home-manufacture while minimizing dependence on others. Over time however, Europe abandoned mercantilism in favor of free trade, and European manufactured goods, plus a dominating European presence, established much of Asia as subordinate to Europe economically as well as politically.

In India, where the BRITISH EAST INDIA COMPANY had a presence from 1608, the initial effort succeeded due to divided indigenous governors willing to grant favorable terms of trade. Also significant was company military superiority. Once in control, the company became rapacious, and eventually it required military assistance from England to preserve its position. In 1773, the British government took over control of India from the company, which remained until 1858.

Conclusion. Mercantilist practices varied, as did degrees of success, but all attempted to use the same rules to attain the same goals. As wealth consisted mostly of bullion, the goal was to maximize the amount in the state's control. To do that, countries either acquired colonies or worked toward favorable balances of trade with their rivals. The governments aggressively promoted economic development, restricted colonies to provision of raw materials and markets, and tried to keep the system closed through navigation acts and other laws to control competition. As long as economic theorists assumed that the supply of wealth was finite, limited to the world supply of gold and silver, mercantilism was logical. In 1776, Adam Smith published *An Inquiry Into the Nature and Causes of the Wealth of Nations*, and suddenly wealth equated to productivity, not metal. There were no limits. Free trade replaced mercantilism as the dominating practice. Of course, by this time, England had established its industrial prowess and did not need the protective tariffs. Instead, English industry needed free trade to establish its hegemony.

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Merck & Company

A PHARMACEUTICAL company headquartered in Whitestation, New Jersey, Merck reported approximately $40 billion in sales in 2000. Like most drug companies, Merck invests heavily in RESEARCH AND DEVELOPMENT (R&D), allocating $2.6 billion in 2001, and having spent some $15 billion in R&D over the preceding 10 years. Such investment has produced various vaccines and medicines that treat cardiovascular, gastrointestinal and infection diseases, and glaucoma and arthritis. More recently, Merck developed a drug that treats HIV infection called Crixivan.

Merck produces both human and animal health products including Zocor, Mevacor, Vasotec, and Pepcid. These are some of the best-selling prescription and nonprescription medications in the world. Merck employs over 78,000 people in 120 countries and owns 21 factories worldwide.

Merck's history began in Darmstadt, Germany, in 1668 when Frederic Jacob Merck, an apothecary, used his knowledge of chemistry to found a fine-chemicals firm. In 1891, succeeding generations of Mercks relocated the business to New York City. By the 1930s, the company was specializing in the research and production of pharmaceuticals. After a merger in 1953, Merck expanded the organization internationally.

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Merrill Lynch

ONE OF THE MOST recognized, leading financial management and advisory companies in the world, Merrill Lynch does business in 36 countries, and its total client assets are currently approximated at $1.3 trillion. As an investment bank, Merrill Lynch is the global underwriter of debt and equity securities and strategic advisor to global corporations, governments, institutions and individuals.

In the words of CHIEF EXECUTIVE OFFICER (CEO) Stanley C. O'Neal, "We are building a new kind of company—a growth company, diversified and disciplined, agile and accountable; a company that lives by the proposition that the only sustainable advantage is to find ways of adding real value to clients in the markets we serve."

Throughout 2002, Merrill Lynch focused on restructuring mandated by a market of ups and downs, terrorist attacks, war, and a wobbly economy. The company has honed controlled expenses, diversified revenues, and liberated resources—all in a state of reserve for the future. Resizing, reshaping, a new Merrill Lynch is, according to its public relations, "a portfolio of diversified businesses (armed) to deliver superior client service and shareholder value across economic cycles."

Full-year net earnings (2002) were $2.5 billion, or $2.63 per diluted share—the third-best operating performance in the company's history, despite a decline in net revenues due to a tougher operating environment. Simultaneously, the firm exceeded its profitability target with a pre-tax profit margin increasing to 20.2 percent. At the end of its 2002 fiscal year, with a bolstered balance sheet, its capital base was stronger and larger, and with liquidity position better than in many years.

Succinctly, three customized businesses have emerged in the company's restructuring: Global Markets and Investment Banking (GMI); Global Private Client (GPC); and Merrill Lynch Investment Managers (MLIM).

GMI serves corporations, financial institutions and governments with comprehensive investment-banking and strategic-advisory services—including debt and equity trading, underwriting and origination, and mergers and acquisitions.

GPC is the world's premier provider of wealth management services, with more than $1 trillion in client assets. For individual investors, GPC ensures high-quality service through a segmented offering that meets clients' needs. Through Merrill Lynch's new cash-management platform, "Beyond Banking," clients can manage their everyday financial transactions separately from, but linked to, their investment holdings.

MLIM is a huge money manager with $462 billion under management, serving a diverse, global base of mutual-fund investors, high-net-worth individuals, pension funds, corporations, governments and other assorted institutions.

"Merrill Lynch was founded on the idea that the world is full of opportunity," states the company's chairman, David H. Komansky. "While some people question the very concept of globalization, (we) remain convinced that open, free and fair markets are the surest way to global prosperity." Reporting total revenues of almost $39 billion in 2002, Merrill Lynch was ranked as the 95th largest company in the world.

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Merton, Robert C. (1944–)

CO-WINNER, ALONG WITH Myron SCHOLES, of the 1997 Nobel Prize in Economics, Robert C. Merton begins his autobiography, "I was born in New York, NY on 31 July 1944, the middle child between two sisters, Stephanie and Vanessa." Merton's father was a leading sociologist on the faculty of Columbia University. "My father introduced me to baseball, poker, magic, and the stock market (only magic didn't take root)." Financial practice intrigued Merton from an early age. "As early as 8 or 9 years of age, I developed an interest in money and finance, even at play. I created fictitious banks such as the RCM Savings of Dollars and Cents Company. I gladly balanced my mother's check book."

As Merton explained, "I was a good student but not at the top of my class." He studied applied and pure mathematics in Columbia's Engineering School. Entering the California Institute of Technology's Ph.D. program in applied mathematics, Merton left after only a year to study economics at the Massachusetts Institute of Technology. "My decision to leave applied mathematics for economics was in part tied to the widely-held popular belief in the 1960s that macroeconomics had made fundamental inroads into controlling business cycles and stopping dysfunctional unemployment and inflation. Thus, I felt that working in economics could 'really matter' and that potentially one could affect millions of people."

Merton explains: "I see my research interests as fitting into three regimes of roughly equal lengths across time: 1968 to 1977, 1977 to 1987, and 1988 to the present, with a reflective year 1986-88. Thee first period was my most productive one for basic research, in terms of both the number of papers produced and originality and significance of contribution. The central modeling theme was continuous-time stochastic processes with continuous-decision-making by agents. Locating this modeling approach within mathematical economics, I see my models falling in the middle range between simple models (e.g., one or two-periods with a representative agent) designed to give insights (associated by some with the MIT school) and full general equilibrium models on a grand scale involving an arbitrary number of agents with general preferences and production technologies (often associated with the Berkeley school)."

Merton recounts, "in 1987, I took my first-ever sabbatical year. . . This reflective year was a watershed, both for my research and for where it would take place. In effect, *Continuous-Time Finance* was the crowning synthesis of my earlier work. Its Chapter 14 on intermediation and institutions, however, represented a bridge to a new direction of my research. From that time until the present, I have focused on understanding the financial system with special emphasis on the dynamics of institutional change. In particular, I am studying the role of financial technology and innovation in driving changes in financial institution and market design, the management of financial-service firms, and the regulatory and the accounting systems."

Along with Myron Scholes' derivative-security research, Merton was cited by the Nobel Committee for "a new method to determine the value of derivatives." This method, the Black-Merton-Scholes stock option pricing formula, by facilitating economic valuation in many areas, has proven useful in the finance industry and the study of economics.

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Metro

RANKED AS THE 72nd largest company in the world by *Fortune* magazine, Metro AG is the German management holding for a group of retail and wholesale chains. The company was formed in 1996 from the merger of several other German retailers, based on the Kaufhof Group, created by legendary German entrepreneur Otto Beisheim.

With 2,310 retail locations in 26 countries, Metro achieved net sales of €51.5 billion (2002) and profits of €412.0 million (2001), with assets of more than €20 billion and 234,000 employees worldwide. With 46.3 percent of its revenue achieved outside Germany, Metro has a significant international presence on the European and Asian continents, the countries last entered having been Vietnam and Japan. The optimization of the store portfolio, judicious internationalization, and effective logistics are regarded the cornerstones of the company's rapid growth.

Metro AG is divided into four strategic business units: cash and carry markets, food retailing, non-food specialists, and department stores, and trades under the brands Metro Cash & Carry, Real, Extra, Media Markt, Saturn, Praktiker, and Kaufhof. With a share of more than 45 percent of total corporate revenue, the cash and carry outlets have become global leaders in the self-service wholesale segment. With 416 stores in 24 countries and up to 17,000 food products and 30,000 non-food products carried, Metro cash and carry pursues a different strategy than WAL-MART's Sam's Clubs, that carry about 4,000 products. Metro stock (Meog.de) trades on German stock exchanges (DAX).

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Mexico

A FEDERAL REPUBLIC of more than one million square miles, Mexico borders the UNITED STATES to the north, the Gulf of Mexico and the Caribbean Sea to the east, Belize and Guatemala to the southeast, and the Pacific Ocean to the south and west. It has an ethnically diverse population of 98 million, with a significant presence of numerous indigenous groups primarily concentrated in the south and southeast. Despite more than a century of modernization efforts, Mexico remains a nation of contrasts. Vast sectors of the population are inserted into the global economy through trade and the use of modern technology, but a significant amount of people still live in isolated communities as their ancestors did hundreds of years ago. This divide is one of the most salient issues facing Mexico in the 21st century.

In the early 1500s, SPAIN inaugurated 300 years of colonial administration over the *Virreinato de la Nueva España*, much of which would become Mexico. The conquest and early colonial period was not only brutal for the vanquished Aztecs, but war, disease, forced labor and migration largely decimated other indigenous populations in Mesoamerica. Spanish conquest was aimed primarily at the extraction of mineral wealth, and, secondarily, at the conversion of souls to Christianity, goals that occasionally clashed. Vast amounts of silver flowed from central Mexico in Spanish ships, oiling the wheels of European commerce during the early stages of capitalist development.

Although the independence movement was born from the discontent of *criollos* (Mexico-born Spanish elites) over Spanish rule as in the rest of Latin America, in Mexico it rapidly received the widespread support of the indigenous and *mestizo* peasantry. Independence was declared on September 16, 1821, at the crest of popular rebellion and following a decade of bloody conflict with Spain. A fragmented political elite and strong regional leaders throughout the country resulted in a period dominated by civil war. In a quick war with the United States in 1847, Mexico lost a good deal of its northern territory.

Internal convulsion between conservatives and liberals ensued, resulting in a second foreign occupation, this time by the French with their imposition of Maximilian of Hapsburg as emperor (1863–67). His defeat at the hands of Benito Juárez inaugurated a long period of economic liberalism and political stability. In particular, the rise of Porfirio Díaz to power resulted in massive inflows of foreign capital, primarily for the extraction of minerals and other raw materials for export to the United States.

The vast wealth generated under the Porfiriato (Díaz regime) concentrated in few hands, blocking the aspirations of a nascent middle class of professionals, and creating ample resentment among the peasantry and fledging working class. Demands for elections free of fraud went unheeded, and following electoral fraud in the presidential elections of 1910, Francisco I. Madero called for open rebellion, inaugurating the Mexican Revolution. Although the more radical factions of the revolution were defeated, the armed upheaval of a peasantry allied to Emiliano Zapata, and ranch hands loyal to Francisco Villa, left its imprint in the Constitution of 1917, where a balance was struck between a salient role for the state and the prerogatives of the private sector.

The more radical provisions of the 1917 Constitution were not fully implemented until Lázaro Cárdenas (1932–38) made bold use of Article 27 to redistribute 44 million acres of land to communes or *ejidos*. He also used this constitutional article to expropriate foreign oil companies during their stand-off with oil workers in 1938, establishing *Petróleos Mexicanos* as a state monopoly. The Cárdenas administration created the framework for a stronger state role in the economy, and provided the political foundation for the creation of the *Partido Revolucionario Institucional* (PRI) during the administration of Miguel Alemán (1946–52).

Hotels and resorts along Mexico's Pacific coast draw tourism dollars into the country's gross domestic product.

The PRI established a corporatist political structure based on three sectors. The peasantry represented by *Confederación Nacional Campesina*, the working class represented by the *Confederación de Trabajadores Mexicanos*, and the middle class, grouped in the *Confederación Nacional de Organizaciones Populares*. Using material rewards for organizations supporting the party, issuing stiff punishments for detractors and the opposition, and most likely making use of some electoral fraud, the PRI was able to remain in control of the presidency until 2000. During the 1950s and 1960s, the country underwent what has been termed the Mexican miracle, a long period of high economic-growth rates and low inflation characterized by an active state, but with ample room for the private sector.

By the 1960s, growing inequality had generated discontent. As social tensions rose, guerrilla activity made an appearance in Guerrero, and protests in Mexico City resulted in the 1968 Massacre of Tlatelolco, where an undisclosed number of students were killed by security forces.

Luis Echeverría (1970–76) attempted to diffuse social tensions with redistributive policies including the largest reallocation of land since the Cárdenas administration. His statist orientation placed business leaders in a heightened state of alert, starting a slow but steady movement of business support away from the PRI. Echeverria's successor, José López Portillo (1976–82), took office as vast oil reserves were discovered in the Gulf of Mexico. The quadrupling of oil prices in 1973–74 had sparked interest in exploration, and this was followed by large investments in oil extraction. Convinced that Mexico had found the road to riches, the administration of López Portillo borrowed heavily from international commercial banks, bringing the foreign debt of the country to $80 billion in 1982.

In August 1982, Mexico gave the opening salvo in what came to be known as the Latin American debt crisis. A recession engineered by the Ronald REAGAN administration to reduce inflation in the United States resulted in the sharp increase in international interest rates, and a significant drop in the price of oil, by then Mexico's main export. Unable to make payments on its foreign debt, Mexico declared a moratorium.

The INTERNATIONAL MONETARY FUND (IMF) stepped in with financial resources to make payments on condition of the implementation of austerity measures and the liberalization of the economy. The administration of Miguel de la Madrid (1982–88) struggled to revive the domestic economy while implementing IMF policies. In 1986, Mexico joined the GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT) and 743 state enterprises were privatized or shut down between 1982 and 1988. Nevertheless, de la Madrid was unable to control inflation until the implementation of the *Pacto de Solidaridad* in 1987, freezing wages and prices in an attempt to stave off inflation without further economic contraction.

Carlos Salinas de Gortari (1988–94) was elected the following year amid allegations of widespread fraud. He rapidly moved to consolidate his power with high-profile political maneuvers such as the arrest of Joaquin "La Quina" Hernandez Galicia, an influential union leader with the petroleum workers union. Once firmly in control, Salinas deepened the neoliberal reforms of his predecessor. Changes to Article 27 of the Constitution in 1992 put an end to land reform and threatened existing *ejidos*. His proposal to negotiate a North American Free Trade Agreement (NAFTA) led to its signature in late 1993 and inauguration on January 1, 1994. The end of land reform and the opening of trade in agriculture under NAFTA were interpreted by many Mexicans as a violation of the spirit of the Mexican Revolution and the letter of the Constitution of 1917. A group of Mayan peasants staged an armed rebellion on the day NAFTA went into effect, catapulting their enigmatic leader, Subcomandante Marcos, to instant celebrity status in Mexico and around the world.

The same year, fissures within the PRI itself resulted in two high-profile assassinations, including the party's presidential candidate. Political uncertainty was followed by investors' anxiety, resulting in the reduction of capital flows to Mexico, higher costs of borrowing and the shortening of its maturity. When Ernesto Zedillo (1994–2000) took office in December, foreign-exchange reserves had been driven down trying to defend the value of the peso. Within days of the inauguration, investors ran from the peso leading to its sharp devaluation and a balance of payments crisis that required a $40 billion bailout by the IMF and the U.S. Treasury Department, launching a series of financial crises in emerging market economies.

Zedillo's presidency focused on re-establishing growth and solidifying the pro-market reforms of his predecessor. The political patronage system based on the corporatist organization of the PRI had been in crisis since the mid-1980s. Zedillo's technocratic approach and further reforms to the political system weakened the party even further. Vicente Fox (2000–06) of the *Partido de Acción Nacional*, won the 2000 presidential election, breaking 71 years of one-party rule. A former executive of Coca-Cola in Mexico, Fox pursued even closer relations with the United States, going as far as proposing the integration of the labor markets of the two countries. His initiatives were soon disregarded in the United States and the George W. Bush administration became preoccupied with national security issues and the Middle East.

Although the economy recovered rapidly from the 1995 crisis, growth has remained sluggish and highly dependent on the U.S. economy, which, in 2003, absorbed 90 percent of Mexico's exports. Under NAFTA, Mexican manufactures have gained unrestricted access to U.S. markets, boosting the economies of Mexico's northern region where the infrastructure and semi-skilled labor necessary for industrial production is concentrated. However, NAFTA has also brought rising concerns regarding the fate of hundreds of thousands of peasants, primarily in the central and southern regions, whose survival is endangered by rising imports of subsidized U.S. corn. The intended beneficiaries of proposed infrastructure development in these regions (i.e., Plan Puebla-Panama), many of them indigenous people, are deeply rooted in their lands. Attempts to integrate them as wage laborers into a modern, export-oriented economy are likely to meet resistance as this represents a threat to their millenary cultures.

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microeconomics

THE BRANCH OF ECONOMICS that deals with the behavior of, and the interaction between, individual economic units, such as consumers or firms, is called microeconomics. As a positive science, microeconomics explains social and economic phenomena as the result of rational individual behavior. As a normative science, microeconomics offers techniques to judge the value of different economic and social policies or institutions. Its methods can thus be used to predict how well alternative policies achieve certain goals set forth by the investigator.

Individual behavior. One aim of microeconomics is to examine individual choices and decisions, based on two fundamental premises: That all economic agents possess certain well-defined objectives (preferences), and that they act according to these objectives in an optimal and coherent way. For example, it is commonly assumed that the objective of a firm's management is to maximize profits, and that it chooses among its possible actions the one that best achieves this objective. Combined, these two assumptions comprise the principle of rationality, on which most of economic science is grounded.

While microeconomics often regards agents as purely self-motivated, its approach is general enough to accommodate a wide range of preferences, including a concern for the well being of others (altruism). In choosing the best course of action, economic agents are usually constrained: A consumer can only buy as much as can be afforded with a certain income, while a firm can only sell as many products as the market can bear. Microeconomics thus tries to understand all individual behavior as the solution to a constrained optimization problem. The microeconomic tools for examining such problems extend to dynamic choice (decisions must be made over time with varying constraints), and choice under uncertainty (not all decision-relevant variables are known).

Interaction and aggregate behavior. The scope of microeconomics reaches beyond the analysis and prediction of individual behavior. Economic agents typically engage in *interaction* with one another, and many variables of economic interest are determined through interaction only. The second aim of microeconomics is thus to understand the nature and outcome of such interaction. The following example illustrates the ways this question can be approached.

Consider the market for a certain good. How much someone buys or sells of this good depends on its price. In a market equilibrium, a price will obtain at which aggregate supply is just enough to satisfy aggregate demand (the price is said to clear the market). The price of a good is hence the outcome of the sum of all demand and supply decisions. The very fact that goods have prices through which their value can be determined in a meaningful way, is the consequence of individuals interacting as buyers and sellers in markets.

In markets with many consumers and many firms, each single participant has only a small influence on the price. If the number of market participants is large enough so that each agent can neglect the influence of her actions on aggregate variables, then microeconomists speak of perfect competition. In a relatively small group of individuals, on the other hand, one must account for the fact that each person's actions directly affect the choices of others (imperfect competition). In a market with only two competing firms (duopoly), for example, the output decision of one firm can be expected to have a direct affect on the output decision of the other firm. Those situations are called strategic, and microeconomists use the tools of GAME THEORY to examine them.

Microeconomics as a normative science. The market example also highlights the normative aspects of microeconomics. The exchange of goods between agents creates value for all involved participants, by which one can judge the success of alternative market designs and competitive regulations. A desirable market outcome should be efficient, in the sense that it leads to an allocation of economic resources that cannot be changed for mutual advantage. Thus, inefficient markets do not exhaust all gains from trade. Microeconomics also offers methods to quantify the overall value that is generated by various forms of market institutions, by deriving measures of social surplus, or welfare.

Not all things can be traded among individuals, however. Groups often have to make choices for themselves that affect their members in different ways. For example, a country must choose a single labor standard, but its citizens typically have differing opinions on what it should be. For welfare statements to be meaningful in this context, individual preferences must be aggregated into a social counterpart. As a sub-branch of microeconomics, social choice theory can identify circumstances under which a society at large can adhere to the same rationality principle as its members.

Microeconomics vs. macroeconomics. Microeconomics shares with MACROECONOMICS the fact that it can make predictions about aggregate variables. While no clear-cut borderline between these two branches of economics exists, several differences and similarities can still be found.

One difference is contextual: Typically, the questions that are addressed using macroeconomics are motivated by and associated with issues of national economic interest; such as how INFLATION, UNEMPLOYMENT, or output, depend on each other. It has become customary to refer to economic inquiry that is concerned with these variables as macroeconomics, while questions concerning consumers, firms, or single markets, have been associated with microeconomics. A second difference is methodological: Macroeconomic analysis often assumes relationships between variables that, in principle, are the outcome of microeconomic interaction, but are not being treated as such. For example, to address a particular question, a macroeconomist may assume that interest rates and savings are positively correlated. A microeconomist, on the other hand, would try to explain this relationship by examining how individual savings decisions in a bond market determine the interest rate.

Economic issues can be very complex to analyze, as typically a large number of variables affect situations of interest. Both microeconomists and macroeconomists deal with these complexities by using economic models: Formal (i.e., mathematical) representations of the real world that are based on a few key assumptions, while neglecting other aspects of the problem. Since economic models are necessarily abstract, the hope is that the insights that they offer are general enough to be applicable to a wide range of specific issues. As a consequence of economics using models, its results require careful interpretation, because they can change when previously neglected features are accounted for. Often, however, a model's validity can (and should) be tested empirically, using ECONOMETRICS.

The extending scope of microeconomics. Many social issues related to disciplines other than economics can be addressed by microeconomic methods. Doing so, one assumes that people adhere to the rationality principle even when making "non-economic" choices. Then individuals' decisions whether to commit crime, whom to vote for, or whether to smoke, have been successfully analyzed by microeconomists. Similarly, microeconomic models of interaction among agents have been used to study the "marriage market" or outcomes of political elections. This research has resulted in many interesting new insights. It is needless to say that many of those areas, while not traditionally associated with economics, are of profound importance for the economic well being of individuals, groups, and nations.

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Microsoft

THE LARGEST PRODUCER of consumer-level computer software in the world, Microsoft products include the most successful operating system (the various incarnations of Windows), the most successful internet browser (Internet Explorer), and the most successful productivity suite (Office), each of which are considered the industry standard. Microsoft ultimately has been credited with turning computers away from a mere toy of hobbyists and toward mass, popular acceptance, but the company has also been accused of bullying the industry and operating as a MONOPOLY.

Microsoft was formed in 1975 by Bill GATES and Paul Allen, two childhood friends and, later, both Harvard University dropouts. Upon discovering the Altair 8080 (the first computer designed for home use, available as a assembly-required kit), the two wrote a BASIC programming language program for the machine and began selling it to computer companies such as Radio Shack and Texas Instruments. Gates and Allen moved their company from Albuquerque, New Mexico, to Washington State in 1979 and proceeded to produce a wide variety of programming-language software programs. At a time when computer companies primarily focused on hardware and proprietary software, Microsoft only sold software that was compatible with a wide variety of hardware. Microsoft also licensed its software to hardware manufacturers at low rates, hoping to grow via a high quantity of business rather than high profit margins.

Microsoft made the move into operating systems after being approached by IBM in 1980 for input on a new computer line. When asked to supply an operating system for this new system, Microsoft bought an existing program from a local company, modified it, changed the name to MS-DOS (short for Microsoft Data Operating System), and released the product in 1981. Microsoft licensed MS-DOS not only to IBM but to many other manufacturers, thus making IBM-compatible machines easy for companies to build as long as they upheld MS-DOS (and Microsoft by extension) as the de facto software standard.

After an abortive attempt at designing their next generation operating system in conjunction with IBM, Microsoft moved to a graphical interface, where the user operates the computer by manipulating on-screen images, as opposed to MS-DOS, which requires typed-in commands. Graphical user-interfaces had existed since the late 1970s at Xerox's research lab, and commercially since 1984 with the release of the Apple Macintosh. Microsoft's first serious graphical operating system, Windows 3.0, was released in 1990 (earlier, fairly inefficient versions existed as far back as 1984). Industry critics often commented on similarities between Windows and Apple Macintosh's operating system; Apple also thought the two systems were too alike and filed a copyright lawsuit (which it lost) against Microsoft in 1991.

Microsoft grew enormously in the 1990s. One of the company highlights in this decade was the release of the productivity suite Office, which combined spreadsheet, word-processing, and (among others) presentation software; rather than simply bundling software together, Office attempted to integrate the component programs by having them look and operate in similar fashions and by making data easy to move from one program to another. Office was originally designed and sold for the Macintosh in 1989 (other than Apple itself, Microsoft is the world's largest producer of Macintosh software) and released in a Windows-compatible edition in 1990.

Microsoft also increased its share of the operating system market with the release of Windows 95, a complete overhaul of Windows 3.0. Windows 95 was wildly successful, selling over 1 million copies in its first four days of release. Because Windows 95 included a link to the company's fledgling internet service Microsoft Network, America Online accused Microsoft of unethically using its position as producer of the leading operating system in an attempt to dominate the internet market. When Microsoft bundled its Internet Explorer web browser with its next operating system update (Windows 98), the U.S. Justice Department (prompted by web browser rival Netscape) investigated Microsoft and declared the company a monopoly in 2002.

Since its early acquisition of the MS-DOS forerunner, buying and altering existing products has been a regular business practice for Microsoft. Instead of just modifying existing products, however, Microsoft has also bought entire companies in order to acquire a particular program; when Microsoft wanted to enter the web-page design software market in 1995, they bought Vermeer Technologies in order to take over their FrontPage program. These acquisitions have sometimes proven ruthless; when talking to America Online about a possible merger, Bill Gates told AOL executives, "I can buy 20 percent of you or I can buy all of you, or I can go into this business myself and bury you."

As of 2003, Microsoft continues to push computer software as the core of their business. They are also making substantial pushes into the portable electronics market (with Windows CE-run handheld devices) and into home gaming (the X-Box). Microsoft is also developing home automation software to spread its Windows brand further into people's lives.

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Mill, John Stuart (1806–73)

A GIFTED 19TH-CENTURY thinker, John Stuart Mill made important contributions not only to economics but also to political science and philosophy. He was the eldest son of James Mill, a close friend of Jeremy BENTHAM and mentor to David RICARDO. As a key figure of the philosophical radical movement, James Mill wanted his son to be a recipient of the intellectual traditions of both Bentham and Ricardo. Accordingly, John Stuart Mill became the target of a highly rigorous intellectual training that his father considered necessary for his proper development.

The story of John Stuart Mill's education has been told in his *Autobiography*, published shortly after his death. He began to learn Greek and arithmetic at age three; Latin, at age eight; followed by mathematics, chemistry and physics. During early adolescence, his training in philosophy and political economy began. His formal training in economics started with a thorough reading of Ricardo's *Principles of Political Economy and Taxation* followed by an equally intensive study of Adam SMITH. He was still a teenager when he edited the five volumes of Bentham's *Rationale of Evidence*. When Mill was 17, his father was appointed to the India Office, and in turn obtained a clerkship for his son with the British EAST INDIA COMPANY. His formal career with the East India Company lasted for 35 years, terminating with his retirement when the company was liquidated in 1858.

The psychological costs of his remarkably intense education were manifested in a mental crisis at the age of 20, but after a period of depression, Mill recovered to become one of the leading intellectuals of his time. He frequently wrote articles on literary and philosophical topics. His first major work *A System of Logic*, published in 1843, was favorably received and widely read. A few years later, he ventured into economics with *Some Unsettled Questions in Political Economy*, somewhat of a prelude to his main work. His great summary of classical economics *Principles of Political Economy, with Some of Their Applications to Social Philosophy*, published in 1848 (the same year as *The Communist Manifesto* by Karl MARX and Friedrich ENGELS) was the leading textbook in its field for more than 40 years. It was written in less than two years during a time when Mill was also working full time at the India Office

The structure of this work intentionally resembled *The Wealth of Nations* rather than Ricardo's *Principles* because Mill wanted to address wider concerns than those associated with pure political economy. Mill's *Principles* is divided into five books: Production; Distribution; Exchange; Influence of the Progress of Society on Production and Distribution; and Of the Influence of Government.

Other publications, including *On Liberty* (1859), *Considerations of Representative Government* (1861), *Utilitarianism* (1863) *Auguste Comte and Positivism* (1865), and *The Subjection of Women* (1869), demonstrate the breadth of his scholarship. In the latter publication, Mill addressed the benefits for men of equal rights for women.

Mill was an exceptional person, not only intellectually ahead of his own generation, but also a rebel, both against his father's disregard of emotional factors in his philosophy of life and against some of the doctrines his father applied to the social sciences. He was a champion of individual liberty, but an active social reformer. He sought new influences to widen his perspective, among them Samuel Taylor Coleridge, Thomas Carlyle, Johann Wolfgang von Goethe, and Auguste Comte. It was Comte's attempt to interpret history as the progressive development of the human intellect that likely stimulated Mill's own search for a philosophy of history. Yet among those prominent names, Mill himself believed that the greatest intellectual and emotional influence was his friendship and subsequent marriage to Harriet Taylor. She apparently taught Mill to be receptive to the humanistic socialist ideas of the time, and he credited her with convincing him of the importance of the distinction between laws of production and laws of distribution.

Mill believed that in a competitive economic framework, individual and social interests were generally compatible with one another, but he also noted many of the popular exceptions to LAISSEZ-FAIRE that have now become a part of modern capitalism. He adhered to the classical position that social policy could not modify production functions. However, to counter Ricardian predictions of a dreaded stationary state at which wages would be at a subsistence level, he recommended exceptions to pure laissez-faire principles. These reforms would encourage individuals in society to act in a more humane way, resulting in a more equitable distribution of income.

Mill advocated high rates of taxation on inheritances, rather than a progressive income tax that could create disincentive effects. He also favored the formation of producer cooperatives. Not only would workers acquire financial benefits from receiving a share of profits and interest from the cooperative, but society would also benefit from the potential productivity increases that such incentives would generate. He emphasized the importance of worker education, with respect to the practice of birth control, in order to dampen the effects of diminishing returns in agriculture, and regarded unions as a means to improve the position of the working class.

In retrospect, Mill probably held too rigid a view of the unchangeable nature of the laws of production. After all, technological development constantly changes production relationships. That does not, however, diminish the real message of the distinction: most important to Mill was the fact that society could affect the distribution of income initially produced by the economic machine, and that it was a central role of government to establish policies that promoted equality of opportunity.

To Mill, the conflict between the interests of landowners and those of the rest of society was obvious, but he rejected the socialist condemnation of private property and competition. Moreover, though Mill did not dispute the Ricardian prediction of falling rates of profit and the inevitability of the stationary state, he argued that it could be highly desirable to society. He believed that when the pace of economic activity slowed, less attention would be focused on increasing the quantity of material goods produced and more attention could be directed toward improvements in the quality of life.

Mill's *Principles* was clearly intended to summarize and synthesize all economic knowledge to date, but it also made important original contributions to economic theory. Even though Mill was inclined to emphasize his connection to classical economics, his advances also signaled the transition to neoclassical economics. He formulated, using purely verbal analysis, a description of static equilibrium price formation that is consistent with modern treatments, and developed a theory of jointly supplied goods. These contributions demonstrate the ability of a great mind to derive by means of verbal thought processes the insights equivalent to those later established mathematically.

Historians of economic analysis also credit Mill for his important contributions to the theory of international trade. Ricardo's comparative-advantage analysis had strengthened Smith's arguments concerning the benefits of unregulated international trade. The Ricardian model demonstrated that where comparative advantages existed, international trade could increase world output and benefit all trading nations. However, Ricardo did not specify the terms of trade that would emerge (and hence the distribution of gain between the trading partners), but rather suggested that the international price would likely be about halfway between the two domestic prices.

Mill, using his concept of reciprocal demand, concluded that the terms of trade would depend on the relative strengths of demands for the imported products by the trading countries. Though he did not employ formal mathematics to derive this conclusion, it was surprisingly correct, and later economists such as Alfred MARSHALL and Francis Edgeworth, who added the graphical analysis, praised his analysis. His other contributions to trade theory included an analysis of tariffs on the terms of trade and the effects of transportation costs on the trading outcome.

Though for much of his career Mill accepted the wages fund doctrine, an integral piece of classical economic theory, he also supported the formation of labor unions. Unions and strikes seemed to be appropriate tools to counter the bargaining power of the employing firm, and to Mill, far from being restrictions of competition, were actually necessary for a free market. Historically, the wages fund concept was derived from the view, suggested by both Smith and the PHYSIOCRATS, that it was necessary for the employer to "advance" wage goods or their monetary equivalents to workers during the production process.

However, opponents of labor-union formation had used the wages-fund doctrine to demonstrate that attempts by labor to increase wages would necessarily be unsuccessful. Finally in 1869, Mill recanted the wages-fund theory, without changing his position about the need for population control and without amending his presentation of the theory in the seventh edition of his *Principles*. Accordingly, Mill also concluded that arguments concerning the inability of union activities to raise wages were invalid. His decision not to revise the treatment of the wages fund theory in his text may have been practical or philosophical: such a revision would have required major reconstruction of much of his theory, but it would have also implied a sharp break from the classical framework that he learned as a child.

Another important conclusion generally accepted by classical economists was SAY'S LAW, often summarized as "supply creates its own demand." Mill offered a logical (and new) defense of this position to the critics, by developing a theory of BUSINESS CYCLES. He said that in an economy with credit money, the possibility of a general oversupply existed, not in the Malthusian sense of general gluts, but because of changing expectations in the business community. He generalized that such an oversupply would be of short duration, but noted the importance of business confidence.

Mill committed his intellect to an elegant synthesis and improvement of economic knowledge at a time when classical economics was being criticized on all sides. Though always an independent thinker, he listened and attempted to address many of the concerns that were levied against classical economic theory from many different perspectives. He made significant theoretical modifications to the existing Ricardian model, and made several important original contributions that have often been overlooked or obscured. Perhaps more importantly, he insisted that political economy should contribute to human welfare and help establish intelligent policy. His eclecticism makes it difficult to unequivocally classify his ideology, but his dedication to social reform was undeniable.

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Miller, Merton H. (1923–2000)

MERTON MILLER RECEIVED the Nobel Prize in Economics in 1990 with Harry MARKOWITZ and William SHARPE for his contributions in the field of corporate finance. Miller clarified which factors determine share prices and capital cost of firms. He laid, along with Frances MODIGLIANI, what are now considered the foundations of corporate financial theory.

The Modigliani-Miller irrelevance theorem states that under the conditions of no brokerage costs, no taxes, no bankruptcy costs, only one interest rate, and perfect information transfer it does not matter how a firm structures itself. While these assumptions are unrealistic, they were a starting point from which researchers could add more variable complications and determine optimal debt-to-equity ratios for firms.

Miller was born in Boston, Massachusetts, the only child of Joel and Sylvia Miller. His father, an attorney, was a Harvard University graduate, and Miller attended Boston Latin School and then entered Harvard in 1940 where one of his classmates was Robert M. SOLOW. He completed his study of economics in only three years and graduated in 1943.

During WORLD WAR II he worked as an economist first in the Division of Tax Research of the U.S. Treasury Department and subsequently in the Division of Research and Statistics of the Board of Governors of the Federal Reserve System. In 1949, he returned to graduate school at Johns Hopkins University in Baltimore.

Miller's first academic appointment after receiving his Ph.D. from Hopkins in 1952 was visiting assistant lecturer at the London School of Economics in 1952–53. From there he went to the Carnegie Institute of Technology (now Carnegie-Mellon University). At Carnegie his colleagues included Herbert SIMON and Modigliani. Modigliani and Miller published their first joint "M&M" paper on corporation financial theory in 1958 and collaborated on several subsequent papers until well into the mid-1960s.

In 1961, Miller left Carnegie for the Graduate School of Business at the University of Chicago where he stayed until his death except for a one-year visiting professorship at the University of Louvain in Belgium during 1966–67. His graduate students at Chicago included

Eugene Fama, founder of the efficient market theory, and Myron SCHOLES. At Chicago, where he was Robert R. McCormick Distinguished Service Professor, most of his work continued to be focused on corporate finance until the early 1980s when he became a public director of the Chicago Board of Trade.

Miller then became interested in the economic and regulatory problems of the financial services industry, and especially of the securities and options exchanges. Miller also served as a public director of the Chicago Mercantile Exchange where he had served earlier as chairman of its special academic panel to study the stock-market crash of October 19–20, 1987. Miller and fellow Chicago Nobel-Prize laureates, Milton FRIEDMAN (1976), Theodore SCHULTZ (1979) and George STIGLER (1982) are extremely strong supporters of free-market solutions to economic problems.

Miller's first wife Eleanor died in 1969 leaving him with three young daughters. He later married his second wife Katherine. Miller died in his long-time home in Hyde Park, Chicago. He was the author of eight books, including *Merton Miller on Derivatives* (1997), *Financial Innovations and Market Volatility* (1991), and *Macroeconomics: A Neoclassical Introduction* (1974, with Charles Upton).

Eugene Fama, the Robert R. McCormick Distinguished Service Professor of Finance, Miller's first Ph.D. student at Chicago and a 37-year colleague, says, "All who knew him at Chicago and elsewhere recognize him as a path-breaking, world-class scholar, a dedicated teacher who mentored many of the most famous contributors to finance and a graceful and insightful colleague who enhanced the research of all around him."

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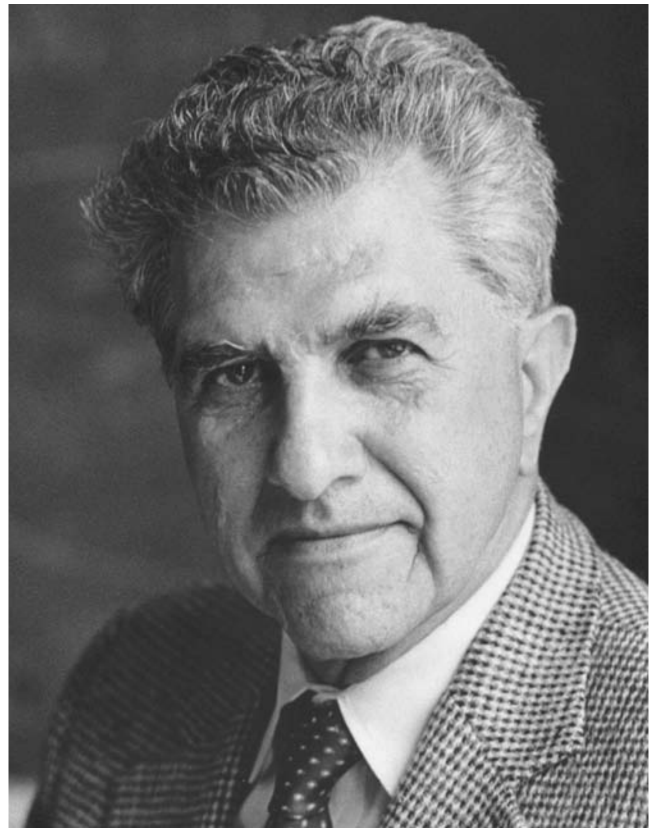

Merton H. Miller, along with his Chicago School colleagues, supported free-market solutions to economic problems.

mining

ONE OF HUMANKIND'S oldest economic activities, mining is the act of digging mineral substances from the earth. Indeed, eras of human progress, the Stone Age, Bronze Age, Iron Age, etc., are defined by the ability of civilizations to collect and process different minerals and ores. Globally, mining directly accounted for $361 billion in gross world product in 1998 and employed 13 million workers. These figures represent only 0.9 percent and 0.5 percent of global income and employment respectively, but mining directly affects nearly every other sector of the economy. While iron ore production is a "mere" $25 billion per year business worldwide, it is the primary input into the $200 billion steel industry. Similarly sand, gravel, and cement are the lifeblood of the multi-trillion dollar global construction industry.

Taxonomy. The mining industry is generally broken up into three major sectors. The first is fuels, which includes the fossil fuels of petroleum, natural gas, and coal as well as uranium. These ENERGY commodities are generally separated from the rest of the mining industry. The metals sector is defined on the basis of an element's position on the Periodic Table and includes iron, copper, gold, aluminum, lead, and other commercially important ores. Iron is the most widely mined metal in the world with annual production exceeding one billion metric tons valued at $25 billion in 2000. While other metals are mined in much lower quantities, their relatively higher values per kilogram make them nearly as economically significant.

In 2000, worldwide production of copper was 12.7 million metric tons at a value of $22.3 billion, zinc production was 0.8 million metric tons at a value of $10.7

billion, gold production was 2,550 metric tons at a value of $22.9 billion, and the production of platinum-group metals was 365 metric tons at a value of $8.0 billion. Total worldwide raw metal production was roughly $125 billion in 2000. Metal ores typically require significant processing in order to produce high-grade metals, and therefore the value of the finished materials may be substantially higher than value of the ore itself.

For example, the production of aluminum from bauxite ore is highly energy-intensive, and thus the cost, in 2000, of the ore required to produce one ton of aluminum was just over $100 while the value of the finished crude aluminum was roughly $1,750. Ores containing only trace amounts of the metal may be economically viable to mine so that the total quantity of ore mined in the copper, gold, and iron industries is of a comparable magnitude despite, the huge differences in the production of the finished metals. Metal-ore mining tends to be concentrated in specific geographical locations. For example, 35 percent of world copper ore production takes place in CHILE, and 53 percent of platinum comes from mines in SOUTH AFRICA. The UNITED STATES, a large country with a diverse mining industry, produces nearly one-third of the world's molybdenum while depending on foreign sources for all of its nickel, tin, and tungsten.

The final mining sector is industrial minerals. This sector includes construction materials such as sand, gravel, crushed and cut stone, and cement; minerals for use in industrial processes such as phosphate, soda ash, and lime; and minerals for direct consumption such as gemstones, salt, and clay. Production of industrial minerals exceeds that of metal ores both in physical quantities and economic value.

World cement production alone in 2000 of cement was 1.6 billion metric tons with a value of $117 billion, and annual world production exceeds $1 billion in sand and gravel, crushed and cut stone, phosphate rock, salt, soda ash, boron, and clay. In the United States, roughly three-quarters of $40 billion in GROSS DOMESTIC PRODUCT (GDP) accounted for by the non-fuels mining industry is a result of industrial minerals. As opposed to metal ores, the production of industrial minerals, particularly construction materials, tends to be more evenly distributed geographically, due to the relatively high transportation costs in comparison to the value of the materials. The exception to this general rule is gemstones, which are, of course, expensive and lightweight. For example, three-quarters of world diamond production comes from just three countries: AUSTRALIA, the Democratic Republic of Congo (Zaire), and RUSSIA.

Mining itself comes in two basic forms, surface or open-pit mining and underground mining. Surface mining involves the collection of minerals at or near the surface of the land. Strip mining is a type of surface mining where a relatively thin covering layer of soil, or overburden, is removed to expose minerals just beneath the surface. Quarries are surface mines where cut or crushed stone is extracted. Open-pit mining is frequently used for coal and both metal and industrial minerals with essentially all sand, gravel and stone collected in this fashion. The nature of surface mining allows for massive economies of scale with the largest mines covering several square miles.

Underground mining involves digging tunnels to access minerals found below the immediate surface. Shaft mines are dug vertically to allow access to veins of ore deep underground through the use of elevators. Drift mines enter into the sides of hills or mountains using horizontal tunnels, and slope mines use inclined tunnels to get at deposits relatively near the surface. A significant portion of coal is mined using underground mining as well as large quantities of metal and gemstones.

Scarcity. Economics is defined as the study of the allocation of scarce resources among competing users, and therefore it is no surprise that economists have long studied the issue of resource SCARCITY. The most significant early economist in the field is Thomas MALTHUS (1766–1834), an English clergyman whose 1798 work, *An Essay on the Principle of Population*, examined population growth and agricultural output. Malthus theorized that since populations grow geometrically while the amount of arable land was essentially fixed, population growth would eventually outstrip food production leading to widespread famine and poverty. Malthus' concepts are easily adopted to the mining industry where stocks of minerals can be seen as fixed in supply and exploited by an ever-growing population.

Standard measures of mineral scarcity such as the Static Reserve Index, calculated by taking the currently known deposits of a resource and dividing by the current annual usage, point to very limited time periods before various minerals are exhausted. Modern scholars who expand upon Malthus' ideas, such as Paul Ehrlich and Donella Meadows, are known as Doomsday theorists or Neo-Malthusians, and they suggest that the world is doomed to run out of critical, depletable resources, such as minerals, within a generation.

On the other side of the issue, the so-called technological optimists such as Julian SIMON point out that Malthus' dire predictions have failed to come true in the two centuries since they were first proclaimed. Malthus, they say, did not properly account for advances in technology that allowed population growth to slow and agricultural production to rise. Similarly, the optimists believe that apocalyptic predictions about running out of basic minerals fail to account for the possibility that new sources will be discovered, substitutes will be developed, and consumption will fall as prices rise in the face of scarcity.

The case of copper is instructive. In 1950, the U.S. Geological Survey estimated worldwide proven reserves of 90 million tons. At the then annual rate of consumption of 2.2 million tons, the Static Reserve Index indicated a 40-year supply of the metal. Fifty years later, after an additional 250 million tons of copper had been mined, estimated reserves had risen to 340 million tons due to new discoveries of deposits, and the development of technologies that allowed production of metal from lower grade ore. Further reducing the consumption of copper and extending the "life expectancy" of this valuable resource was the development of fiber optic cable, which reduced the use of copper wire in transmitting data. Indeed, in 1998, the market price of copper, adjusted for general inflation, stood at its lowest level in history at roughly a quarter of its peak price in the 1960s. Economists would infer from these low prices that despite the fact that consumption of this finite resource has increased, copper has actually become less scarce over the past 50 years.

Mining, labor history, and government regulation. The difficult and dangerous nature of mining, particularly coal-mining, made the industry a natural target for union organizers. Many of the most significant and violent moments in labor history were directly related to the coal- and hard-rock mining industry. The 1876 execution of 10 members of the "Molly Maguires," the largest mass execution in U.S. history, came directly from the violent conflict between Irish coal-miners and the Philadelphia and Reading Coal and Iron Company. In the 1897 Lattimer Massacre, police opened fire on Pennsylvania coal-miners who were participating in a post-Labor Day rally, killing 19 marchers. The infamous 1914 Ludlow Massacre occurred when 20 people, including 15 women and children, were killed by members of the Colorado National Guard and Colorado Fuel and Iron Company gunmen attempting to break a months-long coal-miners' strike.

The United Mine Worker Association (UMWA), the largest and most historically significant miners union, was formed in 1890 by the merger of two smaller local unions in Columbus, Ohio. The formation of the new union was due in part to the efforts of William Wilson who later went on to serve as the nation's first secretary of labor under Woodrow WILSON in 1913. Other notable figures in the mining labor movement included John L. Lewis, president of the UWMA from 1920–60 and a leader in the formation of the Congress of Industrial Organizations (CIO), Bill Green, Treasurer of the UWMA and later a president of the American Federation of Labor, and Mother Jones, a prominent union organizer. Unionization led to the establishment of the shorter workday in 1898 and collective bargaining rights in 1933.

The federal government increased regulation of mining in the early 20th century. The U.S. Bureau of Mines was formed in 1910 and established the nation's first mine-safety research program, the first national program to collect data on mine accidents, and the first trained mine-rescue teams. The Federal Coal Mine Health and Safety Act of 1969 regulated increased mine safety and provided the first standards to prevent black lung disease. The law was extended to the metal and nonmetal mining sector in 1977.

In 1907, the worst year on record for mining fatalities, 3,242 coal-miners died in job accidents out of 680,000 workers, for a fatality rate of nearly 1 in every 200 laborers, an astonishing number. Complete figures on metal and industrial mineral fatalities were not kept until the 1930s, but typical fatality rates were roughly half that of the coal industry. By the year 2000, total U.S. mining fatalities had fallen to less than 100 in an industry with 350,000 employees. Still, despite huge improvements in mine safety thanks to improved technology and government regulation, mining remains the country's most dangerous industry based on fatalities, with a death rate roughly twice that of police officers.

Mining and economic development. Many geographical areas can trace their early economic development directly to nearby mineral deposits: San Francisco, California, and the Sutter's Creek gold rush of 1849, Denver, Colorado, and the gold and silver boom of 1859, and Johannesburg, South Africa and the gold discoveries of 1886. While mining towns often exhibit a boom and bust cycle, with bustling cities left as ghost towns once mineral deposits are exhausted, in some cases, nearby transportation centers continued to flourish after mining interest subsided.

Unlike the petroleum industry, which created the vast wealth of the oil barons, the miners and mining companies themselves rarely "struck it rich." The reasons for this are both geological and economic. First, the rich veins of ore tended to be modest in size unlike the huge pools of oil that lay under western Pennsylvania and the American southwest. Second, the start-up costs for operating a small mining operation were low in comparison to the costs of drilling for oil, and therefore, the mining industry attracted vast numbers of fortune-seekers whose sheer numbers dissipated any economic profits. The theory of perfect COMPETITION suggests that free entry leads to zero economic profits.

Finally, many of the richest mining discoveries were in remote and inaccessible areas such as the rugged Colorado Rockies and the bitter-cold Yukon Territories.

The high costs of basic supplies significantly reduced potential profits. Indeed, the majority of the fortunes generated by mining booms were by shippers and suppliers such as Charles Crocker, Collis P. Huntington, and Mark Hopkins, merchants during the California Gold Rush who later formed the Central Pacific Railroad.

A few great fortunes were made, of course. The Big Four of the Comstock Lode, John Mackey, James Fair, James Flood, and William O'Brien, made their fortune on the massive silver deposits discovered in western Nevada and later through investments in banks, utilities, and hotels throughout the west. William Randolph Hearst, who built the great publishing empire, inherited his fortune from his father, George Hearst, the primary investor in the Homestake Mine in the Black Hills of South Dakota. The "unsinkable" Molly Brown, who later gained fame as a survivor of the Titanic, was married to J.J. Brown who made his fortune in the Little Jonny gold strike in Leadville, Colorado in the 1890s.

Mining and developing nations. Mining has had a substantial impact on the economies of developing nations as well. The production of basic metals and minerals in poor countries fit squarely within the traditional colonial economic model (mercantilism) where colonies would supply raw materials in exchange for finished goods manufactured in the home country. The criticism of the colonial model of economic growth takes several forms.

Aside from the basic human-rights issue that proposes that citizens of a region should have the right to self-determination, others have argued that the colonial model condemns primary materials producers to low levels of economic growth. First, basic commodities are subject to wild swings in prices that cause general economic instability in mineral-producing regions. Second, if the model of technological improvements and substitution effects suggested by the technological optimists is correct, basic commodity prices will tend to fall over time as metals and minerals become relatively less scarce. In fact, the real price of most metals has fallen over the past half-century.

Open-pit mining collects sand, gravel, and stone for industrial production in the United States.

As pointed out by economist Jagdish Bhagwati, in cases where a country produces a significant portion of the world's total output of a particular commodity, attempts to increase economic output through expanding production may lead to world prices that are lowered to the point where the country experiences the paradoxical case of "immiserizing growth."

Finally, unlike manufacturing economies where production can easily change from one product to another, countries that specialize in mining production do not tend to be able to transform the productive capacity of the economy to other uses when the mineral resources are exhausted.

Mining and the environment. Mining came under increasing criticism in the later years of the 20th century due to its impact on the environment. Metals mining alone produces over 5 billion tons of tailings waste each year. Mining operations also release significant pollutants due to the processes used to extract the pure metal from the ores. For example, most smelting operations release significant quantities of SO_2, a gas responsible for acid rain, and CO_2, the primary greenhouse gas. Similarly, the chemical process used to leach gold from ore uses cyanide as the main ingredient.

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Minsky, Hyman P. (1919–96)

ADEPT AT EXPLAINING HOW lending patterns and mood swings can push an economy into speculative booms or serious declines, Hyman Philip Minsky is one of the more celebrated economists of our time. He argued that these swings are inevitable in a free-market society unless the government exercises control via regulation.

Often described as a radical, his tireless research into the world of economical fluctuations drew respect even from some of his more mainstream foes. In fact, Minsky's theories, centering on the instability of the financial system in a capitalist society, served as a genesis of the Wall Street paradigm. He showed Wall Street how financial markets could easily slip into excess.

"A fundamental characteristic of our economy is that the financial system swings between robustness and fragility," he once wrote. "These swings are an integral part of the process that generates business cycles."

A native of Chicago, Minsky earned a bachelor of science degree in mathematics from the University of Chicago in 1941. While a postgraduate student, however, he switched fields of study to economics and finance after being greatly influenced by Henry Simons, a professor and noted economist of the day. After serving with the U.S. Army overseas during WORLD WAR II, he achieved a master's degree in public administration in 1947, then moved on to Harvard University where he received his doctorate in finance.

Minsky was an adherent of the Keynesian school of economics—that is, a follower of John Maynard KEYNES whose lifelong reflections centered on the causes perpetrating an unstable market system. But, it wasn't until Minsky's diagnoses of the monetary problems that a logical explanation came forth. As the *New York Times* wrote in his obituary, "Minsky found that in prosperous times, when corporate cash flow rises beyond what is needed to pay off debt, a speculative euphoria develops and soon lending gets beyond what the borrowers can pay off from incoming revenues."

Throughout the 1950s, Minsky's research broke new ground. During his own time, his views struck revolutionary chords with conservatives—hypotheses on financial fragility, fiscal policies, financial retrenchments, and recessions. "But, in the last 15 years," says economist Steven Fazzari, "there has been an outpouring of new research, both theoretical and empirical, that rediscovers and validates [Minsky's] views."

Most of Minsky's teaching career was spent at Washington University in St. Louis, Missouri, where he taught economics from 1965 until his retirement 25 years later in 1990. Prior to that, he served in the department of economics at the University of California, Berkeley, and the Carnegie Institute of Technology.

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Mirrlees, James A. (1936–)

JAMES A. MIRRLEES WAS born in 1936 in Scotland and studied mathematics and economics in Edinburgh and later at Cambridge University, England, where he obtained his Ph.D. in 1963. After holding a professorship at Oxford University, he returned to Cambridge in 1995 as a professor of political economy. In 1996, Mirrlees was awarded the Nobel Prize in Economics, jointly with William VICKREY, for his work in the fields of public economics and economic development.

Mirrlees is most prominent for his work on optimal income taxation. He considers the classic utilitarian government whose objective it is to redistribute income from those in society with the greatest abilities to those with the fewest abilities. The problem the government faces, however, is that it cannot determine the innate abilities of members of society. Instead, the government only observes the income of individuals. This yields the classic problem of a utilitarian government: if taxes are levied on the basis of income (which is known to the government), instead of on someone's actual earning ability (which the government does not know), then taxing high-income individuals to redistribute income to those with low incomes creates disincentives to work. Mirrlees devised taxation schemes that account for the disincentives that the scheme itself creates, and thus derived tax schemes that are optimal in light of the informational asymmetry the government faces regarding peoples' abilities.

His work has since been extended to analyze all types of situations in which the relevant information, on which to base decisions, is not observed such that straightforward approaches create disincentives that may be very costly to society and, indeed, counterproductive. In particular, Mirrlees has extended his analysis to study the optimal design of hierarchies in organizations.

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Mises, Ludwig von (1881–1973)

ACKNOWLEDGED AS ONE of the great economists of the 20th century and a champion of individual rights, Ludwig von Mises was born in Lemberg, then part of the Austro-Hungarian Empire, and now the city of Lviv in the UKRAINE. The oldest son of a prosperous engineer, Mises received his doctorate from the University of Vienna in 1906. In 1909, he became an advisor to the Austrian Chamber of Commerce, a post he held until 1934 when he emigrated from AUSTRIA.

In 1912, Mises published his first great work, *The Theory of Money and Credit*, in which he explained the role of money in an economy using microeconomic principles. At the time of the book's publication, the prevailing view among economists was that money was "neutral," meaning changes in the money supply affect only prices. Mises, though, pointed out that increasing the money supply lowers the purchasing power of money, but also changes relative prices and incomes. When the money supply expands, early receivers of the money, like the government itself, benefit more than those who receive the new influx later.

As a result, monetary inflation is a redistribution of wealth to the government and some favored groups from the rest of the population. Mises concluded that any supply of money is optimal and that every change in the money supply has pernicious effects.

Despite its important contributions, *The Theory of Money and Credit* received little attention in the English-speaking world. John Maynard KEYNES reviewed the book in the prestigious Cambridge *Economic Journal* in 1914 and concluded that it was neither "constructive" nor "original." More than a decade later, those surprising conclusions became more understandable when Keynes wrote that his knowledge of German was poor so that "new ideas are apt to be veiled from me by the difficulties of the language." Economist Friedrich von HAYEK noted, "the world might have been saved much suffering if Lord Keynes's German had been a little better."

In 1920, Mises published his second great work, *Socialism*, in which he explained why central-planning could not succeed. Mises realized that the market does not measure value directly, but only indirectly using prices. Without markets and prices, the central plan could not allocate resources efficiently because it could not calculate the values of goods and services directly. *Socialism* had an enormous influence in the 1920s and 1930s, not only by raising questions about central-planning, but also by converting many of its socialist readers into advocates of free-market capitalism. Commenting on its importance to members of his generation, Hayek stated, "To none of us young men who read the book when it appeared was the world ever the same again."

Mises left Vienna in 1934 to avoid the increasing threat to Austria from the Nazi regime in GERMANY. He worked first at the University of Geneva and then fled to the UNITED STATES, where he became a professor at New York University, a position he held until he retired at the age of 87. In 1949, he published his third great work, *Human Action*, a major economic treatise in which he based the study of economics on the choices of individuals as they seek to achieve their most valued goals.

Mises's importance is measured not only in his own work, but also in the work of the many economists he influenced. A partial list of those who participated in his renowned seminars in Vienna includes Hayek, Fritz Machlup, Oskar Morgenstern, and Lionel Robbins. Vernon L. SMITH, winner of the 2002 Nobel Prize in Economics, argues that even today the value of Mises's work has not diminished: "Reading Mises after 50 years, I am impressed with how stimulating, relevant, and crisp *Human Action* is for the state of economics at the end of the second millennium. It has endured well because many of its major themes—property rights, liability rules, the efficacy of markets, the futility of interventionism, the primacy of the individual—have become important elements in microeconomic theory and policy."

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Mitsubishi Motors Corporation

HEADQUARTERED IN TOKYO, this worldwide manufacturer of autos and other vehicles is one of the fastest-growing corporations and the fourth-largest automaker in JAPAN. Mitsubishi Motors Corporation (MMC) "mixes the diversity of talent and resources needed to compete in a global industry," says its public relations literature. But the company's record of success and longevity lends credence to the realization that their public relations boast is not idle. Mitsubishi Motors has been producing automobiles, buses, automotive parts, and powertrains across the world since 1917, virtually nonstop.

What financial shortcomings Mitsubishi has been experiencing in the early 2000s, due to competition and a slowdown in the buying market, has been ameliorated by DaimlerChrysler coming to its aid, acquiring a 34 percent stake in the company and lending its expertise.

Mitsubishi four-wheel-drive vehicles are sold on six continents—Asia, Africa, Europe, South America, Australia, North America, and also in the Middle East. Models vary from continent to continent and include passenger cars such as the sedans Diamante, Galant, Colt and Aspire; mini-hatchbacks like the ek-Wagon and ek-Sport; and light commercial vehicles Delica Van, Delica Truck, SpaceStar, L200 and Lancer Cargo.

One of the keys to Mitsubishi's high reputation is its ability to meet local demands. Specifications vary from model to model, depending upon the location where they are sold. Customization, then, is Mitsubishi's salute to customer satisfaction. North America has been a productive business partner since the early 1970s, selling Mitsubishi products under the Chrysler trademark. Mitsubishi Motors of North America, Inc. manufactures, finances, distributes and markets cars and SUVs through nearly 700 dealerships spread throughout the UNITED STATES, CANADA and MEXICO. A major manufacturing facility in downstate Illinois, which began its assembly line in 1988, has turned out more than 2 million vehicles.

Mitsubishi ranked in 2002 as the 12th largest company in the world, reporting almost $106 billion in sales.

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Mitsui & Company, Ltd.

FOR MANY YEARS, Mitsui of JAPAN has provided an unparalleled breadth of products and technical services to virtually all industries, assisting its vast and diverse line of customers to meet their business goals and objectives head on—whether tomorrow or next year. The functions and capabilities offered are as strategic and disparate as the industries it serves. Mitsui has enjoyed a reputation of nimbly responding not only to its customer base, but to its own quality-driven self-image, flexible in the face of economic and social trends in order to keep constant its successes year after year.

The company's products and services cover the needs of a global environment. Divided into five groups, each group is dedicated to supplying the demands of a specific industry and/or medium: the Metal & Minerals Group (steel and iron products); the Machinery, Electronics & Information Group (i.e., telecommunications and motor vehicles); the Chemical Group (including petroleum and plastics); the Energy Group; and the Consumer Products and Services Group.

Dictated by Mitsui's Five Initiatives, the company aims to offer a full range of capabilities, services along the value chain, service across industries, global services, and creative disposition of its automation.

Reporting more than $101 billion in revenue in 2002, Mitsui ranked as the 13th largest company in the world.

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Mizuho Holdings

TOKYO-BASED MIZUHO HOLDINGS is the holding company for Mizuho Financial Group, including the integrated operations and assets of the Dai-ichi Kangyo Bank, the Fuji Bank, and the Industrial Bank of Japan. The first-of-its-kind merger and integration, which was completed on April 1, 2002, it was the penultimate example of consolidation among Japanese banks, leaving Mizuho Holdings as the world's largest bank, with a trillion dollars in assets. Although the Japanese word *mizuho* means "golden ears of corn," it's more than corn that Mizuho holds.

"We have established the framework of the Mizuho Business Model," explains Terunobu Maeda, Mizuho Holdings' CHIEF EXECUTIVE OFFICER (CEO). "Our group companies (can now) offer a comprehensive range of value-added financial services (to) meet the needs of customers more quickly and appropriately."

More practically, what the consolidation really means is that Mizuho Holdings now leads JAPAN's financial industry in the 21st century. Its mechanism is based on five basic principles: the bank wants to offer a wide range of the highest-quality service to customers; maximize shareholder value and, thus, gain the trust of the society; offer rewarding job opportunities; maximize the benefits of the consolidation to effect cost reductions; and create a new corporate climate.

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modernization theory

MODERNIZATION THEORY attempts to develop a general theoretical model of development of capitalism in areas with non-capitalist societies. The object of analysis of modernization theorists are the countries that were formerly the colonies of European countries, or whose historical development was heavily influenced by them. Modernization theory is also being applied to understand and help the transition of the former SOVIET UNION-bloc countries to capitalist societies.

Modernization theory took shape slowly in the late 1940s and 1950s as a result of the accumulation of empirical and analytical contributions made by a number of U.S. academics sponsored by the U.S. government to help it understand the social conditions in newly independent countries of the Third World. Undertaken in the background of the developing Cold War, this effort had an immediate, practical end: that is to quickly "modernize" willing Third World countries with the help of U.S. financial, managerial, technical, and military assistance so that these countries would remain a part of the capitalist "free world."

Two streams of literature have informed the foundational principles of modernization theory: First, the 19th-century liberal belief in social progress—evolutionary economic development, democratization, and secularization of society—and that this is a universally unilinear process; and second, the structural-functionalist theoretical stream spawned by the writings of Talcott Parsons in early 1950s.

The theory's logical structure is constructed around positing a duality of traditional and modern societies. The concept of modern society is an abstraction of Western liberal capitalist societies. This abstraction is referred to as Industria by some seminal writers in this tradition. The opposite of Industria is the concept of Agraria. Agraria is then defined as a society that lacks the characteristics of Industria or liberal democratic capitalist societies. In the real world, the entire third world was classified as traditional by modernization writers. It was a general belief among them, based on their philosophical principles, that all traditional societies are on their way to becoming modern, just as the current modern societies previously completed this journey (this belief is called unilinearity).

Traditional societies were seen by this theory to have to go through the modernizing process in all their major social subsystems: economic (from subsistence production to market economy); social (from traditional/religious behavior to secularism); political (development/strengthening of the institutions of the state); familial (giving up extended family for nuclear family); and individual-psychological (community orientation of behavior to self-interested behavior).

The process of acquisition of modern characteristics by traditional societies was termed development. Further, that the process of development could be speeded-up by providing key capital, technical, and military inputs to developing countries' governments by the UNITED STATES. The acceptance of these ideas by the majority of scholars, consultants, research foundations, and government officials in the United States led to the creation of official foreign-aid programs. Additionally, multilateral financial institutions were given the role of channeling resources to developing countries.

This modernization model was applied to all "free-world" developing countries during the 1950s and 1960s. However, after two decades of development these countries had little to show in terms of economic or social development. Additionally, it was not a coincidence that anti-democratic regimes took hold in almost all of them as modernization theorists and practitioners generally held the view that democracy would either have to wait until economic development was achieved, or it would follow automatically.

Modernization theory came under severe criticism in late 1960s, especially from proponents of the DEPENDENCY THEORY who criticized it for being ahistorical, ignoring external economic and political factors, ethnocentricity, unilinearity (all countries will follow the same stages of development as Western capitalist countries), and accused it for being a tautology based on its concepts of traditional and modern. Others criticized it for assuming traditional values and social behaviors to be inherently irrational and obstacles to development. In response, modernization theory was modified and developed by writers in this tradition especially after the 1970s.

The new modernization theorists preserved their basic approach in terms of upholding:

1. the national level as the unit of analysis
2. the focus on key internal variables of social values and institutions
3. the key concepts of traditional and modern
4. the key value-belief that modernization is beneficial and desirable.

They also modified the theory in important ways. The major modifications made to the theory were:

1. it was accepted that traditional values are not necessarily obstacles to development
2. that attention had to be given to the historical circumstances of the country under study
3. the possibility of different paths to development was accepted

4. the role of external obstacles/factors facing developing countries were incorporated into analytical framework.

These modifications greatly expanded the theory's scope of applicability and strengthened its robustness. The modifications spawned new studies that included (but were not limited to) the role of religion in the economic and social development of traditional countries, and the role of extended family structure in propelling business enterprise.

Clearly, the new modernization theory has a great potential for development and expansion not only in terms of the logic of the theory, but more importantly in the explanation of the multifaceted and dynamic social reality in the developing world. It also faces some clear challenges, not the least of which are the various ways in which it could possibly (and potentially) collapse into an upgraded classical liberalism.

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Modigliani, Franco (1918–)

ITALIAN-BORN, AMERICAN economist awarded the 1985 Nobel Prize in Economics, Franco Modigliani was cited for the development of his life-cycle theory of household saving and his work on capital costs. He also contributed to rational-expectations theory.

After studying law in Italy, Modigliani emigrated to America in 1939 and became an American citizen. In economics, he worked to correct and extend the theories of British economist John Maynard KEYNES, arguably the most influential economist of the 20th century. Modigliani received his Ph.D. in economics from the New School for Social Research in 1944, where he taught until 1949. After that, he taught at the University of Chicago and the Carnegie Institute of Technology (now Carnegie-Mellon University) before settling at the Massachusetts Institute of Technology in 1962, where he remained for the rest of his career.

One of Keynes' central insights, called the consumption function, stated that when people make more money, they increase their consumption by less than the increase in their income. As a result, they save a greater portion of their income than they did before. This implied that in periods of economic growth, the ratio of saving to income should increase. Simon KUZNETS (1901–85) found that national income data did not support Keynes's view. Economists began searching for ways to make the consumption function fit the data.

Milton FRIEDMAN (1912–) argued that people based consumption and saving decisions on their expected permanent income, not just on having more income at the moment. About the same time, Modigliani argued that each person's consumption/saving ratio depended on his/her stage of life. Under his view, young people saved little, middle-aged people saved a lot for retirement, and older people spent their savings. Modigliani's most controversial assumption is that people save only for their own consumption, not for their heirs.

In 1958, Modigliani and Merton MILLER argued for the Modigliani-Miller theorem, showing that (under certain assumptions) a corporation's value was unaffected by the amount or structure of its debts. This was significant not merely because of what it proved, but because prior to their work, there had been very little theoretical analysis of corporate finance.

Throughout his career, even into his eighties, Modigliani remained influential among economists and was engaged in the political economies of America and Europe.

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Monaco

MONACO OR AS IT IS commonly called, Monte Carlo, is a small, exclusive enclave on the French Mediterranean coast. It is the home of international jetsetters who enjoy the mild winters and warm summers in southern FRANCE. With a population of 35,000 in two square kilometers of territory, wealth is a requirement. Because of its status as a tax haven, data on Monaco is problematic.

Monaco was formed by the ruling Grimaldi family in 1297 and was re-established in 1814 after the French Revolution. From the start, Monaco was a haven for wealthy royalty who felt they were unfairly persecuted by emerging tax systems of growing mercantile cities and states during the Renaissance. After the emergence of capitalism as an economic system in Western Europe, Monaco began to attract heads of business and finance as well, for the same reasons it originally attracted royalty and nobility.

Today, French is the official language with English, Monagasque, and Italian widely spoken. The GROSS DOMESTIC PRODUCT (GDP) per capita is estimated at $27,000, and unemployment is at 0.1 percent. Its ethnicity is really the wealthy from all over the globe, but especially business leaders and nobility in Europe.

Surprisingly, despite its reputation as a tax haven for the rich and famous, Monaco has a diverse economy based on 300,000 tourists a year (25 percent of GDP), conventions, banking, and insurance. It also has a small industrial sector (33 percent of GDP). Gambling revenues account for over 4 percent of the state income annually and value-added taxes (VATs) for 55 percent. The state has more than 4 percent GDP growth, with a heavy dependence on imports from France.

Recently, Monaco has been criticized for poor tax records and is now seeing increased influence from France and the EUROPEAN UNION. The royal Grimaldi family tolerates such influence so long as the limelight is cast away from further tax issues in Monaco.

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monetarism

A LINE OF ECONOMIC thought pioneered by Milton FRIEDMAN at the University of Chicago, monetarism criticizes macroeconomic stabilization policies based on Keynesian MACROECONOMICS. Based on the quantity theory of money, and rooted in the neoclassical tradition, monetarism was propagated intellectually by Friedman in the 1950s and 1960s, and it came to be increasingly accepted as a policy guide following the resurgence of neo-conservatism in the late 1970s to the early 1980s. Monetarism, from a theoretical point of view, has since then been absorbed into new classical economics (also sometimes referred to as Monetarism Mark II), the chief proponents of which are Robert E. LUCAS Jr. at the University of Chicago, Thomas Sargent at New York University, and Robert J. Barro at Harvard University.

Neoclassical quantity theory of money. In the neoclassical approach, money, first and foremost, serves as a medium of exchange. Although historically speaking, useful commodities such as gold or silver served the role of money, it was primarily not their value in use, but their value as a medium of exchange that determined the price of money (its purchasing power in terms of other goods and services). This has become even more apparent when commodity-based money was replaced by fiat money, non-redeemable banknotes issued by central banks; and deposit money was guaranteed only by the creditworthiness of the banks with which it was deposited. The value of money (especially fiat money) as a medium of exchange, however, cannot be determined without knowing how much of it is available to mediate "real" exchange transactions. In other words, money derives value from people using it in exchange for commodities, but this value cannot be determined without knowing what basket of commodities could be exchanged for a given quantity of money.

To resolve this problem, the quantity theory of money makes an important assumption that there is a certain given volume of "real" transactions that does not depend on the quantity of money available. Moreover, the speed of circulation of money (the rate at which it changes hands) is also determined largely by the degree of development of the banking system, the technological progress in the financial sphere, and so on, that is, by forces not related to the quantity of money itself. In the words of one of the most prominent neoclassical advocates of the quantity theory, Irving FISHER: "An inflation of the currency cannot increase the product of farms and factories, nor the speed of freight trains or ships. The stream of business depends on natural resources and technical conditions, not on the quantity of money."

This idea is compactly expressed in the famous quantity equation, $MV=PT$, where M is the quantity of money, V is its velocity (speed of circulation), P is the general price level and T is the volume of real transactions. If T is given by real economic forces and V also does not change, M and P will be related one-to-one. In particular, if the quantity of money is determined by the central bank, then P will be governed by this decision. For example, a decision by the central bank to increase the quantity of money will lead to a corresponding increase in the price level (inflation) and will not have any effect on real economic activity.

Keynesian macroeconomics and liquidity preference. One possible objection to the quantity theory of money, that was raised within the neoclassical school, is the possibility of an endogenous supply of money (the real-bills doctrine). If the quantity of money is not entirely determined by the CENTRAL BANK, but is instead at least partly determined by real economic forces (working through extending or shrinking credit lines), the quantity theory clearly does not work. This line of criticism was never incorporated fully into the mainstream economics, however. Instead, both Keynesian (that is, anti-monetarist) and monetarist lines of thought equally accepted the idea that supply of money is governed by an exogenous policy decision.

Instead of targeting the assumptions about the supply of money, Keynesian macroeconomic theory targeted for criticism the demand for money assumed in the neoclassical quantity theory. According to the liquidity-preference theory, which came to be one of the cornerstones of macroeconomic orthodoxy from the 1950s through the 1970s, money is being demanded not only for the purpose of servicing transactions but also as an asset. The latter, in the words of John Maynard KEYNES, amounted to "the speculative motive . . . i.e., the object of securing profit from knowing better than the market what the future will bring forth."

Later Keynesians added to this a precautionary motive (desire to hold part of wealth in money form at times of increased uncertainty) to conclude that the demand for money is inherently unstable. The quantity theory, which assumed a stable demand function for money in terms of real transactions, was thus considered to be a poor guide for practical policy. The liquidity preference theory of money demand was used to deny the one-to-one relationship between the quantity of money and the general price level and to make the demand and supply of money an essential part of the determination of the real output and real interest rate in the framework of IS-LM (investment-saving, liquidity-money) analysis.

Friedman's restatement of the quantity theory. It should be noted that the approach to money as an asset had not been unfamiliar prior to Keynes. In fact, it formed the basis of the "Cambridge version" of the quantity theory originating with Alfred MARSHALL. In this version, the quantity equation was written not as MV=PT but rather in the form of M=kPY, where M and P denote the same things as in MV=PT while Y denotes real income and k represents the share of wealth that individuals decide to hold in the form of money. Assuming that real income is independent of the quantity of money and k (which is the inverse of the velocity of circulation V in the Fisherian equation) is also chosen by individuals independently of M, the same one-to-one relationship between M and P continues to hold. When, in 1956, Friedman wrote his famous paper, "The Quantity Theory of Money: a Restatement," arguing against Keynesian theory of liquidity preference, he appealed to the Cambridge rather than the Fisher version of the quantity theory to restate the argument.

In contrast to Keynesian liquidity preference theory which considers only the choice between money and financial assets (BONDS), Friedman argued that the demand for money should be considered as being determined by a whole array of rates of return on various assets, including commodities and physical capital. Friedman also included the expectations about the rate of change in the price level (INFLATION) as an important determinant of the demand for money, and he later forcefully presented this point in policy recommendations centered around the thesis that government stabilization efforts, in fact, have de-stabilizing effects through confounding expectations. Friedman also advocated the view (which to him was more of an empirical fact rather than a theoretical construction), that since the linkages connecting money to spending are numerous, the link between money and the price level is strong and relatively stable.

Phillips Curve controversy and the natural rate of unemployment. A popular artifact of Keynesian macroeconomics is the PHILLIPS CURVE. This curve first made its appearance in 1958 when a British economist, A.W. Phillips found a negative statistical relationship between the rate of changes in money wages and unemployment in Britain. Keynesian economics transformed the wage-unemployment relationship into an inflation-unemployment relationship, and developed the notion of a trade-off between price stability and full employment. If the government wanted to promote full employment, it had to pay the price of higher inflation and vice versa.

In the 1970s, however, a completely new situation emerged in which a deep RECESSION was accompanied not by falling but by rising inflation. Under such conditions, orthodox macroeconomic policy of the time became completely paralyzed. Fighting recession and unemployment called for expansionary fiscal and monetary policies, but that would exacerbate inflation and vice versa.

Friedman and the monetarists had an explanation, the role played by expectations. Since the demand for money depends, in particular, on the expected rate of inflation, a surprise increase in the supply of money, not built into those expectations, can indeed lead people to spend more and to supply more labor. This happens because of the money illusion. People see that their money balances are increasing (or that nominal wages are rising) but they do not yet perceive that this is happening throughout the economy so that the general price level is rising, and reducing the purchasing power of money balances and nominal wages.

When this latter fact becomes common knowledge, however, expectations are adjusted and real spending and labor supply return to their original levels, leaving only a higher inflation rate as an eventual outcome. The negatively sloped Phillips Curve, Friedman argued, was only true for a short period of time (from several months to two years), while in the long run the curve is a vertical line passing through the point of the "natural rate of unemployment" determined by non-monetary factors.

If the government tried to increase employment beyond that natural rate by injecting more money, the trade-off between inflation and unemployment would be recreated at ever increasing levels of both inflation and unemployment. What is worse, after a while the public will learn to adjust its expectations much faster and the overall disruption to the monetary exchange can actually even make inflation and unemployment positively related to each other.

The natural rate of unemployment (which is the monetarist counterpart to the concept of full employment) is the statistical unemployment rate governed by the balance of job-separation and job-acceptance rates. The idea is that the functioning of an even perfect market mechanism is never frictionless, so that some people are constantly separated from their jobs and start searching for a new job, while others who have been unemployed for some time finish their search and accept a new job. As long as the process of the job search takes time, some fraction of the work force will be constantly unemployed (although, of course, they will not be the same people).

The length of the job-search process is governed by various factors, including institutional factors such as the level of unemployment benefits and the degree of unionization, but it does not depend on monetary factors and, moreover, since unemployment is basically voluntary, it does not require any effective demand management. If the government wants to reduce the unemployment rate, the monetarist argument goes, it should concentrate on improving the institutional structure of the labor market (in particular countering monopolies by which trade unions are meant) and not try to attain that goal through macroeconomic policies.

The monetarist counterrevolution. The policy implications of this expectations-augmented view of inflation and the natural rate of unemployment vision were aptly called the monetarist counterrevolution. Contrary to previous beliefs that governments should engage in proactive, effective demand management to secure full employment, the monetarists' view of the world was that such stabilization policy would have only short-term effects at best, while in the long run it will produce nothing but inflation. From the monetarist perspective, in the long run "money does not matter," in the sense that changes in the quantity of money only lead to corresponding changes in the price level. Disruptions to the monetary mechanism, however, do matter in that they confuse expectations and create the environment of instability and uncertainty, the welfare costs of which can be very high. In terms of practical policies, Friedman recommended a stable, credible commitment on the part of the central bank that would announce an increase in money supply by a certain number of percentage points each year (roughly equal to the potential real growth rate of the economy), and stick to that rule regardless of short-term business conditions. Such a rule would produce a zero average inflation rate over the long run and would have positive effects on the real economy by making the monetary sphere predictable and stable.

In the wake of stagflation in the 1970s, monetarist prescriptions were tried in practice in the UNITED STATES, UNITED KINGDOM, and JAPAN, among other countries. Central banks in those countries, under strong political leadership from neo-conservative governments decisively shifted the focus of their policies to combating inflation rather than promoting employment and growth. Tightening money supply initially produced deep recessions, but that was something that Friedman had predicted would have to be endured for a period of time needed for inflationary expectations to be adjusted. In the long run, however, according to Friedman and monetarists, expectations would adjust and full employment (equal to the natural rate of unemployment) would prevail with zero or no inflation. Neo-conservative governments also turned very heavily against the trade unions, the most famous episode being Britain's Margaret THATCHER'S confrontation with the miners' union, which changed the nature of the British labor movement for good.

Monetarists' predictions generally turned out to be true. By the second half of the 1980s, inflation largely became a thing of the past in most industrialized countries, while growth rates and employment did not appear to have suffered any long-term setbacks as compared to previous decades (or had even improved, notably in Britain). Although targeting money supply as the goal of macroeconomic policy was implemented only briefly in the early 1980s, the emphasis on controlling inflation is omnipresent in contemporary central banking in industrialized countries. It is also inherent in policy recommendations that are given by international financial institutions to developing countries, reflecting the long-lasting intellectual impact of monetarism.

Rational expectations and modern monetarism. Monetarism by itself may no longer exist as a distinct school of macroeconomic thought; it has been incorporated into the new classical school of macroeconomics under the name of "rational expectations" (sometimes also called "monetarism mark-II"). New classical macroeconomics shares with Friedman's early approach the emphasis on microfoundations of macroeconomic models, that is, the insistence that money demand, in particular, should be derived from some basic principles of utility maximization. The important difference with early monetarism and the work by Friedman is that the new classical macroeconomists are even less willing to compromise with Keynesian views. In particular, they have replaced Friedman's view of slowly adjusting expectations by the concept of rational expectations.

Rational expectations is an assumption according to which all information that is available in principle gets built into agents' expectations, so that no predictable change in economic parameters can have any, even short-term, effects on the outcomes of actions already taking account of all the existing information. It is thus only by "complete surprise" that changes in money supply can affect the demand for money, and since government policies are closely monitored and analyzed by the market, such surprises are very unlikely to succeed. Moreover, even if surprises were possible and the government could, in principle, conduct macroeconomic policies aimed at stabilizing the economy, the value of such stabilization, it is argued, will be very limited and the government resources are better spent elsewhere. Friedman certainly approves of this view.

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monetary policy

IN THE UNITED STATES, monetary policy is conducted by the FEDERAL RESERVE, which is the country's central bank. Generally speaking, monetary policy involves changes in the money supply. However, it is common to speak of INTEREST RATES when discussing monetary policy. This is because most central banks in developed countries now target the interest rate as a short-term instrument instead of the money supply.

Regardless of the specific target, however, the role of monetary policy and the actions of a central bank are important elements in the economy as both the money supply and money demand play a central role in economic fluctuations. In particular, the Federal Reserve plays a key role in MACROECONOMIC policymaking. The Federal Reserve influences the money supply and may even respond to money demand shocks. A shock to money demand simply means that the demand for real balances has changed suddenly and unexpectedly.

Of course, in the absence of a monetary policy response this implies that interest rates in the economy will change. Accordingly, when interest rates change, spending and thus real output may change. To the extent that the Federal Reserve responds to money demand shocks, then the Federal Reserve may be an important player in the business cycle. Additionally, the Federal Reserve may set into motion a chain of events that will lead to an increase or decrease in the nation's money supply. Doing so affects interest rates and thus spending and output.

A monetary system specifies how people pay each other when they conduct transactions. Thus, money serves as a means of payment. Moreover, the monetary system places some meaning on the prices of goods and services so that money acts as a unit of account. In the United States, for example, the unit of currency known as the DOLLAR performs these functions. As stated above, monetary policy involves changes in the money supply instituted by the central bank. The nominal money supply, in a narrow sense, is defined as the amount of currency (i.e., paper money issued by the government) plus the amount of deposits held by people and businesses at banks. This definition of the money supply reflects those assets (e.g., cash and checking accounts) that can be used immediately for transaction purposes.

Technically, the narrow definition of money supply known as M1 includes other very liquid assets, for example, traveler's checks. The Federal Reserve is the issuer of currency in the United States and therefore has direct control over that component of the money supply. However, the amount of funds that people and businesses place in their checking accounts (i.e., deposits) is not controlled by the Federal Reserve. It should be apparent that the Federal Reserve cannot control the money supply in the strictest sense, but that it may influence it.

The monetary base. The monetary base is directly controlled by the Federal Reserve, however. Known as high-powered money, the monetary base is defined as the sum of currency and reserves held by banks at the Federal Reserve. By law, the Federal Reserve has the power to require member banks to maintain minimum levels of reserves. These levels are determined as a percent of customer deposits. In fact, the required reserve ratio is the percent of customer deposits that banks must hold in the form of reserves. While banks may hold more than the minimum required amount, they are not allowed to hold less than that amount. As private sector banks typically are in business to increase shareholder wealth or firm value, they will not want to hold too much of their customers deposits in the form of what is called excess reserves. This is because banks may earn (expected) profit on these excess returns if they produce loans with these funds instead of simply holding onto them. Making loans is risky, though, as there is always the possibility of default. As such, some banks, for a variety of reasons, may actually decide to hold excess reserves, though typically this amount is not very large. Competition and the pursuit of profit tend to eliminate excess reserves.

If banks do not hold the required amount of reserves then they are in violation of Federal Reserve policy and face the possibility of being reprimanded, fined, or even closed. Of course, no bank would want that to happen and so it is rarely the case that banks fall below the required amount of reserves.

It is the case that banks may find themselves in need of funds in order to maintain the desired reserves amount. This may happen if there is an unusually large amount of withdrawals, for example. In this situation, a bank may look to borrow funds from another bank so that they would maintain the level of reserves required or desired, if they would like to hold more than the minimum. There exists a very well organized market for such loans. The market is for very short, in fact, overnight loans from one bank to another bank. Since all banks are presumably in business to increase shareholder wealth (or some measure of value), we would not expect one bank to loan another bank (which is also most likely a competitor) the use of some funds overnight for free.

Instead, banks charge each other interest just as they charge interest to any of their other customers. The interest rate that is charged in this overnight interbank market for loans is called the federal funds rate. The federal funds rate actually plays a critical role in the conduct of monetary policy.

In order to understand the role that the federal funds rate plays in monetary policy, however, it is beneficial to step back and look at the interaction that the private sector and the public sector have through the financial system. To do so, consider the balance sheets of four market participants: private nonfinancials (i.e., nonbank businesses and households), private banks (i.e., financial institutions), the Federal Reserve, and the government (i.e., Congress, Administration and Treasury).

A balance sheet simply records an entity's assets and liabilities. Assets are things of value that an entity owns while liabilities are what an entity owes others. An accounting identity exists in which liabilities plus net worth must equal assets. Note that this implies that if one pays off all of one's liabilities (presumably by liquidating some or all of one's assets) then whatever is left over is net worth.

Assets and liabilities. Consider now four forms of assets and liabilities: currency, BONDs, deposits, and reserves. In this context, the government borrows funds by issuing bonds and thus bonds are a liability for the government. Whoever holds or owns the bonds has an asset. Holders of bonds include private nonfinancials, banks, and the Federal Reserve. The Federal Reserve issues currency and thus currency is a liability for the central bank. Nonfinancials and banks hold currency as an asset, while nonfinancials place some of their funds in banks as deposits.

Thus, deposits are a liability for banks and an asset for nonfinancials. However, banks are required by the Federal Reserve to hold a certain percentage of their deposits in the form of reserves at the Federal Reserve. Reserves are an asset for banks but a liability for the central bank. Finally, banks make loans to nonfinancials and so are carried as an asset on bank balance sheets and are a liability for nonfinancials who must repay the loan. This brief description highlights how these different entities are linked through the financial system and paves the way for the conduct of monetary policy to work.

The Federal Reserve changes the money supply via open-market operations which are the buying and selling of previously issued government bonds. The market actually operates in New York City. An open-market purchase of government bonds from the public (i.e., the nonfinancials and private banks) injects new money into the economic system and will therefore increase the money supply. If the opportunity cost of money is the interest rate, then an increase in the money supply tends to push down the interest rate. An open market sale of government bonds will involve money being removed from the system as nonfinancials and private banks effectively pay the Federal Reserve for these assets. An open-market sale reduces the money supply and tends to raise the interest rate. Note that the Federal Reserve directly controls the monetary base and by using open-market operations can add to or subtract from the monetary base. Moreover, there is a direct relationship between the monetary base and the money supply.

The relationship between the money supply and the monetary base is due to two factors. The first is the required-reserve ratio, which implies that reserves will equal the amount of deposits times the required reserve ratio. The second is the currency-to-deposit ratio, which is the amount of currency people hold as a ratio of their checking deposits. Given the definitions of money supply, monetary base, required reserve ratio and currency to deposit ratio, an algebraic expression exists in which the money supply equals the money multiplier times the monetary base. The construction of the money multiplier is given by the ratio of 1 plus the currency-to-deposit ratio to the sum of the currency-to-deposit ratio and the required-reserve ratio.

Thus, the central bank can estimate how much a given dollar-change in the monetary base will change the money supply. Knowing the answer allows the Federal Reserve to determine how much a particular open market operation will change the interest rate. The interest rate that the Federal Reserve focuses on is the federal funds rate. In fact, the Federal Reserve now selects a target for the federal funds rate and performs open-market operations so that the actual federal funds rate is maintained within some desired band around this target. Generally speaking, the Federal Reserve is quite good at accurately hitting the target they have chosen.

Other tools. There are, however, other policy tools available to the Federal Reserve. As mentioned, the required-reserve ratio may alter the amount of reserves and thus the money supply. Additionally, banks may borrow directly from the Federal Reserve at the interest rate known as the discount rate. The amount of borrowing is affected by how costly it is to borrow from the Federal Reserve and, for example, a higher discount rate will reduce the amount of borrowed reserves and thus reduce the money supply.

Actual monetary policy decisions in the United States are determined by the Federal Open Market Committee (FOMC). The FOMC consists of the seven members of the Board of Governors of the Federal Reserve System and five of the 12 presidents of the Federal Reserve district banks. Historically, the FOMC set the growth rate of the money supply in the 1970s and early 1980s. Once set, the bond traders at the New York Federal Reserve Bank would make the appropriate open market operations to achieve the desired growth rate.

Since the mid 1980s, however, the monetary policy in the United States has focused on setting and maintaining a short-term interest rate (i.e., the federal funds rate). Again, open-market operations are used to achieve this goal.

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money

MONEY IS ANYTHING that is generally accepted as a means of payment. Without money, market or capitalist economies could hardly have developed and its invention is among the most important of all economic factors. Money has three useful functions: unit of account, store of value, and medium of exchange. The latter is the most pertinent, although money as a store of value plays a crucial role in MACROECONOMICS. One of the most important issues in the theory of money concerns its quantity and its relation to the general price level.

Money as unit of account reduces the problem of relative prices because money serves as the *numéraire* in which the prices of all goods can be expressed. This role is the least important and does not give money its distinct character for any good can serve as a *numéraire*. Money also serves as an asset that people can use to store value. It is like other financial assets in this regard, except that it generally does not earn interest. Money's most important function, medium of exchange, reduces the transaction costs of trade. The institution of money as a facilitator of trade and its ability to reduce transaction costs makes it among the most celebrated and studied topics in economic theory. No one will deny that the pursuit of money, that is, its purchasing power, is a prime economic incentive.

Money evolved through an invisible-hand process much the same way as natural selection in biology. Carl MENGER (1892) was among the first to recognize that money was invented in the sense that the state or some set of individuals agreed to create the institution of money. The first form of money was a commodity. Some commodities are more acceptable than others as a form of exchange in a barter economy. In order to avoid the double coincidence of wants, some commodities will come to be exchanged more often than others.

Some commodities possess more of the characteristics that a superior money must have: portability, divisibility, scarcity, identity, etc. Those that possessed these qualities came more and more to be traded and used as a medium of exchange rather than as a commodity. Economist R.A. Radford (1945) discusses how cigarettes evolved as money, through a natural-selection process, in a prisoner-of-war camp. It is plausible, therefore, that money evolved through a similar process. The role of the state, however, is not to be denied in this process.

The evolution of money theories. In early economics, the mercantilists believed that bullion was wealth or at least that its accumulation was good for the economy. The first sound thinking on money surfaced in the period after the influx of gold and silver from the New World but it was not until the 18th century that economists began to form accurate theories of money. David HUME's (1752) specie-flow mechanism clearly illustrated the relation of money to the general price level, and the differences between real and nominal values. Adam SMITH (1776), of course, devotes a chapter to this topic and sets the course of monetary theory for the next century.

Henry Thronton (1802) is the early exception to this quantity theory of money, although he did not deny its validity. Thornton begins a tradition of money of integrating the rate of interest and a mechanism by which changes in the quantity of money affect the price level. In his classic presentation, the BANK OF ENGLAND as a CENTRAL BANK, with all or almost all the modern functions of such a bank, came to play a vital role in the credit process and therefore in the money creation or destruction process. The bank rate thus performs the role of equating the demand and supply of funds (that is to say, credit and the quantity of money). Thornton was among the first to establish the conditions for monetary equilibrium by considering the rate of interest as the adjusting mechanism.

Knut Wicksell (1898) continued in the same vein as Thornton, albeit one via David RICARDO rather than Thornton, and firmly established the Swedish School as one of the foremost in monetary theory. Wicksell's innovation was to clearly spell out the transmission mechanism of monetary disturbances. Wicksell pioneered the saving-investment approach to money. Whenever the natural rate differs from the money or bank rate, the cumulative process is set into motion. When the bank rate falls below the natural rate, there is an excess demand for funds that creates the fuel for an excess demand for goods and puts in action the upward pressure on prices. The resulting inflation will halt only once the bank rate is adjusted to the natural rate of interest.

Saving had already been integrated into the quantity theory of money, but in another form: the controversial SAY'S LAW. Say's Law is simple: In a specialized economy, economic agents supply products because they wish to earn an income with which to spend in the economy. That is to say, earned income will be spent; purchasing power is automatically created when income is received. Any income received in money that is not spent or saved does represent non-spending, but really it is potential spending that will one day be actualized. The actualizing is hastened by the fall in prices that accompanies a fall in aggregate demand. That is to say, excess money balances, savings will be spent when prices fall sufficiently. Writers in the 19th century employing Say's Law did recognize unequivocally saving in their monetary analysis but failed to see its connection to investment spending.

The theories and models were almost as varied as their number. All had one thing in common, however, a central focus on the rate of interest in their analyses. All also were concerned with showing what happens when the economy is in disequilibrium because of the interest rate and the adjustment process bringing the economy back to EQUILIBRIUM.

D.H. Roberston (1925) made one of the earliest contributions in Wicksellsian monetary economics with a rather complex model that explicitly took into account saving and investment in a temporal setting. One of his more colorful insights involved forced saving, which he called automatic stinting or imposed lacking. When the economy is in full employment and the bank rate falls below the natural rate of interest, investment increases. The resources for increased investment come at the expense of consumption. If households expected to save a certain amount in a forthcoming period and end up saving more than expected, this is forced saving. Robertson, without explicitly stating it, had discovered *ex ante, ex post* analysis. This analysis would receive explicit attention and central focus in Gunnar MYRDAL's (1939) examination of the temporal nature of the saving-investment process. For the first time, expectations had figured prominently in monetary theory.

Monetary equilibrium became rigorously defined by Myrdal and the concept developed into the notion of neutral money. The addition of expectations to the monetary model was an enormous supplement to the saving-investment approach. The key to understanding the role of money in the business cycle is the divergence of expectation among the different classes of economic agents and individuals themselves. Households, as savers and spenders, could make a set of decisions that are not synchronized with firms, as both sellers of output and buyers of inputs, especially labor input. A central factor in their decisions concerns the interest rate, a variable that can diverge from its natural rate because of monetary influences. (Differing views on the expected rate of inflation would have to wait decades from when Wicksellian monetary economics reigned supreme, in the 1920s to 1936).

R.G. Hawtrey took Wicksellian analysis in yet another direction. He observed that credit was often unstable and therefore a central bank is necessary to cope with banks and business that either made credit too tight or too ample. Hawtrey's innovation was to add inventory adjustments to changes in credit and money that work through the interest rate. When credit becomes tight, spending also becomes stringent and inventories accumulate. The opposite occurs when credit becomes abundant and the interest rate low. Thus Hawtrey anticipates John Maynard KEYNES's analysis.

One of the most controversial Wicksellian strains was contributed by Friedrich von HAYEK (1931) in his work, *Prices and Production.* Hayek attempted to wed Austrian capital theory and Wicksell's theory of money to construct a theory of cycles. His theory showed that money via the interest rate can influence capital structure by temporarily altering the period of production but with semi-permanent repercussions on the mix of capital goods and consumer goods and therefore employment and capital returns.

The Keynesian revolution and beyond. Monetary theory took a dramatic turn in 1936 with Keynes's *General Theory of Employment, Interest and Money.* Keynes departed with his earlier monetary theory and this may have been a step backward as many economists were later to appreciate. His liquidity preference theory of the interest, where the supply and demand for money determine the interest rate—saving and investment determine income and not interest—is a sharp break with the Wicksellian mold. One saving grace of the liquidity preference theory is the emphasis on the role of money as an asset. Keynes, after all, underscored the function of money as a store of value.

The demand for money would become a crowning achievement of Keynes's monetary analysis in the *General Theory.* Keynes's three motives for holding money, transaction, precautionary, and the speculative, would become imprinted into the literature on monetary economics.

Money as an asset that people wish to hold is the idea behind Keynes's speculative demand. James Tobin (1958), a follower of Keynes, extended Keynes's analysis to the inclusion of holding money along with other assets, an option Keynes did not allow for. Starting with the assumption of risk aversion, Tobin showed that people would want to hold money as part of their portfolio, even when money has a zero rate of return, because of its low level of risk. Money becomes part of a diversified portfolio of assets.

The 1950s saw several major advancements in the theory of money and money demand. Foremost of these was the resurrection of the quantity theory of money by Milton FRIEDMAN (1956). The quantity theory of money is one of the most important in economics. And it is based on an identity:

$$MV = PY$$

where M is the quantity of money, V the velocity of circulation, P the price level and Y the level of real output. The equation simply shows that what is spent must necessarily equal what is sold. This equation is due to Simon Newcomb and Irving FISHER in another variation. (The original form considered the transactions of quantities of goods traded for money rather than the output.) The equation, however, can be used to form a relation among the variables if it is considered as function. The causal relation among the variables is from left to right. The right hand side, PY, is nominal income and it is determined by the quantity of money and its velocity. (M and P are considered at points in time, while V and Y are specified over periods of time or per unit of time.)

A useful equation in monetary theory is the transformation of the equation of exchange from its static form as stated above into a dynamic form using percent changes or growth rates:

$$\text{percent}\Delta M + \text{percent}\Delta V \approx \text{percent}\Delta P + \text{percent}\Delta Y$$

where percentΔM is the growth rate of the money supply, percentΔV is the rate of change of velocity, percentΔP is the rate of inflation and percentΔY is the rate of growth of real output. The equation is useful because it shows that if velocity is constant, then the rate of growth of the money supply determines the rate of growth of nominal GDP (PY) and if Y is determined by non-monetary factors, the rate of inflation is equal to the rate of growth of money supply.

In the quantity theory of money, it is usually accepted that money is important in the short run but not in the long run (unless it is accelerating inflation and especially hyperinflation). Money affects real factors in the short run but usually does not affect real variables in the long run. Changes in the supply of money have been identified with creating the business cycle, major RECESSIONs, and even the Great DEPRESSION (although it is unlikely that changes in the money supply created the Great Depression, it certainly aggravated the situation).

The Cambridge version of the quantity theory turns the equation of exchange in demand for money. The equation:

$$M = kPY$$

where k is now equal to 1/V and is simply the fraction of nominal income that people wish to hold as money balances. The condition for equilibrium is now:

$$M_S = M_D = kPY,$$

where M_S is the supply of money and M_D is the demand for money. Missing from the equation is the rate of interest. But using $M_D = f(Y, r)$, the dynamics of money supply adjustment is easy to explain as money is one asset in a portfolio and all others that are interest bearing. When $M_D > M_S$, people attempt to restore their money balances by selling assets driving the interest rate down until balance is restored and when $M_S > M_D$, people use their excess money balances to buy assets and thereby drive the interest rate up again until balance is restored. One of the keys to this approach is that it considers money as one of many assets, albeit the most liquid of all.

The interest rate approach, at least in considering the transaction motive, would come into its own in the 1950s with the work of William Baumol (1952) and James Tobin (1956). Baumol and Tobin showed that the transaction demand for money is an inverse function of the rate of interest. Like any other good or asset, money has an opportunity cost, and that is the rate of interest.

Phillips Curve. The PHILLIPS CURVE is an important addition to Keynesian monetary theory. A.W. Phillips (1958) observed that in the United Kingdom there existed what seemed like a stable relationship between the rate of change of money wages and the rate of unemployment. When the rate of money-wage rate inflation was high, unemployment was low and vice versa. This tradeoff between unemployment and inflation (as later reformulated by Paul SAMUELSON and Robert SOLOW) quickly became known as the Phillips Curve. The Phillips Curve is really another form of the aggregate demand curve. When aggregate demand is high, the general price level rises and is usually accompanied by a lag in money wages. This means that real wage rates fall and the demand for labor increases. This results in lower unemployment. However, as Friedman once remarked, sustained inflation is always a monetary phenomenon and the Phillips Curve, over long periods, must be related to the money supply.

The correction to the Phillips Curve that takes into account the fall in real wages that accompanies high, or rather, as we will see, increasing, rates of inflation is the addition of expectations. The expectations-augmented Phillips Curve became the breakthrough that allowed a new variety of quantity theorists to supplant the primacy of the then-Keynesian approach to monetary economics. The natural rate of interest would give way to the natural rate of unemployment. The natural rate of unemployment can be thought of to exist when the economy is in monetary equilibrium in the sense that the expectations of economic agents are correct and identical. Any rate of growth of the money supply, and therefore inflation, is consistent with the natural rate of UNEMPLOYMENT. The tradeoff between unemployment and inflation is nonexistent in the long run. A concept related to the natural rate of unemployment is NAIRU, the nonaccelerating inflation rate of unemployment became a popular policy variable in 1980s and 1990s. This is the rate at which there is no tendency for inflation to either increase or decrease (monetary equilibrium).

Quantity theorists had taken matters one step further in 1970s with an article that had been written by John Muth in 1961. (By the 1960s it became apparent to many scholars on the subject of money that the key to understanding the money supply's effects lay in expectations.) The theory of rational expectations had seized economists' line of thought so that it became *the* theory of money by 1990s. The idea behind rational expectations is quite simple. People form their expectations of variables by devising optimal forecasts, that is, predictions that take all information into account. An optimal forecast includes an expectation of the variable that takes in all information and a stochastic component. Thus for inflation, Π:

$$\Pi^o = \Pi^e + \varepsilon.$$

Since the expectation of $\varepsilon = 0$, a rational expectation of inflation, Π^e, is equal to the optimal forecast. The potency of rational expectations comes into play in policy matters, where it asserts that the supply of money can only affect real economic variables through purely random changes.

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monopoly

A MONOPOLY IS DEFINED as a market structure in which there is one single provider of a good or service present in the market: the monopolist. The implication of this particular form of MARKET structure is that the prices for these goods and services are then determined by the objectives of the monopolist, and are limited only by the buyers' willingness to pay for the good or service. This is precisely because there are no other providers, so the monopolist is not constrained by any rival firms.

The polar opposite of a monopoly is a market structure characterized as perfectly competitive—usually considered as a market with many firms that compete against each other. However, regardless of the actual number of firms, a market is perfectly competitive if each firm can essentially only charge the going market price, or otherwise risk losing all of its customers to competing firms.

Profit-maximization, perfectly competitive markets. Economists usually assume that the objective of a privately run firm is to maximize the PROFIT it makes, where profit is measured as the total revenue earned by the firm minus the total costs incurred in producing the good or service. This profit motivation is assumed to be the same regardless of the type of market structure that the firm operates in. It is instructive to contrast how this profit motive plays out in both a monopoly and in the polar opposite, a perfectly competitive market, as this will reveal how a monopolist maximizes profit and what is necessary for it to do so.

One of the defining features of a perfectly competitive market is that firms can freely enter (or exit) the market. If firms are pricing above the COST of the product that is sold, firms will be able to make a profit. However, firms outside the industry are also looking to make profits, and given that they are free to enter the market, they will enter and charge a slightly lower price than the incumbent firms, but will still stay above costs. Such an adjustment on the supply side of the market increases the number of firms in the market and lowers prices—competition is fiercer now than before. Provided that profit opportunities still exist in the market, firms will continue to enter; again, resulting in more competition, i.e., lower prices. This adjustment process goes on, until prices are so low that they are at or near the cost of producing the product, so that it is no longer profitable for new firms to compete in the market.

Thus, a desirable feature of the perfectly competitive market is that although firms maximize profits, the end result of free entry is that goods and services are actually sold at (or near) cost, that is, with little or no mark-up.

It is now clear how a monopolist can make a profit above the profit that firms in perfectly competitive markets make: there is no other firm in the market that could undercut the monopolist's price and steal its customers. Hence, the monopolist can maintain prices substantially above the cost of production, limited only by its customers' willingness to pay. It is also clear now what is necessary to sustain a monopoly. New firms must somehow be prevented from entering the monopolist's market. That is, there must be some barriers to entry so that high profits are not bid away.

Barriers to entry. There are several common barriers to entry that may preserve a monopolist's position as the lone seller in a market. One of the most commonly observed is a legal barrier to entry. For instance, the government may have issued an exclusive license to a firm to supply a market. This is the case when a PATENT is granted that effectively lets a firm monopolize a particular market for a certain period of time, as in the pharmaceutical industry, for example.

Second, there may be barriers to entry that stem from specialized know-how (for example, management expertise) that gives the monopolist an absolute cost advantage. This can be the case if only a single firm possesses the particular expertise on how to produce something at low enough costs to supply the market.

A third factor that may prevent firms from entering a market is that they do not have access to critical resources. Thus, as an example, the aluminum company Alcoa managed to purchase the mining rights to most readily available bauxite. As bauxite is a principal mineral in the production of aluminum, potential competitors in the aluminum market were denied access to a key scarce resource.

A fourth reason that additional firms may not enter a market has to do with the particular technology used to produce the good or service in conjunction with the market size that is being supplied. For instance, a small municipality may not have enough residents to cover the large overhead costs associated with the provision of a sewer system for more than one company. Such instances are referred to as "natural monopolies" (see below), because it may be the case that no second firm would ever want to enter the market to begin with (since if they did enter, they would make a loss).

Costs associated with monopolies. Monopolists are often accused of imposing unnecessary costs on society. The fact that the monopolist's customers must pay a higher price may be the source of much concern over the existence of monopolists. However, economists do not consider this higher price to be a cost on society per se. When a customer pays a higher price for a good or service, then the customer will have less surplus (money), and the monopolist more. However, the monopolist (i.e., the owner of the firm) is also a member of society. Thus, this transfer of money reflects a shifting of money from one member of society (the customer) to another (the owner of the monopoly firm). This may raise questions of equity or fairness, but not questions of efficiency. And it is the latter, namely efficiency, that determines what constitutes cost to society overall.

Nevertheless, an implication of the higher prices charged by monopolists, is a reduction in the supply of the good or service sold, as some costumers will be priced out of the market. And this does raise issues of efficiency. In particular, if the monopolist is charging a price above the cost of production and as a result, some people will no longer purchase the good or service, even though they would have been willing to pay for all the costs of producing it, then the fact that these transactions do not take place is a cost to society.

Hence, what is inefficient, and thus costly to society, is not that some transactions take place at higher prices, but rather that some transactions that would be worthwhile, do not take place at all because some people are priced out of the market.

Once the distinction between equity (fairness) and inefficiency (waste) is drawn, the above costs of monopoly may be easy to see; yet there are also more subtle costs associated with the presence of monopoly. One such cost is closely related to the amount of profit that a monopolist can make in a market. Recall that the monopolist's ability to make profit crucially depends on the fact that there are no other firms in the market. If an unlimited number of other firms were able to freely enter the market, profits could easily erode to zero. Consequently, the monopolist may engage in activities to protect its position in the market. Many of these activities can be socially wasteful. Similarly, if firms see the potential to create a monopoly in a particular market, they may also engage in activities that are designed to secure a monopoly position. Again, these activities designed to create and secure the monopoly from entry may very well be socially wasteful.

Since the monopolist's profits are considered "rents," this socially wasteful behavior is referred to as rent-seeking or rent-protecting activity. An example of this type of cost to society is the lobbying of legislators to grant or protect exclusive licenses. The lobbying activity is exclusively designed to secure monopoly rents, so lobbying itself does not add anything of value to society, yet resources (time and money) are used up in the process of lobbying legislators or regulators.

Another type of cost or inefficiency associated with monopoly is related to the fact that the monopolist does not face any competitors that put pressure on the firm to perform well. This type of inefficiency—referred to as X-inefficiency—may to some degree contradict profit-maximizing behavior, but it is easy to see that a firm that is not facing any competition may very well slack a little and provide a substandard service, even if this results in lower profits.

Finally, it has frequently been argued that monopolies are slow to innovate, at least when compared to competitive markets. This is because for a perfectly competitive firm to "get ahead," it must outperform its competitors. By coming up with cheaper ways of providing the same goods and services or by finding ways to provide higher quality goods and services, a firm in a perfectly competitive market may—at least for a while—be able to make profit. A monopolist on the other hand already makes a profit and improvements to its product-line may not be worth the effort, even if it does allow for a slight increase in sales.

Purported benefits associated with monopolies. There are some who see advantages to monopolies. Ironically, one example sometimes cited is the exact opposite of the final cost associated with monopoly listed above, i.e. less innovation. That is, some claim that monopolists are more efficient at innovation than other firms are. The logic here is that in order to finance the enormous amounts that RESEARCH AND DEVELOPMENT (R&D) of new products and production techniques cost, a firm must have a lot of money. Since monopolists make the most profit, they have the most money available for R&D.

However, two things must be pointed out here. The first is that just because a monopoly makes a lot of money, does not mean that it is used for R&D, it might just as well be spent elsewhere. Moreover, if any firm has a really innovative idea, it stands to reason that the firm may be able to arrange for venture capital to finance R&D even if it does not have its own funds available.

Nevertheless, there are two important points about innovation and benefits associated with monopoly. The first is that monopolies are sometimes created in order to protect innovation, and thereby create innovations. This is the case where a PATENT is granted. The idea here is that only if a firm's innovations are protected from immediate copying will the firm reap some benefit from its R&D. Thus, patenting new research makes R&D more profitable, and hence leads to more innovation. But this just says that (temporary) monopolies that are created through patents are beneficial to innovation, even if the monopoly itself has little incentive to further innovate.

The other important point about innovation and beneficial monopoly is that some firms may evolve into monopolists merely by being much better at providing goods and services to customers than the potential rival firms. In this case, having a monopoly might also not be such a bad thing, as it can only exist because its products are so much better and/or less expensive than any other firms' would be.

Monopolies in the real world. In part due to the costs to society associated with some monopolies, the state has an interest in prohibiting business practices intended to establish monopolies. This poses some real-world issues for government agencies that are in charge of prosecuting monopolists, e.g., the U.S. Justice Department's Antitrust Division.

First, as monopoly is defined as a market structure, it is important to identify the relevant boundaries of the market in question. Indeed, in most anti-monopoly cases, defining the relevant boundaries is the most contentious issue and takes up the most time. There are at least two dimensions in which this can pose a problem, first in terms of the geographic location, and second in terms of the product in question.

Geographic location is important because buyers are able to travel to get to other firms or shop over the internet or phone. Hence, even if there is only one firm in a particular area, it may not be a monopolist. Indeed, the relevant geographic market may be local, national, international or even global (for example, this was argued in the civil aircraft industry when the Boeing–McDonnell Douglas merger took place). As far as defining the product in question is concerned, consider, say, the market for bread. Is the relevant market so narrow as to include only sliced white bread, or is it as broad as to include all possible different types of loafs of bread, rolls, buns, muffins, pita bread, nan bread, pumpernickel, tortillas, and so on? The answers to these questions usually lie in CONSUMER BEHAVIOR. Principally, whether consumers seem to consider different products as substitutable for each other. One way of measuring this is to see how demand for one good is affected by price changes in the other good.

The second difficulty faced in identifying monopolies is that true monopolies rarely exist. In the "real world" what is of actual concern is usually that a single firm dominates a market, even though this firm may face some smaller competitors. Examples of such firms, in the early 2000s, were Intel in the market for computer chip production, Microsoft in operating systems, Kodak in photographic products or Gillette in the market for wet-shaving products. However, much of what is said about monopolies may apply equally well to dominating firms.

Finally, the purpose of taking legal action must be considered carefully. Thus, is it truly in the best interest of society to go against a monopoly, or is it only in the interest of potential rival firms? For instance, if a firm is identified to be a monopolist, but it has attained this position because it simply produces a much better and cheaper product than anyone else, it may be that society is best off without interference with the firm. Indeed, many economists worry that courts are more concerned with the existence of monopoly power rather than the causes for it.

Government-run monopolies. While one usually thinks of monopolists as profit-maximizing, privately operated firms that do not have any competitors, sometimes it is the government that has a monopoly on a particular good or service. There are four different types of government-run monopolies.

Historically, the most important reason for a government to run a monopoly was to raise revenue. Because of the profitability of monopolies, many different types of goods and services have, in the past, been exclusively available through a government-run or a government-licensed operation. Examples include Royal licenses granted for the sale of spices, tobacco products, playing cards, or matches in Europe and state-run or licensed ferry transport services in some areas of the United States. Contemporary examples of the government's desire to raise revenue through monopolies are government-run GAMBLING AND LOTTERIES.

In some cases, governments manage monopolies for some goods and services not necessarily in order to gain revenue, but in order to exert greater control over the distribution of the goods and services in question. This is, for instance, the case for the state-run distribution systems for alcoholic beverages in some states.

The third common occurrence of government monopolies is found due to historical lock-ins and vested interests, when it comes to goods and services provided to the government through the government itself. Thus, in many municipalities, there may exist certain services that the government could buy on the open market. But instead, a separate government agency may be set up that exclusively provides the service. For instance, the servicing of publicly owned vehicles or landscaping of public areas in a community is rarely contracted for with private companies, but instead a separate government agency is established to provide the service. As these agencies do not have to compete for the service they provide in terms of better prices or quality, these types of monopolies are heavily criticized as being expensive to maintain, thus costing the taxpayer unnecessarily. Nevertheless, these types of monopolies on services provided are very widespread due to the vested interests and political power of those employed in the agencies.

Natural monopolies and regulation. Finally, governments often operate what are called natural monopolies, an industry in which it is more efficient to have one single firm provide the good or service. Thus, utilities are often cheaper to provide if there is only a single provider. This is because it may cost a lot to set up the necessary infrastructure to deliver the utility, but once it is in place, it is relatively cheap to provide the service. In such cases, it can be socially wasteful to have several firms incur the large overhead costs necessary to provide the good or service. These markets are therefore often referred to as natural monopolies, and instead of competition, the government either provides the service itself, or licenses another firm to (exclusively) do so (usually subject to some regulatory restrictions). Examples are provision of water, gas, sewers, electricity, phone and cable lines, and railroads.

However, in very large markets, the costs associated with a lack of competition and/or regulation are often greater than the savings experienced by limiting the number of providers, so such markets are increasingly deregulated and opened up to varying degrees of competition. An exception to this trend of deregulation and increased competition is found in extreme cases of high overheads coupled with low costs of providing additional services. For instance, the provisions of national defense, law enforcement, and the court system are very costly, but the level of service provided remains nearly unaffected as additional citizens benefit from the service. These extreme cases of natural monopolies are examples of what are called public goods. They will presumably largely remain government monopolies.

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Monroe, James (1758–1831)

THE FIFTH PRESIDENT of the UNITED STATES, James Monroe was born in Westmoreland County, Virginia. At age 16, he entered the College of William and Mary. Two years later, in 1776, he left college to join the Continental Army during the AMERICAN REVOLUTION. Monroe received a lieutenant's commission and was commended for bravery in combat. Seriously wounded during a daring charge at the Battle of Trenton, Monroe was promoted to captain and eventually attained the rank of colonel.

After failing to gain a field command, Monroe resigned his commission and returned to Virginia, where he was appointed state military commissioner. He also pursued a legal career by studying law with a prominent lawyer, Thomas JEFFERSON, who would become his mentor and political patron.

In 1782, Monroe won election to the Virginia Assembly and then to the Continental Congress. During this time, he began working and corresponding with James MADISON, who came from the same part of Virginia and shared a sense that the Continental Congress needed to be strengthened.

Their relationship became strained when Monroe opposed ratification of the U.S. Constitution in 1787. He objected to the powers of direct taxation and to the power given to the Senate. At Patrick Henry's request, Monroe ran for U.S. Congress against Madison but lost. Two years later he went to Washington, D.C., as a senator, where he joined Jefferson and Madison in opposition to Alexander HAMILTON's attempts to increase the size and power of the federal government.

In 1794, President George WASHINGTON assigned Monroe to a diplomatic post in post-revolutionary FRANCE. His pro-French views, however, led him to be recalled two years later. Monroe returned to Virginia where he was elected and served as governor from 1799 until 1802.

President Jefferson called on Monroe, in 1803, to travel to France as a special envoy to purchase a port along the Mississippi River. Napoleon instead offered either to sell all of Louisiana or nothing. Although the constitutionality of such a purchase was in question and it was clearly beyond the scope of his appointment, Monroe began the negotiations, working with Secretary of State Madison to secure the Louisiana Purchase.

Monroe spent four more years in Europe as minister to Britain. During this time Britain was at war with France and was blocking all U.S. trade. Monroe secured a treaty to relax these restrictions, but Jefferson refused to submit the treaty for ratification because it did not prevent Britain from boarding American ships and kidnapping American seamen for service in the British Navy.

Monroe, believing he had secured the best terms possible, fell into disagreement with the administration. In 1808, he further estranged himself from Madison by running against him for president. With Madison's election, Monroe returned to state politics and served another year as governor.

In 1811, Madison looked beyond their personal rivalry and asked Monroe to return to the federal government as secretary of state. In 1814, Madison also assumed the duties of secretary of war.

Upon Madison's retirement in 1816, Monroe easily won election as president. In 1820, Monroe was so popular that he ran uncontested for re-election, losing only one electoral vote nationwide.

Despite such unity, the issue that would divide the nation for the next half century rose on the horizon: As Missouri sought admission to the Union, members of Congress sought to condition admission on a ban of slavery. Monroe, a slave-owner himself, believed the federal government had no right to tell a state whether it could legalize slavery. He compromised, however, to accept the agreement to admit Missouri as a slave state and Maine as a free state (thus keeping balance in the U.S. Senate) and, at the same time, limiting future slave states to Southern territories.

Throughout his career, Monroe consistently fought to keep power diffused and government small. He was the only president to have taken a significant role in opposing the ratification of the Constitution. While he supported projects to improve coastal defenses, when Congress sent him a bill to build canals and make other internal national improvements, Monroe vetoed the bill. Even though Madison had signed similar laws, Monroe held that the federal government had no such authority.

During his eight years in office, federal spending decreased from $30 million per year to $20 million. Federal debt shrank from $123 million to $84 million, despite a financial panic in 1819 that significantly decreased federal revenues.

Monroe is best known for foreign affairs. He pressured SPAIN into ceding Florida in 1819. He also announced a new policy, drafted by his Secretary of State John Quincy ADAMS, that the United States would oppose any European intervention in the Western Hemisphere. Although the United States did not have the military might to enforce this policy at the time, the Monroe Doctrine became a cornerstone of U.S. foreign policy.

Monroe left office in 1825, heavily in debt. He spent years trying to recover expenses owed by the government for his years of service. In 1829, he presided over Virginia's Constitutional Convention.

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FRENCH NOBLEMAN, LAWYER, and Enlightenment political thinker, Charles de Montesquieu is most well known for his works *Persian Letters* (1721), a thinly veiled critique of 18th century French laws, customs and mores, and *On the Spirit of the Laws* (1748), a central treatise of Western thought that describes government and its workings.

Though Montesquieu defended monarchy as the ideal form of government and nobility as the best safeguard of liberty, in particular his articulation of the idea of separation of powers, a concept that stretched back to the Roman historian Polybius, was influential in subsequent political and constitutional thought. Montesquieu's ideas about economics and commerce appear ambivalent from the modern perspective; they bear a strong resemblance in many respects to those of Alexis de Tocqueville, who was simultaneously attracted and repelled by the merchant orientation of American democracy a century later.

Montesquieu claimed that commerce made nations flourish, increased the population, and fostered peace between trading partners. He praised the people of commercial cities like Marseilles and nations like England as disciplined, hard working, moderate, and frugal. While supporting status differences between people of the same country, a situation supported by commerce and luxury, he feared the effects of too much luxury and consumption as corrupting to the classes who enjoyed them. Particularly in private correspondence and diaries, he remarked that commerce was beneath the notice of a great nation and that the avarice of the Dutch (the most successful trading people of the period) was repellent.

He felt that too intensive pursuit of commerce had destroyed both Greece and Carthage, saving ultimate respect for the Romans, whom he did not view as a commercial power. In the *Spirit of the Laws*, he stated that commerce can only exist with democracy as long as it promotes virtue; when too much luxury is achieved, society will become corrupt. Still, his writing is an important component of a body of literature developing in the century before Adam SMITH's *Wealth of Nations* that emphasized the sweetness that commerce and trade brought to human association, ideas emphasized by other thinkers such as John Miller and James Steuart.

According to such arguments, commerce and trade forced those inclined to behave badly to be civilized out of interest; hence, according to Albert Hirschmann, the most influential interpreter of this literature, commerce led to the victory of interest over passion. For example, in "How Commerce Emerged in Europe from Barbarism," Montesquieu suggests that violence against the Jews persisted until they conceived of the bill of exchange (an early financial instrument for currency exchange and long-distance money transfer), which simultaneously made their wealth invisible and forced rulers to behave fairly. Montesquieu's participation in this strand of thinking separated him from mercantilists, who emphasized the competitive aspects of trade and ideas of economics as a zero-sum game. At the same time he opposed the creation of public debt as too likely to lead to overweening government power.

Montesquieu should be read as a supporter of expanded trade and commerce, but not a capitalist thinker along the lines of Smith.

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moral hazard

THE CONCEPT OF moral hazard traces its origins to the specialized jargon of the INSURANCE industry. In that context, the concept is typically illustrated as a difficulty that arises in the design of insurance contracts. The causes for the difficulty lie in the insurance provider's inability to monitor and prescribe the future behavior of the insured individual.

Consider for example, a HEALTH-insurance contract whereby an individual pays a premium to the insurance company every month in exchange for the promise that the insurance company will reimburse all medical costs incurred by the insured in the event of an illness. In order to determine what would be a suitable premium, the insurance company will need to consider the likelihood of illness for its prospective customer and the magnitude of the resulting medical care costs.

But the likelihood of illness depends in part at least on the conduct of the individual, specifically on his or her exercise of precaution, dietary habits, and so on. Whereas an uninsured individual may take these precautions in order to reduce the likelihood of bearing the medical costs associated with illness, an insured individual may fail to take them, or in any event, take fewer precautions given that their effects in the form of lower medical care expenses would benefit only the insurance company.

Moral hazard arises when behavioral changes induced by the purchase of an insurance contract increase the likelihood of the insured event. Conversely, it could be argued that the problem of moral hazard would be resolved if these behavioral changes could be prevented by contract agreement between the insurance company and its customer. The prevalence of moral hazard in insurance markets follows then from the fact that it is virtually impossible for the two parties to agree to an enforceable contract that suppresses altogether the hazard of behavioral changes by the insured party.

The main consequences of moral hazard problems for the characteristics of insurance contracts are the use of coinsurance and deductibles. Under coinsurance, the insurance company does not provide full coverage for the costs incurred by the customer when the insured event occurs. Continuing with the example used above, the contract may state that only 80 percent of the medical care costs will be reimbursed. The effect of coinsurance is that the benefits of reduced medical bills are now shared between the insurance company and the insured individual. In this way, coinsurance restores, partially, the insured individual's incentives to take precautions against the risk of illness. The purpose of deductibles in insurance contracts is similar, since they establish that during the insurance period only costs or losses incurred above a fixed amount, the deductible, will be reimbursed by the insurance company. Rather than sharing every dollar of costs or losses as under coinsurance, the insured individual bears 100 percent of the costs up to the deductible and 0 percent of costs in excess of it.

According to modern economic theory, the problem of moral hazard in insurance contracts is an example of a broader class of problems arising from the existence of asymmetric information between the parties to a contract or other exchange relationship. Accordingly, economists state that the interaction between two parties is beset by a potential moral-hazard problem when the economic outcome from the interaction for at least one party depends on actions chosen by the other party that cannot be specified in advance because they are not observable.

This characterization explains why economists refer to moral hazard problems as problems of hidden action, and why moral-hazard-like phenomena are reckoned to be at work in a large variety of economic contexts.

For example, consider an agency relationship whereby one individual (the principal) hires another (the agent) to perform a set of tasks. While the agent's effort while performing these tasks determines the principal's economic payoff from the agency relationship, the agent's choice of effort cannot be prescribed in advance because it would be unobservable. This creates a moral-hazard problem because the agent will choose its own effort without giving any consideration to the benefits of greater effort that would accrue to the principal.

As illustrated by the example of the insurance contract, solutions to moral hazard problems take the form of adaptations in the terms of the relationship between the principal and the agent that align the goals of the agent's choice of action with the interests of the principal. Thus, for example, sales agents whose effort cannot be monitored by their principal may be compensated with commissions on actual sales, and top corporate executives whose decisions the shareholders cannot specify in advance may receive their compensation in the forms of shares or stock options.

As is more generally the case for asymmetric information conditions, moral-hazard problems may be the source of economic inefficiencies when the adaptations in the terms of contracts required by the desire to alleviate the effects of moral hazard, prevent the parties from reaching other goals.

Consider again the case of medical insurance presented above. The main goal of an insurance contract is to transfer the risk of medical expenses due to illness from the insured individual to the insurance company. While coinsurance and deductible terms alleviate the moral hazard problem, they do so by forcing the insured individual to bear part of the risk.

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Morgan Stanley

A WALL STREET investment-banking company, Morgan Stanley is also the largest U.S.-based securities firm in terms of total capital, common equity, and net income. It underwrites stocks and bonds and is one of the 10 largest asset managers in the world. Morgan Stanley's client list has included such "blue chip" companies as DuPont, U.S. STEEL, AMERICAN TELEPHONE & TELEGRAPH (AT&T), Mobil, and GENERAL MOTORS. Notoriously conservative for most of its history, the firm became more aggressive in the 1970s and pioneered the first hostile corporate takeover.

Morgan Stanley began in New York in 1935 as a branch of the mighty J.P. Morgan & Company. Created because the Glass-Steagall Act forced J.P. MORGAN to erect a high wall between commercial-banking and investment-banking, Morgan Stanley expected to merge into J.P. Morgan & Company when the political climate changed. Whenever possible, the two Morgan firms would cooperate. While Morgan provided financing for the new company, utility bond expert Harold Stanley acted as president. In 1941, the companies dissolved their formal link.

Chiefly an issuer of "blue-chip" bonds, Morgan Stanley would go to any length to serve a client. Partners stepped in to serve as chairmen of companies in difficulty, as happened with the bankrupt farm-equipment manufacturer J.I. Case in 1961. Morgan Stanley's greatest accomplishment came in the 1940s when it promoted the newly formed WORLD BANK. Besides offering publicity in the form of booklets, Morgan Stanley organized huge syndicates of underwriters to help the World Bank provide development assistance to the poorest people on the planet. This account marked the summit of the firm's success. Its monopoly of much of America's industry made it reluctant to explore foreign markets.

By the 1960s, the firm had developed a reputation as a distinguished but stodgy company where employees had to possess elite lineage, brains, and money. The firm managed securities issues alone or not at all. The only advertising that it undertook came in the form of large "tombstone" advertisements that listed the members of an underwriting syndicate.

A changing business climate forced Morgan Stanley to become more innovative to survive. It began real advertising in the 1970s. In 1971, it opened a sales and trading operation, a lowly but profitable line that Morgan Stanley had traditionally subcontracted to other firms. To attract traders, Morgan Stanley introduced production-oriented compensation that eroded collegiality. Clients pushed the company to engage in aggressive takeovers and it opened the first mergers and acquisitions department on Wall Street. It conducted the first hostile raid in 1974.

By 1989, the firm had become one of the sharks of Wall Street. It raided other firms for analysts and conducted corporate raids for clients. It sold junk BONDS and leveraged buyouts. It 1997, it merged with another very aggressive bank to become Morgan Stanley Dean Witter.

Morgan Stanley served as the chief investment banker to American industry while the United States rose to global economic dominance. Besides fueling this growth, the company pioneered business practices that destroyed the conservatism of investment-banking.

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Morgan, John Pierpont (1837–1913)

AN INVESTMENT BANKER who became the most powerful financial leader of the Progressive era, J.P. Morgan was born in Hartford, Connecticut, and died in Rome, Italy, en route to the UNITED STATES.

Best known for preventing the 1895 collapse of the U.S. Treasury during a run on gold, Morgan is also credited for developing the industrial might of the United States by organizing financing for RAILROAD, steel, and agricultural machinery firms. As head of the Northern Securities Company, Morgan also became the first victim of the Sherman Antitrust Act when the Supreme Court ruled against him in 1904. At the time of his death, he headed the largest private bank in the world.

The son of Junius Morgan, a merchant banker, and Juliet Pierpont, the daughter of a Unitarian minister, J.P. Morgan was educated at public schools in Hartford and Boston. He entered the Institution Sillig at Vevey in Switzerland in 1854 and spent two years at Germany's Göttingen University. In 1857, Junius arranged for the

New York City merchant bank of Duncan, Sherman & Company to give his son a job. With only weak state controls of the banking system, banks often took substantial risks and could easily fail in financial panics. Morgan helped the bank through its near-collapse in the panic of 1857 and then struck out on his own in 1861. Morgan's experiences with Duncan, Sherman taught him to avoid speculation, and the bank that he built would become known for its conservatism as well as its profitability. J.P. Morgan & Company was a New York City-based private wholesale bank that put together syndicates to share the risk of underwriting new issues of bonds or stock. Underwriting contracts committed the bank to sell securities at a minimum price. The bank only made money if it could sell the stocks and bonds above the contract price. Morgan normally acted as a lead banker, taking as much as 50 percent of an issue and placing the rest with other banking houses. He then tendered these shares to retail stockbrokers, commercial banks, and wealthy individuals who were clients of the house.

Morgan's banking skills fueled American expansion by providing funds necessary for the country's growth. The United States simply lacked the financial wherewithal to fund its developing industries, while European nations had capital surpluses that could be tapped to pay for massive American projects such as railroad expansion. Morgan pried loose European money by reducing the risk associated with investment in American securities.

To get investors, Morgan sought to guarantee that American companies would pay timely dividends on stocks and bonds. He hoped the securities would appreciate in time, thereby providing him with a profit. This made Morgan into the opposite of Gilded Age railroad-stock manipulators such as Jay GOULD and Jim FISK who benefited from collusive agreements to fix rates and fares. Morgan skirmished with Gould and Fisk but ultimately won the railroad war. In 1885, Morgan brought together various railroad barons associated with the New York Central and Pennsylvania Railroads on board his yacht, the *Corsair*, and used the threat of no more financing to arrange an end to their destructive rate wars. The Corsair compact caused a rise in the share-value of eastern railroads and greatly increased Morgan's prestige.

Besides a lack of dividends, the other major risk to investors involved currency exchange. After 1873, the United States fixed the value of its dollar according to the price of gold. Farmers and others in the Populist movement preferred a silver standard because the fluctuating rate would reduce the amount of interest they paid. Morgan worked to keep the United States on the gold standard because it minimized the risk of foreign-investor losses through adverse currency exchange rates. Morgan's stands helped to maintain the inflow of European funds that were so necessary to American expansion, but made him enemies among farmers.

Morgan's dependence on gold led him to prop up the U.S. Treasury. In 1895, the government appeared to be ready to abandon the gold standard in the face of political pressures and a major DEPRESSION that had caused a run on the precious metal. Morgan rushed to offer aid to President Grover CLEVELAND. The private pact formed at the White House provided for the purchase of more than $62 million in gold for the U.S. Treasury and saw Morgan guarantee the Treasury against gold withdrawals from February through the end of September 1895.

Morgan's enormous financial power frightened many Americans and, partly in response to concerns about the might of the banker, the Sherman Antitrust Act passed in 1890. The aim of the new law was to forbid combinations in restraint of trade, and Morgan became the first to be ensnared by it. In railroad reorganizations, Morgan had typically maintained control through selecting company presidents and by placing his men on the boards of directors. A hard-fought war with railroad barons over the Northern Pacific forced Morgan, in 1901, into a new strategy of forming a holding company, Northern Securities, to control railroad stock. The state of Minnesota brought suit and President Theodore ROOSEVELT ordered his attorney general to enter the case in an effort to curb the excesses of big business. In 1904, the U.S. Supreme Court ruled the Northern Securities Company in violation of the Sherman Antitrust Act and forced its dissolution. Morgan formed another trust, U.S. STEEL in 1901, but kept prices high enough to foster competition. When the government attempted to shut down U.S. Steel, Morgan's competitors came to his defense.

Morgan's financial wizardry created a safe environment for investors. By means of stabilizing the flow of money, he created a foundation for the growth of the United States.

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Morocco

THE KINGDOM OF MOROCCO borders Algeria to the east and southeast, the western Sahara desert to the south, the Atlantic Ocean to the west, and the Mediterranean Sea to the north. Casablanca is the largest city and economic hub; Rabat is the capital.

The population of Morocco is approximately 31.1 million. Arabic is the official language. Berber and French are also spoken, with French often used for business, government, and diplomatic purposes. The population is almost equally divided among urban and rural dwellers.

In 682, Arabs took control of Morocco, ending Byzantine rule. In the 1400s, Europeans set their sites on conquering the country. In the early 1900s, France and Spain divided Morocco. In 1956, Morocco gained independence from France and Spain and in 1961, King Hassan II took power and ruled until his death in 1999. Hassan's foreign policy often diverged from other Arab nations, and generally sided with the UNITED STATES and Western European nations. Greater liberalization and an increased sense of freedom characterized the 1990s, culminating with the creation of a bicameral legislature.

Industry accounts for about one-third of Morocco's GROSS DOMESTIC PRODUCT (GDP), services about half, and agriculture about 15 percent. Morocco's industrial sector includes the processing of raw materials for export and the manufacture of consumer goods for domestic purposes. Since the 1980s, the government has focused on privatizing operations and attracting private investment. Morocco's manufacturing sector is comprised predominantly of smaller enterprises and includes the production of textiles, wine, refined petroleum, footwear, and construction materials.

Morocco's currency is the dirham and its central bank, the Banque al-Maghrib, issues currency, regulates the credit supply, maintains the foreign currency reserves, oversees the government's specialized lending organizations, and regulates the commercial banking sector.

In 2002, Morocco's exports were valued at approximately \$8.2 billion annually and its imports at \$12.4 billion. Its leading exports are phosphates and fertilizers, foodstuffs, and minerals. Morocco's leading imports are semi-processed goods, machinery and equipment, consumer goods, fuel, and food. Its export/import partners include FRANCE, SPAIN, GERMANY, ITALY, the UNITED KINGDOM, INDIA, and the United States. In the 1990s, Morocco negotiated a formal association with the EUROPEAN UNION (EU), which calls for the establishment of a Euro-Mediterranean free-trade zone. Morocco has entered into other trade agreements to minimize its dependence on Europe.

Morocco continues its efforts to restrain government spending while enhancing private activity and foreign trade. Economists point out Morocco faces the challenges of managing its external debt and enabling freer trade with the EU.

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Mundell, Robert (1932–)

WINNER OF THE 1999 Nobel Prize in Economics, Robert A. Mundell attended the University of British Columbia and the University of Washington. He received his Ph.D. from the Massachusetts Institute of Technology in 1956 with a thesis on international capital movements.

The movement back and forth from floating to fixed EXCHANGE RATES of his native Canada was probably the reason that led Mundell to do his seminal work on the effects of monetary and fiscal policies in a the presence of free-capital mobility. This became known as the Mundell-Fleming model, which can be summarized as follows: If a country had a fixed exchange-rate system, monetary policy (i.e., changes in money supply in an economy) was completely ineffective, while fiscal policy (i.e., changes in the taxation system, government expenditures, and transfer payments) was effective at raising GROSS DOMESTIC PRODUCT and income. The results were reversed in the case of a floating exchange-rate regime.

Later, Mundell would postulate that any country could only have two of the following three variables: Free-capital mobility, fixed exchange-rate, and effective monetary policy. For instance, a country that decides to allow the inflow and outflow of capital and to stabilize its currency, loses its ability to adjust interest rates to fight inflation or recession.

Mundell's latest contribution is in the field of "optimum currency area." Under what circumstances should a country give up its currency and adopt another one? Mundell emphasized that an essential feature of an optimum currency area would be the high internal mobility of workers; that is the willingness and ability of labor to move from areas lacking jobs to regions where labor was in demand. This research is especially timely considering the adoption of the EURO currency in the EUROPEAN UNION and its inherent effects on worker mobility.

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Munich Re

FOUNDED IN 1880 BY German entrepreneur Carl Thieme, Münchener Rückversicherungs-Gesellschaft AG (Munich Re) is now one of the largest worldwide players in the reinsurance business. Headquartered in Munich and represented by offices in 33 countries, the company holds investments of €162 billion (2001), with €36.1 billion of gross premiums written (2001) and a profit of €250 million (2000). In 2002, it ranked 79th on the Fortune Global 500 index. In 1889, Thieme also founded ALLIANZ AG, the large property and life insurer, and through crossholdings the two companies have retained close links until the present day.

Munich Re started to trade on the stock exchange only eight years after its foundation. It also started global activities in its first years. The company has been a pioneer in shaping particularly the nature of reinsurance business. Over time, it has ventured into other types of business such as asset management, export-credit insurance and, together with primary insurers, into agricultural and workers-compensation insurance.

The shares of Munich Re trade mainly in the German stock market's Xetra system. About 43 percent of stock is held by investors from the financial sector, the free float amounting to 57 percent.

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Myrdal, Gunnar (1898–1987)

ONE OF THE DARKEST days for the reputation of the Nobel Prize in Economics came in 1974, when the Nobel Committee announced that the prize would be shared by Gunnar Myrdal and Friedrich von HAYEK. There was no doubt that each, individually, was worthy, but their political and economic views were at opposite poles, and the Nobel Prize that year solemnly memorialized the deep ideological rifts in the discipline. Myrdal championed an activist state while von Hayek wrote against big government.

Myrdal's early work on *Monetary Equilibrium*, that synthesized the oral tradition of Knut Wicksell with Myrdal's own contributions, created the distinction between *ex ante* and *ex post* that is now in every economics textbook. He criticized John Maynard KEYNES for "the attractive Anglo-Saxon kind of unnecessary originality," because the English economists didn't know German (*Monetary Equilibrium* was published in Swedish in 1931, in German in 1933, but English only in 1939—after Keynes' *General Theory* had swept the discipline).

Later, Myrdal studied the interactions of politics and economics in developed and developing countries. As an elected representative to the Swedish Senate, a board member of the Bank of Sweden, and executive secretary of the UNITED NATIONS Economic Commission for Europe, Myrdal was active in attempting to put his ideas into action. In 1944, he wrote a perceptive book on the great American problem of race: *An American Dilemma: The Negro Problem and Modern Democracy*. This applied Wicksell's business-cycle models of cumulative processes to social and political dynamics, bringing him closer to a new institutionalist position.

Myrdal's Nobel Prize lecture made a plea for the moral duty of Western democracies to assist developing countries, not just by simple income transfers but by facilitating basic reforms to reduce the inequalities in poor countries. Myrdal believed that an economist inevitably starts from certain valuations that colored any later analysis; therefore analysis should begin with an explicit statement of the value premises.

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NAFTA

THE NORTH AMERICAN Free Trade Agreement (NAFTA) is a treaty between the UNITED STATES, MEXICO, and CANADA to facilitate commerce between the partner countries by eliminating or reducing tariffs and other non-tariff barriers to trade and investment. The treaty is seen as the nucleus from which to build hemispheric free trade in a Free Trade Area of the Americas (FTAA). Together with the EUROPEAN UNION (EU), it is the most prominent example of the regionalization of international trade, which is often seen as being at odds with global liberalization under the auspices of the WORLD TRADE ORGANIZATION (WTO).

History. NAFTA was signed by the governments—and subsequently ratified by the legislatures—of the United States, Mexico and Canada on December 17, 1992. It was preceded by a free trade agreement of 1989 between Canada and the United States. The treaty is a highly specific and voluminous document, implementation of which began on January 1, 1994. Side agreements were worked out to correct perceived abuses in labor and the environment in Mexico. On the basis of the successful conclusion of the treaty in December 1994, heads of state of 34 American countries (all except Cuba) agreed in principle at the Hemispheric Summit in Miami that negotiations for a Free-Trade Area of the Americas (FTAA) will be completed no later than 2005. The choice between these two alternatives was deliberately left open in order to achieve unanimity. One alternative, favored by the United States, would be the accession of all other American countries to NAFTA; the second route, supported by Brazil and other Latin American countries, proposes the foundation of a free trade area by keeping intact subregional arrangements.

Treaty provisions. NAFTA provides for elimination of all tariffs on industrial products traded between the signatories within a period of 10 or 15 years. Tariffs on half of the import categories were eliminated immediately while all agricultural provisions will be implemented by the year 2008. In addition, NAFTA eliminated or reduced non-tariff trade barriers (such as quotas or sanitary measures) and added free trade in other important sectors such as investment; trade in services, intellectual property, COMPETITION, the cross-border movement of business persons, and government procurement.

Air transport, telephone and basic telecommunication services, and government services are explicitly excluded from liberalization. The treaty also makes concessions to special national interests, for example with an exemption protecting Canadian cultural industries or by U.S.-sponsored patent regimes in pharmaceuticals. It also created new institutions charged with executing or supervising the treaty: the Free Trade Commission, the Commission for Labor Cooperation, the North American Commission for Environmental Cooperation, the North American Development Bank, and a dispute settlement mechanism which may utilize the services of other international arbitration panels. With the exception of the last-mentioned, these institutions have very limited power and resources.

Trade law. The NAFTA treaty creates regional trade law and institutions to implement it. In addition to material norms relating to the freedom of commerce, the treaty also instituted procedural guarantees, particularly recourse to international arbitration panels (one of which is the International Center for the Settlement of Investment Disputes—ICSID) the rulings of which cannot be appealed in any national courts.

One of the disputed legal issues is that of the direct effects of NAFTA in domestic law. Mexican and U.S. constitutional law permit treaties to have such effect, the Canadian constitution precludes it. However, the United States has expressly legislated against direct applicability in domestic courts (Article 102 NAFTA Implementation Act).

Another disputed issue is the investor-to-state dispute settlement mechanism of Chapter 11 of NAFTA. In *The Loewen Group, Inc. v. United States* (ICSID Case No. ARB(AF)/98/3), the claimant, a Canadian operator of funeral homes, alleged violations of three provisions of NAFTA—the anti-discrimination (or equal protection) principles set forth in Article 1102, the minimum standard of treatment (or due process) required under Article 1105, and the prohibition against uncompensated expropriation set forth in Article 1110. In effect, the claimant held the United States liable for a highly controversial judgment by a Mississippi state court under Article 105 of NAFTA, which makes federal states responsible for actions of its constituent units, and under Article 1105, which gives investors "full protection and security."

The United States objected to the jurisdiction and competence of the ICSID tribunal. In a decision issued on January 9, 2001, the tribunal rejected one of the United States' objections to jurisdiction, and decided to hear the other objections with the merits of the case. The United States continues to reject the tribunal's jurisdiction over the claims and denies that any of the alleged measures violated the NAFTA.

Canada also seems to have principled objections to the application of Chapter 11. In the United States, particularly the guarantees against expropriation under Article 1110, which have been interpreted to override national law such as zoning ordinances and to give foreign investors rights to compensation against takings by U.S. authorities, have become the focus of a heated debate over national sovereignty versus supranational contractual duties. In a similar lawsuits, a NAFTA tribunal has awarded California waste disposal company Metalclad Corp. damages after the governor of the Mexican state of San Luis Potosí and a town council had refused to allow the company to open a toxic waste site, which the court interpreted as an illegal taking by authorities. It is likely that Chapter 11 of NAFTA will have to be adapted, failing which changes will have to be made to the U.S. tort system.

NAFTA law contains other innovations (and pitfalls) the business community should know about. For example, different from U.S. domestic law (19CFR102 of 1999) which defines a product as originating in the country in which it has undergone a "substantial transformation," Articles 311ff. of NAFTA mark a product as originating from where it was converted from one product classification to another, which leads to the necessity of having to mark products coming from NAFTA and non-NAFTA countries differently.

NAFTA business. During the implementation period to date (2003), trade between the treaty partners has increased significantly, and particularly Mexico has experienced a surge in foreign investment inflow. By 2004, already 99 percent of all products will be traded freely, and liberalization will be completed by 2008. Between 1994 and 2002, U.S. exports to Canada grew by 40.5 percent while imports grew by 64 percent. U.S. exports to Mexico grew by 91.9 percent while imports grew by 172.2 percent. It is often argued that Canada may have gained least from the treaty, since it had already had a free-trade arrangement with the United States, and trades relatively little with Mexico.

NAFTA (390 million consumers and GNP of $9.2 trillion) has created the world's second-largest free market, after the European Economic Area (EEA), the free-trade area of the EU and three EFTA countries (385 million consumers and GNP of $8.6 trillion), which accounts for nearly 50 percent of world trade. With the accession of ten countries to EU membership in 2004, EEA will continue to remain the largest trading bloc and will also lead in GROSS NATIONAL PRODUCT (GNP). However, implementation of FTAA is likely to shift leadership in world output, if not in trade, again to the Americas.

NAFTA has caused many firms to adopt an integrated North American strategy by merging the operations of the three signatory countries. This permits savings in sourcing, production, and management. Also, firms from outside the region increasingly regard NAFTA as one trading region. This has, for example, the effect of European companies setting up production operations in Mexico, where factor costs are comparatively lowest, and selling final products in the United States and Canada, where purchasing power is highest.

Since 1965, Mexico has allowed duty-free imports of machinery, components, and equipment as long as at least 80 percent of final products are exported. NAFTA has further accelerated the development of this industry, within an in-bond free trade zone along the border with the United States. Many U.S. companies have shifted all or part of their production to Mexico. Through Mexico, and also through Canada, third-country businesses also have free access to NAFTA markets subject to local content requirements. For example, Japanese carmaker HONDA produces minivans in Ontario, Canada, for export to the United States and Europe.

Policy. NAFTA has had its advocates and opponents since the inception of negotiations. While most business interests have supported the trade agreement, many labor groups and environmentalists have opposed it. Opponents include also economic nationalists and isolationists as well as determined free-trade activists objecting to any inter-governmental (and particularly multilateral) agreements on liberalization, which they would rather see negotiated bilaterally, or regard as dispensable if countries liberalize their markets unilaterally. In the United States, opposition to NAFTA has lessened in recent years but is still vocal on occasion, as it was in 2002 during the debates on presidential "fast track" authority to negotiate further trade agreements.

One of the most frequently advanced arguments has been that NAFTA would shift less-qualified jobs from the United States to Mexico, particularly to businesses along the border—the "giant sucking sound" argument, after a phrase coined by 1992 presidential candidate Ross Perot. In actuality, employment effects have been relatively small while the increase in trade has been enormous. The growth of exports and imports between the United States and Mexico rose more than twice as much as trade with the rest of the world, producing significant regional gains as predicted by the theory of comparative advantage.

Economic integration of free trade areas is restricted to the exchange of goods and services and the opening of capital markets, which is regarded as incidental to open products markets. Common external tariffs, which are the hallmark of customs unions, or free markets for factors of production, which are the hallmark of economic unions, have never been intended under NAFTA. However, policy questions arise as to what exactly open-product markets imply. Sale of personally delivered (or "embodied") services across borders finds its limitation with immigration restrictions, required training standards, or national professional licensing rules. For example, under the treaty, the United States was required in 2001 to open its borders to Mexican trucking, whose cost is substantially lower than that of the American trucking industry. Political lobbying by the latter regarding safety considerations has prevented the opening of transport markets for Mexican operators, and the case has become a matter of litigation between the two governments. Though there has been some movement toward permitting Mexican trucks to operate in the United States, final resolution of the issue is still pending (2003).

The next major development in western-hemisphere trade will be the completion of FTAA. In parallel, Mexico concluded a free trade agreement with the European Union in 2000 while Canada signed an agreement with the Andean Group in 1999. In the discussion about FTAA, arguments about gains from trade clearly predominate. Currently, U.S. exports to NAFTA partners are about four times as great as exports to the rest of the hemisphere, and imports from NAFTA partners are five-and-a-half times as great. However, there are still several contentious issues, particularly agriculture, investment, and government procurement. Also, there are hardly any constituencies in the United States for an extension of NAFTA or FTAA beyond a free-trade zone, while many other countries in the Americas would also like to see a liberalization of factor movements, particularly of U.S. immigration rules.

Occasionally, plans for a more ambitious regional integration are proposed, such as the creation of a North American Union modeled after the successful example of the European Union. The president of Mexico, Vicente Fox Quesada, has boldly made this proposal. However, at the moment it seems that in the United States there is not sufficient support for any deeper integration than a free-trade area, while even the path to FTAA is still wrought with political difficulties. In addition, there are arguments critical of further regional integration if this imperils the success of a worldwide liberalization of markets as pursued under the WTO.

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NASDAQ

THE NATIONAL ASSOCIATION of Securities Dealers Automated Quotation (NASDAQ) is the world's largest electronic stock market. Unlike traditional markets, which trade at one central location, NASDAQ trades are conducted over an innovative computer network, thus enabling real-time market data to be sent to users worldwide. NASDAQ's unique open floor allows an unlimited number of participants to trade—estimated at more than 1.3 million users in 83 countries.

One of NASDAQ's greatest strengths is the role the market plays in helping young companies transition to public ownership. As a result, NASDAQ is comprised of innovative technology companies that have, for the most part, remained loyal to the electronic stock market as they have matured. For that reason, NASDAQ's top companies, such as Microsoft, Intel, and Oracle, were once considered high risks, but now dominate the market.

Formation of a new trading system. NASDAQ formally began operations on February 5, 1971, though planning for such a system had begun in the 1960s. NASDAQ used computers to centralize information—at a then-whopping cost of $25 million—thus ensuring that traders had the best information available as they bought and sold stocks.

Prior to the arrival of NASDAQ, companies that went public through the Initial Public Offering (IPO) process traded via telephone via the Over the Counter (OTC) Bulletin Board. As these companies grew and matured, they eventually joined the AMERICAN STOCK EXCHANGE (AMEX), and then graduated to the big leagues of the NEW YORK STOCK EXCHANGE (NYSE).

Once on the NYSE, a single trade specialist on the floor of the exchange determined the company's trading price. Many observers believed that this was a tyrannical system, particularly irksome after the stock market's numerous corrections and collapses. The process of graduating from IPO to NYSE was hierarchical and though steeped in history, somewhat archaic in the 20th century. A young company, however, had no viable alternative if it planned to have its stock widely traded.

Gordon Macklin served as National Association of Securities Dealers (NASD) president and forged the way for the NASDAQ. Rather than rely on a single stock exchange specialist, Macklin foresaw a trading system that linked buyers and sellers electronically, thus opening the bidding process to people on computer terminals across the globe. The traders would use computers to guarantee efficient pricing, thus eliminating the need for traders to be in the same room or debate sales over the phone. Initially, more than 800 securities dealers subscribed to NASDAQ, which presented information on 2,400 unlisted securities.

A core group of more than 500 financial firms, called market makers, make up the core of NASDAQ's market infrastructure. These firms trade on NASDAQ and thus act as distributors. They put their own money to listed securities, and then distribute the shares to buyers. A key to this system is that the market makers are required to list their bid and ask prices at all times, therefore giving participants access to the necessary information to make an informed decision. Since they put their own money into NASDAQ, the market makers guarantee that trades are made quickly and that enough buyers and sellers are trading.

Within a year, NASDAQ traded an average of 8 million shares a day, already besting the volume of the American Stock Exchange (AMEX). Taking full advantage of the burgeoning computer industry, NASDAQ used technology to improve the information flow between traders. By 1984, the market capitalization of the largest 1,000 NASDAQ companies reached $174 billion.

1987 stock market crash. Joseph Hardiman, Macklin's successor as head of the NASD, had an inauspicious beginning to his tenure—the October, 1987 stock market crash, in which NASDAQ fell 11.4 percent and the Dow dropped 508 points in one day. "Black Monday" revealed NASDAQ weaknesses. Hardiman quickly moved to address the challenges.

Hardiman worked to solidify and strengthen the exchange, particularly for large companies. Hardiman wanted to eliminate the second-class status that enveloped NASDAQ and the other smaller exchanges, all of whom stood in the shadow of the larger and more powerful NYSE. In an effort to elevate the prestige for companies listed on NASDAQ, Hardiman enacted tougher entrance standards and made it more difficult for under-performing companies to remain on NASDAQ. The weak penny stocks that symbolized fragility were removed from the board.

The fact that the market rebounded so quickly after the 1987 chaos has played an important psychological role for many investors. Because the general recovery started so soon, they believe that the market always recovers. This phenomenon has been seen in investment trends on NASDAQ the past several years. For example, when the composite dropped 5 percent in July 2000, U.S. investors responded by sinking more than $17 billion into stocks, up 40 percent from the same time the previous year.

Growth of NASDAQ. Hardiman's reforms solidified NASDAQ and enabled the market to experience phenomenal growth. Taking on a kind of renegade or upstart public persona, NASDAQ became the primary vehicle for companies to stage IPOs. For instance, in the first nine months of 1994, 425 companies went public via NASDAQ, while only 50 did the same on the NYSE and a mere 11 on AMEX.

Despite the steps Hardiman took to make the NASDAQ exchange more reputable and viable, the NYSE still ruled Wall Street. Market cap of the NASDAQ 1,000 skyrocketed to $624 billion in 1994, but lagged far behind the NYSE, which boasted a total market cap of $4.5 trillion.

The NASD president could, however, take pleasure in the speed that NASDAQ companies hit important financial milestones. In the mid-1990s, there were more than 125 companies listed on the exchange with valuations of more than $1 billion. Many of the business world's most exciting and innovative enterprises were listed on NASDAQ, including Microsoft, Cisco Systems, Intel, and Oracle.

When NASDAQ celebrated its 25-year anniversary on February 8, 1996, 543 million shares were traded, more than 60 times the shares traded daily in 1971. More impressive was that in that quarter-century span investors were rewarded with an 11-fold return.

Because NASDAQ relied on technological innovation and was IPO-friendly, companies that had similar ideas about technology gravitated to it. Many young tech companies needed a certain amount of nurturing. NASDAQ gave them access to capital and buyers willing to bet on the future. By 1996, technology companies comprised nearly 20 percent of NASDAQ and 40 percent of its $1.2 trillion market capitalization.

Not all observers were enamored with NASDAQ's success. In the mid-1990s, then-SEC (SECURITIES AND EXCHANGE COMMISSION) Chairman Arthur Levitt Jr. criticized the exchange because its traders, in his view, made too much money and charged too much for individual investors to participate. Levitt thought that NASDAQ should operate more like the other markets and become less of a freewheeling environment.

Levitt and the U.S. Antitrust Division also launched an investigation when an academic analysis of NASDAQ charged that its dealers were involved in a widespread price-fixing effort. Although economists challenged the report, it set off a number of lawsuits and intensified President Bill CLINTON's administration's efforts to reform the exchange. The SEC hoped to regulate NASDAQ trading, thus increasing investor power and introducing price stability.

These regulatory efforts attracted media attention, but did not slow the masses of investors (large and small) flocking to the upstart market. In 1995, the NASDAQ composite index shot up almost 40 percent, while share volume surpassed 100 billion. That same year, NASDAQ also upgraded its infrastructure to accommodate the increased activity. By sinking $170 million into its computer systems, the market ensured that it could handle one-day volume of 1 billion shares.

In 1997, Hardiman retired and turned over the reigns to Frank G. Zarb, the former CEO of consulting firm Alexander & Alexander Services and investment firm Smith Barney. Zarb recognized the power of the "new economy" of the late 1990s and pushed for further technological innovations that would prepare NASDAQ for the rush to trade online. He also continued the efforts at establishing a global trading center.

The dot-com boom and bust. In 1999, benefiting from the boom in internet stocks, NASDAQ became the largest stock market in the United States by dollar volume. Its domestic strength bolstered an aggressive expansion program into markets around the world. One such agreement set up a subsidiary in JAPAN, while other efforts were directed at European markets.

In early 2000, the organization signed deals with the London, Québec, and Frankfurt stock exchanges to create joint ventures using the NASDAQ brand. The creation of a 24-hours-a-day exchange took a step closer to reality.

Internally, NASDAQ changed significantly during the dot-com boom—the heyday of the "new economy." NASD members voted to restructure the organization in 2000. As a result, NASDAQ was spun-off into a shareholder-owned, for-profit company. Leading business observers and pundits viewed the electronic market to be the most important mechanism for pumping money into the economy, in turn leading to countless jobs and new companies being created. For example, the NASDAQ reached the 2,500 milestone in late January, 1999. At the end of the same year, the figure jumped to 4,000.

Between 1997 and 2000, nearly 1,700 companies were taken public. These offerings raised $316.5 billion. On March 10, 2000, NASDAQ closed at 5,048, its 16th record high of the year, after a total gain of 86 percent in 1999.

Unfortunately, the tremendous amount of money being pumped into NASDAQ had a dark side as well. The almost daily euphoria of IPOs made NASDAQ a haven for get-rich-quick schemes and investors looking to cash in on the mania. Day-traders entered the market en masse, jumping in and out of stocks at an alarming pace, and attempting to profit on fluctuations in the market. They specialized in cashing out—or having a zero balance—at the end of each trading day.

Ordinary people, who would be considered fiscally conservative in any other circumstances, viewed NASDAQ as a national hobby, rather than a complicated market. Millions of people that had little business in the market began opening online accounts. With little knowledge of market fundamentals, these people fed a speculative bubble that soon burst.

In early March 2001, NASDAQ fell below the 2,000 mark for the first time in 27 months. In one day, NASDAQ dropped 6 percent (192.39 points), marking a yearlong fall that reduced the market by 60 percent.

The dot-com bubble burst with alarming efficiency. Within 10 weeks of hitting its all-time high, the NASDAQ market fell 37 percent, eliminating $2.3 trillion in market value. Internet stalwarts saw their stock prices drop 90 percent or more in a matter of months. Amazon.com, the online bookseller and marketplace, had its stock reach $105 in late 1999, despite having never posted a profit. After the market fell, the stock traded around $10 a share. Yahoo!, the ubiquitous online directory, dropped 93 percent from its peak price of $237.50 a share in early 2000.

NASDAQ companies lost trillions of dollars during the dot-com catastrophe, but those that survived were fortunate. Thousands of others went bankrupt, leading to devastating effects for individual investors, who were often left holding the bag.

The dot-com collapse seriously weakened the national economy at a time when many people assumed that the stock market would continue to rise indefinitely. The United States fell into a RECESSION, though many economists and observers refused to label it as such. As a result of the faltering economy, millions of people were laid-off in the early years of the 21st century. Only record-low interest rates and increased consumer-credit debt propped up the economy and averted the possibility of a worldwide depression.

The terrorist attacks on the World Trade Center complex and the Pentagon in September, 2001 and subsequent military actions in Afghanistan and Iraq further undermined efforts at strengthening the economy. At the same time, millions of traders fled NASDAQ and anything that hinted of technology or the internet.

Rather than being considered the new masters of the universe, technology leaders faced public ridicule for not realizing that they were riding a bubble soon to burst. Investment bankers such as Mary Meeker and Frank Quattrone, who fueled so much NASDAQ trading with their optimistic statements about the strength of internet companies, went into virtual seclusion.

The present and future NASDAQ. NASDAQ has capitalized on the technology introduced by its member companies to increase its own visibility. The market's Web site (www.nasdaq.com) is one of the most popular financial sites on the internet, averaging about 7 million page views per day. In addition, NASDAQ opened MarketSite Tower in the heart of New York City's Times Square. The Tower is seven-stories high and holds the largest video screen in the world. The dazzling site and broadcast studio provides the perfect backdrop for news stations CNBC, CNNfn, Bloomberg, and CBS MarketWatch to televise from on trading days, ensuring great publicity for the market and its companies.

On May 12, 2003, Robert Greifeld was elected president and chief executive officer of NASDAQ, replacing Hardwick (Wick) Simmons, who had been named CEO in early 2001. Greifeld joined the market from SunGard Data Systems, a global Information Technology provider. Simmons' tenure was tumultuous, including the September 11 terrorist attacks and a series of corporate accounting scandals (such as ENRON, Global Crossing, Tyco and WORLDCOM) that rocked people's faith in the stock market.

Despite the furor over the rise and fall of the dot-coms, NASDAQ has matured and gained a solid foothold in its ongoing battle with the NYSE. In little more than three decades, NASDAQ has grown from a far-fetched idea into one of America's great economic success stories.

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Nash, John (1928–)

AMERICAN MATHEMATICIAN and 1994 Nobel laureate, John Forbes Nash, Jr., was born in Bluefield, West Virginia. He graduated from Carnegie Mellon University in 1948 with B.S. and M.S. degrees in mathematics, and from Princeton University in 1950 with a Ph.D. degree in mathematics. His 27-page dissertation, "Non-Cooperative Games," became the foundation of the modern analysis of strategic interaction, or GAME THEORY.

After obtaining his Ph.D., Nash held instructor positions at Princeton University and later at the Massachusetts Institute of Technology (MIT), where he was tenured in 1958 at the age of only 29. During these years, he also held various summer positions at the RAND Corporation in Santa Monica, California, the U.S Air Force's think tank concerned with strategic issues. At the time, RAND officials were eager to apply Nash's ideas to the military and diplomatic challenges of the Cold War.

In 1957, Nash married Alicia Larde, one of his former graduate students at MIT. Around the end of the 1950s, he was diagnosed with paranoid schizophrenia. Nash's illness interrupted his personal and academic life. After resigning from MIT, Nash traveled through several European countries before returning to Princeton, New Jersey, where he lived a quiet life, spending his time hanging around the university campus. Although he was not holding an academic position, he privately continued working on mathematical problems.

In the early 1990s, Nash experienced a rare remission or recovery from his illness. By then, his work on non-cooperative games, which he undertook as a graduate student, had transformed much of modern social science. Game theory was now a striving field within economics. Borne out of the ideas contained in Nash's doctoral thesis, a host of new results and methods has been developed and successfully applied to innumerable strategic problems. For his seminal work on non-cooperative game theory, Nash was awarded the Bank of

Sweden Prize in Economic Sciences in Memory of Alfred Nobel in 1994. He shared the prize with John HARSANYI of Hungary and Reinhard SELTEN of Germany.

Game theory and Nash Equilibrium. Nash encountered game theory as a graduate student at Princeton. A popular book by John von Neumann and Oskar Morgenstern, *Theory of Games and Economic Behavior*, contained the first formalization of a general theory suitable for the study of conflict of interest between individuals, countries, or organizations. As a metaphor for a real-life strategic situation, a game can be either cooperative or non-cooperative. In a cooperative game, binding agreements between individuals (players) are always possible, while a non-cooperative game excludes this possibility unless explicitly modeled.

Nash is credited with having been the first to introduce a clear formal distinction between cooperative and non-cooperative games. However, von Neumann and Morgenstern's book already contained a treatment of a special class of non-cooperative games, two-person zero-sum games. These are games with two players whose interests are diametrically opposed. Many real-life strategic situations are in the realm of non-cooperative games, yet involve more than two players and some common interest among them. At the time Nash entered graduate school, game theory was silent as to how such games should be approached.

In his thesis, Nash defined an equilibrium point in a general, non-cooperative game as a profile of strategies taken by the players that is self-enforcing, in the sense that no player wants to change her strategy if all others adhere to their equilibrium strategies. This construct is now called a Nash Equilibrium. In it, all players' expectations are fulfilled and their chosen strategies are optimal. If one assumes that games are played by rational players, then prediction of the outcome of any game is basically a search for a Nash Equilibrium.

Nash Equilibrium may involve the use of mixed strategies, through which players select randomly among their available actions with certain probabilities. For instance, the pitcher in a baseball game delivers the ball with various speeds and various spins, as predictability would be to this player's disadvantage. In his famous existence proof, Nash showed that if one allows for the possibility of such mixed strategies, an equilibrium point exists in all games with a finite number of players and strategies.

Historically, it is interesting to note that the early economists Cournot, Stackelberg, and Bertrand anticipated Nash's Equilibrium concept in their well-known oligopoly models. Nevertheless, these works remained special to their particular contexts, and did not attempt a generalization of their results to the theory of non-cooperative games the way Nash did.

Nash wrote many other highly acclaimed papers in economics and mathematics. Within the theory of cooperative games, he introduced a fundamental and widely applied solution for bargaining problems, the Nash Bargaining Solution. He further led an effort to base cooperative game theory on results from non-cooperative game theory, a project later called the Nash Program.

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nationalization

THE ASSUMPTION OF PRIVATE assets by a government or an entity controlled by a government is referred to as nationalization. It differs from confiscation. When property or assets are confiscated, former owners receive no compensation. However, when a government nationalizes assets, former owners do receive compensation. The level of compensation usually does not reflect the assets' market value and is either predetermined by the government or negotiated with the former owners.

Nationalization also differs from eminent domain. Although the process is similar, the purpose differs. Governments use eminent domain to seize property for a specific purpose and compensate former owners. For example, a government might use eminent domain to acquire land to build a road or public building, rather than seizing an entire industry or business sector as is done through nationalization.

Nationalization is often politically motivated. A national government may decide that ownership of some or all of industry within the country is controlled by too few people and use nationalization to protect the nation from the power of a select few.

Nationalization may also be motivated by national security. To protect assets, business sectors, and industries vital to a nation's survival, a national government assumes their ownership and management. This often occurs during a period of war or when the independence of the nation is threatened. Governments may also use nationalization as a vehicle to protect against foreign ownership that might jeopardize the sovereignty of the country.

Nationalization is often associated with the politics of SOCIALISM. In socialism and the related political system of communism, the country's assets are held in common by the government to avoid the rise in power and influence of the middle-class business community.

Newly established nations also use nationalization after they gain independence from their former colonial rulers. The newly formed governments use nationalization to exert control over the nation, guide the growth of business and industry, restrict the power of the former colonial nation, and establish sovereignty.

Nationalization in the 20th century was used for political and economic reasons. The RUSSIAN REVOLUTION of 1917 brought a communist government to power and created the SOVIET UNION. The Soviet leader, Vladimir LENIN, established a mixed economy in which large businesses were nationalized along with the companies that developed the nation's natural resources, while small businesses remained in private hands. The Soviets used nationalization to eliminate foreign influence, to gain the maximum benefit out of consolidated business operations, and to eliminate the Russian business class, possible opponents of the new government.

The Mexican Revolution of 1917 and subsequent nationalization of industry in MEXICO in 1938 set an example for other countries in the 20th century. The most vital foreign investments nationalized by Mexico were American petroleum investments. The United States government recognized the right of Mexico to nationalize, but Secretary of State Cordell Hull declared that "No government is entitled to expropriate private property, for whatever purpose, without provision for prompt, adequate, and effective payment." Hull's statement of principle guided the U.S. government's actions whenever Americans' assets were nationalized

The 1929 stock-market crash and subsequent worldwide Great DEPRESSION brought a wave of nationalization in Europe as a way to deal with the economic crisis. Many European countries nationalized banks and insurance companies to maintain the nations' financial structure and protect themselves against total financial collapse. The United States' response to the Great Depression under President Franklin D. ROOSEVELT's NEW DEAL programs did not include nationalization. When confronted with the closing of American banks in 1933, Roosevelt used the power of the government to assist private banks but did not nationalize them.

During WORLD WAR II, any nations seized control of business and industry to direct their wartime economy. Great Britain nationalized industries to control production and direct industrial output to the war effort. The United States created war production boards and worked in cooperation with industry to achieve wartime production goals instead of nationalizing assets.

After World War II, the number of nations nationalizing their economies expanded. Eastern European nations, starting with Czechoslovakia, nationalized industries in 1945 and 1946. As Eastern European countries adopted communist governments, they copied the Soviet Union's pattern of nationalization. In Western Europe, nationalization was a response to the decline of economic importance and a way to preserve a measure of control. FRANCE and Great Britain nationalized natural resource operations like coal- and iron-ore-mining as well as the steel and food-processing industries. Rebuilding European economies from the devastation caused by World War II required greater control and coordination. Consolidation of unprofitable operations also saved jobs.

Nationalization became synonymous with the socialization of European economies in the second half of the 20th century. SWEDEN became the prime example of a socialized democracy and used nationalization to create a mixed economy. France and Great Britain extended nationalization to service industries including broadcasting, banking, and telecommunications.

Former colonies nationalized industry during this period. In the 1950s, EGYPT nationalized the SUEZ COMPANY, provoking France and Great Britain to send military forces to the area. In 1951, the Iranian government nationalized the Anglo-Iranian Oil Company. Throughout Africa and South America, governments nationalized foreign and domestic investments to consolidate power and to foster competition with stronger economies. New Asian governments like the People's Republic of CHINA, Democratic Republic of VIETNAM, and Republic of INDIA used nationalization to further their political goals.

In the late 1970s, deregulation gained momentum in Western economics as the process of nationalization lost favor. Most nationalized firms lost money and failed to innovate. Consequently, they were unable to compete in the global marketplace. In the last two decades of the 20th century, PRIVATIZATION replaced nationalization, taking assets previously nationalized and selling them to private interests either in whole or as components. Funds raised through the sale of these assets were returned to national treasuries. With the election of a Conservative Party in Britain in 1979, under the leadership of Prime Minister Margaret THATCHER, the British government began aggressively privatizing. The privatization movement started with state-owned enterprises like British Steel and British Airways and moved on to firms like British Telecom and electric and water utilities. The privatization movement spread from Britain to the European continent as many European members of the EUROPEAN UNION (Common Market) prepared for increased competition from an open market.

The collapse of the communist governments of Eastern Europe and the demise of the Soviet Union in the late

1980s and early 1990s also brought a wave of privatization. New non-communist governments experimented with voucher programs to return some of the value in formerly nationalized firms to their citizens. Some governments resorted to direct sale of assets to foreign investors as a means of strengthening national governments and protecting employment through foreign infusions of capital and innovation.

In the 21st century there are still calls for nationalization as a way to preserve some industries from total collapse but nationalization as a widely accepted economic process has fallen out of favor.

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NEC

NEC PLAYED AN IMPORTANT role in attracting foreign capital and technology to facilitate JAPAN's early 20th-century industrialization. Nippon Electric Company was founded in 1899 as a joint venture with the American firm Western Electric. The company specialized in telephones and switching systems during its first two decades. In 1925, NEC imported Western Electric broadcasting equipment for Radio Tokyo (later NHK) and began its own electron tube development program.

As Japan's overseas empire grew in the 1930s, NEC was a leading provider of communications infrastructure. The company supplied China Xinjing Station with 100kW radio broadcasting equipment in 1934. It assisted the Ministry of Communications with long-distance telephone line carrier equipment in 1937. NEC successfully tested microwave multiplex communications for the first time in Japan in 1944.

After Japan's defeat in WORLD WAR II, NEC was a leader in the country's economic and technological recovery. In 1950, NEC began development of transistor technology. With the outbreak of the KOREAN WAR, NEC signed an export contract for radio-broadcasting equipment with Korea. In 1954, NEC began its research on computers and introduced its first all-transistor computer in 1959.

During Japan's 1960s rapid economic growth, NEC cooperated closely with the Japanese government to develop the computer industry. The government provided low-interest loans and other SUBSIDIES. Japanese firms were also pressured to buy domestic computers whenever possible. In this protected environment, NEC began its integrated circuit research in 1960, entered a technology-sharing agreement with Honeywell in 1962, and provided ground equipment for the trans-Pacific broadcast of the 1964 Tokyo Olympics Games.

At the same time, NEC expanded its overseas operations. Nippon Electric New York was incorporated in 1963. In the late 1960s and early 1970s, NEC sold communications equipment in South America, Europe, and CHINA. In the early 1980s, NEC acquired American high-tech companies and began producing semiconductors and computers in the United States. In the face of increased competition, many American firms complained that Japanese government support gave NEC an unfair advantage. This criticism subsided somewhat with the 1990s Japanese RECESSION and American information-technology boom.

NEC is a worldwide manufacturer and distributor of semiconductors, computers, mobile telephones, network equipment, and internet services. Net sales for 2002 were $38.3 billion, ranking NEC as the 85th largest company in the world.

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Nestlé

NESTLÉ WAS FOUNDED by Henri Nestlé in 1867 in Vevey, SWITZERLAND, where the company headquarters remains in the 2000s. Henri Nestlé, a trained pharmacist, was searching for an alternative to breast milk for infants who were premature or whose mothers could not breast-feed. Thus, Nestlé began life as a producer of infant formula/cereal.

Since then, Nestlé has become the largest food company in the world, via internal growth and aggressive external acquisitions. Particularly since WORLD WAR II, Nestlé has expanded beyond its primary "milk-coffee-chocolate" focus to encompass a far broader food product range, although products using either coffee or cocoa as the primary input still account for approximately 40 percent of group profits. Nestlé is also one of the world's oldest multinational enterprises, having first expanded beyond its national borders to produce in the UNITED KINGDOM and GERMANY by 1874, an early strategic necessity given the small market size of the Swiss market.

Nestlé is currently the world leader in mineral water (acquiring Vittel in 1969, Perrier in 1992, and San Pellegrino in 1997), instant coffee (having developed the first soluble coffee in 1938) with a 56 percent global market share, powdered and condensed milk with a 40 percent global market share, and confectionery (acquiring Rowntree and Perugina in 1988). Nestlé also has a commanding market presence in pet food (acquiring Spillers in 1998, and Ralston Purina in 2001). Nestlé's most important global brands include Carnation, Kit Kat, Buitoni (pasta), Friskies (cat food), Stouffers (ready-made meals), Nescafé, and Perrier, as well as a myriad of local and national brands. Finally, Nestlé is present in cosmetics (obtaining a 26 percent stake in the French firm, L'Oréal, in 1974) and pharmaceuticals (acquiring Alcon Laboratories, a leading ophthalmic company in 1977).

In 2002, overall group sales were $50.1 billion, an increase of 19.5 percent since 1998. Of total group sales, Nestlé's revenues (by percentage) across business segments were as follows: beverages (26.2 percent), milk products (26.2 percent), prepared dishes (17.7 percent), confectionery (12.1 percent), pet food (12 percent), and pharmaceuticals (5.8 percent), with a net profit margin of 8.5 percent. Worldwide, Nestlé has approximately 250,000 employees, of whom 41 percent are located in Europe and 34 percent in the Americas, and operates more than 500 factories in 85 countries around the world, as well as 17 research and development facilities.

Within the food and beverage industry, competition is intensifying, mainly due to falling trade barriers (with the implementation of the Single European Market or emerging opportunities in Asia and Latin America, for example), the increasing market share of private-label manufacturers, and the increasing consolidation of the retail industry by firms such as WAL-MART and Aldi (Germany). Amid these structural changes, Nestlé believes that it is crucial to be close to the consumer in terms of branding and product customization, as tastes are mostly based on local culture. With respect to production, logistics and supply chain management, however, decision-making is more centralized, to take advantage of any possible economies of scale.

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Netherlands, the

DURING THE MIDDLE AGES, the tiny northwestern corner of Europe was largely overlooked by contemporaries, not without some justification. The Dutch were overshadowed by their neighbors to the south in Flanders, which was a major center of industrial production and trade. The residents in the north subsisted from fishing or pastoral agriculture. In the 15th century, the herring industry increased when herring schools shifted their routes to cross the North Sea, and the area began to prosper, especially with the help of continual technical improvements.

The soil conditions in the Netherlands were not conducive to supporting a large population, so from a very early date, towns, such as Amsterdam, started importing grain from eastern Europe. The influx of grain reduced food prices and encouraged Dutch farmers to switch to specialty goods, including industrial crops like hemp and flax, which they could produce more efficiently and at a greater profit. This complex division of labor has led some historians to call the Netherlands the first modern economy.

The increased prosperity coincided with the Dutch Revolt against Spanish rule. During the Middle Ages, the towns of the Netherlands had negotiated independent taxation policies with their foreign rulers. Through a series on innovations, often referred to as a financial revolution, the towns of Holland became creditworthy corporations and the Dutch, in general, learned to handle money very well. When a new Spanish king, Philip II, threatened that financial independence, it triggered a revolt that was fueled by religious differences. The Spanish held on to the southern provinces of the Low Countries, but were unsuccessful in their attempts to retake the north. Protestant sympathizers in the southern provinces were forced out and thousands emigrated to the northern provinces. They brought with them CAPITAL, advanced skills, and the desire to succeed in a new LAND. Seemingly overnight, the thriving industries of the south, including textile production and printing, were transplanted to the north and Amsterdam became the central clearinghouse for nearly all European international trade.

The 1590s were a time of great famines in ITALY and the Dutch used the dire circumstances as an excuse to infiltrate Mediterranean trade, which brought much needed cheap grain from the Baltic. Once the Dutch delivered the grain, however, they did not leave. They took over shipping in the area and established valuable trading links with Iberia and the Middle East. They didn't stop there. Despite a Portuguese monopoly, a number of small Dutch partnerships organized expeditions to Asia. In 1602, the Dutch government forced the competing firms to consolidate because they believed that a large unified firm could better battle the other national interests. The new corporation was called the United (Dutch) East India Company, commonly referred to by its initials, VOC.

Though it was chartered by the state, it was a privately owned corporation and the largest single commercial enterprise the world had ever seen. The company had over 2,000 investors, but with the long time lag (a single round-trip voyage took as long as 3 years) and the costs of establishing a headquarters in Asia, there was concern about how to distribute profits. This predicament led to the creation of first modern corporation, in which the company's life is independent of individual ownership and the investors have limited liability. VOC stocks were the first stocks sold in an open market and formed the genesis of the stock market in Amsterdam.

The Dutch used their knowledge of inter-Asian trade, gathered from the headquarters in modern day Jakarta, to dominate the trade between Europe and Asia, which was almost absurdly profitable. For the next 50 years, the VOC returned an average of 27 percent per year return to its investors. They attempted to do something similar in the Americas and founded the West India Company in 1621. By 1674, the company was completely bankrupt and despite briefly holding a portion of BRAZIL, the company never succeeded in establishing a colonial empire. The Dutch retained a few islands in the Caribbean and plantations along the wild coast of Suriname. The Asian colonies would continue to be profitable, though on a more modest scale, until their independence following WORLD WAR II.

The Dutch had the most advanced economy in the 17th century, but they lost that status by the 18th. The expense of nearly continual warfare, combined with hostile economic policies in neighboring countries, exhausted their financial reserves and the country built up considerable debt. With relatively high taxation and wages, Dutch industries became less competitive and many withered away altogether. In the 18th and 19th centuries, the Netherlands had ceased to be a vigorously prosperous nation, though it remained quite wealthy. The wealth was derived from large-scale investment, especially in foreign enterprises and nations, including the new UNITED STATES.

The Dutch economic base, though it was considered modern in the 16th century, was obsolete at the beginning of the 20th. It was the last European country to industrialize, and never adopted the technologies of the first INDUSTRIAL REVOLUTION, which were not well suited to its rich, well-educated population. Instead, they became leaders in the science-based technologies of the second industrial revolution, and two of the firms founded at that time, Philips (electronics) and ROYAL DUTCH SHELL GROUP (petrochemicals) remain world leaders.

In 2002, the Netherlands had a population of more than 16 million, and a GROSS DOMESTIC PRODUCT (GDP) of $434 billion, yielding a GDP per capita of $26,900, one of the highest in the world.

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New Deal

FRANKLIN D. ROOSEVELT (FDR), in his presidential nomination acceptance speech to the 1932 Democratic Party Convention, provided the nation with a biting critique of the Republican Party and the way the Herbert HOOVER administration had dealt with the Great DEPRESSION. FDR described programs that he would push to relieve the effects of the greatest economic crisis in American history. In conclusion Roosevelt declared, "I pledge you, I pledge myself, to a new deal for the American people."

The NEW DEAL, Roosevelt's agenda to deal with Depression, included legislation to assist the average American suffering from high UNEMPLOYMENT and deflation of the economy. In addition, Roosevelt tried to enact progressive reforms to restore confidence in the American economy and government. The New Deal ushered in a new era in activist government as an agent of change. Conservative forces criticized the New Deal as an attempt to bring socialism to the UNITED STATES. Liberal activists believed that the New Deal did not go far enough to change the structure of America's economy and society.

Most historians concur that the New Deal did not cure the Great Depression but did rebuild confidence in America and created the modern regulatory environment.

Roosevelt used a cautious approach to solving America's economic problems.

For example, during the 1933 banking crisis he used the government to support the banking system without fully nationalizing the system as many European nations did. FDR also tried to maintain a balanced budget while funding the New Deal, raising taxes on the wealthy and cutting government spending in areas like the military. The new regulatory restrictions on business and increased taxes on the rich earned Roosevelt the label "traitor to his own class" since he was part of the wealthy class, but sided with the less fortunate.

Historians divide the New Deal into three main phases, the first 100 days, the first New Deal, and the second New Deal.

The first 100 days. By the time Roosevelt took office in March 1933, after a resounding victory in November 1932, the American economy had deteriorated. The unemployment rate exceeded 25 percent, with 13 million people not working. Banks in 30 eight states had closed. On March 4, FDR's inauguration day, the banking centers in New York and Illinois closed, bringing the nation's financial system to complete standstill. The day after Roosevelt's inauguration, he issued an executive order closing all banks, asked Congress to meet in emergency session, and proposed new banking legislation. By March 10, both houses of Congress had passed FDR's banking legislation, initiating government supervision of and assistance to private banks. On March 13 the largest and strongest U.S. banks reopened and saw more deposits than withdrawals on that day.

During the first 100 days of the Roosevelt administration more legislation was passed than during any other period in American history. In contrast to the previous administration that tried to stimulate investment and production, the New Deal used the power of the federal government to encourage consumption, influencing factories to produce more goods and hire more people. Central to the New Deal was the National Recovery Administration (NRA) that tried to bring a measure of government planning to the industrial sector. The NRA imposed restrictions on prices and wages along with controls on production levels. Another of the NRA's aims was to bring peace between management and labor. This legislation was declared unconstitutional by the Supreme Court in 1935, which led Roosevelt to attempt to limit the power of the federal court.

The Civilian Conservation Corps (CCC) was another piece of legislation passed in the first 100 days. Aiming to reduce youth unemployment and provide financial support for families, the CCC allowed men between the ages of 18 and 25 to work on environmental projects like building roads and paths in national parks. Workers were provided food and shelter and paid $30 monthly, of which they had to send home $25.

Another early piece of legislation created the Federal Emergency Relief Administration (FERA) to provide cash payments to needy families, support charitable relief organizations like church-run soup kitchens, and offer work to destitute families. Eventually FERA's work programs were offered through the Works Progress Administration and cash payments to the unemployed became unemployment insurance under the Social Security Act.

One of the weakest sectors in the American economy was the agricultural sector, since it had not prospered during the 1920s when the industrial sector had expanded at an unprecedented rate. During the Depression farmers suffered from surplus production and low prices. To assist them, Congress passed the Agricultural Adjustment Act (AAA) that paid farmers subsidies to leave some of their acreage fallow. Roosevelt hoped that reduced production would support higher prices and therefore stabilize farm income. Unfortunately, large farms used the program but small farms could not make the program work. In 1936 the Supreme Court ruled the price regulatory elements of the AAA unconstitutional and Congress reworked those provisions. Although the reworked AAA ceased after World War II, it became the philosophical basis for future farm-subsidy programs.

In addition to Roosevelt's early efforts to save the American banking system from collapse, the administration proposed and Congress enacted two pieces of legislation that altered the financial sector. The 1933 Glass-Steagall Act banned commercial banks from selling stock or participating in corporate underwriting. Glass-Steagall created two distinct and separate banking groups, commercial/retail banking and investment banking. Glass-Steagall also created another organization that is part of the American banking structure, the Federal Deposit Insurance Corporation (FDIC), to insure bank deposits. Insured banks paid a fee to the FDIC that created a fund to protect depositors against loss. Initially deposits were insured up to $2,500; the amount today is $100,000.

The New Deal tried to stimulate the American economy through federal spending. Two programs enacted in the first 100 days are clear examples. Recognizing that the South was the poorest region in the country, the administration proposed the creation of a regional planning and development agency, the Tennessee Valley Authority (TVA). TVA's purpose was to construct hydroelectric dams on rivers in the mid-south to control flooding and produce cheap electricity. Dam construction would create construction jobs and allow TVA to offer inexpensive electricity to industry willing to locate in the area. In addition, inexpensive electricity would now be affordable to rural southerners.

The other program enacted in the first 100 days to stimulate employment was the Public Works Administration (PWA). During PWA's existence from 1933–39, 6 billion federal dollars financed federal and nonfederal construction projects including roads, public buildings such as post offices and federal courthouses, and the first federal public housing. In addition to TVA and PWA, the New Deal created the Civil Works Administration specifically to provide emergency relief during the harsh winter of 1933–34.

The early New Deal combined relief and reform programs to attack the desperate problems of the Great Depression. Roosevelt understood that his biggest task was to restore confidence to the American people. In his first inaugural speech in March 1933, he said the now famous words, "First of all, let me assert my firm belief that the only thing we have to fear is fear itself—nameless, unreasoning, unjustified terror." Roosevelt tried to reassure the American people, through his words and actions, that the federal government would do everything within its power to solve the problems. As the New Deal matured from the first 100 days into the first New Deal, the main emphasis shifted from relief to reform.

The first New Deal. Once major American relief efforts of the first 100 days became part of the program to combat the Great Depression, the Roosevelt administration drafted new legislation to regulate and stimulate the American economy. In 1934, three pieces of New Deal legislation became law, creating the FCC, FHA, and SEC.

The Federal Communications Act created the Federal Communications Commission (FCC) to regulate the new wireless and wired communications industry. Its main focus was the emergent radio industry in America. The FCC issued broadcast licenses, regulated broadcast content for community standards, and encouraged new technologies. Eventually, the FCC also regulated the television industry.

The Great Depression severely depressed home ownership in the 1930s. In 1934, the administration proposed creating the Federal Housing Administration (FHA), which provided mortgage guarantees to reduce the down payment for a mortgage from 30 percent of the purchase price to 10 percent. The new FHA guarantee extended the standard mortgage loan from 20 to 30 years, lowering monthly payments and therefore making homes more affordable to middle-income families. The FHA enacted new building standards and codes such as for electrical wiring and plumbing, helping standardize construction practices. The Federal Housing Administration remains an active participant in the home-mortgage industry today.

One of the most significant pieces of legislation passed in 1934 as part of Roosevelt's efforts to rebuild public confidence in the economy and the business community was the Securities and Exchange Act, which established the SECURITIES AND EXCHNAGE COMMISSION (SEC). The stock market crash of October 1929 had destroyed confidence in the various stock exchanges and in the business community. The SEC was given the responsibility to oversee American stock exchanges and the activities of publicly held firms. Roosevelt turned to one of America's best-known stock traders, Joseph P. KENNEDY, as the SEC's first commissioner. The SEC required publicly traded firms to submit quarterly reports, audited for accuracy, to stockholders and the general public. Companies wishing to sell stock would submit a series of reports; all the transactions would be open to the public. This access to corporate information gave rise to modern stockbrokerage houses and stock analysts. The SEC remains a vital part of the federal government's efforts to maintain openness and responsibility in stocks and equities.

In 1935, the administration continued to send Congress legislation to reform business and provide relief to the unemployed. However, the Supreme Court declared the National Recovery Act unconstitutional, creating a new obstacle for Roosevelt. In spite of this setback, Congress passed the Wagner Act that formed the National Labor Relations Board (NLRB). The NLRB ushered in a new era in labor-management relations, requiring collective bargaining and giving the president new powers to impose binding arbitration when the nation's economic security was in danger. The Wagner Act and the NLRB, though modified since, continue to provide the legal structure for labor-management relations in the United States.

Building on earlier New Deal programs, the Roosevelt administration pushed through new legislation in 1935 such as the Works Progress Administration (WPA), the Rural Electrification Administration (REA), and the National Youth Administration (NYA). The WPA expanded the scope of the PWA through new funding for construction projects and also provided funding for professional fields still suffering from the Great Depression. Actors, writers, painters, historians, photographers, dancers, and musicians benefited. This newly expanded program became controversial when WPA-funded plays and art works were criticized for their content or themes.

The REA brought electricity to rural America. Most private electric utility companies did not want to make the substantial investment to extend electricity to nonurban areas of America. The return on investment would be low because of declining rural population and a dependence of rural America on falling farm income. Low-cost electricity created by hydroelectric dams of the

TVA became available to the rural south through the REA. Other regions of the country also benefited, most notably the west, where new hydroelectric dams were funded.

The NYA went beyond the CCC and its basic efforts to remedy youth unemployment. The National Youth Administration supported education and training by giving young people grants to stay in school. This program supported two million students in high school and college and kept them out of the work force, reducing the pool of eligible workers. Once the United States entered World War II, the program was discontinued but the idea surfaced again in the education provisions of the GI Bill.

The most significant and long-lasting New Deal program, Social Security, also came into existence in 1935. Characterized as an old-age pension program, Social Security became the primary federal program to assist the elderly, those unemployed, dependent mothers and children, the handicapped, and Americans in need of public-health programs. It was designed as a payroll deduction program for federally guaranteed retirement payments. The American public was told that an account would be set up at Social Security and that payroll deductions would be paid into the fund. However, in reality the payments went into a central fund and underwrote payments made to the present generation of claimants. Those working would pay for those retired through regular paycheck deductions. Folded into the legislation was an unemployment insurance program that both the employer and employee paid into a central fund to provide. Individuals who had paid into the fund and lost their jobs would be eligible for a specified number of monthly payments. Since the originally enacted legislation became law, a number of other programs have become apart of the system, including Medicare. Social Security is considered the most successful New Deal program and has been credited with the transformation of the elderly from the poorest segment of the American population into the wealthiest.

Roosevelt took the Supreme Court's 1935 ruling that the National Recovery Act was unconstitutional as an attack by conservative forces to end his efforts to revive the American economy. FDR took his case to the American people when he ran for a second term in 1936 and won a landslide victory. This greatest margin of victory in modern electoral history encouraged Roosevelt to take on the Supreme Court in his second term. FDR's second term as president is considered the second New Deal.

The second New Deal. The second round of New Deal legislation was less ambitious and in many respects an attempt to protect the legislation passed during the first 100 days and the first New Deal. Roosevelt proposed legislation to Congress to put more justices on the Supreme Court to enable him to appoint new justices to the court. He justified the legislation because the court was behind in its work; new justices would allow it to catch up. The court presented a convincing argument that it was up-to-date on its work and did not need any new justices. Roosevelt failed to get this legislation, often called the court-packing bill, passed by Congress, but the Supreme Court did start to favor New Deal legislation with its approval of the Wagner Act and Social Security.

The major piece of legislation proposed by the Roosevelt administration in 1937 was the Farm Security Administration (FSA). The FSA built on the earlier Agricultural Adjustment Act, part of which had been declared unconstitutional. The aim of the FSA was to provide federal aid to small and tenant farmers.

From the beginning of FDR's efforts to deal with the Great Depression in 1933 until the summer of 1937, the American economy improved each year and considerable progress was achieved in reducing unemployment. However, in the summer of 1937 the American economy went into a deep recession, caused by a dramatic drop in consumption. In order to maintain a balanced federal budget while funding new programs like Social Security, Roosevelt had reduced funding to older programs like WPA, which provided income to many people. So, when people were dropped from the program they restricted their spending.

In 1938, the last of the major New Deal legislation became law with the passage of the Fair Labor Standards Act. This law set a minimum wage of 40 cents an hour and a 40-hour work week for any company engaged in interstate commerce.

The nation and the world shifted focus in 1938 from the economic problems on the home front to the growing clouds of war worldwide. After 1938, the Roosevelt administration focused on maintaining existing programs and keeping a watchful eye on international events.

The New Deal is not considered a success in economic terms, not because of what was done but because the programs did not go far enough. Roosevelt acted in a conservative manner; much higher federal spending to stimulate consumption would have been needed to end the Depression. In fact, higher federal spending on the military during World War II did end the Depression. In the terms of solidifying the federal government's relationship with the average citizen, however, the New Deal was a great success because it set basic standards for living in America and the federal government became a guarantor of those standards.

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New York Stock Exchange

CAPITALISM IS BASED on surplus, and stock exchanges create capital surplus financing by investor purchase of securities. It also allows the investor a vehicle with which to indirectly affect market change, sometimes for a profit. The New York Stock Exchange (NYSE) prides itself on being the main center of capitalism in New York City, and indeed, the NYSE has spearheaded the emergence of capitalism from its beginnings.

The original Dutch exchange. Originally inhabited by Native American Indian groups who traded with Dutch seafarers in the early 1600s, Manhattan, protected from the open sea by Long Island, was an excellent natural port for the emerging global trade of mercantilist economies. The Dutch establishment of New Amsterdam as trading port and settlement saw native goods like tobacco, fur, timber, fish, and foodstuffs flow out of native lands in exchange for finished European goods and products from around the globe.

From the start, New Amsterdam was a global community of traders, who often moved goods by Dutch ships and were financed by Dutch banks and credit houses. The Dutch role as middlemen in the emerging global trade gave them ideas on how to participate in the mercantilist system. The Protestant Dutch had been fighting a war of rebellion against the Spanish Empire in the 1500s and 1600s. Their small population and small land mass was balanced by their masterful seafaring skills and ships, and their ability to function as middlemen, private-company founders, and financiers for the mercantile markets around the globe. Eventually the Dutch mastered a model of international trade, port cities, shipping, financing, and trade that became the basis for modern capitalism. One can see the Dutch imprint on New York City and its famous stock exchange to this day.

During the Dutch revolt against Spanish rule, the small Dutch states developed a capitalist style stock system to fund its defeat of the Spanish mercantile economy. SPAIN had a large colonial empire, with excellent Portuguese seafaring ships, the best land army in Europe, and silver from its American colonies. However all of its products had to be bought from Europe due to small Spanish production. To combat this, the Dutch developed trade companies, finance banks, and credit houses to fund and control the Spanish economy. Spanish silver fleets crashed the European money markets when they arrived, or crashed the Spanish economy when hurricanes or Dutch and English piracy delayed them. The Dutch banking houses, feigning neutrality, offered open loans and credit to the Spanish crown and to its arms manufacturers.

Dutch trade companies, producing real profits in global trade, sold stock to raise funds that supported the bank and credit houses. Spain became dependent on this finance system and went bankrupt five times between 1518–44, when it was at the height of its power. The system worked so well, that when London burned in the 1660s it was completely remade on the Dutch model and became the hub of international trade and capitalism.

This Dutch model of security exchange was transferred to the settlement of New Amsterdam and led to the rise of the New York Stock Exchange. Geographically, a 1653 stockade or wall of wood was laid across lower Manhattan as a defense for the trading community.

Early Wall Street. In 1685, as the British took control of the Dutch settlement, Wall Street itself was laid out along the stockade route. Hence the name "wall" street. In 1790, the newly independent UNITED STATES issued $80 million in bonds to help finance its revolutionary war debt. These war bonds, as they came to be called, were the first major publicly traded securities and marked the arrival of a pure U.S. investment market. Often overlooked, the war bonds had multiple impacts on the economy beyond the obvious. They financed necessary defensive and offensive positions of a nation or state in foreign affairs, thus impacting foreign trade and exchange rates as well as stability of the market. Second, they also established a permanent link between the military and the arms industry both in peace and in war, a link that often directly impacts a capitalist economy. If such bonds are used to fund offensive war efforts such as the war with Mexico in 1848 (MEXICAN-AMERICAN WAR), then the dividends can be even greater. The acquisition of territory and resources provides more fuel for a capitalist-style economy.

In 1792, the historic Buttonwood Agreement was reached between 24 significant merchants and brokers. The agreement was signed by all 24 members on Wall Street and marked the official emergence of a U.S.-derived, New York securities exchange. The Bank of New

York became the first corporate stock traded and the first listed company on the NYSE. This pattern was remarkably similar to the Dutch model of finance of the previous century.

In 1825, the Erie Canal was opened to connect the Great Lakes with the eastern seaboard port of New York City. New York State bonds were used to finance the canal and were actively traded on the exchange. While the canal was never profitable as a private enterprise for the state, the trend of publicly financed and traded bonds for the building of civilization infrastructure was established.

With the NYSE firmly established as the new nation's center for trade, not even the great fire of 1837 could derail it. The NYSE's original home at a rented room on 40 Wall Street was eventually abandoned. The market panic of 1857 saw market value decline 45 percent during the year. The collapse of the Ohio Life Insurance & Trust Company led to an 8 percent drop in a single session during the year. The market did re-establish itself but only with the AMERICAN CIVIL WAR of 1861–65. Trading securities of seceding states was suspended and along with war bonds, this move helped doom the Southern economy during the war. The name of the New York Stock Exchange (NYSE) became official in 1863, replacing the cumbersome New York Stock & Exchange Board (NYS&B).

The victory of the Northern, industrial, capitalist economy over the Southern, agrarian economy was part of the war effort by the North. A number of NYSE members including business and finance leaders, were advisors for President Abraham LINCOLN during the war. At Lincoln's assassination in 1865 the NYSE closed for a week. It eventually moved to its first permanent home, a five-story building on 10-12 Broad Street that opened

The famous "controlled chaos" of the floor of the New York Stock Exchange lies at the core of capitalism in America.

at the end of the war in 1865, and served as the center of the NYSE until 1903. The intersection of Wall and Broad Streets became the center of securities trading in the United States.

In 1868, membership in the NYSE could be sold as a property right. This ominous sign that everything in the country could be bought or speculated upon, eventually culminated in the financial panic of 1873 during the administration of President Ulysses S. GRANT, The NYSE closed for 10 days after Jay Cooke & Company, a Philadelphia bank firm, failed due to speculation on railroad stocks. The financial panic that gripped the nation exposed corruption throughout the Grant presidency and carried on into future presidential administrations. Many of Grant's appointees were involved in schemes to bilk investors of money in securities fraud. The Grant presidency established the linkage between the economic welfare of the nation and the perceived effect the presidency could have on the economy with foreign policy, legislation, and appointees.

Late 19th century. Increasingly in the last third of the 19th century, big-business interests played a stronger role in both politics and Wall Street as the NYSE area was then known. National news companies like the Hearst empire were quick to establish this link in the eyes of the American public and Wall Street became a common phrase.

Industrial leaders such as Andrew CARNEGIE, and financiers such as J.P. MORGAN who bought out Carnegie, became the most powerful and wealthiest men in America, and perhaps the world. Morgan controlled the largest company in the world, U.S. STEEL, one of six major railroads in the United States, and floated the bond that backed the gold reserve to stabilize the American economy after the panic of 1893. The use of the NYSE as a financial and securities tool for private gain and public control was clearly involved with the terrible fluctuations in market value during the last third of the 19th century. Progressive reform under President Theodore ROOSEVELT would move toward government control of the banking system, and better regulation of the use of the NYSE.

In 1907, rumors of New York bank collapses triggered a run on city banks. J.P. Morgan stepped in again to stabilize the crises with a massive infusion of cash into the banks. The stock market stabilized and the complex, sometimes contentious relationship between big business, finance, the government, and the stock market was realized.

In 1914, WORLD WAR I forced the shutdown of security exchanges around the globe due to falling prices. The NYSE shut down for more than four months. However the final result of war saw the permanent establishment of U.S. industry as the world's largest producer of industrial goods, and the United States as the creditor nation for debt-ridden, rebuilding Europe. Wall Street supplanted London as the world investment capital as foreign issues became common at 18 Broad Street.

Black Thursday and beyond. The Roaring Twenties followed and funded the addition of a massive, 23-story building on 11 Wall Street in 1922. The "garage" section of the trading floor was also added at this time. However, the postwar boom was followed by a global DEPRESSION in the 1930s. On October 24, 1929, "Black Thursday," stock prices fell 13 million shares. Five days later the market crashed on volume of close to 20 million shares. During the Depression, the first salaried president of the NYSE, William McChesney Martin, Jr., was appointed in 1938.

The start of WORLD WAR II (1939–45) marks the entry of women onto the stock floor. The post-war boom saw the market recover and a push to include more middle-class Americans in stock investing. In 1955, President Dwight D. EISENHOWER had a heart attack, prompting large sell-offs at the NYSE. In 1956, the postwar boom and Cold War environment provided impetus to add another addition to the NYSE at 20 Broad Street.

The assassination of President John. F. KENNEDY in 1963 forced the closing of the NYSE to avoid massive sell-offs. In 1967, Muriel Siebert became the first female member of the exchange just as the traditional paperwork of the NYSE caused a crisis, forcing increased automation of the exchange. In 1969, a third trading room, the Blue Room, was added. In 1970, Joseph L. Searles III became the first African-American member, and in 1971 the NYSE became a not-for-profit corporation, as ironic as it may seem. A board of directors with 10 public members was given control to increase public perception of participation in 1972. Further changes included the first non-U.S. member, Bruno Des Forges in 1976.

The 1970s saw the NYSE affected by the Richard NIXON presidency scandal, the end of the Vietnam War, and the Jimmy CARTER presidency's economic recession. The 1980s looked like an era of recovery as stock values soared only to be burst by the October 19, 1987, DOW JONES Industrial Average drop of 508 points, the largest in history. Two days of unprecedented volume followed with a total of over 608 million shares traded.

The 1990s saw the collapse of the Cold War and further meteoric rise of market values on the NYSE. But on October 27, 1997, the Dow Jones plunged again 554 points. The 3-D Trading Floor (3DTF) was added in 1999 to accommodate the increasing role of technology in securities exchange. This marked the fourth trading room of the NYSE. Another record high was achieved by the Dow on January 14, 2000, at 11,722,98 and was followed by the largest single day gain of almost 500 points on March 16, 2000.

Global stocks and technology companies played a major role in the traditional NYSE but their overvalue at the turn of the millennium led to stock values plummeting on April 14, 2000, by 617 points. The fifth and final trading room was added in 2000 at 30 Broad Street. Its construction was directly related to the huge economic boom associated with technology stocks

The terrorist attacks on the World Trade Center in New York City led to a four-day closure of the NYSE. When it reopened on September 17, 2001, a record 2.37 billion shares exchanged hands. The NYSE has survived bull and bear markets for over 200 years as the center of American, and now global, securities exchange. A sixth trading floor is planned to open in the near future.

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New Zealand

AN ISLAND NATION in the south Pacific Ocean, New Zealand is southeast of AUSTRALIA and comprises two main islands—North and South Islands—and many smaller islands. It is a member of the British Commonwealth of Nations.

The population of New Zealand is 3.9 million. Approximately three-quarters are of European descent, 10 percent Maori, 4 percent Polynesian, with Asians and others making up the rest. English is the predominant language, but Maori and Samoan are also spoken. Nearly three-quarters of the population lives on the North Island and while New Zealand has a strong rural sector, the majority of its people live in cities. Since WORLD WAR II, the annual rate of immigration has generally surpassed that of emigration. Recently Asians and Pacific Islanders have become the predominant immigrant groups.

Around 800 C.E., New Zealand was settled by Polynesian Maoris and remained isolated until the mid-1600s when European explorers arrived. In 1840, the British proclaimed their sovereignty over the country. In 1907, New Zealand became an independent dominion. With the beginning of World War II, New Zealand's economy was mobilized for the war effort, including the enactment of wage and price controls. In 1973, New Zealand and Australia pledged increased cooperation, which was a response to the loss of trade caused by Britain's entry into the European Economic Community (EEC). In 1984, the government instituted sweeping policy reversals, called Restructuring, that were geared toward changing the role of the state in New Zealand's economy, and toward transforming the economy from an agrarian basis dependent on concessionary British market access, to a more industrialized, free market structure that could compete globally. The government also banned nuclear-powered and nuclear-armed vessels from its ports. This decision strained relations with the UNITED STATES and led to the United States suspending its defense obligations.

New Zealand's labor force is more than 1.9 million, with about two-thirds engaged in services, one quarter in industry, and about 10 percent in agriculture. Since the introduction of the Employment Contracts Act in 1991, which gave workers the right to decide whether to belong to an employee organization or not, union membership has significantly declined.

New Zealand's currency is the New Zealand dollar. New Zealand's banking system consists of several commercial and trustee saving banks and one central bank, the Reserve Bank of New Zealand, which has the sole power of issue of currency. Since the 1980s, New Zealand's capital markets have become extremely competitive, with many specialty institutions emerging. In 1985, the government freed transactions in foreign exchange, and, for the first time, the exchange rate was floated in a competitive market.

New Zealand's exports are valued at approximately $14.2 billion annually and its imports at approximately $12.5 billion. It is the leading exporter of dairy products in the world and second only to Australia as an exporter of wool. New Zealand's major imports are petroleum, iron, steel, textiles, and heavy machinery. Most manufactured goods are imported free of duty. Since the importance of trade with Britain has been reduced, there is now greater importance placed on trade with the Middle East, JAPAN, and the United States.

Though New Zealand's per capita incomes have been rising, they remain below the level of the EUROPEAN UNION's four largest economies. Since New Zealand is still heavily dependent on trade to drive growth, it has been affected by the global economic slowdown and the slump in commodity prices in the early 2000s.

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Nicaragua

NICARAGUA IS THE SECOND poorest country in the western hemisphere after Haiti, and the poorest in Central America. After decades under a brutal dictatorship, Nicaragua experienced a popular uprising in 1979, and the Sandinista National Liberation Front, a group of leftist rebels fighting the government for almost two decades, took power. The Sandinistas nationalized part of the industrial sector, confiscated land from the dictator Anastasio Somoza, and implemented land reform. Large estates were turned into state farms; other land was redistributed to agricultural cooperatives or later to individual peasant families.

Although the Sandinista leadership operated a mixed economy with a sizeable private sector, the Ronald REAGAN administration opposed it on anti-communist grounds. The United States imposed an embargo on Nicaragua in 1985, and funded and assisted the "contra" forces, led by ousted government officials and based in Honduras and Costa Rica. The contras attacked Nicaraguan troops and civilians, especially agricultural cooperatives and government health and education workers.

In the 1980s, Nicaragua received massive material aid and volunteer assistance from many countries. But military spending and a collapse of tax revenues led the government to resort to printing money, generating inflation over 30,000 percent at its peak.

In 1990, the Sandinistas lost in national elections and became an opposition party. A drastic stabilization and structural adjustment program brought inflation down to below 10 percent, but exacerbated unemployment and poverty. Nicaragua still suffers deep poverty and an enormous external-debt burden. Recently, flood, drought, and economic hardship have driven hundreds of thousands of Nicaraguans to migrate to Costa Rica to find employment.

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Nigeria

THE FEDERAL REPUBLIC of Nigeria covers 923,768 square kilometers in western Africa and encompasses 36 internal states. Nigeria is a country of diversity. Its climate ranges from equatorial in the south to tropical in the center and arid in the north. Over 25 ethnic groups make up its population, often creating disagreements over how the economy of the country should be managed.

As a British colony, Nigeria's abundant resources were often exploited, but the British moved the nation forward with public roads, railroads, and increased export trade. Nigeria won its independence from Great Britain in 1960; and after 16 years of military rule, a new constitution was ratified in 1999, establishing a three-branch government, including a president, a bicameral legislature and a supreme court. A major goal of the new government has been to establish economic reforms.

Economically, Nigeria has suffered from exploitation, corruption, and mismanagement. Its dependence on oil and oil-related products resulted in an economic collapse in the late 1970s and early 1980s. While almost 31 percent of Nigeria is arable land, agricultural workers continue to live at subsistence levels, partially because of frequent drought and flooding. In 2000, 45 percent of the nation's residents lived below the poverty line, while most of the wealth remained in the hands of the top 10 percent of the population. Nigeria's human resources are potentially strong as the country is the most populous in Africa (130 million in 2002), but have been drained by the low life-expectancy rate of 50.6 years, a high incidence of deaths from AIDS (250,000 estimated in 1999), and a high infant-mortality rate of 72.49 deaths per 1,000 live births.

In 1989, the WORLD BANK declared Nigeria qualified to receive funds from the International Development Association (IDA), and in 2000, Nigeria received a debt-restructuring grant from the INTERNATIONAL MONETARY FUND (IMF) and the Paris Club to help them institute economic reforms.

Nigeria's abundant natural resources include natural gas, petroleum, tin, columbite, iron ore, coal, limestone, lead, iron, and zinc. While its major exports continue to be petroleum and petroleum products, cocoa, and rubber, the government has encouraged the growth of industries such as crude oil, coal, tin, columbite, palm oil, wood, animal hides, textiles, cement and other construction products, food products, footwear, chemical fertilizer, ceramics, and seeds, in order to develop a diverse economy. Nigeria continues to import machinery, chemicals, transport equipment, manufactured goods, food, and live animals even though its agricultural products includes cocoa, peanuts, palm oil, corn, rice, sorghum, millet, tapioca, yams, rubber, cattle, sheep, goats, pigs, timber, and fish.

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Nikkei

THE LONGEST RUNNING stock price index in JAPAN's history, the Nikkei Stock Average (Nikkei) has been calculated continuously since September 7, 1950, when the newly reopened Tokyo Stock Exchange (TSE) began using the DOW JONES method to calculate the stock-price average. This is the method still in use today and the Nikkei has grown to become Japan's leading and most widely quoted index of stock market activity. Similar to the Dow Jones Industrial Average, the Nikkei is used to calculate the average stock price of 225 leading stock issues traded in the first section of the TSE (medium to large capitalization stocks).

Like the Dow Jones, the Nikkei is a price-weighted index in which the movement of each stock is weighted equally regardless of its market capitalization. Calculated as the arithmetic mean of the stock prices of 225 stocks selected from the approximately 1,400 in the TSE, it therefore does not fully represent the real average price of the stock market. Listed on the Nikkei are some of the worlds most widely known companies: TOYOTA, SONY, HONDA, Fuji Photo Film, and NEC.

The Nikkei is calculated to accurately reflect the performance of stocks on the Japanese stock market at any given time, and the mixture of stocks in the index can be altered to reflect trends in the current market. In its original format the Nikkei's component stocks were changed only because of special circumstances such as liquidations and mergers; throughout the 1980s there were only eight changes. Now however, while the 225 stocks are selected to represent the overall performance of the market, emphasis is placed on maintaining the index's historical continuity while keeping the index composed of stocks with a high market liquidity. A maximum of 3 percent of the average's component stocks, or 6 out of the 225, may be removed each year if they have relatively low market liquidity. However, while it is true to say that the Nikkei is the average price of 225 stocks traded on the first section of the TSE, it is different from a simple average in that the divisor is adjusted to maintain continuity and reduce the effect of external factors not directly related to the market. These 225 stocks represent 36 industry classifications at the heart of Japan's economy.

It was not until the postwar occupation of Japan that a recognizable share-exchange evolved, primarily as a means of destroying the economic power of the Zaibatsu—large, family-owned companies who controlled Japan's pre-war economy. A formal structure for the TSE was established when the Japanese parliament passed the Securities and Exchange Law in 1948.

While the name Nikkei Stock Average only came into being in May 1985, there has been a continuous TSE price average since 1950. Originally known as the Tokyo Stock Exchange Adjusted Stock Price Average, in July 1971, Nihon Short-wave Broadcasting (NSB) took over responsibility and began calculating and announcing what was now the NSB 225 Adjusted Average. On May 1, 1975, Dow Jones & Co granted exclusive rights to the name and Dow calculation method for the new Nikkei Dow Jones Stock Price Average. In May 1985, the Nikkei Dow Jones Stock Price Average became the Nikkei Stock Average and at the same time the Nikkei Dow Jones 500 Stock Average became the Nikkei 500 Stock Average.

Since 1971, the Nikkei has been calculated by Nihon Keizai Shimbun, Inc. (NKS) the leading Japanese financial information services company, therefore any addition or removal of stocks is at the discretion of NKS. Because of the method of calculation, the composition of the selected stock, and the historical continuity of the Nikkei, most market reports quote the Nikkei when they talk about the Japanese stock market.

The Nikkei has continued to develop and expand. On January 4, 1982, the Nikkei Dow-Jones 500 Stock Average was introduced, covering an adjusted average for 500 stocks. Since October 1, 1985, the index has been calculated every minute during trading hours. In September 1991, Nikkei took the major step and started calculating and announcing the market value-weighted All Stock Index for all stocks listed on Japan's eight stock exchanges, this was aimed at producing an accurate reflection of the Japanese stock market. Since October 1991, components have been checked every year, and those of relatively low liquidity have been replaced by issues of high liquidity. Therefore, the index corresponds to changes in the market environment while maintaining consistency. In October 1993, the Nikkei Stock Average of 300 Selected Issues (Nikkei 300) was introduced. This was a weighted average of 300 selected stocks, aimed at giving a stock-price average more representative of the market as a whole.

The Nikkei has developed into more than the simple arithmetic mean of the stock prices of 225 selected stocks. It is now used as a base for futures-trading worldwide. Nikkei Stock Average Futures are traded on the Singapore International Monetary Exchange, Osaka Securities Exchange, and the Chicago Mercantile Exchange. International futures-trading on the Nikkei 300 began in February 1984.

In April 2000, in a major revision aimed at bridging the widening gap between the Nikkei (which was based on traditional industries) and the growth in the Japanese stock market of information technology companies. The shares that were removed were mainly mining, textiles, and chemicals and were replaced with others from growth sectors such as telecommunications, in an attempt to make the Nikkei more representative. In a further change, the share used to calculate the average will be reviewed every year.

The Nikkei Stock Average continues to provide a range of functions within the Japanese financial markets, when necessary adapting to new market trends and developments, and introducing new services to meet changes in demand.

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Nippon Life Insurance

OF THE THREE MAJOR life insurance companies in JAPAN—Nippon Life Insurance, DAI-ICHI MUTUAL LIFE and Sumitomo Life—the former leads the way. Nippon is, in fact, one of the world's largest insurers in total assets and policies in force. The company's strategic plans involve cutting through the competition by being the comprehensive total-insurance company of the new century.

Equipped with what Hoover's business reference describes as a "door-to-door sales corps," Nippon sells its specialized packages of life and group insurance, as well as annuity products. Nippon continues to expand and grow. Throughout the Orient and the world, Nippon participates in an assortment of activities including real-estate development and management, and a variety of educational-based and philanthropic projects. Recent deregulation has given Nippon the green light to move into the expanding areas of corporate and residential lending. Still, it is pushing further to expand in both life and non-life insurance products.

Headquartered in Osaka, Japan, Nippon owns many overseas holdings that focus on providing insurance to Japanese companies and to citizens abroad. American offices are located in New York City, Chicago, and Los Angeles. In January 2003, Nippon became the first Japanese life insurer to market policies in China on a full-scale basis, partnering with SVA Information Industry Company.

In 2002, Nippon ranked as the 33rd largest company in the world according to *Fortune* magazine, with nearly $64 billion in revenue.

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Nippon Telegraph & Telephone Corporation

OVERCOMING THE COMPETITIVE thrusts of companies such as American Telephone & Telegraph (AT&T), Nippon Telegraph & Telephone (NTT) stood, in early 2003, as the world's largest telecommunications company. On top of systems and solutions that benefit its huge customer base, Nippon boasts of having installed more than 25 million subscriber telephone lines, as well as millions of high-speed internet lines.

Nippon, with headquarters in Tokyo, JAPAN, is a holding company for regional local phone companies NTT East and NTT West, a long-distance carrier called NTT Communications, and several research-and-development entities. It operates a major internet service provider, as well, and owns 64 percent of Japan's leading cellular phone company. At the turn of the 20th century, NTT had branched out internationally, in the UNITED STATES and in the Pacific arena.

Established recently, in 1985, its continual success is largely founded on two factors—ability and know-how. Business analysts say the company possesses an innate talent to effectively and quickly serve the customer, and it has a savvy for reorganization, putting the most efficient technologies behind the steering wheel.

RESEARCH AND DEVELOPMENT (R&D) are the elemental drivers. While the holding company performs fundamental research, its "regionals" conduct specialized research. Simultaneously, Nippon's R&D departments—NTT Comware, NTT Facilities, and NTT-ME—apply important technology such as software development and implementation, and telecommunications security, thresholds to what NTT calls, the new millenium's "Information Sharing Society." In 2002, NTT ranked as the 16th largest company in the world with sales of nearly $94 billion.

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Nissan Motor Car Company

NISSAN MOTOR is JAPAN's second-largest automobile manufacturer, behind TOYOTA and ahead of HONDA. Its cars are world famous and include the Sentra, Altima, Infiniti, among others. Besides sedans, Nissan's vast output includes a sports car, the 350Z, as well as the Frontier pickup truck, Pathfinder SUV, not to mention satellites and pleasure boats.

Based in Tokyo, Nissan owns several plants in Japan and Europe (including FRANCE, GERMANY and the UNITED KINGDOM), and also in MEXICO and the UNITED STATES. The Nissan Technical Center of North America, located near Detroit, Michigan, boasts high-skill engineering capabilities and serves as the design-enhancement center for all autos manufactured for American and Canadian consumption.

Formed from the merger of two companies in 1925, Nissan adopted its present name in 1934. Interrupted by WORLD WAR II, production slowed to a whisper afterward and did not return to full output until 1955. Sales accelerated in the early 1960s when Nissan went global.

During the 1990s, the company suffered a sharp decline in profits, a result of fierce competition among worldwide auto manufacturers. In 1999, however, a strategic partnership between Nissan and French-carmaker, Renault, sparked a revival. Renault, also hurting from the sting of hard times, bought 37 percent of Nissan in an attempt to rejuvenate both companies. The collaboration worked, thanks not only to an adoption of a no-loopholes quality plan, but also to a new chairman, Renault's Carlo Ghosn, who took over Nissan's chair. Chief Executive Officer Ghosn's expense-slashing, penny-pinching form of management quickly—and respectfully—earned him the nickname, "Le Cost Cutter" when the red ink on the ledgers suddenly changed to black.

Since April 2002, Nissan has been adhering to its blueprint for future security. The plan, called Nissan 180, is a comprehensive operational business thrust ensuring continued growth, increased profits, and zero debt. *Fortune* magazine reported Nissan had sales of nearly $50 billion in 2002 and ranked as the 58th largest company in the world.

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Nissho Iwai

A JAPANESE GENERAL TRADING company specializing in risk management in international transactions, Nissho Iwai traces its roots to JAPAN's late 19th- and early 20th-century industrial revolution when two general trading companies formed to conduct transactions across cultural barriers. In 1901, Bunsuke Iwai created Iwai & Company to market products from Japan's fledgling steel industry in Western countries. The next year, Iwajiro Suzuki founded Suzuki & Company and established a global network of offices to trade sugar.

Suzuki soon expanded into sugar-refining, flour-milling, tobacco-marketing, beer production, insurance, shipping, and ship-building. Suzuki grew rapidly in response to Allied demand for war materials and shipping services during WORLD WAR I. In the postwar recession, however, the company could not sustain its excess capacity and bankruptcy forced Suzuki's 1928 reorganization as the Nissho Company.

The Iwai group meanwhile grew to include Daicel Chemical Industries, Nisshin Steel, Kansai Paint, and Fuji Photo & Film. In 1968, complementary business lines led to Nissho and Iwai's merger. In the 1970s, Nissho Iwai managed international urban-planning and construction projects in newly developing countries. The advertisement, "If Rome had to be built in a day, Nissho-Iwai would most likely get the job" reflected the company's ambition in these new ventures.

In the year ending in March 2002, Nissho Iwai's employees at 30 domestic Japanese and 131 overseas offices conducted transactions worth $43 billion in its principle businesses of steel, chemicals, foodstuffs, construction, and urban development. It ranked as the 74th largest company in the world in 2002.

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Nixon, Richard M. (1913–94)

RICHARD NIXON WAS born in Yorba Linda, California, in 1913, the year before World War I broke out in Europe. By 1941, the world was again at war, and Nixon joined the U.S. Navy after receiving a law degree from Duke University. In 1946, Nixon successfully ran for the House of Representatives, where he served for four years. He had become a U.S. Senator by the time Republican presidential candidate Dwight EISENHOWER chose him as his vice-president. Nixon ran for president in 1960 but lost to John KENNEDY with the closest popular vote in American history (49.7 percent to 49.5 percent). He used the intervening years to good advantage and became president in 1968 with 43.4 percent to Hubert Humphrey's 42.7 percent.

Richard Nixon inherited a country already suffering from INFLATION (a decrease in purchasing power) brought on by the VIETNAM WAR and stagflation (a slowing economy accompanied by rising prices). Nixon's expertise was in foreign policy, and he was unprepared for economic crises. Based on the advice of his economic advisors, Nixon sent his first budget to Congress with a $4 billion cut. Most of the cuts were aimed at social programs, such as subsidized lunches. Nixon was haunted by the memory of three recessions under Eisenhower for which the Republicans had suffered. Contrary to his preferences, Nixon approved congressional tax cuts in 1969 that placed a minimum tax on the wealthy and removed some individuals below the poverty line from the tax rolls. However, he alienated Congress by impounding funds appropriated for specific programs.

Despite a Republican tendency to let business alone, Nixon blocked acquisitions by large corporations and outraged foreign investors with his economic policies. He interfered in strikes by invoking the Taft-Hartley Act. In September 1969, he placed a freeze on federal construction programs and encouraged states to do the same. Nixon followed the advice of George Shultz, the secretary of labor, and devised a full-employment budget, planning as if the employment level were no more than 4 percent, expanding the money supply faster than the FEDERAL RESERVE was inclined to do, and holding down prices and wages. In June 1970, Nixon established a Government Procurement and Regulatory Review Board and announced that the COUNCIL OF ECONOMIC ADVISORS (CEA) would deliver inflation alerts. In the Economic Stabilization Act of 1970, Congress gave the president the right to regulate prices, rents, wages and salaries; however, no one really thought a Republican president would do so. Nixon's 1971 budget ran a deficit calculated at $11.6 billion, and the value of the U.S. dollar dropped precipitously.

On August 15, 1971, Nixon announced a new economic policy on national television, providing for a 90-day wage-and-price freeze, reviving Kennedy's investment tax, adding additional TARIFFs on imports, setting forth new spending cuts, lifting the excise tax on automobiles to encourage sales, agreeing to postpone welfare reform, and calling for increased revenue sharing (federal money distributed to state and local governments). Initial reaction from the business world was positive, and the public grew hopeful. Then gas prices soared. Nixon instituted a 15 percent cutback on gasoline, closed gas stations on Sundays, and even had gasoline-ration stamps printed, although they were never used.

Since the wage-and-price freeze was only in effect until November 13, Nixon instituted the second phase of his economic policy by establishing the Citizens' Price Commission to restrain prices and the Citizens' Pay Board to oversee wages and stop them from rising to inflationary levels. Also, by 1971, U.S. gold reserves had declined by $10 billion due to trade imbalance and overspending. Nixon decided to de-link the dollar from the gold standard, thus ending the BRETTON WOODS agreement.

Nixon won re-election in 1972 with a comfortable margin (60.7 percent to George McGovern's 37.5). But when the third phase of Nixon's economic plan proved unsuccessful, stock-market prices dropped and prices rose. In March, Nixon ordered a limit on the price of beef, pork, and lamb. The public was aghast when national television showed baby chicks being slaughtered because farmers could not afford to raise them. The fourth stage of the economic plan continued a price freeze until August 12 when food prices rose by 60 percent. Inflation was now at 14.5 percent. The economic situation was serious, but the political climate overwhelmed economics as Nixon was named an "unindicted co-conspirator" in the Watergate scandal, leading to the U.S. Congress preparing impeachment proceedings. On August 8, 1974, Nixon became the only president in United States history to resign from office.

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non-alignment

SIMPLY PUT, NON-ALIGNMENT refers to the policy of those countries that had remained neutral in the Cold War competition between the UNITED STATES and the SOVIET UNION, between the North Atlantic Treaty Organization (NATO) and Warsaw Pact, though not necessarily between SOCIALISM and capitalism.

In terms of world system theory, one could state that ever since the end of WORLD WAR II, each sector of the world system, the core, the semi-periphery and the periphery, has had an ideology of its own. For the core countries, it was capitalism (or liberal democracy), for the semi-periphery it was socialism, and for the peripheral countries it was non-alignment. Though in many Third World countries national ideology was characterized by different blends of capitalism, nationalism, regionalism, socialism, and ethnic and religious self-identification, the same was true of the core and semi-periphery countries as well, as evidenced by Eurocommunism, democratic socialism, Irish nationalism, Polish Catholicism, and Slavic parochialism. Each sector, nonetheless, had its dominant ideology and non-alignment was the dominant ideology of the Third World, i.e., of the countries located at the margin of the world system.

Contrary to popular perceptions, non-alignment was an ideologically conceived proposal for alignment, and a successful one. Under a self-evasive label, this ideology served to create the largest 20th-century alliance in the world. Though formed as a non-military alliance, the non-aligned movement had more members than both the NATO and Warsaw Pact groups. Also, contrary to conventional wisdom, and even contrary to INDIA's Jawaharlal Nehru's moralist claims, non-alignment was not the middle path but a competing strategy aimed at making the Third World a partner in the global distribution of power and resources. It was hoped that non-alignment would also forge, to use EGYPT's Gamal Abdel-Nasser's words, a "community of thought" and a "friendship of struggle" which will "awaken" and "bind together" people of Asia and Africa.

The term and the concept. John Kenneth GALBRAITH has chronicled that President John KENNEDY had "mused that with so many countries opting for a neutralist policy, maybe the United States should be neutral too. I suggested . . . that the term was meaningless. Countries were, indeed, communist or non-communist."

While Europeans, at least in the beginning, called this stance neutralism, its founders preferred to call it non-alignment; a term reportedly coined by Indian Defense Minister Krishna Mennon.

"Mennon must have perceived the advantages perceived by the arcane word, which follows the noble traditions of other such words as non-violence, non-resistance, and non-attachment, words that defy accurate definition but vaguely uplift the human spirit and inspires it to build ideologies and philosophies around it," Galbraith wrote. In response to a reporter's insistent questioning, Mennon is known to have said: "Yes, in a sense non-alignment is an ugly word; it is a negative word but when you use it the way we do, it becomes positive." A number of scholars have attempted to link it to India's history, religious ethos, and national temperament. For instance, Michael Brecher has suggested: "The central message of India's philosophical tradition dating back from the Buddha has revolved around the rejection of the absolutes and extreme positions. On the contrary, it has stressed philosophical relativity, intellectual Catholicism and tolerance of opposites."

Rudolphs have summed up their observations in one sentence: "The most striking feature of Indian politics is its persistent centrism." Others see a parallel between non-alignment and the social separation of castes in India. Nehru has said: "I have not originated non-alignment; it is a policy inherent in the circumstances of India . . . and inherent in the very circumstances of the world today."

This mode of analysis, however, fails to take into account that:

1. Non-alignment was not created by India alone, at least four other nations and their leaders had played an equally important role in the formation of this coalition and movement
2. Even if we were to analyze only India's role in the process, non-alignment was more a reflection of the imperatives of the Indian state than Indian culture, though the two are not totally unrelated
3. It does not catalog consequences of non-aligned movement in terms of power politics by depoliticizing and defocusing the analytical project.

In a policy speech before the World Affairs Council in Los Angeles on April 21, 1961, President Ahmad Sukarno of the Republic of INDONESIA explained:

> We call our foreign policy independent and active. Others call us neutralist. Others call us uncommitted. Who can be neutral in this world today when the very nature of mankind is threatened? Who can be uncommitted when colonialism and imperialism still flourish and are still aggressive in the world? Who can be uncommitted when international social justice and international democracy is still just a dream and a vision?
>
> We are not neutral, and we will never be neutral so long as colonialism and imperialism continue to exist anywhere and in any manifestation anywhere in this world of ours. We will not be uncommitted so long as certain states are unwilling to accept demand for international social justice and international democracy.

A clear definition of non-alignment was enveloped in the criteria for inviting countries to the non-aligned conference adopted at the preparatory meeting held in Cairo, Egypt, in June 1961. "The country should have adopted an independent policy based on the coexistence of States with different political and social systems." Thus peaceful coexistence of "states with different social or political systems" and "supporting the movements for national independence" became two key elements of the definition of non-alignment.

The founders. The non-aligned movement was founded by five individuals: Nasser of Egypt, Jawaharlal Nehru of India, Joseph Tito of Yugoslavia, Sukarno of Indonesia, and Kwame Nkrumah of Ghana. These individuals shared common views about imperialism, colonization, decolonization, and sustainable independence of Third-World countries. They represented local and regional aspirations for sovereignty, independence, freedom, equality, peace, and progress. Their first goal was to expedite the process of decolonization and limit the reach of neo-colonialism. Their second goal was to maintain their independence and sovereignty. And their third goal was to seek democratization of the world order. At its roots, it was essentially a coalition of the dissident leaders of the semi-periphery (the socialist camp) and the main leaders of the periphery (the third world). Its original members represented the largest Muslim state (Indonesia), the largest Arab state (Egypt), the largest South Asian state (India), the most independent socialist state (Yugoslavia), and at that time the most politicized African state (Ghana).

Three of these five men were leaders of regional movements: Nasser of Pan Arabism, Kwame Nkrumah of pan-Africanism, and Tito of anti-Stalinism within the European communist community; in a way forerunner of Euro-communism. All of them were third world internationalists with varying degrees of sympathy for socialism, though each of them interpreted socialism very differently. Most of them were cognizant that receding colonialism will be replaced by emerging modes of neocolonialism and thus imperialist exploitation of third world countries by Europe will continue under a different guise. Non-alignment was to be a defense against both colonialism and neocolonialism. As an expression of this unity against colonial occupation, Israel was never allowed to become a member of the non-aligned movement.

The subsequent leaders of the non-aligned movement include many historic figures such as Fidel Castro of Cuba and Nelson Mandela of South Africa.

Primary motivations. The primary motivations of this movement were to maintain newly gained independence; to ensure territorial integrity of newly decolonized states; to inculcate peaceful co-existence among states professing different social, political and economic systems; to build an environment of mutual trust and mutual benefit; and most importantly not to get embroiled in the Cold War. In effect, it was a third world response to the Cold War shaped by history of struggles against imperialism and colonialism. Its vision was eloquently formulated by one of its leaders: "We believe that peace and freedom are indivisible, and denial of freedom anywhere must endanger freedom elsewhere and lead to conflict and war. We are particularly interested in the emancipation of colonial and dependent countries and peoples, and in equal opportunity for all races."

Although the participating African and Asian countries shared a colonial past, their forms of government were not the same. Therefore the leaders of these countries decided to come together for the common purpose of maintaining peace and mutual cooperation.

To the extent that all politics is local, each leader had calculated a set of local advantage in co-authoring of the vision underlying the Cold War.

Nehru: a tryst with destiny. While these leader held many ideas and ideals in common, they differed in their secondary motivations and aspirations. For Nehru, the non-aligned movement was, *inter alia*, an embodiment of the Indian dream. On December 4, 1947, Nehru had written: "We will not attach ourselves to any particular group. That has nothing to do with passivity or anything else. . . . We are not to going to join a war if we can help it; and we are going to join the side which is to our interest when the time comes to make the choice. There the matter ends."

Nehru felt that "the initiative comes to our people now and we shall make the history of our choice." Later, Nehru was even more candid: "We are asked to collect the smaller nations of the world around us . . . I think it is, if you like, opportunist in the long run—this policy that we have so far pursued before we became the government, and to some extent after we became the government . . ."

Nehru visualized fulfillment of six major goals through the establishment of the non-aligned movement:

1. Projection of India's interests at a global scale
2. Containment (or counter-containment) of its arch rival Pakistan
3. A major and lasting alliance with the Arab/Muslim world (which turned out to be a masterpiece of Indian diplomacy
4. Pressing a subtle advantage of neutrality over China
5. Establishing and lead a voting bloc at the UN
6. Enhancing India's bargaining position vis-à-vis both camps.

Nasser: seeking strategic partnership and strategic depth. Speaking to a large gathering at Rosetta, Egypt on September 19, 1959 Nasser said:

> We have responsibilities toward our own country and toward the whole world. We are a small country and a small people but we have a role to play in the world, in world politics and in the world community. . . . By setting an example we can prove that there are in the world spiritual powers more powerful than the methods which they used in the Medieval times when they came here to occupy our land. Conscious of our responsibility towards the world, we announced our policy of positive neutrality. This policy of course got us into trouble, for positive neutrality means that we are subject to no influence from either camp but follow a policy of complete independence and prevent any attempt into our affairs.

For Nasser, non-alignment meant five things:

1. Further consolidation of the power of nationalists in Egypt vis-à-vis the Muslim Brotherhood, the communists and the army
2. Building a global coalition against Zionist occupation of Arab lands

3. Preventing what happened to the duly elected Iranian Prime Minister Dr. Mohammad Mussadegh from happening to other leaders in the region
4. Forging greater unity between Africa and Asia reflective of Egypt's dual Arab and African identity
5. Enunciating a contemporary Egyptian ethos enabling it to play a meaningful role in world affairs.

Tito: innovation in the service of liberation. Marshal Tito once told Nasser and Nehru: "I have seven complicated problems. I have *one* state that uses *two* alphabets, the Latin and the Slav; which speaks *three* languages, Serb, Croat, Slovenian-Macedonian; has *four* religions, Islam, Orthodox, Catholic, and Judaism; *five* nationalities, Slovenes, Croats, Serbians, Montenegrans, and Macedonians; *six* republics; and we have *seven* neighbors."

For Tito non-alignment was a resource for:

1. Maintaining Yugoslavia's unique identity within and without the socialist bloc
2. Legitimation and consolidation of his own power in Yugoslavia
3. Reducing Soviet control and domination over Yugoslavia without (direct) reliance on the West
4. Experimenting with new, non-communist and non-capitalist modes of development
5. Forging close links of mutual understanding and support between East European dissidents and third world nationalists.

Sukarno: wider aims of revolution. "To be released in all its strength and glory" Sukarno told his audience in the United States, "a nation also needs a vision, an ideal, a philosophy. For us in Indonesia, that philosophy is summed up in what we call our Pantja Sila, and, if I may say so, Pantja Sila holds for us an importance comparable to that in which your Declaration of Independence was held by the founding fathers of the United States. However, Pantja Sila was defined and accepted by our nation before we declared our independence and during the years of revolutionary struggle, when sometimes the outlook seemed grim and black, that clear definition of our national aims supported us and gave us strength." Pantja Sila, the Five Pillars, consists of: belief in God, nationalism, internationalism, democracy, and social justice.

For Sukarno, non-alignment had several advantages:

1. Strengthening Indonesian position vis-à-vis the Dutch
2. Instituting a modernist approach to nation-building and state formation
3. Projecting and applying at least three of the five principles, internationalism, democracy, and social justice, at the international level.

Nkrumah: a continental approach. Nkrumah, who in his vision and aspiration was as much a leader of Africa as of Ghana, wholeheartedly believed "The greatest contribution that Africa can make to the peace of the world is to avoid all the dangers inherent in disunity, by creating a political union which will also by its success, stand as an example to a divided world. A Union of African states will project more effectively the African personality. It will command respect from a world that has regard only for size and influence."

For him "continent" was the primary unit of thought and organization. He believed that "Under a major political union of Africa there could emerge a United Africa, great and powerful, in which the territorial boundaries which are the relics of colonialism will become obsolete and superfluous, working for the complete and total mobilization of the economic planning organization under a unified political direction. The forces that unite us are far greater than the difficulties that divide us at present, and our goal must be the establishment of Africa's dignity, progress and prosperity."

For Nkrumah, non-alignment had several local advantages, which included:

1. Consolidation of his power vis-à-vis the feudals and feudalist parties
2. Expansion, legitimation, and consolidation of pan-Africanism
3. A means of limiting the encroachment of neocolonialism
4. Generating goodwill and collaboration not only among nations but also among various regions of the world.

Brief history. Though the movement traces its origin to the Bandung (Indonesia) Conference of 1955, which was co-sponsored by Pakistan, India, Sri Lanka, Burma, and Indonesia, perhaps, the first foundational stone was laid by the leaders of Peoples Republic of China, who had articulated five principles of peaceful co-existence, which were later incorporated into Sino-Indian pact of 1954 over Tibet. These five principles (popularly known as Panch Sheel) are: mutual respect for each other's territorial integrity; non-aggression; non-interference in each other's affairs; equality and mutual benefit; and peaceful co-existence. Though the movement started off with only 25 countries, its present membership includes 144 countries, which means many UN members.

The milestones in the evolution of the non-aligned movement include the following: Sino-Indian Treaty of

1954, Bandung (Indonesia) Conference, 1955, First Summit at Belgrade 1961, the Second Summit at Cairo 1964, Third Summit at Lusaka, 1970, the Fourth Summit at Algiers, 1973; the Fifth Summit at Colombo, 1976; the Sixth Summit at Havana, 1979; the Seventh Summit at New Delhi, 1983; Eighth Summit at Harare, 1986; Ninth Summit at Belgrade, 1989; Tenth Summit at Jakarta, 1992; Eleventh Summit at Cartagena de Indias, 1995; Twelfth Summit at Durban, 1998; Thirteenth Summit at Kuala Lumpur, 2003.

Its increasing importance can be gauged by the increasingly larger number of countries, including European and North Americans, who attend its summits as observers and guests. For example, Brazil, China, Croatia, Kazakhstan, Kyrgyzstan, Mexico, Ukraine, and Uruguay attended its 13th Summit in 2003 Summit as observers. Moreover, the following countries attended this summit as guests: Australia, Bosnia-Herzegovina, Canada, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Netherlands, New Zealand, Poland, Republic of Korea, Romania, Russian Federation, Slovak Republic, Slovenia, Switzerland, United Kingdom of Great Britain, and the United States.

Objectives. The objectives of the Non Aligned Movement have evolved over the last half-century, but its original goals included: granting freedom to people under colonial and alien domination; establishment of a just international economic order; elimination of the causes and horrors of war and, especially elimination of nuclear weapons; promotion of human rights; condemnation of all forms of racial discrimination; protection of the environment; abolition of imperialism, colonialism and neo-colonialism; peaceful co-existence and amiable settlement of international disputes; and strengthening the role and effectiveness of the UN.

Membership of the non-aligned movement was based on a five point criteria:

1. Independent policy based on non-alignment and co-existence of states with different social and political systems
2. Consistent support for national independence movements
3. Not a member of a multilateral military alliance concluded in the context of great power conflicts
4. If a country has a bilateral military agreement with a great power, or is a member of a regional defense pact, it should not be concluded in the context of great power conflicts
5. If it has conceded military bases to a foreign power, the concession should not have been in the context of great power conflicts.

Role in world politics during the Cold War. The overall role of the non-alignment movement during the Cold War can be classified into ten categories:

1. Prevent reemergence of colonialism and intensification of neocolonialism
2. Balance the world order
3. Help regulate competition between East and West
4. Ease North-South tensions
5. Promote nuclear disarmament
6. Create an effective system for overall security
7. Institutionalize decision-making and consensus-building mechanisms among the non-aligned nations
8. Strengthen international law and international institutions such as the UN
9. Prevent war, build peace, and conduct itself as “the largest peace movement in history”
10. Seek to lessen the gap of power and wealth among “have” and “have-not” nations.

Nuclear disarmament was one of the main planks of the non-alignment movement during the Cold War period, more so during the early phase than the later. In the later phase, several non-aligned countries including India and Pakistan had, contrary to their earlier assertions and public pronouncements, joined the nuclear race and became nuclear powers.

In the diplomatic field, there was a far greater convergence of interest between the second world (socialist) and third world countries than between the first and third world countries. In terms of its voting patterns during the Cold War, the third world was closer to the socialist camp than the capitalist camp.

Role in world politics during the post-Cold War period. Now that the Cold War has ended, is the non-aligned movement still relevant and still needed? The answer given by former UN Secretary General Boutros Bourtros-Ghali is an emphatic yes. Speaking at the 35th anniversary of the non-aligned movement, the former secretary general pointed out that despite the fold up of colonialism and Cold War, the “underlying philosophy” of non-alignment remains relevant and of immense enduring value for all nations. Its continued relevance is premised on the following principles: “rejection of power and military might as the basis of international order; assertion of independence and sovereign equality as the organizing principles of international relations; recognition of the universal need for development, and the link between disarmament and development; commitment to multilateral decision-making on global issues through the Unites Nations; and belief in solidarity that transcends—yet draws strength—from diversity."

Its original message for self-determination, freedom, independence, and sovereignty has been complemented with calls for North-South and South-South cooperation, on the one hand, and for democracy among the nations on the other. Today the scope of the non-aligned movement has been expanded to include political as well as economic cooperation with focus on development, industrialization, population control, debt relief, education, health care, and poverty alleviation. Its action agenda for the 21st century includes development, peacemaking, rule of international law, creation of an international culture of democracy among nations, ecology, resource preservation, and knowledge and technology transfer.

"The sovereign equality of nations has always implied a common stake in, and responsibility for, the survival and betterment of humanity." Close cooperation among the members of the non-aligned movement and similar cooperation between members of the non-aligned movement and countries of Eastern and Western Europe is being necessitated by the emergence of a unipolar world order. Pressing need for both balancing and stabilizing the unipolar world order necessitates such cooperation. In recent years, ecology, education, and human development have been added to this list. Its new leaders are calling for a renaissance of the non-aligned movement.

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nonprofit organizations

NONPROFIT ORGANIZATIONS play an integral role in a capitalist economy. No longer is the establishment of a nonprofit organization merely an exercise in obtaining tax-exempt status for wealth protection, but rather, it is about acquiring social benefits of every variety, including the advancement of ideas, the promotion and safeguarding of cultures and religions, and the protection of valuable resources.

Within the profit sector, firms are motivated to be streamlined and efficient so that profits can be distributed to their owners/investors. The nonprofit, however, has other motives, and that is to exist for charitable or educational purposes, and to devote its funds and resources to the maximization of ends that its members and donors desire to attain, on a no-profit, no-loss basis. A nonprofit organization gets tax-exempt status with the Internal Revenue Service (IRS) because its trustees or shareholders do not benefit financially from any profits.

Nonprofit, of course, is not equated with losses, but instead is based on a breakeven concept so that those who run the organization can concentrate on carrying out the organization's stated goals without having to supply financial gain to those who fund the organization.

The separation of "for-profit" and "nonprofit" sectors is an admirable notion, for it has to do with people who are out to earn a return on investment, and those who want to invest in doing charitable works and producing desired outcomes. After all, certain goods and services cannot be profitable and therefore need the voluntary, financial support of interested individuals, as well as tax breaks from the IRS.

Society reaps substantial, non-monetary benefits from the operation of nonprofits, including what we derive from scholarly think tanks, educational institutions, health organizations, family and religious organizations, cultural-ethnic societies, historical preservation societies, and those organizations that assist people with disabilities or place homeless pets into good homes. These non-monetary gains are essential for the "good life" enjoyed by those living under a free-trade, capitalist system. Without the advantages derived therein, the individuals who benefit from charitable nonprofits would have less freedom because of government subsidies and welfare arrangements.

The nonprofit sector consists of voluntary coalitions and/or partnerships of individuals that have decided to take up a worthy cause, and hence, this replaces what otherwise could be public sector advancement into that particular area. After all, certain goods and services are necessary within a capitalist society, and if the production of these goods/services is not taken up voluntarily by individuals, the government will step in and tax the private sector in order to fund these goods/services for the public sector. In that case, political lobbying, partisan interests, career focus, and other unpleasant exploits are much more likely to have a negative influence on the goals and operations of an organization.

In addition, interested private parties typically exude a great passion for the cause and voluntarily invest their time, effort, or money. The satisfaction of deeds well done or the achievement of objectives is unquestionably a motivating factor for humans that strive to meet philanthropic ideals. An aspect of the social benefits received by way of a nonprofit organization is that no one individual is forced to pay for an outcome or benefit that he does not approve of. People who do not approve of a nonprofit's activities need not interact with them.

However, the characteristics of nonprofit economy are such that government both encourages and discourages nonprofits through subsidies and restrictions, while both proclaiming their virtues and conveying skepticism. In a truly capitalist economy, the government would have no bearing on the formation, mission, or social outcome of any organization, whether profit or nonprofit. However, in a mixed economy such as the UNITED STATES, opportunistic and political behavior still manage to play a large role within the nonprofit sector of the economy.

Simply because nonprofit organizations reside in a "hidden" sector of our economy, where scant attention is sometimes paid, doesn't mean that there is little interest in this part of the economy. Indeed, all of our lives are touched in some way by an array of nonprofit organizations working toward serving public interests in voluntary, non-coercive ways. In view of that, the nonprofit form of enterprise is essential to both beneficiary individuals and society as a whole.

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North, Douglass (1920–)

WINNER OF THE 1993 Nobel Prize in Economics (jointly with Robert FOGEL), Douglass North was cited for having "renewed" research in economic history by rigorously "applying economic theory and quantitative methods in order to explain economic and institutional change." North helped usher in the cliometric revolution in economic history and later played a key role in redirecting economic historians away from excessive dependence on theories emphasizing optimization, instead focusing attention on institutions and their role in economic evolution.

As student at the University of California, Berkeley, North triple-majored in political science, philosophy, and economics. Upon graduation, he entered the U.S. Merchant Marines, became a skilled navigator, and used his considerable free time to read widely. Following World War II, he enrolled in Berkeley's graduate economics program, completing a dissertation in 1952 that examined the history of the life insurance industry.

After joining the faculty of the University of Washington in Seattle, North published a series of well-regarded articles on American economic history. In 1960, he was named coeditor of the *Journal of Economic History*, where, despite objections by many more traditional economic historians, he used his position to open the journal to the new cliometric work of young scholars, such as Robert Fogel. Cliometrics takes its name by adding the suffix "metrics" (to measure) to "Clio" (the Greek muse of history). The essence of cliometrics is to unite economic theory with measurement to explain history.

North's first book, *The Economic Growth of the United States, 1790–1860* (1961), is regarded as a landmark in the transformation of economic history. Backed by a host of quantitative evidence, it argued that the three regions of the American economy were initially separated by high transportation costs. As steamboats, ocean-shipping, and canals linked these regions in the decades before the AMERICAN CIVIL WAR, each progressively specialized in its own comparative advantage. The South exported sugar, rice, tobacco, and increasingly cotton; the North became a financial, commercial and manufacturing center; and the West dedicated its resources to food and animal production. Trade allowed them to complement each other, spurring economic growth. The book's central contribution showed how economic theory and measurement could explain the broader contours of history. During this period, North became a veritable apostle for the new cliometric approach, as exemplified by his brief textbook, *Growth and Welfare in the American Past* (1966), which challenged many conventional views on important topics in American economic history, using basic economic theory and quantitative evidence.

In the mid-1960s, North turned his attention to European economic history, and became convinced that standard economic theory was incapable of explaining longer-term economic change. His subsequent research sought to go beyond economic growth's proximate causes (such as technological change and investment) to its ultimate causes. This task required an understanding of institutions, property rights, and governance.

The first major product of this new approach was *Institutional Change and American Economic Growth*

(1971), written with Lance Davis. It developed a model in which individuals and organized groups modified institutions (such as laws, regulations, and property rights) when they believed that changing existing institutional rules would generate benefits greater than the costs of innovation. North and Davis used their model to examine institutional changes in land policies, finance, transportation, manufacturing, service industries, and labor markets.

Next, North joined Robert Paul Thomas in writing *The Rise of the Western World* (1973), which, in a mere 158 pages, aimed to explain the fundamental factors of Western Europe's economic development between 900 and 1800. It argued that changes in population and technology altered relative prices and induced new institutional arrangements, especially the decline of feudalism and the rise of the market economy.

North was not completely satisfied with these books' central ideas, however. In *Structure and Change in Economic History* (1981) he discarded the assumption of efficient institutions and began explaining why inefficient rules would tend to exist and persist. North's overarching model was built on new theories of property rights, the state, and ideology. This exceptionally ambitious book was recognized as a treasury of bold generalizations and provocative insights. However, critics warned that North had overstated, oversimplified, and disregarded conflicting evidence, and questioned the usefulness of such grand theorizing. Similar reactions greeted *Institutions, Institutional Change, and Economic Performance* (1990). North had clearly moved beyond his cliometric roots—there is not a single table in either book.

North continued teaching at the University of Washington until 1983, when he moved to Washington University in St. Louis. There he established the Center in Political Economy, and began advising governments, including Russia, the Czech Republic, Argentina and Peru, on how to create institutions beneficial to economic growth.

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Norway

THE KINGDOM OF NORWAY is a constitutional monarchy with a population of approximately 4.5 million people (2002). It covers approximately 125,181 square miles in northern Europe and occupies the western part of the Scandinavian Peninsula. Norway shares a border with SWEDEN in the east, FINLAND and RUSSIA in the northeast. The capital, Oslo, is the largest city in the country. Norway also has territories in the Arctic Ocean, south Atlantic, and in Antarctica.

During WORLD WAR II, the Norwegian merchant fleet provided aid to the Allies during the war. Even though half of the Norwegian merchant fleet was sunk during the war, Norway quickly recovered its commercial position. Norway's postwar economic policy included a mixture of SOCIALISM and measures such as controls over prices, interest, and dividends.

Approximately 75 percent of Norway's land is nonproductive. Less than 4 percent is cultivated and the country has to import over 50 percent of its food. There are pasture lands in the mountains that are used for cattle and sheep; to the north, the pastures are used for raising domesticated caribou, reindeer. One-fourth of the land is forested, and as such Norway's timber is the chief natural resource and one of the main industries. Tourists are attracted by the fantastic fjords and the midnight sun. Fishing is very important and Norway exports cod, herring, and mackerel as fresh, canned, or salted product to the entire world.

Petroleum was first discovered in Norway in the Ekofisk field in 1969 and is now vital to the nation's economy, becoming, along with natural-gas production, the country's chief industry. While this industry brings increased employment, it also ties Norway to the fluctuating world petroleum market that can cause increased inflation. Norway has other mineral resources that are heavily mined: pyrites, copper, titanium, iron ore, coal, zinc, and lead. Norway also produces nickel, aluminum, ferro alloys and semi-finished steel. Food manufacturing, pulp and paper, electrochemical, electrometallurgical, and shipbuilding industries are also important to the economy.

Norway trades mainly with the UNITED KINGDOM, GERMANY, Sweden, the NETHERLANDS, DENMARK, and the UNITED STATES. In 1972 and 1994, Norwegian voters rejected membership in the EUROPEAN UNION.

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O

occupation

WHEN WE ASK SOMEONE "What do you do?" we expect to hear about that person's job, or perhaps that she is unemployed. We might add "for a living," and that in itself is telling as well. It has become second nature to us. Working for a salary or professional fees, usually bound by a contract (i.e., having an occupation), has been for many decades the main way to become an effective member of modern societies for a huge majority of citizens. Most people pay for their food, their housing and everything else with the money they get in exchange for the tasks they do for others, usually employers. The very origin of the word "salary" shows the historical depth of working life: Roman soldiers got their pay in salt, hence salarium.

We should remind ourselves, however, that it has not always been like that. Hunter-gatherers or feudal peasants either consumed their own products or the goods they bartered for them. They worked for their lords some days of the week, but got only protection (often from their own lords' punishment) as a payment. Only medieval artisans, organized into guilds, can be counted as forerunners of the modern notion of occupation. Among other things, guilds set up a credential system, so that a rigid hierarchy of apprentices, journeymen, and masters was established, and guildsmen successfully excluded non-affiliated outsiders. Only when one of his products was voted a masterpiece by the masters of the guild was the journeyman admitted. There were merchant and craft guilds, such as goldsmiths, cobblers, stone masons (whose secret association gave birth to the freemasons, who still have the squares and compasses used in stone buildings as their symbols), or carpenters.

But in the first stages of industrial society, paid work was associated with poverty and poor health, it was a demeaning activity (except for the very upper crust of professionals), and it was not usually meant to be a steady source of income. The putting-out system, for instance, very common in the textile business, meant that merchants arranged with workers for production to be carried out in their own homes, but no commitment was in principle made to maintain that arrangement from year to year, or even order to order. Occupations, considered as stable, legally bound arrangements with productive concerns, often related to educational degrees and/or vocational training, and around which foreseeable and acceptable life courses could be organized, are something of an innovation. Just consider that, only in 1938, the Fair Labor Standards Act managed to ban oppressive child labor, reduced the maximum workweek to 44 hours, and set the minimum hourly wage at 25 cents. And that regulation covered only a lucky fifth of the American working population.

In fact, it can be said that occupations with some degree of legal protection are part and parcel of a wider social compact, championed by progressive politicians, manufacturers and trade UNIONS in the first decades of the 20th century. For instance, Henry FORD famously changed the rules of an industry bent on paying as little as possible to, and getting as much working time (both in weekdays and in daily hours) as possible from, its labor force. He stated that "the people who consume the bulk of goods are the people who make them. That is a fact we must never forget—that is the secret of our prosperity." This placed the regulation of occupations, in terms of leisure time, stability and benefits, at the heart of management concerns. Planned production, heavy investment in machinery and assembly lines and around-the-clock shifts required a loyal and dependable workforce, "scientifically organized" by management pioneers such as Frederick Winslow Taylor into carefully defined occupational categories.

Occupation as identity. Today, we all know that a person's "place" (status, prestige, welfare, even leisure options or lifestyle) in society is, to a great extent, a function of her job and its conditions. We are all aware of what it means to have a blue- or a white-collar job, and even though all workers may take pride in their identity, life chances are unevenly distributed. Systematic sociological classifications such as the Goldthorpe Classes are easy to identify with our own map of social structure. From the upper-service class (from administrators to higher-grade professionals) to the unskilled workers, the routine non-manual or the petty bourgeoisie (composed of small proprietors, among others), our job has a lot to do with what our life prospects are. Health, political participation, or newspaper readership are a few examples from the host of traits associated with people's location in the occupational structure.

It is true that to a (classical) Marxist the great cleavage in capitalistic societies runs along the owners of the means of production (the employers or large shareholders) and those who only own themselves (i.e., their ability to work for the former). That is the source of class conflict, and the engine of history in Marxist terms. But it seems obvious that there is a great deal of difference, at least in life conditions as experienced day-to-day, between corporate managers, neurologists, web designers, longshoremen, and garbage collectors. Inequality studies have accordingly placed the distribution of occupations at the core of their view of society. Now, try to picture how occupations (and the social positions attached) are distributed in American society. Most survey respondents would answer that the resulting image is a pyramid, with a tiny tip of super-rich and a wide base of low-wage manual workers; or more commonly they suggest something like a diamond, with few people on top and at the bottom, and a wide middle class of reasonably well-to-do workers.

Social structure researchers have argued that American society could be instead depicted as a double diamond, with a small one comprising a privileged class of around 20 percent of Americans, where we find the superclass (1–2 percent of large shareholders, investors, and proprietors) and credentialed professionals, all highly educated and highly paid, such as engineers, executives in large firms, etc. This diamond of the privileged is set on top of another diamond four times as big. The area in which they contact would be the comfort class, where we find skilled blue-collar workers (say, a successful carpenter or plumber) or many types of professionals (such as nurses or teachers). But this comfort class comprises less than 10 percent of the population, 50 percent of whom would be really in the thick part of the lower diamond, or the contingent class. The lower tip of the big diamond corresponds to the excluded class of people who work only every now and then, perhaps no more than 10 percent of Americans.

One of the main points here is that your place in the occupational structure is related not only or directly to your educational success, but to several other types of capitals. For instance, whom you know, and the people whom these people in turn know (i.e., your social CAPITAL), are crucial to getting the information and influence required to improve your job prospects. Another aspect of inequality linked to occupational status is that of the uncertainty surrounding the contingent class. Workers are always at risk; even when they have relatively well-paying jobs, illness or lay-offs may very quickly wreck their lives, as they live paycheck to paycheck.

Occupation, education, and skill. Occupations are closely linked to education, to transferable skills or human capital. The more specialized your skills, and the harder to acquire them, the better you can bargain for your rewards in the labor market. The opposite also holds, and it has been said that the gap between those able to command good conditions and high compensation and low-wage workers increased markedly in the last quarter of the 20th century, by at least 30 percent in terms of income.

Many researchers attribute this growth in inequality to a combination of factors, among which the demand for ever more skilled labor stands out, together with the shift from industry into services (which also hurts non-college educated workers) and institutional factors, such as the decline in unionization rates.

Technological change and the universal improvement in education have certainly been the factors behind the growth in total human capital present in the economy. A good way to realize the size of this transformation is to compare the fraction of total hours worked in the private business sector that were carried out by people with different levels of education in different periods. Let's start with 1948. Men with less than 4 years of schooling pitched in 8.3 percent of all worked hours, whereas those with 5 to 8 years of education worked 35.6 percent. The share of the best-educated workers, with 16 or more years of schooling, was 6.0 percent. However, by 1999, men with less than 4 years of schooling worked less than 1 percent of all hours that year, and the share of those with 5 to 8 years of schooling had decreased to 3.4 percent. But the figures for the best educated, college and postgraduate with more than 16 years of formal education, were now over 28 percent.

This sea-change summarizes the extraordinary historical transformation in what occupations are like, and therefore what American workers' life is about. Capitalism is, most of all, a dynamic system, in which firms are prodded by the carrot of profit and the stick of bankruptcy towards ever-changing production and consumption structures. The Austrian economist Joseph SCHUMPETER famously called this a process of "creative destruction." Occupations, the forms in which human work participates in this system, have accordingly a history of their own. There are jobs that do not exist anymore in practice (just think of horseshoe-hammering blacksmiths), and other occupations have declined enormously in the number of people involved (all kinds of agricultural workers). Still others have sprouted along the route of industrial and human service innovation. Information-technology activities, for instance, have witnessed a tremendous growth in recent decades.

Along those years, it was often the case that some jobs could not be given a category or a title by the employers. We could mention, as arcane as occupations go, ISO specialists (who aid in checking the compliance of firms and products to the Industrial Standard Organization norms such as the ISO 9002), or dialysis reuse technicians (that, as all other health-related occupations, have experienced a boost linked to an aging population). But in fact, many new or emerging occupations are little less esoteric or glamorous (think of aerobic coaches, or schoolbus aides).

Quality of life. It is crystal clear that the quality of a person's life is closely related to her occupation. If a society is to be considered fair, it should then be possible within it to move toward better jobs in one lifetime (career mobility) or for the next generation to move up the occupation ladder (intergenerational mobility), whether its shape is a double or single diamond. Taken to the extreme, this is the familiar "rags to riches" story, but a milder version of "making it in the land of opportunity" is widely believed to be part of the American outlook on society. But, is it true? Do low-wage Americans have a greater chance than other citizens of advanced societies to "make it," or see their children "make it"? Although no easy answers are available, it seems that mobility is not greater in the UNITED STATES when we compare it to other countries, and it could be getting even worse. The only outstanding difference is the degree of inequality, which can be measured for example by the result of dividing the income of the top 20 percent of the working population by that of the bottom 20 percent. With data from the late 1990s, U.S. credentialed workers earned nine times as much as those in the lowest part of the contingent class and the excluded. Compare that to GERMANY (less than five times) or to CANADA (a little over five), not to mention the egalitarian Nordic welfare states, where the best-paid workers earned only 3.5 times as much as their less-qualified fellow countrymen. Just to give a glimpse of the growth of income inequality among executive positions and low-pay ones in the last decades, it has been claimed that CHIEF EXECUTIVE OFFICERS (CEOs) now earn 419 times the pay of the average workers in their firm, up from 326 times in 1997 and 42 times in 1980.

What can we expect occupations to be in the near future? Even after the internet bust, technological change will probably continue pushing for greater returns to investment in education, and greater inequality in the same measure. But apart from these trends, changes in occupations are bound to affect our own identity; they will probably be less capable of telling us who we are. It has been noted that, as an average, a college-educated American will probably change jobs more than 12 times through a lifetime. Information technology and new forms of corporate organization, based on flexibility and short-term projects, mean that strong ties to people and firms may not develop as they did in the past. Trust, loyalty, and a sense of one's own bearings have to do with a certain continuity in place and time. The story we tell about ourselves may become difficult to weave, because of the instability that modern capitalistic practices increasingly build into our everyday life.

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Ohlin, Bertil (1899-1979)

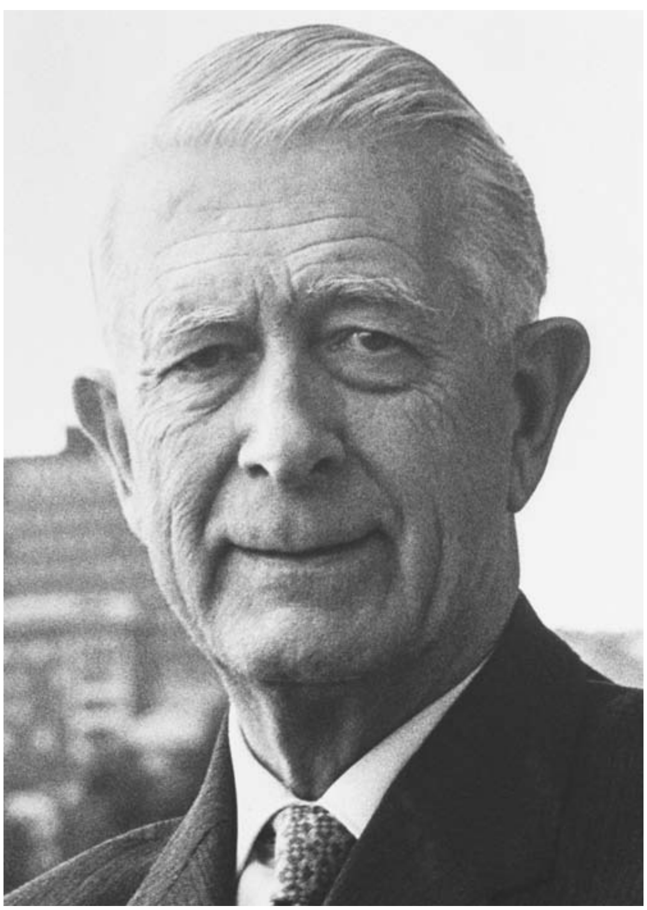
AWARDED THE 1977 Nobel Prize in Economics, Bertil Ohlin was a Swedish economist and leader of a political party. He is credited, in conjunction with Eli HECKSHER, with introducing one of the most influential economic theories of the 20th century.

Ohlin's education started at the University of Lund in SWEDEN, where he studied mathematics, statistics, and economics. He then went on to study under Hecksher at the Stockholm School of Business. Ohlin then moved to the Stockholm University, where he would learn under some of the most prominent Swedish economists of his time, Gustav Cassel, Knut Wicksell, David Davidson and others. In 1924, he presented his thesis on international trade theory. This lead to his seminal work titled "Interregional and International Trade" in 1933.

Ohlin acknowledges the immense influence Hecksher's writings had on his trade theory and particularly Hecksher's paper in 1919 titled "The Influence of Foreign Trade on the Distribution of Income."

The trade theory came to be known as the Hecksher-Ohlin Factor Endowment Theory. The main question posed by this theory was how nations trade with each other. The earlier trade theories had focused on the Absolute Advantage (Adam SMITH) and Comparative Advantage (David RICARDO). There was no discussion of how the countries got the advantage; hence, the factor endowment theory proposed that the trade pattern should stem from the availability of resources within a country. Factor abundance and factor intensity formed the building blocks of this new theory proposed by Hecksher and Ohlin.

The trade pattern between countries would take place under the following principle: A country will export a commodity that uses its abundant factor intensively. A labor-abundant country would produce a commodity that uses labor intensively and a capital-abundant country would produce a commodity that uses capital intensively.



Swedish economist Bertil Ohlin proposed new theories on international trade and resource allocation.

For this work, Ohlin was awarded the Nobel Prize jointly with James MEADE. In recognizing his work, the Nobel committee praised Ohlin's work on patterns of international trade, resource allocation, intra-national trade, and the international division of labor.

After submitting his thesis, Ohlin spent two years traveling to England and the United States. He studied both at Cambridge and then at Harvard universities, and Ohlin credited these experiences as immensely useful and influential in his future writings. His academic career ranged from being selected as a chair of the economics department at the University of Copenhagen, to the chair of the Stockholm School of Business, to lecturer at various universities in Europe and the United States.

Ohlin was also very active in Sweden's political arena. He was elected leader of the Liberal Party in Sweden, holding the position from 1944–67 during which time the liberal party was the government's main opposition.

During his entire career, Ohlin had published over 1,200 articles both in academic journals and several newspapers. His writings resulted in major academic works written in the area of regional growth, international trade, and factor prices.

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oil

ALTHOUGH OIL WAS of little importance as a source of ENERGY before the 20th century, humans have used petroleum for thousands of years. Ancient Sumerians, Assyrians, and Babylonians used crude oil collected from seeps near the Euphrates River. Egyptians used it for medicinal purposes, while Persians used oil to soak incendiary arrows. In the late 19th century, petroleum was mainly used for illumination in kerosene lamps as whale oil became scarcer.

By the early 20th century, oil joined coal, wind, wood, and muscle power as one of the world's main sources of energy. The century saw a dramatic increase in overall world energy production and consumption, and oil was the key. Indeed, it soon replaced coal as the world's main fossil fuel. First steam ships and railroads, then automobiles and airplanes utilized oil, making it the main fuel used in transportation by about 1930. Oil would also be used extensively for heating. Furthermore, petroleum became important in the production of plastics, synthetic fibers, and many other chemical products. Oil deposits, however, are scattered unevenly around the world. This fact requires large international corporations to extract, transport, process, and deliver oil. These oil companies maintain a worldwide network of wells, pipelines, tankers, and refineries.

In addition, in the 20th and into the 21st century, oil played an important role in international relations. A country's petroleum reserves have significant economic and political consequences. Oil's importance as a global issue is intensified due to the fact that most of the world's petroleum deposits are found in a few large fields.

Most oil fields are small and insignificant, but perhaps half of the world's original oil reserves are located in fields known as supergiants, which contain more than five billion barrels. There have been fewer than 40 supergiants discovered since exploration began in the mid-19th century, and less than 5 percent of the world's known fields have produced about 95 percent of all of oil. Most of these large fields are located in the Persian Gulf region of the Middle East, making the area a flashpoint in international political and economic relations.

Early oil booms in the United States and Russia. The first significant oil boom in the world took place in Pennsylvania when hard-rock drilling began in 1859. For the first time, inexpensive oil was available for widespread use. By late 1860, there were some 75 wells producing oil in a part of the state known as the Oil Regions. There were also at least 15 refineries in the area and more in nearby Pittsburgh. The region produced 450,000 barrels in 1860. Production increased with the discovery of the first flowing well in 1861 and by 1862, output was 3 million barrels. Stories of instant wealth attracted many who sought to make their fortune. However, the early oil industry already demonstrated a tendency to be subject to great price fluctuations. Thus, while prices had reached $10 per barrel in January 1861, by the end of the same year prices had declined to a mere 10 cents per barrel.

The AMERICAN CIVIL WAR played a major role in the Pennsylvania oil industry. Traditionally, the North had imported turpentine from the South in order to produce camphene, a cheap illuminating oil. However, when the war broke out, Northerners turned to Pennsylvania oil for lighting. Furthermore, because the North no longer benefited from revenue generated by Southern cotton exports, Northerners began to export more oil in order to recoup the lost revenue. In addition, after the war, many veterans flocked to the oil regions, contributing to a great speculative boom that saw prices reach nearly $14 per barrel. Investors formed hundreds of new oil companies all along the East Coast in cities such as New York and Washington, D.C. However, there soon followed a period of depression, leading to low prices in 1866–67. Among the companies that came out of this initial oil boom was John D. ROCKEFELLER's STANDARD OIL COMPANY, which he established in 1870 and which soon came to dominate the industry.

The Pennsylvania oil boom was soon followed by one in Russia, making the country the world's leading producer by the turn of the century. In the 1860s, Russia imported most of its kerosene from the United States. Soon, however, Russia became a major oil producer itself when oil was found near Baku on the Aspheron Peninsula, an outgrowth of the Caucasus Mountains on the Caspian Sea. There had been a primitive oil industry in the early 19th century that the government controlled. The Russian government then opened up the industry to competitive private enterprise in the 1870s, leading to the expansion of drilling and the construction of refineries. Foreign interests soon played a key role, such as the Swedish Nobel family and the French Rothschilds.

For example, Ludwig Nobel developed some the first oil tankers, leading to a revolution in the oil transportation industry. In the 1880s, a railroad was completed from the oil fields and refineries to the Black Sea, which opened up world markets to Russian oil. Soon, Russian petroleum was competing with U.S. kerosene in Europe. By 1888, Russia was producing more than 20 million barrels of oil. Living and working conditions in the oil fields were poor, which led to much worker agitation, and in 1903, a work stoppage in the oil fields set off a strike wave in the country. Then, during the 1905 revolution, the flow of Russian oil diminished greatly due to further worker struggles. With little new investment in the early 20th century, the Russian oil industry soon declined. After the creation of the SOVIET UNION in 1917, the Russians tapped the oil reserves in Siberia and largely ignored Baku (now in the country of Azerbaijan), leaving polluted water and abandoned oil derricks.

The oil booms in Pennsylvania and Russia both paled in comparison with what would soon occur in Texas. Oil production on a small scale began in Texas in the 1890s. Then in 1900, drilling began on the coastal plain near Beaumont, Texas, on a hill known as Spindletop. Using rotary-drilling techniques borrowed from water-well drilling, in January 1901, a well on Spindletop known as Lucas I began flowing at 75,000 barrels per day. This gusher started the Texas oil boom and within months more than 100 companies operated more than 200 wells.

A number of major oil companies were involved in Texas oil production, which allowed them to erode much of the traditional power of Standard Oil Company.

For example, Shell (ROYAL DUTCH SHELL GROUP) sought to diversify from its Russian production and also strengthen its position against Standard. Shell was among the companies that took advantage of Texas petroleum being especially good for use as fuel oil. Soon, the oil industry was transformed, as petroleum was now used increasingly for fuel in ships and railroads rather than for illumination. The Sun Oil Company also played a significant role in Texas, not only in production but also in the storage, transportation, and marketing aspects of the industry. Sun acquired storage facilities in Texas and also built a refinery near Philadelphia to receive Texas crude oil by boat. Finally, the early Texas oil boom saw the birth of Texaco, which started in 1902 as the Texas Company. After becoming Texaco in 1906, this company (now CHEVRON TEXACO) was among the leaders in producing and selling gasoline. Soon, oil production spread to other parts of Texas and to neighboring states such as Louisiana and Oklahoma.

An even bigger oil boom in Texas began in 1930. The East Texas reservoir, known as the Black Giant, was the biggest oil deposit in the United States discovered to date. Within a year, there were more than 1,000 wells pumping out 1 million barrels per day. This vast new supply, however, led to lower prices. For example, in 1926, the price of oil in Texas was $1.85 per barrel. By May 1931, the price had fallen to 15 cents. Much of the production during the East Texas boom was controlled by small, independent producers, not by the big oil companies. The Texas Railroad Commission, which had certain control over the oil industry, sought to limit production by these many small producers in order to restore higher prices. The commission was unsuccessful at first, leading the governor to send in the National Guard and the Texas Rangers to shut down production. Prices rose again in 1932. The governor granted the Texas Railroad Commission the power to issue pro-rationing orders, thus allowing the commission to set quotas on oil production. Nevertheless, authorities had only limited success in limiting production. First, they set quotas too high and production still outstripped demand. Second, there was much production of so-called "hot oil" illegally produced above the quotas. Federal government intervention would be required to more successfully deal with the supply and demand issues in Texas during the 1930s.

Petroleum in Latin America: Oil booms in Mexico and Venezuela. In the early 20th century, there was significant exploration and production of petroleum in MEXICO. Exploration efforts found oil in the rainforests of Veracruz along the Gulf Coast and drilling began in earnest in 1906. Two foreign-owned companies dominated the early Mexican oil industry, Pan American Petroleum and Mexican Eagle. Major discoveries in the country began in 1910 with the Potero del Llano 4 well, said to be the biggest "strike" in the world at the time. With these major strikes centered near Tampcio, Mexican Eagle became one of the world's leading oil companies and Mexico became a major producer. Mexican oil supplies were especially important to the United States market. Mexico was a critical source of oil during WORLD WAR I and, by 1920, 20 percent of the U.S. market was supplied by Mexico. By 1921, Mexico had become the second-largest producer in the world.

Although many in Mexico saw oil as a way to achieve economic success, the petroleum industry encountered a number of problems. Oil companies viewed the rainforest and indigenous populations in the area as obstacles, and there would be great environmental and human costs. In addition, saltwater seeped into the Mexican oil fields, making production more difficult. Foreign competition from the United States and VENEZUELA also harmed Mexico's position as a leading producer. Eventually, the Mexican oil industry also became a battleground for the major oil companies and the country's government. The Mexican Revolution, which began in 1910, sought national ownership of mineral resources such as oil. The 1917 constitution established government ownership of the subsoil. Along with many new regulations and taxes, the stipulations of the new constitution led foreign companies to begin to withdraw investment from Mexico and the country began to decline as a major producer.

In 1937, there was a dispute between U.S. and British oil companies and the oil workers' labor unions. The conflict led to a strike and subsequent legal battles. Then, the companies refused to honor a wage increase ordered by an arbitration tribunal. In response, Mexican president Lázaro Cárdenas ordered the expropriation all foreign oil companies. Cárdenas then created a national oil company known as *Petróleos Mexicanos* (PEMEX). Cárdenas' actions led to sanctions by the United States and Great Britain. Nevertheless, the oil nationalization was a major victory for Mexican nationalists and was largely supported by all sectors of Mexican society.

Then, in the late 1970s, Mexico discovered large deposits of oil and gas on its eastern coast. By 1980, the country had estimated reserves of 200 billion barrels. These vast deposits provided a great deal of hope for the Mexican government, but would also contribute to a major economic crisis. With world oil prices up due to events in the Middle East, the Mexican government counted on oil revenue for its foreign exchange in order to further expand petroleum production and thus create jobs. To this end, the government began to import equipment and technology, relying on foreign loans. This situation led to a rise in Mexico's trade deficit, which in turn caused high inflation. When oil prices fell significantly in 1981, projected government earnings also shrank dramatically. In turn, there was a flight of dollars and a government devaluation of the Mexican peso. Mexico became mired in a RECESSION marked by high UNEMPLOYMENT. In danger of defaulting on its foreign loans, Mexico accepted IMF loans and austerity programs.

The political changes in Mexico that eventually paved the way for NATIONALIZATION led the oil companies to look elsewhere for new wells. The companies expected that world petroleum demand would grow and that there was the potential for shortages. Furthermore, the experiences of World War I showed the strategic importance of oil. That, combined with the great profits that could be made, led the companies to seek oil in countries such as Venezuela in the 1920s. Venezuela under the dictator Juan Vicente Gómez, who came to power in 1908, offered a favorable climate for foreign oil-investment, in contrast to Mexico. In the early 1900s, the country was still relatively poor, under-populated, and agricultural. Gómez saw oil as a way to both develop his country and make himself rich at the same time. To this end, Gómez ended the nationalistic policies of his predecessor Cipriano Castro and sought to promote foreign investment.

Oil exploration and production in Venezuela was difficult at first, as the country was not well mapped, there were few roads, and diseases were widespread. Nevertheless, by 1913, Royal Dutch Shell was already involved in Venezuela and would soon be joined by Standard of New Jersey. The 1922 Petroleum Law set the terms for concessions, taxes, and royalties. Then in December 1922, the Barroso well in the La Rosa Field in the Maracaibo Basin, which belonged to Shell, starting spewing 100,000 barrels per day, which marked the start of the oil boom in Venezuela. Soon, hundreds of foreign oil interests flocked to Venezuela. Gomez sold off concessions to his friends and family, who then resold them at great profit to the foreign oil companies.

The Venezuelan oil boom transformed the country's economy and society. In 1921, Venezuela produced 1.7 million barrels of oil. By 1929, the country produced 137 million barrels, making it second only to the United States. Oil accounted for 76 percent of the country's export earnings and about half of all government revenue. Venezuelan petroleum also made the foreign oil companies wealthy. Shell, Standard of New Jersey, and Gulf controlled nearly 90 percent of Venezuelan oil, so the country still remained dependent on foreign investment. The Venezuelan population also changed as many foreign workers came to work in the oil fields, especially Caribbean blacks.

Gómez died in 1935 and the Venezuelan oil industry he built soon began to change. By the late 1930s, the country was more dependent on oil than ever before, as petroleum made up 90 percent of exports. Gomez's successors sought to reform the industry. At the same time, foreign companies and governments wanted to avoid nationalization, as Venezuela was an important source of cheap oil, especially during WORLD WAR II. In March 1943, a new petroleum law called for equal sharing of profits between the Venezuelan government and the oil companies. In exchange for solidifying and extending concessions and allowing for new exploration, the Venezuelan government received the same amount of revenue as the foreign oil companies.

The production of refined oil and petrochemicals remains the world's major energy industry, despite alternative resources.

In the 1970s, the Venezuelan government nationalized the country's oil industry. In 1971, the government announced that when oil concessions began to expire in 1983, they would revert to the STATE. Furthermore, no new concessions would be granted. In response, companies lowered their investments in Venezuela, leading to decreased production. Increases in world oil prices in 1973 led to heightened demand for nationalization. Thus, in 1975, President Carlos Andrés Pérez announced that nationalization would take place on January 1, 1976. The nationalization process went relatively smoothly. The government compensated foreign oil firms with $1 billion, while creating a national oil company known as *Petróleos de Venezuela* (PDVSA). The Venezuelan government signed service contracts with foreign companies to obtain technology and personnel. They also made marketing agreements with the companies in order to sell Venezuelan oil on the world market. While PDVSA did become a major force in the world oil industry, Venezuela remained largely dependent on oil exports for its economic well-being.

Oil in the Middle East. By the 1920s, the Middle East surpassed Latin America as a major oil-producing region and became a key to world politics and economics due to its vast petroleum reserves. In the years after World War I, oil in the Middle East became an important international issue and the world's major petroleum companies sought to find the richest deposits in the region. After the war, the Ottoman Empire disintegrated and the British and the French divided the region into protectorates. Both European countries were interested in potential oil deposits in the Middle East, particularly in Iraq. The oil industry in the region came to be dominated by the Turkish Petroleum Company (TPC). BRITISH PETROLEUM (BP) controlled about half of the company, while Shell and French interests each owned roughly one-fourth of the shares. Initially, the TPC sought to keep U.S. companies out of the region. However, U.S. government pressure soon led to the participation of U.S. companies and many of the world's major oil firms signed the Red Line Agreement, in which none of the parties would seek concessions in the Middle East except through the TPC. The agreement included all of the Middle East except Iran and Kuwait.

The boom in Middle Eastern oil began in Bahrain, a group of islands off the coast of the Arabian Peninsula that was a British protectorate in the inter-war period. The British firm BP was not interested in developing BAHRAIN, however, and the oil concession there passed first to Gulf and then to Socal. Socal struck oil in 1931 and by 1933 had begun exporting oil from Bahrain.

Bahrain served as the stepping-stone to SAUDI ARABIA. King Ibn Saud was looking for potential sources of revenue and in 1933 signed an agreement with Socal. The company gained the right to drill for oil in the desert nation in exchange for an annual rent and substantial loans to the Saudi government. In 1936, Texaco joined Socal in exploring Saudi Arabia and production began in 1939. A decade later, in 1949, the Trans-Arabian Pipeline took Saudi oil across SYRIA and LEBANON to the Mediterranean Sea, where tankers could then send it to Europe. Thus, King Ibn Saud succeeded in transforming himself from a desert warrior into a major world political figure.

Oil companies also found substantial deposits in KUWAIT. Intially BP and Gulf struggled for control of oil rights in this small Middle Eastern country. Then in 1934, both companies signed a joint agreement with the ruling skeikh. By 1938, they had discovered major petroleum reserves.

Oil and World War II. Oil played a major factor in the outbreak of World War II, especially in the Pacific Theater. By the early 20th century, JAPAN had emerged as a major world military and economic power. The Great DEPRESSION, however, hit Japan very hard, heightening the island country's sense of vulnerability as it lacked most of its necessary raw materials. As the Japanese government played an increasingly larger role in politics in the 1930s, it sought to build up the country's military and industrial strength in the case of war. However, such preparations were difficult due to Japan's almost complete lack of oil reserves. By the late 1930s, Japan produced only about seven percent of its own petroleum. About 80 percent of its imports came from the United States and another ten percent came from the Dutch East Indies. Therefore, any war against the United States would be extremely harmful to Japan. This situation led the Japanese to implement new restrictive oil policies in order to reduce the role of foreign oil companies in Japan, and to prepare for any potential military conflicts. The official outbreak of war with CHINA in 1937 did lead the government to seek to improve its relationship with the foreign oil firms. The government also devised an ambitious but ultimately unrealistic plan to develop synthetic fuels.

Japanese territorial expansion in Asia meant a potential oil embargo by the United States. At the same time, the outbreak of war in Europe meant that many colonial possessions in Asia were vulnerable to Japanese attack. These conditions influenced the Japanese to attack Pearl Harbor in order to take out the Unites States, and allow Japan to expand. Leading up to the Pearl Harbor attack, U.S. President Franklin ROOSEVELT was reluctant to completely shut off oil supplies to Japan, but by August 1941, U.S. policy virtually ended oil exports as Japanese assets had been frozen. Soon the British and Dutch East Indies also cut off the flow of oil to Japan. Last-ditch attempts at negotiation failed, leading the Japanese to launch an attack on Pearl Harbor to protect its eastern flank, especially to make tanker routes from Sumatra and Borneo safer. The United States did not, however, simply allow Japanese expansion in Asia. With its greater industrial capacity, including vast oil reserves coming from domestic sources as well as Latin American allies, the United States was able to defeat Japan in 1945.

OPEC and oil shocks. In September, 1960, five of the world's leading oil producers created the ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES (OPEC). The founding members—Saudi Arabia, Venezuela, Kuwait, Iraq, and Iran—founded the cartel in order to defend the price of oil. Together, they controlled more than 80 percent of the world's total exports. Other oil-exporting countries in Asia, Africa, and Latin America joined OPEC later. Yet at first, international oil companies and the Western industrial countries paid little attention to OPEC. Several factors limited the effectiveness of OPEC during the 1960s. In most producing countries, the major oil reserves still belonged to the international oil companies. Furthermore, there was a significant petroleum surplus on the world market. Also, members often did not wish to challenge the United States and others industrial powers.

For example, King Faisal in Saudi Arabia took a relatively pro-West stance and the democratic government of Venezuela was friendly to the John F. KENNEDY Administration. Political rivalries such as those between Iraq and Kuwait also limited the effectiveness of OPEC. To make matters worse, the cartel's two founding fathers—Abdullah Tariki of Saudi Arabia and Juan Pablo Pérez Alfonso in Venezuela—withdrew from politics. Finally, throughout the 1960s, new oil reserves around the world added to the existing surplus. For example, significant reserves were found in ALGERIA and LIBYA. Thus, there was now more new petroleum seeking markets that there was demand. After correcting for inflation, oil prices dropped by some 40 percent in the decade.

This situation changed in the 1970s. Unhappy with low oil prices that had contributed to much of the world's postwar economic boom, OPEC members decided to cooperate in order to raise prices. In protest of Western favoritism toward Israel, after the fourth Arab-Israeli conflict known as the Yom Kippur War in October 1973, Arab OPEC members decided to halt oil shipments to the West. Within a year, world oil prices had quadrupled, leading to an "oil shock" in many developed countries. Countries such as Japan, which imported 99 percent of its oil, and those in Western Europe, which imported 96 percent of their oil, were especially hard hit. Even the United States, the country closest to being oil self-sufficient, felt the effects. The economic consequences were the worst since the 1930s, marked by high inflation, lower living standards, and high unemployment, which hit 13 percent in Western Europe. Thus, the oil shock contributed to the end of the post–World War II economic boom. There was some recovery by 1976. However, the fundamentalist Islamic Revolution in Iran led to higher prices again in 1979. By 1982, however, oil prices began to decline due to efforts of the industrialized nations to reduce their dependence on OPEC oil. Furthermore, unity among the OPEC countries faltered, especially with the outbreak of the Iran-Iraq War in 1980.

The actions of OPEC and higher oil prices in the 1970s had a number of important consequences. Governments in the OPEC countries now took in much larger revenues, which they could spend developing their own countries or invest abroad. They invested some of the oil dollars in the industrialized world, but also provided aid to developing countries through mechanisms such as the OPEC Fund for International Development. In part, this aid was necessary due to the fact that non-oil producing countries in the developing world were hit especially hard by rising oil prices.

The initial success of OPEC policies inspired hope among many in the Third World. Nationalists in developing nations applauded the transfer of wealth from the rich industrial countries to those of the developing world. They believed that this might mark the shift of world economic inequalities. In the end, however, OPEC had to adjust its prices due to declining demand. Nevertheless, the importance of the Middle East on the world political stage had increased dramatically. The region could no longer be ignored by the world powers. This increased importance can be seen in the 1991 Persian Gulf War and the invasion of Iraq by the United States and Great Britain in 2003.

There were also important changes in the developed countries. Seeking to reduce their dependence on OPEC oil, Western nations sought to locate and exploit more of their own oil deposits. Notable were significant reserves in Alaska and the North Sea. Developed countries also increasingly turned to non-OPEC oil exporters, such as Mexico and the Soviet Union. Conservation efforts increased in many countries, as many were forced to rethink the consumerism illustrated by high energy use. In addition, many industrialized countries explored and developed alternative sources of energy, such as nuclear power. Nevertheless, as prices steadily decreased after the oil shock, the world still depended a great deal on oil as the main source of energy.

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Okun's Law

TO THOSE WHO WORRIED about the micro-distortions caused by macro-stabilization policies, James TOBIN riposted, "It takes a heap of Harberger Triangles to fill an Okun Gap."

The gap between potential and actual GROSS DOMESTIC PRODUCT (GDP) is known as the Okun Gap; Harberger Triangles are the deadweight loss wedges caused by taxes, familiar to most economics students. Okun's Law translates the output gap to unemployment statistics ("Potential GNP: Its Measurement and Significance").

Clearly, there is a political aim as the original article admitted, "If programs to lower unemployment from 5.5 to 4 percent of the labor are viewed as attempts to raise the economy's 'grade' from 94.5 to 96, the case for them may not seem compelling. Focus on the 'gap' helps to remind policymakers of the large reward associated with such an improvement."

Okun's Law was intended as a mere rule of thumb. For every percentage point that unemployment was from its long-run value, gross domestic product (GDP) was about three percentage points away from its potential. So if the long-run unemployment rate were 4 percent, an unemployment rate of 5 percent meant that GDP was 3 percentage points away from potential. The exact coefficient has been mooted ever since (usually to be revised downward). It is sometimes reformed into a dynamic relation, linking a change in unemployment to GDP growth rather than level.

Such a large relationship is not due only to employment. If we consider an aggregate production function Y=f(K,L), then it would surely be surprising that an increase of one percent in L would increase Y by such a great deal more. The additional leverage comes from the fact that, as labor utilization approaches capacity, firms work their inputs harder: additional hours per worker, greater labor force participation, and greater productivity per worker. Okun's original paper estimated that just over half of the increase came from increased person-hours, with increased labor productivity making up the remainder.

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oligopoly

DESCRIBING A MARKET or industry, an oligopoly exists when there are relatively few firms and many buyers. In such a market environment, each buyer takes the market conditions as given but each firm is aware that its actions will have an effect on its rival's action. Most goods and services are provided in oligopoly markets rather than perfectly competitive or monopoly markets, and economists have been concerned with oligopoly theory ever since Augustine Cournot's pioneering work, published in 1838. Even today, the oligopoly question, how prices are determined when there are only a few sellers in the market, is a central area of investigation of the field of INDUSTRIAL ORGANIZATION.

Cournot provided the first formal theory of oligopoly. Realizing that strategic interaction is important if there are only a few sellers in a market, he proposed a solution concept and examined the stability of the solution, studying both the case of substitute goods and the case of complementary goods. Cournot furthermore discussed the possibility of collusion among the sellers and how his oligopoly solution related to the perfectly competitive equilibrium. An essential feature of Cournot's oligopoly model is that the sellers choose production quantities simultaneously and a "neutral auctioneer" sets the market-clearing price for the aggregate quantity.

Cournot's solution to the oligopoly problem shows that there is an inverse relationship between the number of sellers in a market and the deviation of the price from marginal cost (i.e., deviation from the perfectly competitive solution). Cournot's path-breaking work went unnoticed for about 50 years until J. Bertrand reviewed it in 1883. Bertrand criticized Cournot's work by contending that it is more appealing to let the sellers set the prices themselves, without the help of an auctioneer. His proposed modification, sellers setting prices rather than deciding on quantities, resulted in a radically different solution to the oligopoly problem.

According to Bertrand, price will be equal to marginal cost as long as there are two or more firms; the oligopoly solution will be the perfectly competitive outcome no matter how many sellers there are in the market. This result is sometimes referred to as the "Bertrand Paradox" in the oligopoly literature.

F.Y. Edgeworth (1897) solved the Bertrand paradox by introducing capacity constraints. Given that none of the firms in an oligopoly are capable of producing the quantity demanded at a price equal to marginal cost, high price firms face a non-zero residual demand and prices are not equal to marginal cost in equilibrium. Edgeworth went on to show that in the case of capacity constraints, or more generally in the presence of decreasing returns to scale, no solution exists to the oligopoly problem.

Heinrich von Stackelberg (1934) pioneered the role of commitment in oligopoly theory and showed that, while in general oligopoly equilibrium may exist, there are a number of possible market scenarios under which equilibrium fails to emerge. Von Stackelberg also was the first to explicitly introduce asymmetries between oligopoly firms by distinguishing between so-called leaders and followers. One can argue that after Cournot and Bertrand, besides the contributions of Edgeworth and von Stackelberg, the theory of oligopoly largely lay dormant until GAME THEORY imposed itself as a tool for the analysis of strategic interaction, and therefore oligopoly theory.

During the 1960s and thereafter, beginning with M. Shubik and R. Levitan, game theorists and economists rediscovered the works of Cournot and Bertrand and realized that the analysis of oligopoly behavior was a subject well suited for game theoretic analysis.

Today, the various theories of oligopoly behavior can essentially be viewed as a set of different games, representing different market scenarios. The strategic interactions among rival firms in an oligopoly have been analyzed using the theories of static games, finitely and infinitely repeated games, sequential move games, and dynamic games. Using the notion of a static game it can be shown that both the Cournot and Bertrand solution to the oligopoly problem can be viewed as a Nash Equilibrium for a well-specified market game in which firms choose their actions simultaneously.

The difference between the two solutions (Cournot vs. Bertrand) comes from the assumption made regarding the set of actions available to the firms. Cournot's solution is obtained if the set of actions is restricted to the set of quantities while Bertrand's solution is a Nash Equilibrium for a game in which the firms' action are the set of prices. The different welfare implications of the two approaches were also confirmed, i.e., under quite general conditions regarding demand and cost structure, the Bertrand-Nash Equilibrium is more competitive than the Cournot-Nash Equilibrium.

Given these contrasting results, an important question to ask is which scenario is more likely to emerge in a particular market? There are a number of oligopoly models that have endogenized the choice of quantity or price as a strategy variable. Not surprisingly it can be shown that, given a choice, oligopoly firms prefer quantity to price as a strategy variable. However, the static models of oligopoly also show that a serious theory of oligopoly behavior cannot be timeless. George STIGLER (1964) stressed the importance of such factors as the speed with which rival firms learn of price cuts by other firms, the probability that such price cuts are detected by rival firms, as well as the scope of retaliation by other firms in response to price cuts.

Applying the notions of finitely and infinitely repeated games, a great deal of work has been done to investigate the possibility of tacit collusion in oligopoly, taking into account the possibility of defection from the collusive outcome as well as retaliation if defection indeed takes place. In short, tacit collusion cannot arise in finitely repeated games of oligopoly behavior.

Both the so-called backward induction method and the notion of a sub-game perfect equilibrium imply that if oligopoly firms interact a finite number of times, the collusive outcome cannot be an equilibrium outcome for any stage of the game. This picture changes quite drastically if one allows for infinitely repeated interaction in oligopoly markets. Given that rival firms interact with each other forever, the collusive outcome can be supported by so-called trigger strategies as an equilibrium outcome at each stage of the game. These trigger strategies take the form of triggering a retaliation response if one or more firms ever deviate from the collusive strategy.

The important point is that tacit collusion may arise as an equilibrium outcome in an oligopoly market. In addition to repeated games, two-stage games applied to the oligopoly model have highlighted the importance of timing, the essential role played by sunk costs and commitments. Employing the concept of sub-game perfection, these models of oligopoly behavior show that commitments at early dates, such as investment in capacity, can influence the outcome of oligopolistic interaction at later dates.

Finally, dynamic games of oligopoly behavior considering price, quantity, investment, and other state variables as strategies have resulted in additional insights into possible outcomes for oligopoly markets. While the application of game theory has resulted in many additional insights into oligopoly behavior and equilibrium in oligopoly markets, it also has shown that the basic notions of oligopoly behavior put forward by Cournot and Bertrand are still the benchmark models of oligopoly theory.

One should not view the set of different models that aim to explain oligopoly behavior as competing models, but rather as models that are relevant for different particular oligopoly markets.

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OPEC

THE ORGANIZATION OF Petroleum Exporting Countries (OPEC) is a group of oil-exporting countries that have banded together to set uniform output and price goals in the international petroleum market. It consists of 11 countries: ALGERIA, INDONESIA, IRAN, IRAQ, KUWAIT, LYBIA, NIGERIA, Qatar, SAUDI ARABIA, the United Arab Emirates (UAE), and VENEZUELA.

Member countries contain roughly 75 percent of the world's proven crude OIL reserves, and supply about 40 percent of the world's output. Members' share of production within OPEC was, in December 1998: Venezuela 10.98 percent, Algeria 2.89 percent, Indonesia 4.98 percent, Iraq 8.42 percent, Iran 12.99 percent, Kuwait 7.36 percent, Libya 4.94 percent, Nigeria 7.32 percent, Qatar 2.36 percent, Saudi Arabia 29.58 percent, and UAE 8.09 percent.

OPEC was formed at a meeting held September 14, 1960, in Baghdad, Iraq. The founding members were Kuwait, Iran, Iraq, Saudi Arabia and Venezuela. These countries were coordinating their responses to the actions of the major multinational oil companies known as the Seven Sisters. The Seven Sisters were British Petroleum, Chevron, Exxon, Gulf, Mobil, Royal Dutch Shell, and Texaco. For much of the first half of the 20th century, these multinational corporations dominated the world oil market.

The oil-producing countries did not have adequate technology, manpower, or capacity to carry on the production of oil on their own. Under those circumstances, Venezuela first began to share profit with the oil corporations, partly from a revised tax system. Venezuela later encouraged the Arab oil-producing countries to follow suit. Saudi Arabia realized the potential quickly and reformed its tax system.

Though OPEC existed since 1960, it was not until a decade later that its power increased. OPEC's share of world production was 28 percent in1960 and 41 percent in 1970. The first of the "oil shocks" occurred during and after the 1973 October war between EGYPT and ISRAEL. The Arab members of OPEC aligned with Egypt, demanding an end to UNITED STATES support of Israel.

When the United States refused, the Arab countries imposed an embargo. The first oil shock increased the (nominal) price of oil by almost three times: the price for benchmark Saudi Light increased from $2.59 in September 1973, to $11.65 in March 1974. The world economy soon fell into a recession. The second oil shock occurred in 1979, when the Iranian Revolution caused a drastic reduction in oil exports from Iran. Iran reacted to an American embargo on Iranian oil by prohibiting the exportation of Iranian oil to American firms.

The war between Iran and Iraq in 1980 made the situation worse. The effect of the second oil shock was short-lived, however, as non-OPEC countries significantly increased production. There was an increase in oil price in the early 1990s (the third mini-shock) when Iraq attempted to annex Kuwait. The sudden decrease of the oil exported from Iraq and Kuwait caused the oil price to spike. Increased production by Saudi Arabia moderated the situation.

Whether OPEC is a cartel is subject to debate. A cartel is defined as a group of producers of a product that band together to obtain as much market share as possible, and to adjust output levels and prices to make the most profits. The objective is to function as much like a monopoly (single-seller industry) as possible. The profit-maximizing operation of a cartel occurs when the production quota allocated to each member is determined by the equality of the additional cost of production (member marginal cost) and the additional revenue gotten from that additional unit (cartel marginal revenue).

For example, assume that it were determined that the additional revenue received from the sale of a barrel (bbl) of crude oil were $10. Allocating production would be similar to running an auction for the right to produce each bbl. A producer bidding the lowest would get to produce each additional bbl, until the lowest price any can produce for is $10. Many economists believe that cartels are unstable because members have the incentive to raise their profits by undercutting the set cartel price and stealing customers. Once this cheating is detected by other members, they retaliate by cheating on the others until the cartel falls apart. The longevity of OPEC has proved to be an exception to this theory.

OPEC as a cartel. The degree to which OPEC works as a cartel is an ongoing discussion. The OPEC countries do not all share the same interests. Each has different strategies, so it is often hard to reach consensus. Countries with larger reserves and small populations, like Saudi Arabia, generally desire to increase production. They fear that higher prices will induce technological change and the development of new deposits, which in turn will reduce the price of oil. Countries that have lower reserves, or larger populations, prefer to reduce the supply. The reduced supply would increase the price on the world oil market, if the demand remains unchanged. Negotiations among the oil ministers of the member nations involve reinforcing common goals and reconciling these different interests. If the ideal operation of a cartel, as described above, is not followed, and that is what is meant by "not functioning as a cartel," then OPEC is probably not functioning as a cartel fairly often. However, if the goal of maximizing the size of the profit pie is not enough to keep the cartel together, some members have religious and political ties that seem to provide the glue.

In the contemporary world economy, OPEC has the potential to wield a significant influence due to its large reserves and market share, and the reluctance of many oil-dependent industrialized countries to seriously develop substitutes and to implement serious oil-conservation strategies. Some observers believe, however, that the emergence of non-OPEC competitors in the late 20th century has limited OPEC's ability to influence global oil markets, and the Saudi political alliances forged with the United States adds weight to incentives not to restrict oil output and raise prices.

These growing sources of non-OPEC oil have reduced U.S. dependence on oil from OPEC. Also, like all economic players, OPEC is vulnerable to the ups and downs of global economic activity. For some OPEC countries, oil is the most significant, or the only significant, export commodity. These countries face the challenge of keeping their economies alive when there are economic slowdowns, and especially when the oil reserves run out. If they build infrastructure, invest in communications and computer technology, and diversify their economies to produce goods and services other than oil, their economies might not suffer much in the long run.

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Opium Wars

THE OPIUM WARS occurred during CHINA's rule by the Manchus, the hunting, fishing, and farming people from central Manchuria who had succeeded the Ming (1644) and maintained a superior standard of living until the 1700s.

The Manchus had expanded the empire, treating non-Chinese as "tributary states," and like the Ming, disdained foreign "barbarians," allowing only government-recognized monopolies to trade with the Spanish, Portuguese, Dutch, and English.

By the 18th century, the British EAST INDIA COMPANY was restricted to trading in a special area of Guangzhou (Canton) during a limited time period, and only with the official merchant guild. As European demands for Chinese tea were added to the existing market for silks and porcelains from the mid-17th century to the beginning of the 18th century, the Manchus benefited from a trade surplus, paid in silver.

As the 18th century progressed and demand for Chinese tea grew, Britain's emergence as a formidable naval power was paralleled by the increasingly disdainful attitude toward China by European philosophers, British merchants, and the British government.

European Enlightenment thinkers had once praised China for its ethics and the lack of church domination; however, they now identified modernity and liberty as essential and pointed to Chinese repressions. European cultural superiority coexisted with demands that China grant the British economic concessions, allowing them to buy tea closer to its source in the Yangzi river provinces, and to abolish the tributary system and interact with other nations through published tariffs, ambassadors, envoys, and commercial treaties.

A formal request by the king's cousin, Lord George Macartney (1793), to the Manchu Emperor Qianlong was first delayed by Macartney's refusal to kowtow (show respect) and then denied when the emperor dismissed Macartney's 600 cases of manufactured items, informing the king in a letter that the Chinese "possess all things" and had "no use for Britain's manufactures."

The Opium Wars were the Western response to Qianlong's refusal to cooperate, rooted in the early recognition by the British East India company that opium's ability to ease emotional and physical pain and its highly addictive properties could be used to solve the balance of payments problem with China. From British India, exports of opium to China rose from 200 chests in 1729, to 4,500 in 1800, shortly after Macartney's visit.

The Chinese responded by banning opium importation and domestic production by 1800 and punishing smoking opium. However, exports rose to 40,000 by 1838. Soon smuggling and criminal gangs allowed the drug to make its way throughout all levels of Chinese society, including the emperor's court, and it became next to impossible for the government to crack down on drug dealers. The crisis was exacerbated when silver began to drain out of China.

In 1839, imperial official Lin Zexu was sent off to Guangzhou to stop foreign traders from importing opium and Chinese from smoking it. Lin was partially successful, closing opium dens, arresting 1,600 Chinese, and executing Chinese dealers; however, neither threats, bribes, trading options, nor the barricading of foreigners in their factories compelled foreigners to turn over their opium stocks.

Prior to the onset of fighting, attempts were made to end the standoff. The British superintendent in Guangzhou, Charles Elliot, turned the merchants' opium over to Lin, who destroyed it, ordering that trade in Guangzhou would be confined only to merchants who would not deal in it. However, in London, the opium trading firm of Jardin, Matheson and Company's lobbying resulted in victory for commercial interests, and by 1840, a British force of 47 ships left India to confront the Chinese.

Lin's purchase of cannons for the fortification of Guangzhou came to naught, as the British bypassed this port, directly attacking Ningbo and Tianjin, pillaging coastal areas, seizing cities, and killing thousands of Chinese. With the 1842 Treaty of Nanjing and 1843 Treaty of Bogue, Great Britain gained Hong Kong, the Manchu were ordered to pay $21 million in Mexican silver, the ports of Guangzhou, Fuzhou, Xiamen, Ningbo and Shanghai would open with consulates, and the British would be granted most-favored-nation status.

Tariffs and customs duties would be fixed only after consultation with the British, whose subjects would henceforth be tried in British consular courts in China. Pursuant to renewed fighting in 1856, China was forced to open 11 more ports, sanction the Christian missionary presence, and legalize opium, in accordance with the Treaty of Tianjin (1858), which represented British, French, Russian, and U.S. interests.

Hostilities ended by 1860; however, the Opium Wars signaled the beginnings of an unequal treaty system that would essentially remain until the communist victory in 1949.

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optimorum of market

OPTIMUM OPTIMORUM (Latin) is equal to saying "the best of the best." The optimorum, as it is often briefly referred to, is the global optimum or the state where a given allocation can no longer be improved. When there are several allocations, each of which may be locally optimal, the optimorum is the best among these. The optimorum is analyzed in the economic theory of distribution, not in PRICE theory. Synonymous terms are bliss point or satiation point.

In a wide sense, the concept of a global optimum is used in many areas of economics (e.g., general EQUILIBRIUM theory and welfare economics, public economics, and international trade theory) and of management science (particularly in those areas that apply mathematical methods such as linear programming and GAME THEORY). The optimorum concept is important in capitalist economies since it expresses the fundamental idea that economic choice relies on trade-offs and that different patterns of consumption or production may lead to efficient solutions among which only one is also globally the best.

The following conditions are held to define the optimal organization of an economy:

1. Factors of production must be used such that the marginal rates of substitution in production are equal for all producers (= efficient factor input)
2. Every factor bundle is to be distributed such that the marginal rates of substitution in consumption are equal for all consumers (= optimal distribution)
3. Production and consumption are to be matched such that the marginal rate of transformation equals the marginal rates of substitution in consumption (= optimal matching between production and consumption).

These conditions define PARETO OPTIMALITY, situations where no change can make one individual better off without making another worse off.

However, such local optima need not be global optima. If a social welfare function is assumed, Pareto-optimality is a necessary yet not sufficient condition for its identification. The optimum optimorum is the best Pareto-optimal point.

The distinction between local and global optima is crucial in analyzing social welfare functions, where the maximorum is the point of maximum social well-being at which it is no longer possible to reorganize an economy such that one individual is better off without simultaneously reducing another individual's utility level. Efficiency, then, is not some unique point toward which society may direct its efforts. Rather, many efficient solutions (in production and distribution) are feasible, and each is different in resource allocation, commodity distribution, and the distribution of overall utility.

Clearly, the challenge of finding an optimal economic organization for a society cannot be resolved by appeals to efficiency alone. This insight has become extremely important for public policy analysis. It has also prompted the development of economic research paradigms such as the theory of second best, which defines policy implications for situations when Pareto-optimal solutions cannot be attained and an optimum optimorum can consequently not be found.

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Orientalism and Eurocentrism

THE TERM, ORIENTALISM, is used at least in four senses:

1. Specialized, purportedly objective, often classicist study of Asian and African cultures, languages, and literatures
2. A European artistic approach to depiction of Asia and Africa in paintings, novels, poems, movies, and other genres as primitive, exotic, depraved, bizarre, mysterious, and lascivious
3. A style of thought based upon on ontological and epistemological distinction made between the Orient and (most of the time) the Occident
4. A method of critiquing hegemonic western practices of producing knowledge about non-Europeans as a means of gaining greater power over the lands and lives of the latter; described by some as anti-Orientalism.

In academics, however, Orientalism now primarily connotes two major activities: A western ideological approach to production of knowledge about the Third World, and a systemic critique of such knowledge production.

Orientalism as a western system of producing knowledge about non-Europeans. "It is not the sum of the works of the Western specialists and scholars who have studied non-European societies," notes Samir Amin. Orientalism "refers to the ideological construction of a mythical Orient whose characteristics are treated as immutable traits defined in simple opposition to the characteristics of the Occidental world." In that sense, it is a theme-generating device that provides structure, coherence, depth, and direction to Western narratives about the non-west. This ideological construction can be summarized into six categories: 1) historiography; 2) aesthetics (art, language, literature, and culture); 3) politics; 4) economics; 5) education; and 6) religion.

While historiography deals with institutionalized memory of conflicts, moral and material trajectories of human societies, and the shape of history itself, the Orientalist historiography, like a Hollywood movie, assigns a subordinate role, if not a villain's role, to the Oriental in all these realms. The Orientalist aesthetics, as commented above, having shown the Oriental as primitive, exotic, depraved, bizarre, mysterious, and lascivious, celebrates its own wonderful benevolence, an attitude eloquently conveyed by Joseph Conrad in the novel *Heart of Darkness*: "It gave me the notion of an exotic Immensity ruled by an august Benevolence."

Orientalist attitude toward non-European politics has been crystallized through the image of Oriental despotism, and of the economy through what has been disparagingly called the Asiatic mode of production. Karl Wittfogel, best known for his "hydraulic hypothesis," has argued that vast irrigation needs of Oriental societies including EGYPT, Mesopotamia, INDIA, CHINA and pre-Columbian MEXICO and PERU, had resulted in tight water control through formation of centralized and bureaucratized authoritarian empires deeply hostile to change. On the other hand, being free of such limitations, Europe was able to rise to contemporary technological heights. As far as the Asian mode was concerned, even Karl MARX felt that it was based on "the unchangeableness of Asiatic societies" and "the constant dissolution and refounding of Asiatic states."

Lord Thomas Babington Macaulay's perspective on education of Indians ("We must at present do our best to form a class who may be interpreters between us and the millions whom we govern; a class of persons, Indian in blood and color, but English in taste, in opinions, in morals, and in intellect.") remains the quintessential example of Orientalist philosophy of educating the natives.

The truths of the weak are seen as weak truths in need of replacement by the victor's ethics and religion. It is typified by what Missionary Cram, of the Boston Missionary Society seeking converts among the Senacas, had told a group of their leaders in summer of 1805: "You have never worshipped the Great Spirit in a manner acceptable to him; but have all your lives been in great errors and darkness. To endeavor to remove these errors, and open your eyes, so that you might see clearly, is my business with you." Likewise, Macaulay's rhetorical question: "We are to teach false history, false astronomy, false medicine because we find them in company with a false religion?"

What lies at the heart of these constructions of the Orient is great colonial poet Rudyard Kipling's conception of the Oriental as "half child and half beast," an enduring image that continues to characterize imperial narratives from Kipling and E.M. Forster to Bernard Lewis and Howard Bloom and from Macaulay to Samuel Huntington. Inculcating new relations of force and obligation, these narratives endow the colonizer with, to use Forster's phrase, "the power to do good" to the Orientals, who are treated as nameless and faceless phantoms. This, as historically observed, necessitates civilizing and Christianizing the Oriental who is seen both as barbarian and pagan.

The Orientalist mission is thus characterized by four main goals: to civilize the barbarians, to Christianize the pagans, to create among the Orientals a scientific outlook and a rational attitude, and to recreate the Orient in the Western image in the name of modernity, democracy, progress, advancement, peace, and liberation.

Orientalism as a critical method. This critical evaluation of this Western system of knowledge production about non-Europeans is conducted through analysis of a series of canonical texts including those by Chaucer, Mandeville, Shakespeare, Dryden, Pope, Byron, HUME, Kant, HEGEL, Vico, Gibbon, Marx, Weber, and Dostoyevsky, and many others. In other words, this critical method focuses on writers, thinkers, poets, philosophers, and scholar-administrators who reside at the center of the Western culture and learning, and not those at its margins.

This school of thought has found its ablest exponent in the writings of Edward Said. From Said's point of view: "Taking the late 18th century as a very roughly defined starting point, Orientalism can be discussed and analyzed as the corporate institution for dealing with the Orient—dealing with it by making statements about it, authorizing views about it, describing it, by teaching it, settling it, by ruling over it: in short, Orientalism as a Western style for dominating, restructuring, and having authority over the Orient."

The single most important contribution of Said's theory of Orientalism has been to "place imperialism at the center of the Western civilization" both in terms of its constitutive economic, social, and cultural role as well as its regulative role in shaping and defining the relations of force, commerce, and ideas among the Western and non-Western nations.

Primarily, Said deals with European methods of knowledge production and relates them to issues of knowledge and power. This critical method interrogates operations of power in terms of both "discourse of power and power of discourse" to reveal how and why Western assertions of "power to do good" are repeatedly located in the triple claims of innocence, omniscience, and benevolence.

Said's critical apparatus. Said is concerned with corporate Western discursive practices, their prodigious—or hegemonic—productivity, durability, and strength. It is only through these discursive practices, Said believes, that the West was able to build an enormously systematic discipline "to manage—and even produce—the Orient politically, sociologically, militarily, ideologically, scientifically, and imaginatively during the post-Enlightenment period." Said's project is to study a series of historical encounters, interactions and relationships. Orientalism, writes Eqbal Ahmed, "is about the relationship of knowledge to power, of culture to imperialism, and of civilization to expansion."

It is also about the relationship of COLONIALISM to science and social science, about the complex coalition between soldier, statesman, scholar, and saints of the dominant culture against the subjugated peoples; about European trusteeship over the other races who, as Karl Kautsky has phrased it, "are regarded as children, idiots or beasts of burden;" about triangulation of systems of control through coordination of state, ideology, and culture.

It is not enough, however, to study these ideas and relations in the abstract without reference to distribution of power and prestige among the individual and institutional actors. Ideas, cultures and histories, he argues, cannot be seriously studied without their configuration of power also being studied. Once placed in the matrix of socio-historic power relations, it becomes possible to "show that European Culture gained in strength and identity by setting itself off the Orient as a sort of surrogate and even underground self," Kautsky writes.

It is important to note that, while developing a theoretical framework to explore Orientalism's accumulated capacity to control natives' lives down to the core of their existence, Said also examines the historical trajectories of resistance, recovery, and revival of subjugated cultures and peoples; and further explores how these activities are reported in the Western media, academia, and official discourses.

Said's Orientalism was complemented, refined, and completed by his magnum opus, *Culture and Imperialism*, in which he articulates the notion of the contrapuntal method, which is both a political and an academic technique for critiquing one-sided history, for inserting missing links into the institutionalized memory and forging a polyphonic scholarship that contains a multiperspectival gaze.

Said's critical apparatus can be summarized in terms of eight primary concepts: 1) discursivity, 2) representation, 3) subject positioning, 4) positional superiority, 5) poetics, 6) strategic location, 7) strategic formation, and 8) the contrapuntal method.

The notion of discursivity deals with essential plot lines and themes of a series of 18th-, 19th-, and 20th-century narratives constructed to define self and the inferior other. Said argues that one cannot possibly understand the efficiency and controlling capacity of Orientalism without examining it as a discourse. It is precisely its constitutive rhetorical function that provides with basic information about how "European culture was to manage—and even produce—the orient politically, sociologically, militarily, ideologically, scientifically, and imaginatively during the post-Enlightenment period."

The idea of discursivity is closely tied to the notion of representation. To talk of representation is to talk of how the Orient is signified and given meaning in the Western thought process; how it is placed in the social, moral, and intellectual hierarchies; and who speaks for the Orient, with what authority and for what purpose? Also, who is given or denied a voice in historical texts and, thus, in history itself.

Subject positioning or inculcation of desired structures of belief and attitude in cultural in-groups and out-groups is a strategic part of representation. In the Orientalist discourse, the stipulated subject positioning is, among other things, accomplished through a flexible positional superiority "which puts the Westerner in a whole series of possible relationships without losing him the relative upper hand," Said explains. The Westerner is guaranteed in advance the role of the hero, liberator, discoverer, inventor, and savior in every significant narrative. This positional superiority almost always brings about a happy marriage of power and virtue in the Western hands.

A tool for a certain kind of representation and a certain kind of subject positioning, poetics refers to a complex existential and experiential process of imbuing time and space with meaningful feelings and may range from designating a house as haunted to a continent as dark and a system as evil. "Strategic location is a way of describing the author's position in the text with regard to the Oriental material he writes about. . . . Everyone who writes about the Orient must locate himself vis-à-vis the Orient; translated into his text, this location includes the type of narrative voice he adopts, the type of structure he builds, the kind of images, themes, motifs that circulate in his text—all of which add up to deliberate ways of addressing the reader, containing the Orient, and, finally representing it or speaking in its behalf," Said writes.

This strategic formation is a way of analyzing the relationship between texts and the way in which groups of texts, types of text, even textual genres, acquire mass, density, and referential power among themselves and thereafter in the culture at large. Every writer on the Orient (and this is true even of Homer) assumes some Oriental precedent, some previous knowledge of the Orient, to which he refers and on which he relies. Additionally, each work on the Orient affiliates itself other works, with audiences, with institutions, with the Orient itself.

These textual and inter-textual relations are to be analyzed not to find what may lay hidden in the Orientalist text, but that which is observable in its exteriority. A premeditated representation is the final product of this exteriority. "And these representations," Said continues, "rely upon institutions, traditions, conventions, agreed upon codes of understanding for their effects, not upon a distant and amorphous Orient." In surveying the exteriority, what one should "look for are styles, figures of speech, setting, narrative devices, historical and social circumstances, not the correctness of the representation, nor its fidelity to some great original."

And finally, the contrapuntal method refers to identification and analysis of acts designed to refute subjugating arguments, regain territory, reclaim identity, supply missing links of history and memory, and, in the final analysis, create a multi-perspective understanding of society, history, and human relations.

Eurocentrism. Like any other ethnocentric perspective, Eurocentrism is a worldview with Europe as the ultimate model and criteria of almost everything, and all other regions, peoples and cultures are located, named, and evaluated on the basis of self-reference criteria.

Eurocentrism is, in part, based on claims of "only in the West" as clearly articulated by Max Weber in the following passage: "Only in the West does science exist at the stage of development which we recognize as valid. . . . [The] full development of a systematic theology must be credited to Christianity under the influence of Hellenism, since there were only fragments in Islam and in a few Indian sects." The "only in the West" list includes modern conceptions of capitalism, state, citizenship, labor, art, culture, literature, music, journalism, architecture, organization, and technology. And the European is discoursed as the "inventor of invention."

It is a viewpoint that emphasizes absolute and permanent superiority of the Western civilization over all other civilizations. Europe is portrayed as the embodiment of universal truths that must be emulated by everyone else. This claim to universalism, critics hold, becomes a vehicle for demanding and forcing "a homogenization of aspirations and values." Its primary themes include progress, technology, democracy, modernity, post-modernity, individualism, capitalism, and rationalism, etc. All these themes can be summed up as the quality of European-ness. This "European-ness lies in the form of the original settlement history, . . . a decentralized, aggressive part-pastoral offshoot and variant of western Asian agricultural society, molded by the forest," explains historian J.M. Blaut. These themes are perpetuated in and through humanities, social sciences, art and aesthetics, journalism, religious activities, politics, and even science and technology (to the extent that technology also doubles up as ideology, as some have argued).

Categorizing Eurocentrism as an ideology-dressed-as-theory, Samir Amin describes it as not the sum of the works of the Western specialists and scholars who have studied non-European societies, but a mythic construction of the European self and the non-European other. What distinguishes Eurocentrism from other ethnocentric perspectives or claims is the nature of its self-constituting myth.

This myth, Amin explains, is not "properly speaking, a social theory integrating various elements into a global and coherent vision of society and history. It is rather a prejudice that distorts social theories. It draws from a storehouse of components, retaining one or rejecting another according to the ideological needs of the moment. For example, for a long time the European bourgeoisie was distrustful—even contemptuous—of Christianity, and, because of this, amplified the myth of GREECE."

The main attributes of Eurocentrism include: Arbitrary annexation of Greece to Europe; arbitrary annexation of Christianity to Europe, as the principal factor in the maintenance of European cultural unity; construction and depiction of a racist image of the Near East and other more distant Orients; the Eternal West vs. the Eternal East ("The East is East and the West is West, and the twain shall never meet."); imagined continuity of the European learning and progress; false backward projection of the North-South split; total separation of Greece from the Orient, from Egypt and Phoenicia in particular, to justify claims of Aryan purity and superiority.

But more importantly, it introduces the notion of Manichaenism in the conception of self and the other by rejecting any possibility of tracing the origins of the Orient and the Occident to common or shared origins. Cross-pollination of ideas and mutual learning among civilizations and peoples are denied, and so is the human equality of non-European peoples. Critics believe, that this rhetorical move enables Eurocentrics not only to claim moral and intellectual superiority but also an inherent right to use military and political authority over various parts of the Orient, as and when deemed necessary or useful. Its ultimate efficacy lies in creating a right to rule over others; justifying use of violence; legitimizing military occupations; reordering lives; redesigning social, educational, political and economic systems; and forcibly recreating the Orient in the image of the Occident.

Thus, it sets up a task for the European man, who is the embodiment of good, not only to affect the separation of good and evil, but to rule over the darker areas of the world, to bring light and learning to them. To that end, Eurocentrism is a celebration of European power to create and destroy; its increasingly greater sway over nature, time, space and life; and its capacity for seemingly endless progress and pleasure. The European history is seen as the prototype of the world history, in effect, the history of each society. Thus what is good for Europe is emphatically, and at times forcibly, presented as good for the world.

A statement by great humanist writer Fyodor Dostoyevsky about Russia's European role in Asia inadvertently but brilliantly discloses the value content of Eurocentrism. He writes:

> What is the need of the future seizure of Asia? What is our business there? This is necessary because Russia is not only in Europe, but also in Asia; because the Russian is not only a European, but also an Asiatic. Not only that; in our coming destiny, perhaps it is precisely Asia that represents our main way out. . . . In Europe, we are hangers-on and slaves, whereas to Asia we shall go as masters. In Europe, we were Asiatics, whereas in Asia we, too, are Europeans. Our civilizing mission in Asia will bribe our spirit and drive us thither.

Since the end of the Cold War, Eurocentrism has found its eloquent and theoretically compact expression in Samuel Huntington's formulation about the clash of civilizations. In his much-discussed essay "The Clash of Civilizations?" Huntington writes: "Western concepts differ fundamentally from those prevalent in other civilizations. Western ideas of individualism, liberalism, constitutionalism, human rights, equality, liberty, the rule of law, democracy, free markets, the separation of church and state, often have little resonance in Islamic, Confucian, Japanese, Hindu, Buddhist, or Orthodox cultures."

This line of reasoning reveals a deep-seated contradiction between Western claims of universality and uniqueness. While the West seeks to recreate the Third World in its own image, it also continues to imply and assert that the Oriental lacks the potential to become the Occidental. A subtler form of recent Eurocentrism has been put forward by scholar-administrator Anthony Lake. In his policy speech titled "From Containment to Enlargement," Lake notes:

> Democracy and market economies are ascendant in this new era, but they are not everywhere triumphant. There remain vast areas in Asia, Africa, the Middle East, and elsewhere where democracy and market economics are at best new arrivals—most likely unfamiliar, sometimes vilified, often fragile.
>
> But it is wrong to assume these ideas will be embraced only by West and rejected by the rest. Culture does shape politics and economics. But the idea of freedom has universal appeal. Thus, we have arrived at neither the end of history nor the clash of civilizations, but a moment of immense democratic and entrepreneurial opportunity. We must not waste it.

These concepts were further clarified and put into operation by President George W. BUSH in his State of the Union Address on January 29, 2002:

> No nation owns these aspirations, and no nation is exempt from them. We have no intention of imposing our culture. But America will always stand firm for the non-negotiable demands of human dignity: the rule of law; limits on the power of the state; respect for women; private property; free speech; equal justice; and religious tolerance. America will take the side of brave men and women who advocate these values around the world, including the Islamic world, because we have a greater objective than eliminating threats and containing resentment. We seek a just and peaceful world beyond the war on terror.

While "no nation owns these ideals,"the United States, and by implication the West, continues to possess trusteeship over these non-negotiable ideals, as well as the right to enforce them by necessary means.

Orientalism and Eurocentrism. While Eurocentrism is a construction of the European self (individual, group, race, nation, state, civilization, etc.) as superior, moral, rational, and Godly, Orientalism is a construction of the Oriental other (individual, group, race, nation, state, civilization, etc.) as inferior, infantile, dangerous, beastly, and evil. Eurocentrism and Orientalism are two halves of the same unified concept and each part presupposes the existence of the other and remains incomplete without it.

Eurocentrism has gained a new significance in the context of 21st century globalization. At least for the foreseeable future, it has become its official ideology.

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ownership

THE POWER TO EXERCISE control over an asset or resource is regarded as ownership. Often defined also as the residual rights of control, meaning that ownership confers on the owner the right to exercise control over the resource only within certain limits determined by the legal system and/or contractual obligations. The most important components of the bundle of rights that define ownership are exclusivity and alienability. Exclusivity refers to the right to determine who may (and who may not) use the resource in a particular way. Alienability refers to the right to reassign ownership to someone else, including the right to offer for sale at any price.

Why ownership? This is a basic question that has existed throughout human history. The development of the economic science has furnished us with an answer. When resources are scarce, assignment of ownership (property) rights becomes essential to avoid wasteful fight over those resources. Consider a simple example of a person who is given a certain amount of resources (budget) and chooses a bundle of consumption goods and services that maximize his or her UTILITY (satisfaction) within that budget. What if the person could attempt to "improve" the budget constraint by stealing from others? That is, what would happen if ownership were not fully protected?

First of all, if A can steal from B, it means that B can also steal from A. If both steal equal amount from each other, A will end up with exactly the same budget as before. But the problem is actually much worse. If stealing becomes a norm, it means that a lot of time and effort has to be spent on trying to steal from others and also on protecting oneself from becoming a victim of stealing by others. This time and effort will result in actual reduction in the budget constraint and satisfaction from consumption. For example, whenever someone buys a bicycle, she also has to buy a heavy and expensive lock. Unlike other parts of the bicycle, the lock is not needed to enjoy the ride, however. It is a necessary addition to the bicycle because the bicycle might be stolen (because ownership is not perfectly protected in practice). Such socially wasteful expenditure on various protective devices and activities is very widespread even in most law-abiding societies, but in societies that have failed to assign and/or protect ownership they can and do make life really miserable.

The assignment of ownership (property rights) becomes even more important when we think of the production process. Scarce goods are not like "manna from heaven." They must be produced by allocating resources to the production process. Imagine that a farmer plants corn, cultivates it, etc., but his neighbor reaps and sells it. "After some such experiences the cultivation of land will be abandoned," explains Richard Posner in *The Economic Analysis of the Law*. In the presence of scarce resources, absence of ownership rights would kill any investment in improving the productivity of the society.

Private or collective ownership? This question has given rise to hot debates and has been a subject of controversy, including political rivalry between believers in individual freedom and private ownership, on the one hand,

and socialists, on the other hand. First of all, the nature of controversy has to be clarified. Neither pure private nor pure collective ownership have ever existed in any human society. In a society whose economic system is based on private ownership, collective ownership is very widespread. The most important form of it is, of course, ownership within a family (household). Housing, cars, televisions, children's toys, and many other items are usually in collective, not private ownership in any family, and many of the most important economic decisions about how to allocate resources within the family are often made collectively. Public goods, such as national defense, security, roads and bridges, fire service, etc., are also owned and exploited collectively despite the fact that they are scarce and valuable.

On the other hand, most societies based on collective ownership do also admit private ownership, at least in personal consumption. Thieves stealing goods from other people were prosecuted under a collectivist SOVIET UNION regime not less strictly than under a regime based on private ownership. Hence, the real debate between advocates of private ownership and advocates of socialism is limited to an argument about whether productive resources should be owned privately or collectively.

Efficient execution of collective ownership requires a high degree of altruism of co-owners toward each other or a well-functioning system of bureaucratic execution, or both. But while altruism is quite efficient within a family (or, more generally, within a well-defined small group of people repeatedly interacting with each other), it becomes quite inefficient when extended to the marketplace. There is no alternative to bureaucratic execution of collective ownership over some public goods, such as national defense, but the bureaucracy becomes progressively ineffective when it attempts to expand the sphere of its control over a large and complex economy.

Most countries that have achieved sustained economic progress and high standards of living of population have done so based on private, not collective ownership of most productive resources. The Soviet Union and its allies after WORLD WAR II had achieved some moderate economic success based on state ownership, but the success was short-lived and all those countries are currently in the transition to private ownership. Moreover, state ownership over production resources in the former Soviet Union was not at all collective in the real sense. Whenever it was enforced, it was, by and large, private ownership by the top-ranking communist officials.

Ownership and economic efficiency. Private ownership has arisen from scarcity of resources and its institution is vital to provide the society with an environment in which economic development can take place. A separate question is whether the identity of a particular owner matters for efficiency, or whether it is important just to have a well-delineated assignment of ownership rights, no matter who the owners are.

On a very high level of abstraction, it can be shown that it is the institution of private ownership that matters while the identity of the owner does not matter for resource allocation. A famous example (Ronald COASE, *The Firm, the Market, and the Law*) discusses this issue in the context of interaction between ranching and farming. In the example, stray cattle grazed by the rancher damage crops in the neighboring plot of land cultivated by the farmer. If the rancher and farmer can negotiate, there will be a socially efficient amount of crop damage from straying cattle regardless of who owns the land (or which party is legally liable for the damage). If the land is owned by the rancher, the farmer will have to pay him to limit the size of the herd, and the farmer will be willing to pay up to the amount at which the value of an additional ton of crops is exactly equal to the value of the last steer removed from the herd. If, on the other hand, the land is owned by the farmer, then it will be the rancher who will offer the farmer to compensate him for the damage in exchange for allowing to graze the herd. Once again, the rancher will be willing to pay up to the amount at which the value of the last steer added to the herd is exactly equal to the value of the last ton of crops destroyed. It is clear that the size of the herd and the amount of damage to crops will be the same in both cases, the only difference being that the rancher's income will be higher and the farmer's income lower in the former case while the opposite will be true in the latter case.

The above argument, under the name of the Coase Theorem, became a standard part of modern economic theory but also a subject of much controversy. In particular, Coase himself strongly opposed what he perceived to be a misuse of his example intended only as an illustration of what might happen if negotiations and market transactions were costless. Coase argues that his real point was that the assignment of ownership does matter in practice, because in the real-world negotiations, contracts and market transactions are not costless. In the presence of transaction costs, the identity of the owner can be very important.

Among transaction costs that make the identity of the owner especially important are the costs associated with possible dilution of surplus from investment. In order to make the production process really efficient, one or more parties involved often have to commit in advance to making a certain investment that would lose much of its value, should the transaction subsequently fall through. For example, an engineer can design and allocate capital equipment and also invest a lot in training workers to work with this specific capital equipment. If the ownership of the capital equipment is not assigned, however, workers may later "hold up" the engineer demanding that they are given a lion's share of profits, and threatening to quit and take the equipment with them. If such behavior is possible, a forward-looking engineer will have to think twice before investing her time and effort in a costly design and workers' training.

As a result, innovative activity, the engine of economic growth, might be severely hampered. If the engineer is given ownership over the firm, however (which means that she can exclude any single worker or all of them together from using the capital equipment), the workers cannot hold her up any more, and economic efficiency will be restored. If the society decides that for some reason workers are entitled to a better compensation than the wage offered by the owner, it is always possible, theoretically at least, to attain the socially desirable distribution of income through a tax system, not tampering with private ownership of productive resources and economic efficiency.

Truncation of ownership and the agency problem. In practice, taxation does restrict private ownership and does have consequences for economic efficiency. It is just one instance of the truncation of ownership rights by various legal constraints and regulations that are part of our everyday life. The exercise of ownership rights is also effectively constrained by the time the owner can allocate to actually executing the control rights bestowed on him.

Truncation of ownership by taxation and regulation is implemented by the society for both economic and non-economic reasons. An example of the former would be government regulation of automobile emissions. Air pollution caused by any single automobile passing along a road cannot possibly be the subject of negotiations and market-based transactions between the owner of the automobile and passers-by who suffer from inhaling exhaust fumes. Transaction costs are clearly too high for the Coase Theorem to work in such a context. Hence, the government steps in, sets and enforces certain guidelines, effectively reducing the degree of freedom with which automobile owners can exercise their private ownership.

An example of a non-economic constraint on ownership would be the legal prohibition of slavery. This law prohibits not only slave ownership, but it also prohibits an individual from selling himself into slavery of his own free will. Thus, we can say that even an individual's right of ownership of himself is not complete in the modern society (remember that the definition of full ownership includes the right to sell at any price). Military conscription is another example of a legal constraint on an individual's right to exercise ownership with respect to his own human capital.

Just as with the case of high transaction costs making the identity of owners matter, truncation of ownership rights also results in changed incentives. For example, a high income-tax leads to less incentives to work, and also to less incentives to invest in education and training. A minimum wage in the presence of a tendency for some employers to discriminate against minorities will hurt the employment prospects of minorities (because they will not be able to offer to be hired at a lower wage to induce discriminating employers to hire them). Enforcement of seat belts and airbags can lead to people driving more recklessly (because they feel more protected in their automobiles) and threaten the safety of pedestrians. The general lesson is that questions of imposing limits on the exercise of ownership rights should be analyzed from various angles and especially from the point of view of how they affect economic incentives. It should also be not forgotten that the extension of a private right of action often (always?) curtails another private right of action.

One of the biggest limitations on the exercise of ownership stems from the fact that the time and effort owners can allocate to controlling valuable resources in their ownership is limited. This problem clearly manifested itself in socialist economies based on state or collective ownership. As the economy grew large, it became simply impossible to coordinate and control the use of all productive resources from one command center. But the problem of control also persists in capitalist societies based on private ownership because the desires of owners must be translated into cooperative action by employees (the agency problem), and because it is often optimal to increase the size of the firm to the extent that exceeds the capabilities of a single private owner. A joint stock company has to be formed and the problem of diffuse ownership arises.

The agency problem requires incentive schemes (such as performance bonuses and other profit-sharing schemes, stock options, threat of takeovers, etc.) for employers or hired managers to act in the interests of owners. Also, since control becomes weaker both when ownership is too diffused and when it is too concentrated (the latter because one individual has to oversee too many firms), absolutely equal and a very unequal distribution of wealth both lead to weak exercise of property rights. A certain, but not too large, degree of wealth inequality seems to be exactly what is required for private ownership to be executed effectively.

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Pakistan

THE ISLAMIC REPUBLIC OF PAKISTAN in southwest Asia borders INDIA (east), IRAN (west), AFGHANISTAN and CHINA (north), and the Arabian Sea (south). The northerly Himalayan Mountains have summer rains and winter snows that drain south across the hot Punjab and Sindh plains into the Arabian Sea via the Indus River drainage.

Pakistan was founded as a Muslim state when the subcontinent became independent from the British Empire in 1947. There are 145 million people, of which 36 percent are urban. Urdu is the national language, but English is spoken as the medium of official business. The rupee is the official currency. GROSS DOMESTIC PRODUCT (GDP) per capita is about $500 or an equivalent of purchasing power parity of about $2000. The GDP growth rate is 4.8 percent (2002).

Unemployment is around 6 percent, inflation less than 4 percent, and foreign debt is at $31 billion. The current (2003) semi-civilian regime of General Pervez Musharraf was installed after the elections in October 2002. Military replacement of civilian rule is common in times of strife and accounts for Pakistan's strong ties with military suppliers from the West, and for its debt. A nuclear arms contest between India and Pakistan has further exacerbated Pakistan's debt.

Musharraf has had difficulty in ending endemic, economic corruption but has been successful in attracting renewed economic aid by fighting terrorism. However, disputes with Pakistan's largest independent power producer HubCo, the INTERNATIONAL MONETARY FUND (IMF), and sanctions for nuclear tests have hurt the flow of investment. Additionally, a tax system overhaul failed to collect $1.6 billion of the anticipated $7 billion in taxes, and led to a general strike by the All Pakistan Organization of Small Traders and Cottage Industries in May 2000.

Poverty, healthcare, education and basic infrastructure problems plague 40 percent of the population. Agriculture employs about half of the 38 million workers, producing cotton, rice, wheat, and sugar cane. Textiles are a key export in a trade deficit of about $1 billion. Pakistan, in the 1960s, was officially considered by the United Nations as a model developing country with growth strides in social and economic indicators. But the historic dispute with India over the status of the Kashmir region led to increasing responsibility by the military in Pakistani society. The resulting political instability proved to be the Achille's heel of the developing country.

However, consistent import-export trade with the UNITED STATES, JAPAN, GERMANY, and the UNITED KINGDOM indicates Pakistan can participate in the global market if it is stable and capable of producing exportable surplus.

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Palestine

PALESTINE REFERS TO A REGION approximated by the combined areas of present-day Israel, the West Bank and Gaza. Following 400 years under Ottoman rule it was placed under British mandate in 1919, after the Balfour Declaration of 1917 stated British support for "the establishment in Palestine of a national home for the Jewish people . . . [provided that] nothing shall be done which may prejudice the civil and religious rights of existing non-Jewish communities."

Rapid immigration brought Jews to 31 percent of Palestine's population by 1947, when the UNITED NATIONS proposed dividing it into a Jewish state with 500,000 Jews and 500,000 Arabs, an Arab state with mostly Arabs, and an international enclave of Jerusalem and Bethlehem. Zionists accepted this, but Arabs rejected it.

In 1948–49, Jewish military attacks on Arab villages led to the flight of about 700,000 Arabs. In May 1948, the British mandate ended and the state of ISRAEL was declared. By 1949 Israel had about 700,000 Jews and 100,000 Arabs; Jordan got the West Bank and EGYPT the Gaza Strip. But in 1967 Israel occupied these lands militarily.

Today, over 3 million Palestinians live under Israeli occupation. In 2001, and even more severely in 2002, Israeli military measures in Palestinian Authority areas have resulted in the destruction of much capital plant and administrative structure, widespread business closures, and a sharp drop in GROSS DOMESTIC PRODUCT (GDP), which stood at $1.7 billion (per capita $800) in 2002.

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Panama Canal

THE ISTHMUS OF PANAMA IS ONLY about 50 miles wide, by far a shorter route between the Atlantic and Pacific oceans than the 8,000-mile trip around South America. But it is a difficult 50 miles, through jungles and across the Continental Divide.

Initially, the Spanish built a road across the isthmus, and the first interest in an isthmian canal came only a few years after the Spanish took possession. The Camino Real, the treasure road linking the oceans, was slow and difficult, so surveys in the 1520s and 1530s tested the feasibility of building a canal. Philip II (1556–98) abandoned the idea, arguing that if God had intended an isthmian canal, He would have built it. Spain retained Panama for the next three centuries, and the canal idea languished.

Panama became independent in 1821, joined in the short-lived Gran Colombia, then became a province of Colombia. European and American interest in the isthmus was strong, for it was the shortest route between the Pacific and Atlantic oceans. In 1846, the UNITED STATES won the right to build a trans-isthmian railroad, invaluable during the western gold rush. When finished, the 47.5-mile railroad was the first transcontinental railway in the world. But a canal seemed more practical. Americans explored other options, but the isthmus was the best.

In the last quarter of the 19th century, with European imperial competition heating, interest in a canal became especially strong. In 1876, France's Ferdinand de Lesseps sent Navy Lieutenant Lucien N.B. Wyse to the isthmus. When Wyse returned, De Lesseps rejected his ideas because they entailed construction of tunnels and locks. Wyse went back to Panama, checked two potential routes, and opted for a route closely paralleling the railroad; this route seemed practical although it would require construction of a 23,160-foot tunnel at Culebra. Wyse negotiated the concession with Colombia in 1878, winning exclusive construction rights for his company and a 99-year lease. De Lesseps was on hand for the ceremonial first cut in 1880. In 1881 the first worker died of yellow fever. Already more than a thousand workers were engaged, but the Culebra cut was delayed due to general disorganization of the company's operations. The company spent more than $25 million buying the railroad. In 1882, the company established hospitals on each side of the isthmus, and by 1883 the company had 10,000 workers. In 1884 the labor force was 19,000, primarily West Indian.

In October 1884, Philippe Bunau-Varilla became a division engineer at Culebra, overseeing both dry and wet excavation. Soon, he became director general of the canal project. He had no success in overcoming the landslides that plagued the sea-level canal. And yellow fever became a constant killer of workers. Bunau-Varilla fell victim, but he survived, recovering in France. Back in Panama in 1887, Bunau-Varilla abandoned the sea-level canal and began a high-level lock canal, with a series of pools connected by locks. The canal at its maximum height would be 170 feet. Work resumed, but in 1889 the money ran out. The company dissolved, the work slowed, then halted. By 1894, liquidation was complete. Wyse renewed the concession for the company, but the company was rocked by scandal.

The canal had cost $287 million and only 11 miles had been dug. It had cost the lives of 20,000 men to move 50 million cubic meters of earth and rock. Thousands of investors lost their money, and some cried fraud. Both Ferdinand de Lesseps and his son, Charles, were among those indicted and found guilty.

The work continued, however, and in 1898 the company set a new canal plan in place. The new plan called for two high-level lakes to raise ships over the Continental Divide; eight sets of locks would gradually lift ships. The subsequent American plan would appropriate much of this one. For the French, it was too late; by 1898 the company had only half its original capital. It could abandon the project or sell it. Negotiations took five years, but finally in 1904 the United States bought the rights for $40 million. Construction began shortly after, and the 10-year project ended-up costing about $387 million.

The final American plan was developed by John F. Stevens, chief engineer of the U.S. Isthmian Canal Commission, in 1906. The canal opened for business on August 15, 1914, allowing ships to move from the Atlantic to the Pacific easily, a trip of 51 miles being much safer and easier, not to mention faster, than an 8,000-mile trip around Cape Horn.

The United States operated the canal through the 20th century. Increasingly, Panamians and other South Americans protested the continuing American presence. In 1977, President Jimmy CARTER and General Omar Torrijos signed a treaty phasing out American control and transferring American military bases on December 31,1999. Despite strong opposition from the U.S. public and Senate, Carter narrowly won approval of the treaty. Under the terms of the treaty of September 7, 1977, a transition Panama Canal Commission took over the canal and zone in 1979, and a Panamanian Panama Canal Authority assumed responsibility in 1999. The canal, by treaty, became neutral, and Panama took over former U.S. military facilities.

In 2002, Hong Kong-based Hutchison-Whampoa operated the canal ports. The canal employed 14,000 people, only 4,000 of whom were Panamanian.

The principal business of the canal is trade between the United States East Coast and Asia, anticipated to grow as China-U.S. trade increases. The canal also carries trade between Europe, the United States West Coast, and Canada, and increasingly, North-South American trade. The canal has a capability to handle about 50 ships a day, with its record day being 65. Passage averaged 24 hours per ship. In fiscal 2001, canal traffic averaged 33 ships per day for a total of 12,197; this was a decline of the 34-per-day average of the previous year. Size was a problem, with the 50,000-ton Panamax class ships being the largest the canal could handle.

To some, the canal at century's end seemed obsolete. It accommodated ships carrying up to 65,000 tons, but modern ships could carry as much as 300,000 tons. This disparity raised interest in building a new canal, perhaps through Colombia, Mexico, or Nicaragua. A canal through either of the first two would be sea level, as attempted at first in Panama. A Nicaraguan canal would require locks, as did the completed Panama Canal. Another proposal was to dredge 765 million cubic meters of earth and rock and convert the Panama Canal to sea level, one 1960s proposal suggested the use of nuclear explosives.

The canal commission committed to a $1 billion modernization in 1996, widening the narrow eight-mile long Gaillard Cut that allowed access only for a single Panamax-class vessel. Completed in 2002, this expansion allowed two Panamax ships to pass simultaneously. Modernization of canal technology and tugboats were other investments by which the commission hoped to increase traffic by 20 percent.

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Pareto optimality

ONE MAJOR CRITERION with which the value of an economic outcome can be evaluated is Pareto optimality. Under the condition of Pareto optimality, an outcome is suboptimal if one can make a Pareto improvement in the allocation of production and consumption between individuals. A strict Pareto improvement makes all individuals better off. A weak Pareto improvement makes at least one individual better off without making any individual worse off. The Pareto optimality criterion is often used in social welfare, management and political economy since a Pareto improvement is universally beneficial (or at least not harmful). Therefore, in an efficient market all individuals should be in favor of a Pareto improvement, and in an election, since no one is harmed, all voters should be in favor of a Pareto-improving resolution.

Born in 1848, Vilfredo Pareto was an Italian economist and sociologist. Pareto's early training was in engineering at the University of Turin where, in 1870, he completed his thesis on "The Fundamental Principles of Equilibrium in Solid Bodies." After completing his degree he worked as an engineer, but also began applying his mathematical training to economic problems. In 1893, he followed Léon WALRAS as the chair of political economy at the University of Lausanne, Switzerland. His mathematical analysis of economic outcomes had far-reaching implications.

Vilfredo Pareto's well-known contributions, other than Pareto optimality (1906), are the ideas that income distributions throughout society are stable through time and the theory of the "circulation of elites." The latter theory states that while some individuals are born into higher social strata, these strata rotate as today's elite is overthrown by lower classes who become the new elite. Pareto died in 1923 in Geneva.

Pareto optimality is an important concept in welfare economics since it provides an objective criterion. If a Pareto improvement does not harm anyone, then there should be no opposition. The competitive equilibrium in a perfect market is one example of a Pareto optimal solution. If there were Pareto improvements to be made, then that would imply gains to trade, and the economy would move to the Pareto optimal equilibrium.

Consider a simplified example of a Pareto improvement. Two individuals are riding a train. One person is trying to read her newspaper to research business trends for an important meeting, the other person is talking loudly on his cellular phone transacting business with his office. In this situation, we can see that this may not be the best allocation. The person trying to read the paper cannot concentrate with the loud conversation, and the person talking on the phone is getting distracted by mean stares and eye-rolling. What often happens in this type of situation is that enough people complain and cell phones get banned from the train. Taking a look at the value of work being done, there may be a Pareto improving solution:

	Reader	Talker
Value of Work done with Talking	$250	$500
Value of Work done without Talking	$400	$50

If cell phones are banned, a total of $450 of work gets done between the two individuals. Letting them talk, however, generates a total of $750. The higher total indicates that a reallocation can be made to make both better off than with the regulation. For instance, if the Talker is allowed to use the phone, yet is required to pay his seatmate $150, a Pareto improvement is made. The Reader only does $250 worth of work, but plus $150 brings her to the $400 she could have made without the talking. The Talker earns $500 less the $150 payment, leaving $350 which is more than the $50 she would have if legally restrained from talking on the cell phone.

As seen in the above example, some Pareto improvements seem awkward since we do not usually see cash payments made on the train, and many Pareto improvements are left undone. A competitive equilibrium in a perfect market will achieve the Pareto optimum, but there are cases of market breakdown where the outcome is sub-optimal. Information asymmetry can cause a market breakdown. If it cannot be verified that the Pareto improving transfer has been completed before one must take action, then a common result is that individuals do not honor agreements.

Another information problem is accurately calculating the transfer. If you ask the Reader how much her work is worth, what is keeping her from saying $500 or $550? This is why information asymmetries often end up with a second-best outcome (or third or fourth-best) rather than the Pareto optimal solution.

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partnership

THE GENERAL USAGE of the term partnership in the business world could simply mean a joint venture or a strategic alliance that is based on common interests between two or more business entities. Partnership, in a formal sense, however, is a legal term that refers to a type of business organization when two or more persons form a voluntary association for the purpose of doing business.

The most basic form of partnership assumes each partner has equal executive power over the business and takes an equal share of profits or losses. Any partner can act on behalf of the partnership. By and large, a partnership is a business that is based on a private personal agreement. Government regulations on partnerships are therefore minimal. Besides a simple registration with the local authorities for the application of a business license, there is no legal material that one has to submit to the government to establish a partnership. A business partnership can exist once a personal agreement, usually in written form, has been reached between two or more persons.

There are three types of partnerships in the United States: the general partnership, the limited partnership, and the limited liability partnership. A general partnership is a partnership that carries the typical features of a partnership, such as the sharing of management and profit. Each partner is equally liable for the debts and obligations of the firm in full scale, regardless of which partner incurred it. A general partnership resembles a personal agreement between the involved parties. Since all responsibilities are on a personal basis, there is no need to file any paper work with the state.

The second type of partnership is the limited partnership, or the abbreviation LP. Different from the general partnership, it involves two kinds of partners, the general partner and the limited partner. The limited partner, or the "sleeping partner," does not need to have full liability of the debts and obligations in this partnership. The liability is only limited to the amount invested in the limited partnership. To gain legal recognition for this special partnership arrangement, the business has to have at least one general partner, who will eventually be fully responsible for the partnership, and has to file with the secretary of state to receive a Certificate of Limited Partnership.

A variant of the limited partnership is the family-limited partnership, or FLP. A family-limited partnership is a limited partnership in which ownership is restricted to the family members. FLP differs from other types of partnership and corporate forms because the transfer of interest is restricted and is not publicly traded. It is organized as a way to keep control of a family business among the family members. The younger generation of the family usually will be limited partners who own part of the business but do not have the right to participate in the daily management of it. The senior generation will be the general partner who has the right to manage it but also shares an unlimited liability on the business. The business will eventually be transferred to the family members of the younger generation when the time becomes desirable.

The last type of partnership is the limited-liability partnership, or the abbreviation LLP. It is the same as a general partnership with all of the same characteristics except with regard to the liability of its partners. A new legal organizational form that has been recognized by the U.S. government since 2001, limited-liability partnership is a hybrid between a limited company and a partnership. It is an option for a general partnership whose partners want to retain the basic features of a partnership but at the same time want to have the privilege of limited liability. It is a form that is supposed to be attractive for firms that are organized under a professional partnership, such as attorneys and accountants. In fact, in California for example, this form is only available to attorneys and accountants. Even with the attribute of limited liability, LLP is still treated as a partnership for tax returns.

Partnership has been used as a form of business for centuries. An early form of limited partnership can be traced back to the medieval period and is believed to have an Islamic origin. This business innovation later spread out to other parts of the world and became almost a universal practice in both Europe and Asia. The limited-liability partnership, on the other hand, is a very new design that has been practiced only in the last few years.

From an organizational point of view, there are two other common business organizational forms in history besides partnerships: the sole proprietorship and the corporation. A sole proprietorship is a business run by a single individual. It is the oldest and most common form of business organization. The individual, as the owner, controls the whole business and will be held personally liable for all the debts and obligations of the business. A sole proprietorship of a business is not regarded as a separate business entity and tax returns will be determined by the individual's personal income tax rate. Except for an application for a business license, sole proprietorship is not subjected to any federal or state regulation.

A corporation is a form of business organization that is organized by dividing the company's capital into shares. Modern corporations represent an aggregate ownership where a group of shareholders owns, but does not usually run the enterprise. It is recognized by the government, through registration according to the company law, as a corporate entity that has an independent legal personality. As an organization with legal personality, its property and liabilities can be separated from those of its members. It can therefore hold property, can make contracts, and can sue and be sued. The life of the company as an independent entity can also extend beyond that of the participants and can be independent from any changes to the composition of the shareholders.

A partnership is something in between a sole proprietorship and a corporation. It has more than one owner, but the owners are not like the shareholders of a corporation. It is often simply regarded as an aggregation of persons doing business together. There is no separation of ownership and control within a partnership, similar to the sole proprietorship but different from a corporation. A partner can be the owner and the manager simultaneously.

A partnership does not carry a legal personality from its owners, unlike a corporation. Profits of the business are supposed to pass through from the business to the partners, and each of them will report their profits from the partnership as a personal income, which will be taxed at that time. Therefore it is considered as a "pass-through entity" where the partnership itself does not pay any tax on profits.

Each of these organizational forms has advantages and disadvantages. Sole proprietorship is simple and with almost no government intervention. It only involves very small amount of licensing fees. The owner also has all the control, both on how to run the business and how to utilize the profits. However, the high control of the business by the owner at the time means that the source of capital will be limited to the owner. The owner of a sole proprietorship is also responsible for unlimited liability, which is always a potential risk.

A corporation, on the other hand, can raise capital by selling shares to the public. Unlike the owner of the sole proprietorship, the owner of the shares of a corporation, or the shareholders, could easily transfer the ownership through the stock market. Shareholders are also protected under limited liability. There is, of course, a price for all these advantages. It is relatively costly in terms of legal fees to file for incorporation. The organization of the corporation is also governed by the company law and therefore must fulfill numerous legal requirements accordingly.

A partnership is an arrangement that could solve the problem of capital by pooling resources from more than one partner. Compared with a corporation, it has far less legal restrictions and, therefore, the owners could retain a higher level of control on the operation of the business. The trade-off is that there could be disagreements between partners that could jeopardize the business, and all the partners are responsible for a unlimited liability, whatever the consequence. In a worst-case scenario, a partner has to be responsible for any wrongdoing of the other partner on behalf of the partnership. Because of the risk of being involved in personal liability, a partnership is supposed to be formed among people who are close and personally trust each other. Also, while it is a better option than a sole proprietorship in raising capital, with few exceptions, it is still not a form of business organization that could allow the business to grow to a very large size.

Another disadvantage of partnership is that when one partner does not want to continue to be involved, the partnership has to be dissolved first before any new arrangement can be made. The partners must first fulfill any remaining business obligations, pay off all debts, and divide any assets and profits among themselves. If one of the partners still wants to continue the business, he or she will have to buy-out the part of the business that used to belong to the other partner, and either turn the business into a sole proprietorship, or find a new partner to continue the business.

The alternative forms of partnership that are available allow some degree of flexibility and could overcome some of the disadvantages of a simple form of partnership. A limited partnership allows those who want to have more control of the business, but do not want to form a corporation, to have an alternative source of capital through the recruitment of limited partners. A limited partner can have the chance to invest in a business that is less restricted in terms of government intervention and can enjoy limited liability at the same time.

A limited-liability partnership also carries some attractive advantages. The key advantage is that all members of the partnership could carry limited liability, that is, all partners are limited partners. In the past, this could be achieved only by setting up a company. However, any business that is organized as a corporation will be under double taxation, which means that the profit of the corporation is subject to corporate tax, and any dividend the shareholders received would be taxed as income.

An LLP is taxed differently, in a way that profits made from the business are taxed as personal income just like a general partnership. Because of privilege of the limited liability, the business, even though it is a partnership, has to produce and publish ACCOUNTING information to the Registrar of Companies each year.

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patents

THE SOCIAL VALUE OF INVENTIONS and creative work has long been recognized—and their authors rewarded. As long ago as 1474, the Senate of the Republic of Venice decreed that inventors of "new and ingenious devices" be granted monopoly rights for a term of 10 years, thus establishing what is generally recognized as the first formal patent system.

About three centuries later, the drafters of the UNITED STATES Constitution granted Congress the power "to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."

In 1790, the U.S. Congress exercised this power by passing into law the first patent statute, stipulating that the author of a "sufficiently useful and important" invention would receive patent rights for a duration of 14 years. Over the following century, patent systems were set up in the majority of industrializing countries. By the end of the 20th century, more than 130 countries had a patent system in place, although the details of patent protection granted to inventors differ across national systems.

In general terms, a patent represents a legal right to exclude others from making, using, or selling an invention or products made by an invented process that is granted to an inventor for a limited term. Accordingly, a patent creates a MONOPOLY over the use of an invention until the expiration of the patent term. The defining characteristics of the regime of patent protection are the duration of the patent rights, the breadth or scope of patent protection, the definition of patentable subject matter (that is, of the kinds of inventions for which patent protection is admissible), and the criteria of patentability that a specific invention has to satisfy.

In the United States, the duration of patent rights is currently set at 25 years from the date when the inventor files a patent application with the Patent and Trademark Office. The continuing validity of a patent is subject to the payment of modest maintenance fees. When a patent is issued, its content is published and a description of the invention becomes available for public scrutiny. The text of the patent includes a description of the invention and a number of claims defining the intellectual property for which the patent right is granted. The holding of a patent can be the source of a legal action by the holder against a third party accused of infringing on the patent. Typically, the accused infringer in a patent suit defends himself or herself by arguing that the patent in question is invalid, or that in fact his or her own actions are not infringing. Notice that the scope or breadth of the patent is decided in the context of litigation, as the courts determine the precise boundaries of the original patent rights. This is an important aspect of patent protection, since the economic value of a patent depends on how easy it is for others to "invent around" an existing patent. Accordingly, a broad scope of protection makes it harder to invent around a patent, whereas a narrow scope makes it easier.

General restrictions on the kinds of inventions that can be patented are common in every national legal system. The U.S. Patent Statute establishes that patents may be granted for the invention or discovery of any "new and useful process, machine, manufacture or composition of matter or any new useful improvement thereof." The term process refers to any "process, art or method and includes a new use of a known process, machine, manufacture, composition of matter or material." The vagueness of the language in the Statute has left the task of interpreting which inventions and discoveries are excluded to the courts. Over the last 20 years, court rulings have considerably expanded the definition of patentable subject matter. Accordingly, classes of inventions that would have likely been considered non-patentable in earlier times are now protected with patents. Notable among these are genetically modified living organisms, gene fragments, software programs, and business methods. These changes in legal doctrine have been quite significant in light of the rapid pace of technological advances in the relevant fields and have generated considerable controversy.

Criteria for a patent. Provided that the invention constitutes patentable subject matter, the decision as to whether to grant a patent hinges on three criteria: the invention must be useful, novel, and non-obvious. An invention is useful if it serves a specific purpose and is beneficial rather than harmful to society. Determining the usefulness of an invention is not always straightforward, particularly in those situations where an inventor rushes to file a patent application without conclusively demonstrating that the invention can serve the claimed purpose. Furthermore, the stated purposes for an invention may be too generic or vague for the invention to deserve patent protection. Along these lines, considerable controversy accompanied the filing of patent applications on gene fragments (Express Sequence Tags, or ESTs) whose utility could only be described as being valuable research tools for mapping complete genes.

The novelty requirement quite simply restricts the award of a patent to inventions that are new, a condition that is not as easy to verify as it may appear at first. Problems with the novelty requirement arise because it is a rare circumstance when the proposed invention is known to the public in the same exact form. More typically, the novelty of an invention has to be assessed by determining how new it is relative to any similar invention previously known or demonstrated, a determination that incidentally may relate to the scope of patent protection on earlier inventions.

Even if useful and novel, an invention may not receive a patent for failing to pass the non-obviousness test. This test asks whether or not the invention demonstrates a sufficient improvement on the prior art to deserve the award of a patent. The implicit assumption is that on the basis of the prior art in a specific area of technology, certain minimal improvements are obvious to any person skilled in the art, and consequently they are denied patent protection. Thus, the non-obviousness requirement defines the minimum inventive step required for the patentability of an invention.

The legal characteristics of patents described above are of considerable significance for the economic analysis of patents. Features like duration and scope of protection, or the inventive step implicit in the non-obviousness requirement, have the potential to play an important role in defining the economic effects of the legal monopoly over ideas created by patents. Specifically, they are likely to affect the performance of the markets for innovative products, as well as the extent of competition among firms in the pursuit of technological innovations. Considering that they may facilitate the formation of market monopolies—an inefficient form of industrial organization by most economists' own reckoning—why have societies throughout history been so keen on awarding patents to inventors?

Early advocates of patents. A variety of legal philosophies have been invoked over time to provide justification for the creation of a patent system. One of the main theses adopted by 19th-century commentators regarded the award of patents as a matter of justice dictated by either a man's natural right to his own property, including property in ideas, or by society's ethical duty to compensate or reward inventors for what they contributed. This emphasis on the just reward for inventive activity appears to be the basis for Adam SMITH's views on the matter in his *Wealth of Nations*. Even though he held a negative opinion of monopolies in general, Smith appears to consider the granting of a temporary monopoly to be the easiest and most natural way to reward the inventor of a machine for the risk and expense incurred.

Other supporters of the patent system charged, on pragmatic grounds, that patents were a bait for inventors to pursue the progress of science and the useful arts, thus benefiting society. The exceptional character of the monopoly created by the award of a patent is articulated clearly by John Stuart MILL, whose analysis anticipates the essential elements of modern economic thought on the role of patents:

> The condemnation of monopolies ought not to extend to patents, by which the originator of an improved process is allowed to enjoy, for a limited period, the exclusive privilege of using his own improvement. . . . That he ought to be both compensated and rewarded for it, will not be denied, and also that if all were at once allowed to avail themselves of his ingenuity, without having shared the labors or the expenses which he had to incur in bringing his idea into a practical shape, either such expenses and labors would be undergone by nobody except very opulent and very public-spirited persons, or the state must put a value on the service rendered by an inventor, and make him a pecuniary grant.

Critics of the patent system often disputed the need for an incentive to promote the inventive work that many considered to be a natural manifestation of human curiosity. In a different guise, a similar point was made by mid-20th-century critics who considered the declining economic role of the lone inventor in favor of the corporation to undermine the justification for awarding patents. This position reflected the belief that the social usefulness of the underlying invention bore no clear relation to the earnings generated by a patent, and furthermore that corporate investment in inventive activity did not depend on the prospect of a patent.

In this regard, an alternative viewpoint supporting the award of patents considers them to be society's consideration for the inventors' willingness to disclose their ideas or discoveries to the public. Under this view, it is recognized that the incentive of a patent award is not necessary to stimulate inventive activity. However, it is believed that inventors would keep their findings secret, or in any event, they would not disseminate their ideas as widely as it would be desirable in light of society's commitment to promoting the progress of science and the useful arts. The award of a patent is seen as a reward for the disclosure of information by the inventors. Note that for the inventors who intended to profit from their discovery by keeping it secret, the patent becomes a substitute means for profiting from the invention. As for other inventors, patents may offer a sought-after symbolic recognition of their creative work and induce them to disclose their inventions.

The social interest in disclosing information about inventions highlights dynamic aspects of the progress of science and the useful arts that other theories pay only scant attention to. In fact, the public disclosure of existing inventions may serve the dual purpose of forestalling duplicative research and experiments aimed at identical discoveries, and of contributing to the body of society's knowledge and ideas that constitutes an important factor for future inventive efforts.

Each of the views about the social function of patents described above, justifies the creation of a monopoly in the use of an invention as a necessary evil that society has to tolerate and endure in order to promote the achievement of a greater good, the progress of science and the useful arts. Building upon this general framework for examining the patent system, many fascinating economic models investigate how changes in the duration and scope of patents or in the criteria for patentability would affect social welfare and the pace of technical advance. It is important to realize that the implications of these theoretical models for the design of the patent system and other policy issues depend on the validity of the general framework they adopt.

Bluntly, an empirical assessment of the context of inventive activity is necessary to determine whether patents induce a significant increase in inventive activity, whether patents induce a significant increase in the disclosure of inventions, and more generally if they perform in the way the theory assumes them to do.

Consider, then, the proposition that patents are necessary as an incentive for inventive activity. The premise for this proposition is that invention is a costly activity and that inventive activity will be forthcoming under the stimulus of a financial reward. Absent a legal property right preventing others from copying, imitating, and using the knowledge underlying an invention, the inventor will not be able to profit from it either directly or by licensing its exploitation to a third party. The patent system's net social benefits should be determined by weighing the social value of the change in inventive activity that the system induces, against the social costs of the monopolistic conditions whose appearance in the relevant product markets the system facilitates. In principle, the changes in inventive activity may be trivial if inventive activity would occur in response to other stimuli, or if the granting of broad and long-lived patents deters firms from performing research in the neighborhood, or from undertaking the kind of follow-up inventive activity that could otherwise improve on the original invention.

Patents in research and development. Whether or not and in which contexts, patents provide a crucial incentive to inventive activity has been the focus of a considerable amount of empirical work. Beginning in the 1960s and as late as the early 1990s, surveys of RESEARCH AND DEVELOPMENT (R&D) managers have been conducted in order to draw a map of the technology areas for which firms consider the prospect of a patent to be a necessary inducement for their R&D investments. The conclusions of these studies have been remarkably consistent and suggest that with the exception of firms in the pharmaceutical industry, firms do not consider patents as a very effective means of protecting their inventions. On the contrary, many survey respondents from firms in the high-tech sectors of the economy indicated that being first to market, learning effects, or sales and service efforts are more important for them to profit from innovation. And in several industries, firms reported that secrecy is an effective means for profiting from innovation in TECHNOLOGY, particularly with respect to inventions focused on new production methods.

A caveat to the validity of these findings is in order, since these surveys have typically focused on large firms with an established R&D department. Patents may play a more important role for other classes of inventors, namely small firms or inventors that pursue a patent with the intention of licensing to other firms the development of any commercial application. These inventors may depend more heavily on patents to protect their invention, either because they cannot rely upon a head start vis-à-vis their competitors due to their small size, or because they facilitate licensing transactions.

It is customarily held that innovation differs from invention because of the development activities that need to be undertaken before an invention can be implemented in a commercial product or a production line. This distinction can be of great economic significance. For example, in the pharmaceutical industry costs incurred after the invention has been made can easily exceed $100 million and account for a sizeable share of overall drug-development costs. Furthermore, the uncertainty about the outcome of an innovative project is not eliminated at the stage of invention, when the technical feasibility of a concept, or a prototype, has been demonstrated.

The costs and uncertainty of development activities have been invoked to argue that holding a patent on an invention is necessary for a firm to commit financial resources to its development. The holding of a patent on the invention secures the prospective market for the innovating firm. By reducing the threat that a competitor may race to market and spoil the inventing firm's profits, the patent induces it to develop and commercialize the invention. Likewise, when the inventive work and the development work are carried out by different organizations, a patent on the inventive work may be necessary together with an exclusive license in order to induce a firm to engage in the development work. In either case, the primary function of patents is not so much to provide incentives for inventive work, but rather to provide incentives for the development work that will follow.

The distinction is particularly important in those contexts where the inventive work would occur even in the absence of a patent. This is the case when the funding for the inventive activity is not dependent on the profit motive, as it is often the case when the relevant research funds are provided by the public or non-profit sectors of the economy. Indeed, the motivation for these forms of support of research activity is to promote inventions and discoveries that are intended to benefit the public at large. Until some time ago, such public purpose was served by placing the inventions and discoveries achieved in this way in the public domain, thus making them available at no cost. Since the 1960s, critics of this practice in the United States advanced the proposition that publicly funded research at universities and other research institutions had failed to induce innovations, and thus to generate public benefits because the results were routinely assigned to the public domain.

Absent a patent and an exclusive license, it was argued, hardly any firm would be willing to invest R&D dollars in such development work. In spite of the weak empirical evidence supporting it, this proposition became the primary stimulus for sweeping reforms in U.S. government patent policies.

This reform, initiated by the Bayh-Dole Act of 1980, granted universities and other private organizations the right to apply for patent protection on the results of publicly funded research. The widespread exercising of this has wrought considerable changes in the way in which research universities contribute to the national R&D effort. The resulting encroachment of patent rights on what used to be the domain of public science is only one aspect of broader changes in the U.S. patent systems, including the drastic expansion of the definition of patentable subject matter promoted by recent judicial opinions, that have taken place since the 1980s.

These events suggest that even though the findings of empirical research in economics are bearish or inconclusive about the social value of patents, policy decisions have been increasingly animated by a firm belief in the social value of stronger patent protection. Lately, this trend has expanded beyond the boundaries of the United States. The spurious association between the changes in patent policy and the rapid pace of U.S. economic growth during the 1990s has prompted other advanced industrial nations to follow suit, at least in part. Furthermore, while less developed countries have historically benefited from unfettered access to scientific and technological knowledge originating from the advanced economies, the TRIPS (Trade Related Aspects of Intellectual Property) agreement that accompanied the creation of the WORLD TRADE ORGANIZATION mandates a time-table for countries around the world to institute a system of patent protection or to strengthen the protection afforded to domestic and foreign inventors.

Although the immediate effect of these institutional reforms is likely to be negative for many developing countries, their supporters argue that in the long run, these countries will benefit as a result of the induced increases in domestic inventive activity and in their participation in technology transfer agreements.

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Pemex

PETRÓLEOS MEXICANOS (PEMEX) is the world's fifth-largest oil producer. As a vertically integrated state enterprise it enjoys exclusive rights to the exploration, extraction, refining, and retailing of oil in MEXICO. It also enjoys a state MONOPOLY over natural-gas extraction, but greater private competition in drilling and distribution. In 2002, Pemex exported nearly half of its daily output of 3.6 million barrels. The same year Mexico's proven oil reserves were 12.6 billion barrels, mostly located offshore in the Gulf of Mexico.

In 1938, foreign oil companies disregarded a Mexican Supreme Court ruling in favor of oil workers. Using this as a rationale, and citing Article 27 of the Mexican Constitution of 1917, which declared the resources in the subsoil to be property of the state, President Lázaro Cárdenas nationalized all foreign oil companies, establishing Pemex as a state monopoly. Although compensation to the former owners defused tensions with the UNITED STATES, a prolonged boycott of Mexican oil by the United States and an embargo by U.S. oil equipment producers ensued. The confrontation made Pemex an important symbol of Mexican nationalism.

Pemex rapidly changed the focus of the industry from exports to the provision of subsidized oil to the domestic market with the goal to assist the country's industrialization. For a few years in the early 1970s, Mexico became a net importer of oil, but the sharp increase in world oil prices in 1973 sparked interest in exploration and raising production, returning Mexico to self-sufficiency in 1974. During the presidency of José López Portillo (1976–82), Pemex undertook extensive exploration resulting in the discovery of vast reserves. Subsequently, Mexico has become the third-largest supplier of oil to the United States with 1.5 million barrels delivered per day in 2002. Nearly 90 percent of Pemex's exports are to the United States.

Pro-market reforms since the early 1990s have brought forward discussion of the potential PRIVATIZATION of Pemex. President Vicente Fox (2000–06) initially supported its privatization. However, Pemex generates around a third of state revenue and privatization is strongly opposed by vast sectors of the population, so the idea has been shelved and exchanged for modernization of the state enterprise, implying greater engagement with private enterprises.

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Persian Gulf War

IN EARLY 1991, a two-month war between IRAQ and a United Nations (UN) coalition of 32 countries led by the United States entered the history books as the Persian Gulf War. Formed in response to the 1990 Iraqi invasion of KUWAIT, the coalition included forces from the United Kingdom, France, Egypt, Saudi Arabia, and Syria.

Initial hostilities stemmed from the desire of Iraqi leader, Saddam Hussein, to annex the neighboring state of Kuwait as an historic province of Iraq. Iraqi intentions to seize Kuwait had been voiced as early as the 19th century, but became more pronounced after 1961 when Kuwait achieved its independence from Britain. With the third-largest oil deposits in the world and far better port facilities than Iraq, Kuwait made an attractive target. In the months leading up to the outbreak of hostilities, Iraq accused Kuwait of illegally pumping oil from Iraqi oilfields at Rumalla, of intentionally overproducing oil to drive down the price and hurt Iraq's economy, and of failing to forgive war debts incurred by Iraq in its eight-year war with IRAN that had ended in 1988. Seeking to resolve the situation by force, Hussein sent approximately 100,000 Iraqi troops into Kuwait on August 2, 1990, formally annexing the country six days later.

The United Nations responded by demanding a full Iraqi withdrawal from Kuwait on August 3, and then on August 6 calling for a global trade embargo on Iraq. Acting quickly to presumably defend Saudi Arabian oilfields, U.S. President George H.W. BUSH dispatched American soldiers to the region on August 7. Further U.S. deployment in the region followed (Operation Desert Shield) through the end of 1990, with support from military contingents from North Atlantic Treaty Organization (NATO) allies and a number of Arab states.

UN forces, under the U.S. general Norman Schwarzkopf, reached approximately 700,000 by January 1991, with 540,000 of those U.S. personnel, while about 300,000 Iraqi troops occupied Kuwait. Meanwhile the UN Security Council had, on November 29, set a final deadline of January 15, 1991, as the date by which Iraqi forces would have to withdraw or face military reprisal "by all means necessary."

The war began in the early morning of January 17th with a massive Allied air campaign (Operation Desert Storm) designed to eradicate Iraqi aircraft, air defenses, and missile installations. Iraq retaliated by firing medium-range missiles toward ISRAEL and Saudi Arabia, hoping to widen the conflict and disrupt the UN coalition. The Allied air offensive, launched from bases in nearby Saudi Arabia and TURKEY, as well as from as far away as Europe, the Indian Ocean, and the United States, continued throughout the conflict. With an overwhelming advantage in air power, Allied air superiority was quickly achieved and Allied targets soon shifted from Iraqi air defenses to its oil refineries, arms factories, communication infrastructure, and government buildings. As the war progressed, the UN air campaign moved to strike Iraqi forces on the ground in Kuwait and southern Iraq in preparation for an Allied ground assault.

The Allied land invasion (Operation Desert Sabre) began on February 24, following two primary invasion routes. The first struck directly northeast from Saudi territory into Kuwait. Within three days, Kuwait City had been retaken as Iraqi defenses in that region disintegrated or surrendered in the path of U.S. and Arab ground troops. A second avenue of attack was launched across the desert, where a major U.S. armored force outflanked Iraqi defenses on the Saudi border and attacked the rear of the Iraqi lines. The move was a great success and Iraqi defenses crumbled. Bush declared a cease-fire on February 28.

After the cessation of hostilities, Iraq accepted a set of UN resolutions on April 7, 1991. Hussein, however, remained in power and took severe measures to quell rebellions among Iraq's sizeable Shiite and Kurdish minorities. Estimates of the physical destruction wrought by the conflict vary widely. Both Kuwait and Iraq suffered devastating property damage. Estimates of Iraqi casualties range from about 10,000 to more than 100,000. Allied forces lost 343. Kuwait suffered about 5,000 casualties.

After the withdrawal of Iraq from Kuwait, many issues remained unresolved. Faced with Hussein's ongoing intransigence, UN sanctions continued in force and tensions between Iraq and the United States remained high, which portended prospects for the future United States-Iraq conflict in 2003.

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Peru

THE REPUBLIC OF PERU BORDERS Ecuador to the northwest, Bolivia to the southwest, CHILE to the south, COLOMBIA to the northeast, BRAZIL to the east, and the Pacific Ocean to the west. Peru's southern area runs across the high Andes, while its northern tip almost reaches the Equator. Lima is its capital city.

Peru's population is almost 30 million. Approximately 45 percent are Native Americans, about one-third of mixed European and Native American background (*mestizos*), approximately 15 percent unmixed white, and the remainder of African, Chinese, or Japanese descent. Spanish is Peru's predominant language, but Quechua is also an official language. Also spoken are English and Aymara. Since WORLD WAR II the population has rapidly increased and become predominantly urban.

Ancient Peru was the seat of several Andean civilizations. SPAIN conquered Peru in 1533. In 1821, Peru's independence was declared but the country was in constant turmoil until 1845 when Ramon Castilla seized the presidency. Castilla's most important contribution may have been his exploitation of Peru's guano and nitrate deposits. For several decades, taxation of this industry was the government's principal source of revenue. During Augusto Leguia y Salcedo's second term (1919–1930), costly public works projects were begun, financed by loans from U.S. banks, and the rights to the La Brea-Parinas oil fields were given to the International Petroleum Company, a U.S. company.

In the 1950s, Peru began a program geared toward encouraging the growth of domestic industries and limiting the outflow of dollars. By 1960, the economy was much stronger and Peru was receiving foreign capital in the form of loans and development contracts. That year, the government gained approval for the gradual nationalization of the majority of Peruvian oil production facilities.

In 1968, the government seized control over the International Petroleum Company's holdings and, in 1969, a program of economic nationalization began, including the expropriation of foreign-owned ranchlands, the institution of price controls, and a sweeping land-reform law. In 1973, the fish-meal industry was nationalized. These programs affected $600 million in U.S. capital investments.

In the early 1980s, the government attempted to reorganize the economy with reduced government involvement and increased private enterprise. However, the new economic policies failed to lessen the growing economic crisis. The rise in the guerilla movement also exacerbated the economic problems. In 1985, the regime announced that it would pay no more than 10 percent of its export earnings toward its nearly $14 billion in foreign debt. In response, the INTERNATIONAL MONETARY FUND (IMF) declared Peru ineligible for future loans and credits until it adopted a more traditional approach to the economy and debt repayment. In 1987, as Peru's economy continued to slide downward, the government moved to nationalize the banks.

In 1990, the government instituted an austerity program. The program eliminated inflation but caused immediate hardships, most notably among the poor. In 1992 a program of neo-liberal economic policies was begun, including the privatization of state-owned mines and utility companies. In 1993, the United States and other nations resumed loans to Peru.

The large state-owned banks control credit, currency regulation, bank regulation, and foreign exchange. The Banco Central de Reserva del Peru is the CENTRAL BANK and bank of issue. Peru's exports are valued at approximately $7.3 billion and its imports at approximately $7.4 billion. Peru's exports are more diversified than most South American countries and include petroleum, fish meal, cotton, sugar, coffee, copper, and lead. Peru's major imports are pharmaceuticals, transport equipment, petroleum, chemicals, consumer goods, and foodstuffs. Its export/import partners include the UNITED STATES, BRITAIN, BRAZIL, SWITZERLAND, CHINA, JAPAN, CHILE, and GERMANY. Peru is a member of the Latin American Integration Association (LAIA) and the Andean Group. Both organizations work to integrate the economies of Latin and South America.

In 1998, El Niño's impact on agriculture, the ASIAN FINANCIAL CRISIS, and the Brazilian market's instability contributed to a curtailment of Peru's economic growth. Factor in political instability and global economic travails and Peru's economic growth has further been suppressed. The government is working to reinvigorate the economy and reduce unemployment but, for the early 2000s, economic growth is expected to be no more than 3 to 3.5 percent.

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Peugeot Citroën

OVERCOMING COMPETITOR RENAULT to produce FRANCE's best-selling automobile, Peugeot Citroën holds the significant status of being the second-best selling car company in Europe, just behind VOLKSWAGEN.

Peugeot manufactures cars, light commercial vehicles, motorcycles, scooters and light-armored vehicles under the Peugeot and Citroën brands. As well, it produces specialized automotive parts (which sell through Faurecia retailer outlets), transportation and logistics equipment (via an association with the global supply house, Gefco) and offers financial-service arrangements (handled by Banque PSA France).

The group, with its 200,000 employees, has been focused on a three-year rollout to produce 25 new models between 2001 and 2004. It is an expeditious schedule compared to the past; only nine new models were introduced between 1997 and 2001. But, the corporate plan is to deliver to its customers the kind of vehicles they want and expect which leads to a wide variety of choice. Besides changes in design aesthetics, Peugeot designers foresee the cars of the new millennium as environmentally conscious, ultra-safe, and offering interface between the car and outside world.

Environmental priorities include reducing harmful emissions, improving air quality, and increasing the number of cars operable on low-fuel consumption. As for safety, Peugeot's newest models feature a structural front-end resistance three times higher than the norm.

A relatively new scope for Peugeot, and for the auto manufacturing industry as a whole, is the incorporation of the "connected village" approach into vehicles. Upcoming Peugeots will include such systems as assisted navigation, built-in mobile phones, message reception, and transmission services capabilities.

This all leads to the company's objective to boost annual sales volume to 3.5 million cars, 800,000 of which would be sold outside Europe. And that is why Peugeot is investing in two new large facilities—a manufacturing plant in the Czech Republic (opening date 2005) capable of producing 200,000 Peugeot Citroën cars per year; and an assembly plant in central Europe (2006) with an annual capacity of 300,000 units.

Full-year financial statements (2001) show revenues of $46 billion, making Peugeot Citroën the 95th largest company in the world.

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Philippines, the

AN ARCHIPELAGO IN SOUTHEASTERN Asia, between the Philippine Sea and the South China Sea, east of VIETNAM, the Philippines were ceded by Spain to the UNITED STATES in 1898 following the SPANISH-AMERICAN WAR. The islands attained their independence in 1946 after Japanese occupation in WORLD WAR II.

In the late 1990s, the Philippine economy—a mixture of agriculture, industry, and services—deteriorated as a result of effects from both the ASIAN FINANCIAL CRISIS and extremely poor weather conditions. The Philippines' poverty level reached 40 percent of the population, but one encouraging sign was that the island's active labor force rose slightly from 30 million people in 1999 to 32 million in 2003.

Of the islands' industries, AGRICULTURE (farming, forestry, and fishing) employs approximately 40 percent of the laboring trades to constitute about 17 percent of the economy. Manufacturing, construction, and mining add 16 percent while services make up the remainder.

Major industrial products are textiles, pharmaceuticals, chemicals, wood products and electronic gear. The Philippines is rich in mineral resources, there are major deposits of gold in northern and southern Luzon, iron ore in northern Mindanao, copper in central Luzon, and high-grade chromium ore in both the west-central and southern parts of the island.

At the beginning of the new millennium, the Philippine government continued economic reforms to help its people try to match the pace of development in the newly industrialized countries of east Asia. The strategy included further deregulation and privatization of the economy, and increasing trade integration.

The GROSS DOMESTIC PRODUCT (GDP) per capita was $4,000 in 2001. The future of the Philippines' economy is highly dependent on the economic prospects of its two major trading partners, the United States and JAPAN.

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Phillips Curve

THE PHILLIPS CURVE PLOTS the relationship between the rate of inflation and the unemployment rate and it is very common to view the Phillips Curve in a graphical format. Usually, this is done by placing the rate of inflation on the vertical axis and the unemployment rate on the horizontal axis. Doing so, A.W. Phillips first noted the inverse empirical relationship by using wage inflation and unemployment for the British economy.

This original study looked at a 100-year time period, ending in 1957. Modern variations of the Phillips Curve typically replace the wage inflation rate with the inflation rate for consumer prices. In the UNITED STATES, as well as in many other countries, this is measured by the percentage change in the Consumer Price Index or CPI. Moreover, the modern Phillips Curve is often augmented with a term that represents inflationary expectations and is, therefore, referred to as the expectations-augmented Phillips Curve.

First developed by Phillips, the inflation-unemployment rate relationship was later modified by Milton FRIEDMAN and Edmund Phelps. Today, the standard expectations-augmented Phillips Curve relationship is expressed as:

$$\pi = \pi^e - k(u - u^*)$$

In this equation the inflation rate is denoted by π, the expected inflation rate is denoted by π^e, the unemployment rate is denoted by u, and u^* is called the natural rate of unemployment. The latter can essentially be thought of as the unemployment rate that prevails in normal times. Thus, u^* is an equilibrium unemployment rate that the economy naturally gravitates toward over time. In any particular time period, however, the natural rate of unemployment may be greater than, less than, or equal to the actual unemployment rate. Note that the natural rate of unemployment is typically greater than zero as it takes into account such phenomena as frictional and structural UNEMPLOYMENT. The parameter k is greater than zero and indicates the extent to which the inflation rate is associated with the deviation of the actual unemployment rate from the natural rate of unemployment.

In practice, the parameter k is a coefficient that must be estimated. Once estimated, the magnitude of k reveals information about how responsive the current inflation rate is to a deviation of the current unemployment rate from the natural rate of unemployment. Larger values of k indicate more responsiveness while a smaller value of k would indicate less responsiveness. Thus, whenever the unemployment rate is unusually high, which would be the case when $u > u^*$, there is pressure on prices in the economy to rise.

On the other hand, if the unemployment is unusually low, there is a tendency for prices to fall or, at least for the inflation rate to become smaller. It is in this sense that one often hears of the Phillips Curve as illustrating the trade-off that exists between inflation and unemployment. Higher unemployment rates are associated with lower inflation rates while lower unemployment rates are associated with higher rates of inflation.

The expected inflation term picks up the idea that there is inflationary momentum in the economy. That is, if people form their expectations about current inflation from what the inflation rate has actually been in the immediate past, then there is a built-in source of inflation pressure.

For example, if inflation has been high the last couple of periods, it is likely that business owners and workers will expect it to be high in the current period. Thus, they will set their prices and wages in accord with this expectation. Since inflation is the actual percentage change in prices, then to the extent that people raise their prices in anticipation of inflation they are, in fact, placing pressure on prices to rise. It is in this sense that the idea of inflationary expectations leads to inflationary momentum. Thus, according to the Phillips Curve, one source of inflationary pressure is inflationary momentum.

Moreover, the short-run Phillips Curve suggests a trade-off between unemployment and unexpected inflation. Only if expected inflation changes will the short-run Phillips Curve shift. In this context, the shifting of the Phillips Curve reflects the notion that people may have different expectations about inflation, but given these new expectations, there still remains an inverse relationship between unemployment and inflation.

Consequently, any observed relationship between unemployment and actual inflation will change over time as expected inflation changes. Thus we may observe actual inflation being high even when unemployment is higher than the natural rate. This does not invalidate the Phillips Curve relationship rather it simply highlights the point that the curve may shift and the economy may have changed in some way. Indeed, with regard to unemployment, it is unexpected inflation that is relevant, not its level.

Rearranging the expression of inflation one can express the unemployment rate as a function of the natural rate of unemployment and unexpected inflation. Doing so one obtains:

$$u = u^* - (1/k)(\pi - \pi^e)$$

In the long run, if people and business owners have rational expectations of price changes then inflation will equal expected inflation on average. Thus according to the expectations-augmented Phillips Curve, the actual unemployment rate will coincide with the natural rate in the long run and the long-run Phillips Curve is vertical. This implies that changes in the nominal money supply, which affect interest rates and aggregated demand, cannot affect output or unemployment in the long run and therefore money is long-run neutral.

Consequently, the Phillips Curve suggests that policymakers can exploit the trade-off between inflation and unemployment in the short run, but not in the long run.

The result of trying to do so over a long period of time is simply more inflation without any change in the natural rate of unemployment.

In fact, it is typically argued that the ability of the monetary policy authority or central bank (e.g., the FEDERAL RESERVE in the United States) to lower the unemployment rate depends critically on whether or not money is neutral. From a historical perspective, it is interesting to note that during the 1960s, the United States economic policy centered on the ability of a policy-maker to gradually obtain a lower unemployment rate by moderately increasing the inflation rate. However, it was soon recognized that unemployment could not persist below its natural rate without resulting in accelerating inflation.

Economic theory suggests that when output exceeds its potential level, shortages of workers and materials develop resulting in upward pressure on wages and the costs of materials. Note that when the economy is producing an amount of output that is just equal to its potential, the unemployment rate will equal the natural rate of unemployment. As a result of an unusually low unemployment rate and higher than potential amount of output being produced, inflationary pressures begin to build. This is because many firms, in an attempt to keep production levels high, must seek additional workers and/or try to retain current employees who have many good alternative job opportunities. The way to keep and attract workers is to raise wages, compensation, and other benefits. However, these strategies are costly and so firms may find their gross profit margins being squeezed.

As a result, in order to maintain these margins, firms may try to raise prices. Of course, some firms are better able to raise prices than others depending on the market structure in which they operate. Even so, there is pressure on prices to rise and if the overall level of prices does rise, then the economy will experience inflation.

Similarly, when output is below its potential level and the unemployment rate is above the natural rate of unemployment, inflationary pressures begin to subside. In this case, workers' alternative job opportunities are bleak and they may agree to lower wages and compensation in order to keep their jobs. So, when demand has fallen and firms reduce their production levels, they require less workers. The demand for labor has fallen and wages will follow suit. With lower incomes, people will demand less output and prices of goods and services should fall in order to clear markets. Thus, with wages and prices falling, the inflation rate should be lower.

Finally, for convenience purposes, the Phillips Curve is again often re-written replacing the unemployment rate with the deviation of actual output from potential output. Recall that when the actual unemployment rate coincides with the natural rate of unemployment, the economy is said to be producing at potential. Any time the economy's output level deviates from the potential output level then we know that the unemployment rate will differ from the natural rate of unemployment in a predictable manner. This representation using the deviation of output from potential is given by:

$$\pi = \pi^e + g(y - y^*)$$

where y is real gross domestic product, y^* is potential gross domestic product, and the coefficient g measures the responsiveness of inflation to departures of output from potential. Note that if one takes natural logarithms of real output and real potential output, then their difference essentially reflects the percentage by which output deviates from its normal or equilibrium level. In this specification, the parameter $g > 0$ indicates the extent to which the inflation rate is associated with the deviation of gross domestic product from its potential (i.e., the "output gap").

The price adjustment mechanism is succinctly described by the expectations-augmented Phillips Curve. In general, the Phillips Curve shows how inflation depends critically on two components. The first of these components is the degree of inflationary momentum as reflected in the inflation expectations term. The second component is the state of the labor market or, put differently, how the economy is performing relative to some benchmark. This benchmark is either the natural rate of unemployment or potential real output. Policymakers can use the Phillips Curve to help guide the economy and to maintain the inflation rate at desired levels. Economic forecasters can use the Phillips Curve to make predictions about inflation.

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physiocrats

A FRENCH ECONOMIC movement founded by Francois QUESNAY and a major influence on Adam SMITH and later economists, physiocracy derived its name from the fundamental idea that economic systems should follow the rule ("-cracy") of nature ("physio"). The movement was partly a reaction against two doctrines that dominated the economic life of 18th-century FRANCE and other European nations: MERCANTILISM, the idea that government should promote exports and discourage imports so that the country would accumulate gold; and Colbertism, named after the French commerce minister Jean-Baptiste COLBERT (1619–83), which tried to regulate every aspect of economic life, even to the number of threads in lace. Colbertism also tried to encourage manufacturing at the expense of agriculture.

Quesnay, the founder of physiocracy, came from a farming family in rural France and was orphaned at the age of 13. He educated himself in medicine and became a successful surgeon. His writings included a book titled *On the Circulation of Blood* and two encyclopedia articles about farming. These foreshadowed some of his later ideas about economics.

Quesnay became personal physician to King Louis XV of France in the early 1750s, and did not become interested in economics until a few years later. Shortly thereafter, he met the Marquis Mirabeau, who became Quesnay's first follower. Quesnay's own economic writings tended to be obscure. As Lionel Robbins said in his lectures at the London School of Economics, "I find Quesnay almost intolerably difficult. You need a towel round your head to read Quesnay." Mirabeau, on the other hand, proved adept at popularizing Quesnay's ideas: "The ruminations of one seemingly harmless eccentric physician had now become a School of Thought, a force to be reckoned with."

The main ideas of physiocracy can be seen partly as coming from Quesnay's medical ideas and farming background, and partly as a reaction against the dominant economic doctrines in France at the time. First, the physiocrats thought that only AGRICULTURE and MINING produced new value. They saw manufacturing as a sterile activity that simply rearranged what had already been created by agriculture and mining. As a result, they favored policies to encourage agriculture at the expense of manufacturing, exactly the opposite of the policies favored by Colbertism. They also challenged the mercantilist notion that wealth consisted solely of gold or silver. Instead, the physiocrats saw wealth as coming only from productive activity—agriculture and mining, in particular.

Second, apart from wanting to encourage agriculture, physiocrats advocated LAISSEZ-FAIRE economic policies that would leave each individual free to pursue his or her own interests. Again, these policies were the exact opposite of the heavy regulation favored by Colbertism. The physiocrats' support for laissez-faire also influenced Smith, who was a friend though not a follower of Quesnay.

Third, the physiocrats based their policy recommendations on different grounds from those of Smith, who advocated utilitarian measures to achieve "the greatest good for the greatest number." Instead, physiocrats thought that all policies should simply follow "natural law," by which they meant—rather vaguely—their distinction between productive activity (agriculture and mining) and sterile, unproductive activity (manufacturing).

The centerpiece of the physiocrats' natural-law theory was the *tableau économique* (economic table), a diagram devised by Quesnay that showed how wealth flowed between productive and unproductive sectors of the economy. Mirabeau said that the invention of the tableau was as significant as the invention of writing and money; Smith regarded its distinction between productive and unproductive activity as misguided. Quesnay's flow model of the economy can be seen as an echo of his earlier writings about the circulation of blood.

Quesnay's tableau diagram divided society into three columns: productive laborers (agricultural and mining workers); landlords, who were also productive by virtue of making their land available for cultivation; and unproductive laborers (those in manufacturing and commerce). In the diagram, wealth flows year by year between the productive and unproductive classes. Good economic policy, said the physiocrats, caused enough wealth to flow to the productive classes to maintain and increase their output over time. Bad economic policy allowed wealth to flow away from the productive classes into the hands of the unproductive.

In effect, the physiocrats argued that good economic policy favored agriculture and mining at the expense of manufacturing and commerce, while bad economic policy did the reverse. The implications of this view were not always easy to predict: for example, the physiocrats advocated abolishing all taxes except those on landlords; laborers and businesspeople would pay no tax.

Whatever their errors, the physiocrats are today recognized as the first economists to treat a nation's economy as a system of interacting sectors between which wealth flowed over time. Some of their ideas were anticipated by the Irish economist Richard Cantillon in his "Essay on Commerce" (1755) and extended by the Scottish economist Smith in his famous *The Wealth of Nations* (1776).

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Pierce, Franklin (1804–69)

THE 14TH PRESIDENT of the UNITED STATES, Franklin Pierce was born in Hillsboro, New Hampshire. He graduated from Bowdoin College in Maine in 1824. After studying law, he was admitted to the New Hampshire Bar in 1827; the same year his father became governor.

At age 24, Pierce was elected to the state legislature. In 1833, he was elected to the U.S. House of Representatives, moving to the Senate in 1837 as that body's youngest member. However, he and his wife disliked Washington, and felt they could not live on a senator's pay ($8 per day when in session). In 1842 Pierce resigned and returned to private practice, rejecting several offers to return to politics, including an offer to become James POLK's attorney general.

During the MEXICAN-AMERICAN WAR, Pierce served as brigadier general under General Winfield Scott. Following the war, Pierce rejected the 1848 Democratic nomination for governor but remained active in state party politics.

A deadlock at the 1852 Democratic Convention resulted in Pierce's nomination for president on the 49th ballot. He defeated Scott, his former commander and Whig candidate, in the general election.

Pierce immediately angered Northerners. In his inaugural address he announced support for strict enforcement of the Fugitive Slave Act, which required Northerners to assist in returning escaped slaves to their Southern masters. Later, he also supported the Kansas-Nebraska Act, which allowed the residents of those territories to determine their admission to the Union as slave or free states. This was seen as a betrayal of the Missouri Compromise by permitting Northern territories to become slave states. It resulted in a bloody border war as both sides fought to control Kansas.

Pierce also pursued an aggressive foreign policy to expand slave territories. A secret proposal advocating the taking of Cuba by force, made by James BUCHANAN, the minister to Britain, became public. An embarrassed Pierce had to repudiate the document and forego all attempts to acquire Cuba or any other territories.

Pierce's only successful territorial acquisition was the 1853 Gadsden Purchase, encompassing the southern parts of present-day Arizona and New Mexico. The purpose was to build a transcontinental railroad to facilitate the rapid westward expansion of the still young nation. Pierce expanded U.S. trade in Asia and Latin America, and reduced tariffs with Great Britain.

In 1856 Pierce became the only elected president to lose his own party's re-nomination. They selected James Buchanan instead. Pierce became an outspoken critic of President Abraham LINCOLN and the Emancipation Proclamation, and blamed abolitionist extremism for the AMERICAN CIVIL WAR.

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planning

THE CONCEPT OF PLANNING in capitalist economics relates to conflict resolutions between the actual and potential as seen by decision agents. It is a conscious activity by decision agents to transform the potential to actual. Planning may also be viewed in terms of conscious intervention to change the actual reality through cognitive designs. Planning is to create a cognitive edifice or structure of change.

Planning relates present perceptions of concrete realities to future possibilities that must be actualized through a rationally continuous process. It is time sequential in that planning consciously links various decision time points to one another and to the initial time thus defining a conscious decision trajectory through the examination of evolving cause-effect chains that are likely to be actualized through current decisions. It may thus be viewed as examining future possibilities and the alternative courses of action, which may be opened to the decision agent. This involves assessing the future contingencies and designing provisions for them.

Planning is conceptually distinguished from decision in that it is simply a conceptual subset of decision space. The general decision space is composed of deliberative and non-deliberative decisions. Planning belongs to the subset of deliberative decisions. Unlike other deliberative decisions, planning is time-points connected on the basis of rational contemplation of the future relative to the present to arrive at a rational cognitive edifice for action over a specified period such as medium-run or long-run, which establishes planning as a dynamic concept.

Planning is different from the plan in that planning is a cognitive creative process that allows the decision agent to think through the desired objectives, and strategies and tactics to effect the objectives given the resource limitations. A plan is the cognitive outcome of the planning that shows things to be implemented and the rules to implement them. All these lead to the defining characteristics of the concept of planning that include conscious continuity, process, present, future, actual, potential and others.

Planning is concerned with present design of future decisions. It involves deliberative cognitive activity of constructing best strategies and tactics for future decision possibilities to bring into being a predetermined desired set of goals as well as to solve future problems of social complexities in a manner that suggests the needed resources for the implementation of the cognitive construct, the plan. This definition and supporting discussions present to us the subject matter of planning.

Rationale and rationality. By examining the definitions of planning, a question arises as to why decision agents should plan. Planning is viewed as a rational process that offers an important way of thinking about the problems of constructive-destructive process where the existing reality is destroyed and a new reality, the potential, is created in its place. Thus embodied in the concept of planning is decision-choice rationality. The rationality involves a systematic and prudent consideration, analysis and evaluation of goals, alternatives, and limitations on these alternatives and the best strategy to realize the goals for which planning is constructed.

The appeal of planning as a guide to behavior in the destructive-constructive process lies in two fundamental ideas:

1. Unconscious and uncoordinated decision activities result in unexpected outcomes and outside human conscious influence thus forcing humans to simply adapt themselves and their organizations to spontaneous changes of their natural and social environment
2. By planning, decision agents do not simply adapt themselves and their organizations to spontaneous changes of their natural and social environment. On the contrary, planning motivates decision makers to take charge of their destiny through a rational construct of decision and choice.

Thus, through planning, decision agents seek, by their own choice, to change and adapt their environment to themselves and to their organizations as "free beings" in order to actualize the potential that they have consciously conceived and willed. In this epistemic thinking, the reasoning basis for planning is derived from the notion that organizational development and its success are victories over odds when they occur. As a victory, the system's successful development does not occur spontaneously by itself. It requires conscious decision intervention where the chance of the actual outcomes of the willed potentials can be raised substantially above all other potential elements by a scientifically designed connected chain of rational decisions and effective information utilization, which constitute the plan.

Rationality is an important defining characteristic of planning. The concept of rationality in planning takes many forms. It may be a simple definition as "the best selection of means to achieve objectives from a system of values acceptable to the evaluator and by which the consequences of the decision can be measured." It may also take other forms as maximization of attainment, relative to the actual knowledge of goals or it may be viewed as deliberative process of decision-making Rationality may also be defined as a process where decision agents follow predesigned selection rules that have been consciously constructed to create a best strategy to realize goals and objectives as willed by decision agents.

By combining the concepts of planning and the notion of rationality a more elaborate definition may be stated. Planning as a mode of rational analysis and decision-making is a cognitive instrument that enables the holder to make choices of strategies and tactics according to certain defined standards of logical consistency. These provide the decision agent with a framework to explain the underlying reasons for the plan and the embodied decision-choice strategies and tactics, and how the facts and judgments are put together to determine the sequence of decision actions into the planning period. The defined standards are the predesigned selection rules. The analysis and design of the rational selection rules constitute the logical structure called the theory of planning that defines the process.

Process. The process of planning may be defined as a set of logical steps that are internally consistent for analyzing decision situations in order to create a plan of choice actions. It is the development of the algorithmic steps that define the content of the plan, which presents a road map for actualizing the potential as conceived. The planning process is established through the theory of planning whose body components are directed to answer the question of: a) What are the logical body components and their parametric boundaries, and b) how are these logical components interrelated to constitute a theoretical unity that establishes the plan and parametric sensitivity for plan implementation?

The theory of planning belongs to the subject matter of prescriptive science rather than an explanatory science. It is about the design of prescriptive rational rules to be followed by the decision practitioner in order to bring into being that which is cognitively conceived. The basic aim of theory of planning conceived in terms of prescriptive science is to improve reality through conscious choice-decision steps of problem solving. The objective is not the explanation of "what there is," but a transformation of "what there is" (the actual) to "what ought to be" (the willed potential). In its skeletal sense it is composed of a) problem definition, b) diagnosis and analysis, c) plan, and d) implementation and evaluation.

The general abstraction of the planning process conceived within the prescriptive science is that the fundamentals of planning conceptually offer us the following cognitive proposition. a) Planning is a future historic map of successful decisions, b) the successful decisions can be duplicated through a scientifically constructed rational decision-making process where a cognitive plan containing optimal prescriptive rules is constructed, and c) the rational plan presents to the decision agent unified sequential rules for implementation toward the realization of the preconceived goals and objectives.

The task of the theory of planning within the ambit of prescriptive science is to establish a set of optimally structural rules of good decision behavior with an efficient use of information and conscious management of the social organism. This requires a logical assembly of a set of optimally prescriptive rules to be followed in order to increase the chance of successful outcomes by actualizing the potential as conceived in the set of all possible goals and objectives. Planning theory seeks to construct a plan to change the organizational state or to actualize the potential inherent in the future states.

The plan. The resulting plan from the planning process as indicated under the theory of planning is constructed with the techniques and methods of logic, mathematics, statistics, systemicity, and other related areas of science. The plan is a model of optimal decision rules that are prescribed to actualize the willed potential. The content of the plan, given the conceived goals, objectives, and constraints include:

1. Optimal decision rules for creating the required conditions for conscious organizational transformations from state to state on the path of potential to actual change
2. A set of optimal rules for interstate and intrastate transformations through an optimally managed process of change in quality and quantity of the key variables including objective setting, constraint identification, and ranking of alternative strategies and organizational states
3. A set of prescriptive rules for an optimal allocation of resources and optimal distribution of output among departmental or institutional sectors
4. A set of optimal decision rules for monitoring the functioning and progress of the system. These monitoring rules will include the recording of outcomes, the deviation from the conceived targets, goals and the derived optimal values under the planning theory
5. A set of optimal rules for collecting, recording, processing, storing, retrieving, distributing and utilizing information about the planned system by decision agents in accordance with the optimal function, control and evolution of the system
6. A set of optimal decision-choice rules for choosing elements in the interstate and intrastate processes.

Testing, evaluation, and implementation. The plan is tested in different ways to see whether it has internally logical consistency as well as whether it is feasible. The logical consistency test is directed to the examination of each alternative optimal solution and strategy relative to the question as to whether the prescriptive optimal rules respond to the goals, objectives and the limitations that resources, broadly defined, place on them. Modification of the plan would be required if the logical consistency test fails.

The plan is also tested to see whether it is feasible. The feasibility test is directed to examine each alternative proposal relative to the question whether the rationally constructed plan can be implemented within the defined constraints given that the logical consistency test has been fulfilled. If the feasibility test fails, the plan would have to be redesigned or resources would have to be found to widen the feasible region of the planning.

Critical evaluation is required when the content of the plan contains multiple optimal solutions or more than one set of optimally prescriptive rules to follow. The evaluation in this case is directed to a question as to which of the set of optimal decision rules must be followed. The answer to this question may require the use of the method of cost-benefit analysis to rank the sets of optimal decision rules for selection and implementation.

The last in the cognitive sequence of the planning process is implementation and continued monitoring of the transformation process. The analysis of the implementation is directed toward the application of the prescriptive optimal rules of decision behavior to affect the outcome of the potential. Monitoring is directed toward the problem of the examination of the system's transformational performance as contained in the plan. The actual performance is then compared to the conceptual ideal or the theoretically conceived target to allow the use of optimal rules of adjustment, plan modification and possible restructuring by examining the initial plan and possible errors of implementation.

Information support. Information is an important central component in planning and the theory of planning. The interconnectedness of information and planning creates a dynamic relationship of decision-information-interactive-processes where planning turns into decision resulting in outcomes which then become information that is fed back into the planning through implementation and adjustment processes.

Every planning process and every plan have an information support. Information has quantitative and qualitative aspects. The quantitative aspects of information is essential to optimize the chances of successful outcome of the planning decision and the plan. The qualitative aspects of information on the other hand is important in exercising subjectively prudent value judgment with deliberative behavior in the planning process, the plan construct and management of the complex and dynamic social system that requires conscious decision-choice behavior in directing its evolution to a desired end.

The information in support of planning may itself be a part of comprehensive planning. In this way, the information system includes the decision agents, the goals and objectives of overall activities of information that include collection, recording, processing and transformation of the information into knowledge that is useful for planning decisions. The knowledge is stored, retrieved and communicated for use in the control decisions required by the prescriptive rules of the plan. The constructed information basis in support of the planning and plan will include past, present and future information. The past is linked to the present and the present to the future through the techniques of forecasting, estimation, prediction, interpolation, and others.

The principal objective for the construction of an information system may be specified as the collection of the relevant and primary data and summarizing it into a form that can serve as a supporting basis for all planning decision. This requires a) the monitoring of the functioning and development of the object under planning where the differences between the actual parametric values and the ideal are recorded; b) collection and storage of the relevant primary information that describes the nature and structure of the plan; c) processing of the primary information, separating relevant from the irrelevant, for the plan; d) distributing the relevant information to appropriate decision units in accord with tasks that they are assigned for implementing the plan; and e) the use of information for the implementation of the optimal decision rules and the management of the function of the plan.

The process and the logic of planning as cognitive activities result in the design of planning models. These planning models assume many different forms depending on the subject, potential and the goal. Generally, three clusters of planning models may be identified. They are substantive, contextual and instrumental models of planning. Any of these models may be comprehensive, strategic or tactical depending on the environment, event, interaction and dynamics of the process of change. Planning models cover areas of human decision-choice activities such as physical and socioeconomic. These classifications may be viewed as cognitive convenience.

Substantive planning model. This model reflects the sectoral activities of the human social system. Such social activities are imposed by the decisions that are motivated by prevailing divisions of social institution. The nature of substantive planning reflects the organizational nature of the system. It is always partial and driven by sectoral goals and objectives. The set of sectorally induced planning model may conflict with one another where the optimally prescriptive rules in one sector or department may render the optimal decision rules in another sector sub-optimal viewed in a comprehensive sense. The substantive planning models include sub-models of physical planning such as land use, transportation, city, environmental, and many others.

Instrumental planning model. This model relies on planning paradigm where the essential element in the planning process is the partial goal in the sense that it is subsystem-goal oriented. The structure is to plan the instrument required to accomplish the potential. Social instruments such as power or resources are used to influence the planning process and the resulting plan. Instrumental planning models include indicative, allocative, development and social infrastructure models of planning.

Contextual planning model. This model relies on the logic of planning that is guided by ideology and value premises acceptable in the context of social time. The set of contextual planning models includes comprehensive, institutional and socioeconomic planning.

Each of these planning models shape the strategy and tactics of the planning process, the theoretical structure that emerges and the information support that is required to operationalize and implement the prescriptive optimal decision rules embodied in the plan.

Concluding questions. In conclusion, the following epistemically modified questions adopted may be posed.

- How rational are the prescriptive rules derived from the theory of planning?
- Is it conceivable that the optimally prescriptive algorithms and procedures for rational behavior implied in the theory of planning might worsen rather that improve the chances of actualizing the willed potential if such rigid rules of prescription are followed?
- Is it possible to conceive an organizational system that can be rationally controlled in the sense of being engineered, directed to preferred destination and monitored according to human cognition, reason, and will?
- Can such a rational system, if implemented, improve the conditions for the organization and hence the welfare of humans as focused by planning?

These questions are not intended to discredit planning and the theory of planning. They are, however, intended to raise some epistemic concerns about the intelligibility of the prescriptive optimal rules implied in the rational construct of the theory of planning and the uses to which the theory of planning may be put.

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Poland

A COUNTRY OF APPROXIMATELY 40 million people in east-central Europe, Poland possesses both fertile agricultural regions as well as valuable mineral assets. Dominated by its powerful neighbors, GERMANY and RUSSIA, for much of its modern history, Poland became Europe's fastest-growing economy in the 1990s after liberating itself from Russian domination.

First recognized as a kingdom in the late 10th century, Poland reached the height of its power on the European continent in the 16th century. Its productive agricultural lands allowed its economy to grow sufficiently throughout the period, yet the dominance of the noble class prevented large urban areas with a sizable merchant and trader class from developing. A series of partitions by Poland's neighboring powers, Prussia, Austria (later Austria-Hungary), and Russia beginning in 1772, wiped Poland off the map after 1795. In the 19th century, a series of uprisings, including major rebellions in 1830–31, 1846, 1848, and 1863–64, failed to reunite and free the country from foreign dominance.

In the wake of the January Uprising of 1863–64, a loose set of policies known as Organic Work came to dominate the thinking of Polish nationalists. Admitting the futility of using force against their oppressors, Polish leaders encouraged economic development as the best way to preserve Poland's cultural integrity until independence could be secured. Land reforms that ended feudalism in the Russian Partition in the 1860s also contributed to industrial development by freeing up peasant labor to work in urban areas.

Developed under the managerial expertise of capitalists from Prussia, the city of Lodz in the Russian Partition came to prominence in the mid-19th century as a center of textile production. The city was the most important manufacturing center in the Russian Empire and indeed, the first truly industrial city in the region. On May Day 1892, Lodz witnessed a general strike and insurrection, one of the first in the Russian Empire. The protest, which was brutally suppressed with 46 deaths, involved at least 20,000 workers. In 1905, Lodz was again the site of a general strike, which fueled calls for a revival of the Polish state in defiance of Russian authorities.

Poland enjoyed a period of independence from 1918 until 1939, when Nazi Germany invaded and pursued a set of programs to extract Poland's economic resources while brutalizing its population. At the Yalta Conference in February 1945, Soviet Premier Josef Stalin declared that free elections would take place in Poland after the cessation of the war. It was an empty promise: The Soviets engineered a series of rigged elections, combined with outright repression, which eliminated political opposition to Communist rule. A one-party system under the Polish United Workers' Party (PZPR) governed the state from 1947–89.

With 6 million casualties, over 15 percent of the country's population had perished during WORLD WAR II. Two-fifths of the country's production capacity had been destroyed along with a third of the nation's wealth, and most of its major cities lay in ruins. The Soviet-backed government moved to nationalize production immediately and industrial operations with more than fifty employees came under direct state control in January 1946. The PZPR also started a collectivization program in agriculture; although such efforts in Poland lagged behind other eastern-bloc countries, about one-quarter of the country's land was collectivized by 1955.

In emulation of the SOVIET UNION, Poland implemented its first Six-Year Plan for industrial production in 1950 under PZPR official Hilary Minc. Like the Soviet-style command economy, Poland's blueprint for progress emphasized investment in heavy industries such as steel and iron works over the production of consumer items. The regime's proudest accomplishment was the construction of the massive Lenin Steel Works at Nowa Huta, a planned suburb adjacent to the university and cultural center of Krakow. The site was supposed to bring peasant workers into the industrial age but instead became a symbol of the alienation and inefficiency of a centrally planned economy.

Always the most restive country in the Soviet Bloc, Poland was the first country to oust the Communist Party from office in 1989. Immediately pursuing economic "shock therapy" under the Balcerowicz Plan to privatize the economy, stimulate international trade, and dampen inflation and budget deficits, Poland had the highest growth rate of any European economy by the mid-1990s. Although its heavy industries of iron and steel making, mining, and chemical production remained important, nearly 70 percent of the Polish economy was related to the service sector after 10 years of privatization. Seventy percent of Polish firms had also been transferred from the government to the private sector.

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Polk, James K. (1795–1849)

THE PRODUCT OF THE SOUTHERN backcountry, James K. Polk emerged from obscurity to become the 11th president of the UNITED STATES. Polk is remembered for his enthusiastic commitment to territorial expansion, specifically during the Mexican War, as well as his support for lower tariffs and an independent treasury.

Strict Presbyterians, the Polks were Scots-Irish immigrants who established themselves as prominent members of the North Carolina elite in the late 18th century. The first of nine children born to Samuel and Jane Knox Polk, James Polk was frequently plagued by bouts of ill health and was forced to undergo a dangerous operation during his teenage years. Though he recovered from the surgery, he would never enjoy the strong physical character required by a planter. Thus, Polk entered the University of North Carolina at Chapel Hill where he excelled and discovered an interest in law. Following his legal training, Polk continued practicing law until beginning his political career with a seat in the lower house of the Tennessee state legislature in 1822.

By 1825, Polk was a member of the U.S. House of Representatives where he served two terms as Speaker of the House. Polk resigned from the House to run for governor of Tennessee, an office he held for just one term. Despite losing his bid for re-election to governor in both 1841 and 1843, as well as a failed bid for the vice-presidential nomination in 1840, the Democratic party nominated Polk for president in 1844. He won the election and was inaugurated on March 4, 1845.

Polk's single term in office was rife with issues, both international and domestic. His program for the economy, which included lower tariffs, an independent treasury system, and federal support for infrastructure projects that dealt only with international commerce or national defense was overshadowed by the country's involvement in the Mexican War, which lasted from 1846–48. The war, incited by the U.S. annexation of Texas, reflected Polk's commitment to MANIFEST DESTINY, or America's divine right to territorial expansion.

Sectional interests largely drove Polk's territorial motivations, and the land gains acquired during his presidency exacerbated the growing tensions between North and South. The competing economic interests of Southern slaveholders and Northern industrial capitalists played out through the western and southwestern land claims. But Polk's ardent belief in manifest destiny and the expansion of America would not be unique to antebellum America; it foreshadowed the imperialism that underscored American foreign policy at the turn of the 20th century.

Polk left office in 1848 and returned to his home state of Tennessee. Always in poor health, he succumbed to a cholera epidemic on June 15, 1849.

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Portugal

ONE OF THE SMALLEST EUROPEAN COUNTRIES, Portugal's prospects have improved since joining the EUROPEAN UNION (EU) as one of the economic organization's early members in 1986. With an ongoing policy of privatization, Portugal's GROSS DOMESTIC PRODUCT (GDP) was $182 billion in 2002, reflecting several years of steady growth.

Trade with the EU, and other countries, remains vital to the economy. Agricultural, manufacturing and service sectors all benefit the foreign trade market, 59 percent of Portugal's GDP. On January 1, 2002, Portugal also became part of the European Monetary Union (EMU) and adopted the EURO, signified by the symbol: €. Estimated trade income for Portugal in 2002 was €83 billion.

From the Middle Ages through to the 17th century, Portugal reaped the rich rewards of trade as one of the leading explorers and colonizers of the then-civilized world. Adventurers, exploring the Americas, the Tropics, the Orient and the East Indies—all four directions of the globe—had found great rewards in unexplored corners of the world, and claimed these lands for Portugal, settling BRAZIL and sections of Africa, INDIA, CHINA and JAPAN. Merchant routes to and from Portugal crisscrossed the open seas. The historic names of Vasco de Gama or Prince Henry the Navigator are only a few of the Portuguese entries in the history of world exploration during this period.

Followed by the devastating earthquake of 1755 that destroyed most of the towns along the Algarve coast, including the metropolis of Lisbon, and a losing war with Napoleon in the early 1800s, Portugal lost much of its power. Soon, Portuguese merchants, working out of Brazil were noticing they were being bypassed by the rest of the trading world that dealt directly with the native Brazilian government, leaving the Portuguese merchants by the wayside. Complete Brazilian independence ensued in 1822.

Throughout the latter half of the 1800s, Portugal sank into a maelstrom of people's revolts; hard times followed and the economy crumbled. The 20th century brought more disillusionment as a world war, followed by a series of dictatorships, all but ruined the country. Portugal lost most of its foreign colonies, either through native independence movements or, as some historians have suggested, through colonial mismanagement.

With the overthrow of the last of many dictators in the mid-1970s, the country turned around. "Prior to the 1974 Portuguese revolution, Portugal was one of the poorest and most isolated countries in Western Europe," explains an economic assessment report compiled by the U.S. Department of State. "In the 25 years since, however, the country has undergone fundamental economic and social changes that have resulted in substantial convergence with its wealthier European neighbors."

Now, the Republica Portuguesa is an upcoming economy—capitalist/democratic-based—boasting a per capita GDP purchasing power parity of 75 percent of the four top Western European countries. Portugal continues to maintain a consistent growth, low interest rates, and a steady employment situation.

Portugal's economy is service-based. The parliamentarian government has strategically privatized many state-controlled entities. Over the last decade, except for a brief recession in the 2001–02 season, economic growth has surpassed the EU average.

There are some obstacles, however, looming. One, according to the *CIA World Factbook*, is a poor educational system that "has been an obstacle to greater productivity and growth." Another is the growing number of central European nations joining the EU, providing more low-cost labor into the EU market.

Agriculture and fishing, once being Portugal's only commodities, now together constitute four percent of the GDP. Industry and services have been booming over the last quarter century and now provide 36 percent and 60 percent, respectively, of the entire GDP. Within the services sector, tourism ranks high. Considered to be a "safe" country, unembroiled by political or religious radicalism, and with low to moderate costs, tourists from around the world continue to discover the unique charms of Portugal.

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poverty

AN ECONOMIC STATUS, poverty usually ranks lower than some socially accepted minimum standard of living, where each society determines its own definition for the minimum. There are two different poverty concepts: relative poverty and absolute poverty. Relative poverty is defined in terms of relative deprivation, objective or subjective, relative to the mean or median income. Hence, as the level of income and distribution changes, relative poverty changes. Absolute poverty, on the other hand, is a state where the unit of analysis (a person or

Substandard urban housing is only one aspect of poverty for 11.7 percent of people living in the United States.

household or family) does not have the means to afford a certain basket of goods to meet its basic needs.

Among the various different concepts that can be used in defining the so-called poverty threshold line, two stand out: consumption and income. The poverty threshold line based on consumption generally refers to the cost and affordability of meeting basic needs, for example food, shelter, health, and education. The poverty threshold based on income refers to income only, notwithstanding the disagreements as to what kind of income should be used in the estimates. For instance, in the United States, the U.S. Census Bureau calculates the poverty threshold level of income, and thus the poverty line, for different family characteristics. In 2000, it was $17,463 for a family of four with two children. Families falling below this line are considered to be poor. In 2001, the poverty rate, defined as the proportion of the population below poverty line, was 11.7 percent.

In a similar fashion, the WORLD BANK uses $1 and $2 per day, measured in terms of the constant 1994 purchasing power parity (PPP), as the two poverty lines in its international poverty comparisons. In 1999, 2.8 billion people lived below the $2 line and 1.2 billion people below the $1 line in the world. This method of counting people below a given poverty line when divided by the population gives the so-called head-count ratio, a very common measure of poverty. A different measure is the poverty gap ratio, defined as the ratio of the average income required to lift all the poor to the poverty line, divided by the mean income in the economy. The poverty gap ratio not only measures the average income shortfall from the poverty line but also tells us the magnitude of resources we need to eradicate it.

Characteristics of poverty. It is important to know the demographic characteristics of the poor in order to devise policies that would alleviate their poverty. First, women and children constitute a significant majority of the poor. In industrial and in developing countries alike, they experience the worst deprivation. This is specially the case for single women who are heading households with children. Women may not have easy access to gainful employment because they may be forced to stay at home and perform household jobs for which they are not paid. Even women who have access to the labor markets and gainful employment could be more likely to have lower earnings because of economic discrimination in the labor market.

It is not uncommon for women performing tasks similar to those performed by men to be paid less. These lower incomes make it more difficult for their children to have access to adequate health, nutrition, education, sanitation, and other basic needs that contribute to their productive and future earnings capacities. Hence, children born to households headed by women are caught in a poverty trap. Because they are poor, they are more likely to remain poor. The problem is exaggerated if the women are from racial and ethnic minority groups. For instance, in the United States, the overall poverty rate for women in 2001 was 12.9 percent. The poverty rate among households headed by white women was 24.3 percent. The poverty rate for households headed by African-American and Hispanic women was 37.4 and 37.8 percent, respectively.

Poverty is more prominent in large families, especially families with a large number of children. The reason for this is described in terms of the dependency ratio, the number of children under 15 per employed adult. The large dependency ratio in large families contributes to their low per-capita income and poverty.

Typically, poverty is more of an urban problem in industrial countries and a rural problem in developing countries. In industrial countries, the urban poor are often employed in the informal sector as street vendors or in similar occupations. The rural poor, on the other hand, are typically landless peasants at work for large landowners. In both cases, the poor have a lower educational attainment and hence a lower level of human capital. Thus, their defining characteristic is a lack of ownership of physical and human capital. Income is derived from ownership of factors of production and assets. In general, return to labor is less than the return to capital and asset ownership. Within the labor force, the return to unskilled labor is less than the return to skilled labor. Thus, unskilled labor is more likely to be poor than either skilled labor or the owners of capital and assets.

In today's economies, as capital- and technology-intensive production expands, unskilled and semi-skilled labor face eroding incomes and consequently a higher incidence of poverty. Thus, rising inequality in the distribution of income feeds into rising poverty. A related impact of the deteriorating income distribution is that it affects the patterns of consumption and production in the economy. As the incomes of affluent groups rise their consumption increases. The tastes of these groups favor high technology- and capital-intensive production. As production of such goods rises, demand for skilled labor and capital rises, increasing their incomes and affecting the unskilled and semi-skilled labor adversely. Concentration of asset ownership in the high-income groups contributes to the increasing income inequality.

Effects of poverty. The main effect of poverty is that it prevents the poor from accessing the markets in the economy. The poor are excluded from both the labor market and the credit market. The relationship between poverty and the labor market can best be explained in terms of the physical capacity curve. The exclusion of the poor from the labor market is not only the result of a lack of necessary skills, but also due to the lack of necessary nutritional intake to perform even the least skilled tasks. The inability of the poor to afford a necessary minimum calorie requirement leads to malnutrition and under-nutrition. The workers suffer from fatigue and frequent illness and become more susceptible to infection. As a result they cannot hold a job for long periods of time. Their work capacity diminishes, exposing them to higher incidence of poverty. Thus, the poor find themselves in a vicious cycle. Their poverty prevents them from the necessary calorie intake that would improve their work capacity. However, they need a higher work capacity to access gainful employment and to afford the necessary calorie intake. Somehow this cycle needs to be broken.

Access to the credit market is difficult for the poor because of their inability to provide any collateral for credit. Collateral is in fact especially important in the case of the poor because of the high default risk associated with the loans extended to relatively low-income groups. Once again a vicious cycle emerges. To break the spell of poverty the poor need access to the credit markets in order to realize entrepreneurial opportunities that might raise their income and help them accumulate assets. However, the lack of asset ownership limits, if not prohibits, their capacity to borrow.

Policies and poverty. The major policy options to address poverty are concerned with the distribution of income and assets at the macro and micro levels through four different types of measures. One is to eliminate price distortions in the factor markets in order to increase employment of labor. Another is to redistribute assets to the poor to provide them with asset ownership. A third is to redistribute income to reduce income inequality, and a fourth is to publicly provide goods and services to the poor. All four of these measures are to some extent applicable universally, but the first two are less relevant in the industrial world than in developing countries.

The factor price distortion argument maintains that the wage rate paid to labor is relatively high and does not reflect the scarcity cost of labor, leading to relatively capital-intensive production. Because of the presence of strong labor organizations and/or politically inspired legislation that sets the minimum wage artificially high, the actual market wage rate is pushed higher than supply and demand conditions in the labor market would dictate. At the same time, the price of capital, which is the interest rate in, usually, regulated financial markets, is set artificially low because of the political power of the business elite. The discrepancy between these two factor prices favors the use of capital-intensive production. In a typical developing country, this factor intensity is incompatible with its factor endowment. Developing countries are more abundant in labor than in capital, so the price of capital should be relatively higher than the price of labor.

Factor price distortions, however, render labor relatively more expensive leading to capital-intensive production and hence to unemployment. Eliminating the factor price distortions would lead to more gainful employment and therefore to a reduction in inequality and poverty. Hence, the policy recommendation is to liberalize the labor and capital markets along with all the other input markets to allow factor prices to reflect the scarcity costs of the factors of production.

Since inequality in the distribution of assets is a major contributor to income inequality, redistribution of the existing assets and/or creating new assets and channeling them to the poor in the economy is also a policy option. It might be politically undesirable to confiscate in one form or other the existing assets and redistribute them to the poor. In developing countries the assets in question may be land. Transferring the ownership of land by decree to the poor is bound to face severe resistance. An alternative could be to transfer the unused public lands, or to purchase private land at the market price and than transfer its ownership to the poor. Of course, the fiscal resources of the government limit this kind of policy.

In the urban sector, the plight of the poor in terms of asset ownership is more complicated. Since stocks and shares are not realistically the assets they would be holding, property remains one viable option of asset ownership. Hernando DESOTO has extensively written on this issue. His recommendations, adopted in several Latin American countries, revolve around the idea that the economically disadvantaged actually own assets, such as shanty homes that are not recognized officially. He claims that if these informal assets owned by the poor were legalized, the status of the poor would significantly improve. They could then show these assets as collateral and gain access to the credit markets. In addition, the World Bank, recognizing the importance of the OWNERSHIP of assets in fighting poverty, recommended in 1970s the creation of new assets in the economy, which could be channeled to the poor.

Progressive income taxation, theoretically, is another way of redistributing income to reduce poverty and inequality. Taxing the higher income groups in a progressive manner and reducing their disposable income would indeed reduce the income gap between the higher and lower income groups. At the same time, however, it could adversely affect saving and investment in the economy and could reduce total income, rendering the lower-income groups worse-off. Instead, the more effective way of taxing the high-income groups could be by raising indirect taxes, especially levied on the consumption of luxury goods. In our modern world, another source for taxation could be domestic and international financial transactions that are done purely for speculative purposes (a version of the so-called Tobin tax). The implementation of this kind of a tax, however, would be extremely difficult.

Poverty and welfare. Social welfare programs and the provision of public goods (especially consumption goods) and services targeting the poor have been in place for a long period of time in industrial countries in the post-WORLD WAR II period. They come in different forms and have different economic effects. They run a wide spectrum, ranging from consumption subsidies and direct monetary transfers, to the provision of food stamps and school lunches to raise the calorie intake by the poor. Many of these programs have been discontinued on the basis that they take away the incentives to work. Direct-money transfers, especially, are claimed to act as a deterrent to find gainful employment since they reward being unemployed and poor.

A more socially and economically desirable alternative would be to limit the duration of the availability of the free provision of public goods and services and subsidies in order to eliminate the disincentive effects of these policies. If the receiver of such provisions knows that there is a terminal date for them, he would have an incentive to look actively for work. Another viable alternative could be the implementation of workfare programs that would promote cash or in-kind remuneration for work performed by the poor. The work could be in the public sector or elsewhere, but would be directed to the poor and would directly benefit them without reducing their willingness to acquire the human capital and other assets that would provide them the necessary economic opportunities to lift themselves above the poverty line.

Because women and children, regardless of their racial and ethnic background, have a disproportionately high share among the poor, policies directed to them are of utmost importance in lowering poverty. Formal and informal education, and access to other assets are essential to address their poverty. Provision of schooling and nutrition for children, family control to reduce the number of children as well as on-the-job training, and formal education for women are necessary to provide them access to job markets for gainful employment. These kinds of policies would raise the social and economic status of women, and if accompanied by policies that would minimize gender-based discrimination, would help them to participate in economic life as equals with men. Fighting poverty is beneficial for all groups in society in that it not only raises output and income for all, but also minimizes potential social tensions.

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price

PRICES ARE CRUCIAL FOR THE FUNCTIONING of a free economy. In fact, it is difficult to overestimate their importance. It is no exaggeration to say that prices play a role with regard to the economy similar to the one undertaken by street signs, or maps, as far as our geographical understanding is concerned.

In ancient days, before a territory was captured by an enemy army, the defenders would take down the street signs; in that way, they might slow down the hostile force until help, or a counterattack, could arrive. But they need not have taken them down; merely rearranging them in any haphazard order would have done just as well. The point is, prices do illuminate an economy, but not any old prices will do. Just as only accurate street signs will aid our geographical mobility, so, only market prices can perform this function economically speaking. Price controls are thus, in general, economic arteriosclerosis.

Let us take an example to illustrate this point. A bunch of us decide we are too fat. We want to go on a diet. This means, horrible as it sounds, we will have to eat less cake, ice cream and chocolate, and more rabbit food such as lettuce, tomato and carrots. But right now, before our decision to change our eating habits in this manner, there is no misallocation of resources devoted to these two very different types of foodstuffs. That is, there are not obvious shortages of one of them, and surpluses of the other. If virtually all of us go on this diet, it will be difficult to do unless farmers, grocers, restaurants, change what they offer for sale, in order to accommodate us.

So, what do we do to get them to alter their economic behavior? Sign a petition asking them to grow fewer sugar beets and more carrots, and then send it to individual farmers, or, perhaps, more efficiently, to agricultural organizations? Do we go to our state houses, or to Washington, D.C., demanding that our politicians force growers to do our bidding? Not a bit of it.

In a free society, we simply start to buy more of the "good" foods, and less of those that make life worth living (i.e., taste good). This will have two salutary effects: It will drive up the prices of salad ingredients and reduce the prices of factors of production that go in to making desserts. This, in turn, will lead farmers, not necessarily all of them, remember, we still want some high-calorie foods, but some or many of them depending upon how radically we change our purchasing habits, to plant and harvest a different array of crops. How so? Higher prices for the newly desired foods imply greater profits to be earned in these realms. This will encourage agriculturalists to do the right thing for us dieters. Lower prices for the newly less-desired foods imply decreased profits to be earned from producing them. This will encourage farmers to grow lettuce rather than chocolate or wheat.

When will this process end? These alterations in economic behavior will stop reverberating throughout the economy as soon as prices of the various products are such that once again there are equal profits to be made in growing these two different kinds of foodstuffs.

It is no accident that an economy's investment in chocolate and carrots, at any given time, is a reasonable one, in terms of our desires for these two items. Were it not, prices would change until they were. It is no accident that the amount of wood that goes into baseball bats and hockey sticks is roughly proportionate to consumers' demands for these two athletic implements. Were it not, prices would change until they were.

What economist would appreciate the role that prices play in such allocations of resources? Not one in a thousand. Nor is this really problematic. It is said that fish are not aware of the water they swim in, and we are not aware of the air we breathe (ordinarily speaking, given no emphysema, pollution, etc.). In similar manner, it is the rare person who is even aware of prices, other than to complain they are too high (when buying), or too low (when selling); most participants in the economy are not cognizant of this allocative role that prices play.

But prices do more than merely allocate resources. They also determine relative wealth. Why is it that Michael Jordan and Bill Gates are immeasurably wealthier than most, and that people who ask "Want fries with that?" are at the bottom of the economic pyramid? Again, prices. Were it not that the masses of consumers enjoy far more, and thus are willing to pay higher prices for, the unique things supplied by these individuals, Gates and Jordan would not be enjoying anything like their present standards of living. There might have been two individuals living 100 years ago, before anyone had even heard of computers or basketball, with abilities identical to Jordan's and Gates', and yet they would have contributed relatively little to what others value, and thus would have had far more modest incomes.

Prices also determine how goods are produced. Right now, rowboats are typically made of plastic, wood, or metal. If the price of any of them rises, less of that material will go into these watercraft. It is for this reason that no one builds them out of platinum, even assuming that metal would serve well in a technical maritime capacity. The same thinking applies to the labor market. Whenever one input becomes relatively more

Prices displayed in a market give specific signals to different economic actors in an economy.

expensive, the first thought of the business owner is to substitute for it relatively cheaper factors of production.

When the minimum-wage level stipulated by law rises (wages are the price of renting labor services), the entrepreneur will tend to hire more skilled workers, and fire some of his apprentices. If this law were ever to be rescinded, the typical firm would then be mightily tempted to hire more unskilled employees, and either get rid or, or pay less to, the master craftsmen.

Why is it that the economy of the SOVIET UNION went belly up? On the face of it, this is a surprising occurrence. The Russians are a very intelligent people in many ways. Compared to the rest of the world, they have a disproportionate share of physicists, chemists, biologists, mathematicians, engineers, doctors, etc. They launched Sputnik before the U.S. space program even got off the earth. With but few notable exceptions, virtually all chess grandmasters emanate from that part of the world.

Why, then, was their economy such a shambles? In a word, they lacked accurate prices. Without the free enterprise system, based upon private rights and the unconstrained economic choices of all, their prices could only be arbitrary, set by bureaucrats. It is as if they were blundering around in the wilderness, without street signs, lacking a map, with no Global Positioning System, lacking the rudiments of sonar. Forget about not being able to produce products desired by their citizenry (e.g., butter, toilet paper, vegetables, meat); they couldn't plan their way out of a paper bag to produce in sufficient quantity and quality even the things wanted by the rulers (those groceries plus caviar, guns, rockets, limousines, etc.) In terms of our previous example, they had no way to know not to waste platinum on rowboats.

But not exactly. After all, the Soviet economy did last for 72 years (1917–89). Why were they able to continue, bumbling along, for some seven decades? Well, they did have some accuracy in their prices, although this was no credit to their system. This knowledge stemmed from several sources. For one thing, they had access to the Sears catalog. Why does this rather pedestrian publication have anything to do with so momentous a historical event as the fall of the Soviet Union? Simple; this advertising supplement featured prices of the thousands of items sold by that company. Armed with these, and we use that word purposefully, their economy was able to limp along far longer than otherwise would have been the case. Secondly, the Soviets planted economic spies in Western countries. Yes, economic spies, out after our prices, not our military secrets! For the Sears catalogue and other such publications featured prices of only (well, mainly) consumer goods. More is needed for the functioning of an economy, specifically, labor market prices, capital goods prices, interest rates, rental prices, the value of one currency in terms of others, etc. Third, there was a black market or illegal market within the Soviet Union itself. Not only did this offer accurate market prices, it directly kept significant numbers of people from starving to death.

It will be easy to see, by this point, that prices convey valuable information. They are almost a language unto themselves. They are very simple: They increase, they decrease, or they stay the same. Each gives very different signals to economic actors. But, whatever they do, we reckon at our peril without the knowledge they convey. The man more responsible than anyone else for promoting the idea that prices are a sort of semaphore, or economic signaling device, was 1974 economics Nobel Prize laureate F.A. HAYEK. For this economist, economic knowledge is widely dispersed throughout society, and prices are the way of amalgamating, or better yet, coordinating this information.

If prices are so important to an economy (and we have only begun to touch the surface in this regard) why are they everywhere and by most people held in such low repute. Why, that is, are there so many laws on the books restricting their free interplay, and their birth in the voluntary decisions of participants in free markets? Let us list just a few of the governmental controls of market prices to get a grasp on the enormity of the problem: rent control, that mandates that prices of rental property, or rents, cannot rise above certain levels; minimum wage laws, that proscribe that the price of labor, wages, cannot fall below certain levels; usury laws, that demand that interest rates, the price for loans, not rise above a stipulated point; socialized medicine, according to which prices for health care services must be held at zero, or at least at very low levels compared to the costs of providing them.

Supports for agricultural products stem from dissatisfaction with market prices for farm goods; they are too low, complain the farmers. In like manner, tariffs on, or quotas against, imports from foreign countries are evidence of dissatisfaction with the rate of exchanges (i.e., prices) either between the two relevant currencies, or are (typically) based upon the view of domestic producers that foreign prices are too low.

One theory locates the source of these unwarranted attacks on freely agreed-upon prices in the widespread ignorance of economics. If people only but knew more about the "dismal science," there would be less acquiescence in the interference with this lifeblood of the economy. Undoubtedly, there is some truth in this; but it cannot constitute the entire explanation, since there are some very knowledgeable people who favor various price control schemes.

Then, there is sheer venality. An often-asked economic question is *"Quo bono?"* (Who benefits?) and nowhere is this more relevant than at present. Rent control is widely thought to benefit tenants (it does not, but that is another question) and thus it should be no mystery as to why renters would favor this policy, and politicians beholden to them scurry to enact such legislation. Minimum-wage laws help highly skilled workers in their competition with their unskilled counterparts; when the latter are bid out of the market and forced into unemployment, the wages of former are more likely to rise. Similarly, domestic producers urge "Buy American!" policies, and cloak them in an aura of patriotism, and job-loss fears, but the last thing they want is for consumers to enjoy lower-priced foreign imports, to their own economic detriment.

Nor are the demands for agricultural prices supports very opaque; an attempt is made to wrap them in motherhood and apple-pie notions of saving the family farm. But the *realpolitik* of votes being concentrated in mid-western states actually accounts for their success. In any case, the lion's share of these payments go to large-scale agribusiness.

There is yet another reason for this attack on prices and concomitantly the debasement of a once free economy: Our high concentration as producers, relative to that as consumers. The average person consumes literally thousands, if not tens of thousands of items in the course of a year, and yet typically produces only one, or at most a few. For example, the music teacher sells only one kind of services, but buys many. Suppose now, that the toothbrush manufacturers come to Washington, D.C., complaining of low toothbrush prices. If they succeed in getting a law passed elevating prices, they will benefit to the tune of millions of dollars.

But how much money does the music teacher spend on toothbrushes in a year? Merely pennies. Will it inure to her interest to bestir herself, and attempt to fight off the toothbrush interests? It will not. It will probably cost her as much as she spends on this product in one year to even get off a single letter (including not only postage and stationary, but time costs as well). And if she does so, will she have an economic interest in opposing the rubber band industry's attempt to suborn prices? No.

Consider, last, a speculative explanation. Most of our time as a race of human beings has been spent in caves, or in forests, living in small groups. There, the only kind of cooperation experienced by us was of the explicit variety. Cave men would hunt together, some would make spears, other gather berries, and then they would share. But prices in the modern day have nothing to do with such explicit assistance. Rather, they are the embodiment of implicit cooperation, as befits a society not with a few dozen members, but with billions.

We have seen how the farmers cooperate with the dieters, even though they don't know them, never met them, and, possibly, might hate them were ever this to change. Their implicit cooperation is nevertheless achieved through the price system; nothing else (certainly not central planning) could possibly do the job. However, according to this explanation, we are genetically "hard wired," based on millions of years of explicit cooperation as cave people, to recognize only this kind of mutual aid. Hence, the lack of appreciation for the price system. This is why it is so often breached by law, even in the United States, a country devoted to free enterprise and capitalism.

[Editor's Note: Since differential initial endowments of wealth have differential impact on prices, and hence on the menu of choices in the market, one may conclude, ever so grudgingly, a case for intervention premised on equity; such that the market pricing does not exclude entirely those who cannot afford basic necessities such as education and healthcare.]

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price controls

RESTRICTIONS ON MARKET PRICES, such as rent control and minimum-wage laws set by political authorities, are termed price controls. In the absence of price controls, sellers and buyers determine prices by bargaining with each other. Generally, buyers buy more at low prices and sellers sell more at higher ones. If sellers have excess inventories of their products, they must offer lower prices to move this inventory. Lower prices eliminate excess SUPPLY by attracting buyers and repelling sellers.

If buyers, or consumers, cannot buy as much as they want to at current prices, they must offer higher prices. Higher prices eliminate excess DEMAND by repelling buyers and attracting sellers. If at some price, buyers want to buy as much as sellers want to sell then supply equals demand, and the market clears. In this way, competition and bargaining determine market prices.

Authorities can set maximum price controls, or price ceilings, where people cannot trade above a particular price. A price ceiling set below the market price is an effective price ceiling. Effective price ceilings lead to excess demand, or a shortage in a market. By setting prices below market-clearing levels, price ceilings leave markets with too few sellers for buyers to trade with. They can also set minimum price controls, or price floors, where people cannot trade below a particular price. Effective price floors lead to excess supply or a surplus in a market.

Market-clearing prices generally lead to economic efficiency because they result in the greatest number of feasible trades. So long as no one in the market is a monopolist, equilibrium market prices result in consumers getting the products they want at the lowest possible prices, and allow entrepreneurs to earn a normal rate of profit.

Lost trades due to price controls constitute dead-weight losses. These dead-weight losses represent feasible, but lost, opportunities for buyers to benefit by consuming goods and sellers to benefit from profit on trading. An example: when minimum-wage laws lead to employers hiring fewer low-productivity workers.

Price controls affect not only the quantity of goods traded in markets, but their quality as well. Since price controls preclude competition over price, it will lead entrepreneurs to compete over the quality of their goods. Many people believe the U.S. airline industry offered better services during the time that the government mandated high airfares. Since airlines could not attract customers with better prices, they did so by offering more comfortable travel. Since airline decontrol, airfares and airline service have both fallen.

Price controls can also reduce product quality. Controls on the rental prices of apartments usually favor renters over landlords; low rents reduce the profitability of owning apartments. Landlords can recapture these lost profits, or reduce their losses, partially by simply spending less on the maintenance of their apartments. People often complain about the living conditions in rent-controlled apartments and blame "slumlords" for failing to properly maintain their property. But, some economists insist we must consider the perverse economic incentives that rent control creates, before we pass judgment on these landlords.

Price controls affect more than just the quantity and quality of goods. Since price ceilings create excess demand for cheap goods, people will have to wait in line for them. While buyers are paying less money for these goods, their waiting costs them more of their time. Market prices ration goods according to the willingness of buyers to spend whatever money they have. Price ceilings ration goods partially according to the willingness of buyers to spend whatever time they have to spend waiting in line. This notion of "rationing by waiting" tells us that price ceilings impose a hidden cost.

Costs and benefits of controls. Apparent money prices of goods remain low, yet individual consumers bear personal costs in terms of extra time spent, beyond normal shopping, in getting the goods that they want. Under these circumstances, buyers find it worthwhile to spend extra time waiting for what they want to buy. However, it would almost certainly be better if they used their time to either work for more pay, or to enjoy some leisure time rather than to waste it standing in line.

There are also real costs to establishing and enforcing price controls. Governments employ officials to set and enforce price controls. The establishment of price controls is not a simple matter, but requires guidance by competent experts, who could be doing some other kind of work. Since price controls prevent some worthwhile trades, some will try to evade them. The enforcement of price controls draws further upon the pool of available labor, leaving less for the production of actual goods.

Though price controls cause many problems, they do benefit specific people. They transfer wealth between consumers and entrepreneurs. Lower (higher) prices benefit consumers (entrepreneurs). If a price control lowers the price of radios by \$10, and consumers continue to buy 500 radios per week, then the price control in question transfers \$5,000 from entrepreneurs to consumers per week

Consequently, private interests will lobby for price controls. Some entrepreneurs might lobby for price floors, so that they can get higher-than-market prices. But, if they spend large sums of money lobbying for price controls they end up losing part of what they gain. Resources used to transfer existing wealth in this way come at the expense of there being fewer resources to produce new wealth. The losses from enacting and enforcing price controls can easily exceed their dead weight losses.

There is also risk concerning what these transfer benefits will be. When lobbying for rent controls, any potential tenant will have a chance of getting a low-priced apartment. They will also have a chance of not being able to find any apartment. Since some renters will lose out badly, they may all be worse off on average. Thus, the expected payoff to each individual renter from rent control may be less than zero.

The fact that price controls cause dead weight losses, entail costs, and lead to waste, raises questions about why they are so common. Part of the explanation is that officials sometimes commit errors. Price controls are sometimes put into place for the purpose of restraining price inflation. In 3rd-century Rome, devaluation of money caused rampant inflation. In 301, Emperor Diocletian imposed maximum prices in an attempt to stem this inflation. His edict set extensive controls over prices and wages, enforced with the death penalty. His efforts ultimately failed to reign in inflation, despite the extreme penalties imposed on violators.

During WORLD WAR II, President Franklin Delano ROOSEVELT attempted to "hold the line" on the cost of living with price controls. Through the Office of Price Administration, the Roosevelt administration set controls on prices, except for utility rates, fees for services, wages, prices charged by the media, and insurance rates. To enforce compliance, people could sue those who violated these controls for treble damages, seek court injunctions, or even criminal penalties. Many leading figures in guiding early OPA policies were academics, with little real-world experience in markets (among them John Kenneth GALBRAITH). As complaints regarding these OPA policies mounted, the Emergency Price Control Act of 1942 forced these academics out. It did this by requiring a five-year minimum of business experience for all OPA policymakers. The OPA also failed to stop wartime inflation. These price controls ended in 1946, when President TRUMAN vetoed a bill extending them.

Price controls are sometimes put into place in efforts to reduce the costs of government. In 1777, the Legislature of Pennsylvania imposed price ceilings on commodities needed by General George WASHINGTON's Continental Army. Most farmers refused to sell at these prices, and some sold goods to the British instead.

Aside from lobbying and error, some make ethical arguments for price controls. The concept of "the just price" goes back many centuries. It might seem that the term, just price, refers to absolute standards for judging prices. It is, in fact the case, that what people often meant by just prices were simply competitive market prices. However, there are instances where people object to equilibrium market prices as unfair. Emergencies often cause the price of some goods to rise dramatically. During blackouts, increased demand for flashlights and lanterns will cause their market prices to rise. This is often referred to as price gouging or profiteering. Some claim that sellers should not take advantage of emergencies by raising prices on badly needed goods. Laws against price gouging act as temporary price controls during emergencies. Of course, these laws have the same effects as any other such price controls: shortages. However, some economists and policy leaders insist that these measures are necessary for moral reasons.

Some officials also favor price controls to counter monopoly pricing in uncompetitive markets. If some businesses lack competition, they will sell fewer goods at higher prices. Theoretically, some authority could impose price ceilings on monopolists and force them to charge competitive rates. Since officials generally do not know what prices would prevail in competitive markets, direct controls will generate competitive prices only by chance. Because of the difficulty in determining competitive prices outside of experience, it is generally better to consider how one might attain competitive conditions rather than to use price controls in attempts to simulate competitive conditions.

Free markets do not yield perfect results. So, one can always imagine scenarios where price controls yield positive benefits. But, price controls generally have a poor track record in promoting either efficient resource allocation or price level stability. They exist largely due to political considerations, moral assertions, and popular misconceptions. Consequently, many economists are either skeptical of or opposed to their use. Despite these doubts, price controls not only exist, but are a common instrument of public policy in much of the world.

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price discrimination

IN A PERFECTLY COMPETITIVE MARKET, all consumers and producers are price takers; no one can affect the market PRICE by varying the amount that they buy or sell. However, in imperfectly competitive markets certain agents may be able to dictate price. For example, a monopolist, as the only seller in a MARKET, and a monopsonist, as the only buyer in the market, have the power to set price. (In this entry, a monopolist will be used to illustrate price discrimination, but the same logic applies to the actions of monopsonists.)

A monopolist may charge a uniform price to all buyers, or if it has information about how willingness to pay varies across customers, it may engage in non-uniform pricing; i.e., it may price discriminate. Price discrimination involves charging a different price to individual consumers or to different groups of consumers. Differing prices resulting solely from differing costs is not price discrimination. For example, if a firm charges a higher price to deliver its goods to customers who live far away because the costs of delivery are higher, that difference in price is not considered to be price discrimination.

There are three requirements for a firm to be able to price discriminate:

1. It must have market power—the ability to set price
2. It must have information about how willingness to pay varies across consumers
3. It must be able to prevent re-sale of its output from those who are charged a low price to those who would be charged a high price (that is, it must prevent ARBITRAGE).

If a monopolist can identify groups of consumers with varying willingness to pay, price discrimination can allow it to greatly increase its profit. Interestingly, it may also lead to lower deadweight loss (i.e., net social loss). A uniform-pricing MONOPOLY produces less output than a competitive market in order to keep prices at the profit-maximizing level; this lower output is the origin of monopoly deadweight loss. However, when a monopolist price discriminates, it can sell additional output without having to lower the price charged to everyone. As a result, the output of a price discriminating monopolist may be higher than that of a uniform-pricing monopolist, resulting in less deadweight loss.

There are three types of price discrimination. First-degree, or perfect price discrimination occurs when the monopolist charges the consumer's exact willingness to pay for each unit of output. As a result, consumer surplus is zero—consumers are paying the absolute most that they are willing to pay and the monopolist captures all of the surplus in the market. The perfect-price-discriminating monopolist will produce the same level of output as produced by a competitive market, and as a result the dead-weight loss of the monopolist is zero. (While there is no efficiency loss associated with a perfect-price-discriminating monopolist, there are issues of equity since the monopolist captures all of the surplus in the market.) For example, car dealers attempt to practice first-degree price discrimination by haggling in order to determine the prospective buyer's reservation price.

Second-degree, or quantity, price discrimination involves charging a different price for large-quantity purchases than for small-quantity purchases. Again, for such pricing to constitute price discrimination, it must not be attributable to cost differences. Block pricing of electricity by utility monopolies is one example of second-degree price discrimination. Users are charged a high price for initial kilowatt-hours of electricity and lower prices for higher usage. This likely reflects that the price elasticity of demand for electricity is inelastic for the first few units and more elastic for additional units.

Two-part tariffs are a special case of quantity price discrimination. The first part of the tariff entitles one to buy the good or service, and the second part of the tariff is the per-unit cost of the good or service. An example of a two-part tariff is the fee structure of an amusement park; the owner might charge a fee for admission to the park plus another fee per ride. In theory, a two-part tariff could be structured such that the per-unit fee is equal to marginal cost and the admission fee is equal to the remaining consumer willingness to pay; such a two-part tariff would capture all of consumer surplus for the monopolist.

Third-degree, or multi-market, price discrimination occurs when monopolists charge different prices to different groups of consumers. As the number of groups of consumers charged a different price approaches the number of consumers in the market, third-degree price discrimination becomes first-degree, perfect, price discrimination. In multi-market price discrimination, the firm acts as a separate uniform-pricing monopolist with respect to each group of consumers. Third-degree price discrimination is probably the most common; examples include senior-citizen discounts on meals and student pricing for movie tickets. [Editor's Note: It is notable that these discounts are marketed as a "favor" to consumers, whereas in reality they are meant to enhance the profitability of the business.]

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prices, floor/ceiling

AS CONTROLS, PRICE FLOORS and price ceilings refer to situations in which prices are predetermined and fixed by a force external to the market (typically a government or central planner).

A price ceiling refers to a case in which prices are set artificially low (i.e., below the market equilibrium price). Buyers and sellers are prohibited, typically by law, from negotiating any price in excess of the ceiling. In other words, a price ceiling stops the market price of a commodity from moving beyond a maximum value much like the ceiling in a room prevents a person from jumping vertically beyond a certain height. A price floor describes a situation in which prices are set artificially high (i.e., above the market equilibrium price).

Buyers and sellers are forbidden to negotiate a price below the floor.

A price floor prevents the market price of a commodity from falling any lower than a particular level in much the same way that a floor in a room stops an individual from tumbling into the room below her. Price floors and ceilings are generally considered to be inefficient by classical economists due to the fact that they interfere with the laws of SUPPLY and DEMAND. They bind the invisible hand and prevent market prices from adjusting to eliminate surpluses and shortages and consequently are completely inconsistent with capitalism.

By establishing artificially high prices, price floors discourage consumers from purchasing as much of a particular commodity as they would have, had prices been allowed to fall. Consumers, in other words, reduce their quantity demanded of the commodity for which the floor has been set. Producers, on the other hand, seek to increase their quantity supplied as higher prices coupled with sticky costs mean higher profit margins. Producers, in other words, choose to generate a greater level of output than they otherwise would have had prices fallen.

In the absence of flexible prices, a surplus would persist until there was a shift in market supply or demand or the price floor was removed, in which case the surplus would put downward pressure on prices until the surplus disappeared. Because they typically generate surpluses, price floors are considered to be inefficient because the resources used to produce the excess quantity supplied could have been used to produce another commodity. Resources in this case are essentially wasted.

One of the most timeless examples of a price floor, and one that is hotly debated as much today as it was in its inception, is the minimum wage. Many economists identify the minimum wage as a leading cause of UNEMPLOYMENT. By preventing wages from falling, the government encourages individuals who might not otherwise seek work to enter the labor force. The quantity supplied of labor rises. Firms, on the other hand, search for cheaper methods of production in the form of machinery and/or foreign labor, thus reducing the number of jobs openings in the United States (i.e., the quantity demanded of labor). The result is a surplus of labor or unemployment. Please note there are many models and sources of unemployment. Even those who feel that the minimum wage may be the root of unemployment acknowledge the fact that the minimum wage is not the sole cause of unemployment.

A government may also choose to mandate artificially low prices in certain situations. The resulting price ceiling encourages consumers to increase their quantity demanded as the income effect makes it possible for consumers to afford more of the commodity with their given budget and the substitution effect persuades individuals to use more of the government-controlled commodity in place of a now relatively more expensive replacement. Producers, on the other hand, respond to the lower prices by reducing their quantity supplied. Lower prices and sticky costs mean lower profit margins making it less appealing for producers to continue to manufacture large levels of output. The result is a shortage that will remain in the market until there is a shift in market supply or demand, or the price ceiling is removed in which case the shortage will put upward pressure on prices until the shortage no longer exists. Since they typically generate shortages, price ceilings are considered to be inefficient because some consumers, despite the fact that they are ready, willing, and able to purchase an item, will be unable to obtain the government-controlled commodity. Consumers will be "forced" to use their money resources to purchase an item that will provide them with less satisfaction per dollar.

A noteworthy example of a price ceiling and one for which a general consensus among policymakers and social critics has yet to be achieved is rent control. Many economists blame the shortage of quality housing in inner cities on rent control. By forcing landlords to keep rental rates artificially low, the government discourages the production of new apartment buildings as well as the upkeep of existing buildings. Potential tenants, on the other hand, flock to rent-controlled tenements leading to a severe shortage of quality apartments.

Arguments in favor of price controls are typically based on issues of equity rather than efficiency. The equilibrium price in a particular market, while it may lead to an efficient outcome, is considered to be unfair to either consumers or producers. In the case of the minimum wage, the equilibrium wage is considered to be "too low" for workers to live on. Consequently, governments enact price floors in labor markets despite the fact that they may contribute to market inefficiencies (i.e., unemployment). The reverse is true in the case of rent control in which the equilibrium price is considered to be "too high" for prospective tenants to afford. Governments, as a result, establish price ceilings in these cases despite the fact that they create a shortage of quality apartments. [Editor's Note: Since price ceilings and floors cause shortages and surpluses, it is therefore necessary that the government provide additional jobs of last resort, as in the case of minimum wage, and be willing to build additional housing units, as in the case of rent control, to enable the markets to clear.]

Price floors, implemented to assist producers and price ceilings, created to aid consumers, distort market incentives and result in inefficient market outcomes. Price ceilings and floors are rare in the United States which has an economic system largely based on the market mechanism.

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principle of diminishing returns

FIRST FORMULATED BY French baron Anne Robert Jacques Turgot, and later expounded by the classical British economists, the principle (or frequently law) of diminishing returns is today a fundamental element of economic theory. The principle describes how production typically responds to successive increases in the employment of a single input (e.g., LABOR). While initial treatments focused on the case in which labor or capital is added to a fixed amount of land, the principle was eventually extended to apply to any case in which a single input is varied, while all other factors of production are held constant.

According to the principle of diminishing returns, while additional input employment will usually enable increased production, the amount by which production rises with each expansion of input employment will gradually decline as input employment grows. This can be understood as reflecting the fact that production usually works best with a combination of inputs. Fixing all but one input limits the amount that can be produced, and while output can be increased by applying more of the variable input to fixed amounts of the other inputs, the effectiveness of this procedure will diminish as production becomes more and more intensive in that input.

Diminishing returns and the production function. Formally, modern economists usually state the principle as a relationship between the marginal product of an input and the amount of that input being utilized. Let the marginal product of input X be defined as the change in output that occurs when employment of input X is increased by one unit, holding constant the amounts of all other inputs being used. Then the principle can be stated precisely as follows: for each input X used in any production process, the marginal product of X will be a decreasing function of the amount of X employed.

This relationship can be viewed as a statement about the shape of the function that relates output to input employment. Specifically, the principle requires that if (as is usually assumed) the function relating output to input employment is upward sloping throughout, it will also be concave. It is commonly acknowledged that, in many cases, the marginal product of an input will actually rise before it begins to fall. In such instances, the production function is initially convex and only becomes concave once diminishing returns set in.

The debate over Britain's corn laws. While Turgot seems to have been the first to state the principle of diminishing returns clearly, its prominent place in classical political economy can be traced to the early 19th-century debate over Britain's corn laws—legislation that imposed stiff tariffs on imported grain.

Throughout the Napoleonic Wars, Britain had blockaded the European continent in an effort to impose economic hardship on the French. As a result, British grain producers did not have to compete against foreign producers over this period. Grain prices had increased, and previously dormant British lands had been profitably adapted to grain production.

By 1814, the end of the war was in sight. Anticipating that renewed competition against imports would lead to falling prices, British agricultural interests began demanding that protective tariffs be put in place. Accordingly, Parliament appointed a committee to investigate the relationship between agricultural prices and the state of British agriculture, as well as the likely consequences of allowing grain imports to resume.

In 1815, the committee's reports were made public, and within three weeks of their release, David RICARDO, Thomas MALTHUS, Edward West, and Robert Torrens had each independently developed the principle of diminishing returns and applied it to the issue of protectionism. While the authors differed on the question of whether tariffs would be beneficial, all agreed that preserving the wartime advances in British agriculture would require sustaining high prices. Moreover, they claimed, in the absence of sufficient technological progress, population growth and the principle of diminishing returns would lead to still higher grain prices if imports were prohibited.

Diminishing returns and firm supply. For modern economic theory, the importance of the principle of diminishing returns lies in its ability to explain why the short run supply functions of individual producers will be upward sloping.

Let the marginal cost of production be defined as the extra cost incurred when output is raised by one unit. Standard optimization techniques reveal that in order to maximize profit, a perfectly competitive firm must produce the amount of output that makes its marginal cost of production equal to the market-determined price of output. This ensures that a competitive firm's supply function will coincide with the function that relates its marginal cost of production to the amount it produces. Thus, the slope of a firm's supply function will depend upon the slope of its marginal cost function. In particular, upward sloping supply functions will require marginal costs that rise with output.

This is assured, in the short run, by the principle of diminishing returns. Over short-time horizons, all inputs beside labor will be essentially fixed. By the principle of diminishing returns, successive, equal increases in labor employment will raise output in gradually diminishing increments. If so, then a sequence of one unit output expansions can only be accomplished with progressively increasing amounts of extra labor. If labor sells at a fixed per-unit price, then the cost of each successive output expansion will be larger than the last.

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privatization

THE TRANSFER OF the production of goods and provision of services from the public to the private sector is referred to as privatization. Other broader definitions of privatization include any exposure of the public sector to market competition, the outsourcing of public services, vouchers, franchising, and a wide variety of other public-private partnerships. The more restricted, contemporary definition, reflects the kind of privatization that is currently being practiced in industrial and developing countries.

In spite of the fact that privatization is not a new idea and that governments in the past turned frequently to the private sector for provision of goods and services, our contemporary understanding of privatization dates back to the late 1970s and early 1980s. At that time, there was a surge of interest in privatization, in part as a reaction to the 1960s and 1970s policies promoting social welfare, public regulation, and state ownership of economic activities. In 1979, the Margaret THATCHER administration in the UNITED KINGDOM started an ambitious privatization program. State-owned industries, ranging from airports and rail services to public utilities, were transferred to private ownership over a short period of time. The success of the Thatcher administration with privatization had ripple effects in many other countries, including countries with and without a capitalist economic system.

In the last two decades, privatization has become an important part of government policy in FRANCE, in socialist SPAIN, in AUSTRALIA and New Zealand (both with labor governments), in GERMANY, and in the UNITED STATES. The first significant privatization of the Ronald Reagan administration in the United States was that of Conrail in 1987. Since then, several privatizations took place at the federal, state, and local levels. Examples include the U.S. Postal Service, the energy sector (especially electricity), the Port Authority of New York, and municipal golf courses.

The main ideological argument behind privatization is that the state should not be active in economic life in a free democratic market economy. The ownership of the factors of production should belong to the private sector. The size of the government should be minimized, leading to lower taxes and lower government spending. This paradigm is supported by the neo-liberal economic theory, which argues that state-owned economic enterprises are inefficient. According to this theory, publicly owned enterprises lack the profit-maximization orientation and entrepreneurial incentives of private enterprises, and would lead to production decisions dominated by political interests that misallocate scarce resources.

In addition, bureaucratic inefficiencies and the politicization of economic activity would cause a lack of transparency and accountability in the public sector, very often culminating in corruption. The de-emphasis on profitability means that the public sector losses would need to be covered by the state budget, potentially leading to large budget deficits and ultimately to the crowding-out of the private sector in the economy. The neo-liberal argument assumes that private ownership of property rights provides the necessary incentives for maximum efficiency and profitability.

The counter-argument in favor of the presence of the public sector in the economy claims that there are instances when markets do not function efficiently. EXTERNALITIES, lack of perfect information, and increasing returns to scale, for instance, would limit competition, and therefore may prevent markets from optimal functioning. Under these conditions, markets would fail and government intervention in the economy, in the form of either regulation or production, would be justified.

Public choice theory, on the other hand, claims that there is a major fallacy in this last argument. If free markets fail for the reasons mentioned above, there is no guarantee that the public sector would not fail when faced with the same problems, especially given its inefficiency. In this regard and in terms of efficiency gains, a shift from the public to private sector would be more desirable under any circumstance.

In the 1980s, the development policy known as the Washington Consensus moved to the core of the development strategy promoted by the INTERNATIONAL MONETARY FUND (IMF) and the WORLD BANK. This policy emphasizes macroeconomic stability, privatization, domestic economic liberalization, and international openness. It is essentially a pragmatic summary of the economic growth experiences of industrial countries in the post-WORLD WAR II period.

According to this view, price instability in developing countries is the result of their large and persistent budget deficits. These deficits, meanwhile, are driven by the large public sector in the economy because the losses of the inefficient state economic enterprises must be covered by the state budget. The deficits are financed by monetization, that is, the printing of new money, due to the lack of well-developed financial markets. The resulting high inflation leads to higher interest rates, discouraging private investment and hence causing recession and unemployment. An effective way of breaking this vicious cycle is to transfer state economic enterprises to the efficient and profit-oriented private sector.

At the same time, liberalization of the economy by removing all the price and non-price barriers to the free functioning of the market system, would not only stabilize the economy but would reallocate resources in an efficient way and hence would foster growth and development.

Privatization in developing countries has been more problematic than that in industrial countries. The first problem stems from the fact that, unlike in most industrial countries, privatization in developing countries means denationalization of the industries originally nationalized as part of their struggle for national independence. Therefore, state economic enterprise historically has a different "nationalistic" connotation to it. In the industrial world, the role of the state in the economy is simply a matter of public choice. In developing countries, this element of "nationalism" makes privatization more of a political economy issue rather than a pure public choice issue.

In several developing countries, opposition to privatization has been easily mobilized using such nationalistic rhetoric. It needs to be understood that privatization involves not only the transfer of assets but also the transfer of power. Privatization shifts power from the bureaucracy and the politician to the private entrepreneur. Any shift in power invites struggle. It is therefore not surprising that the resistance to privatization in several developing countries has come predominantly from the political and bureaucratic elite, condemning privatization as anti-nationalistic.

This has been especially true in cases where privatization involved sales of public assets to multinational companies. The opposition to privatization is actually a coalition of very distinct groups, including not only business groups that economically benefit from the state economic enterprises, but also labor groups adversely affected by public-sector layoffs that accompany privatization.

According to the supporters of privatization, this increase in unemployment, however, is a short-run phenomenon. The more efficient allocation of resources would, in the long run, increase production, creating jobs and absorbing unemployment. Further complications regarding privatization in developing countries involve concerns about increasing economic inequality, and the transfer of public monopoly power to the private sector. The adverse effects of privatization on inequality are summarized by the fact that most public services and infrastructure primarily benefit the economically disadvantaged. For example, public schools, public housing, water, parks, buses, and state healthcare systems are most important for relatively low-income groups, so privatization of such services has a strong effect on their economic well-being. In fact, privatization of public utilities may raise their price to the higher market level limiting availability to disadvantaged groups, and therefore lowering productivity and raising inequality. These problems are aggravated if the publicly owned enterprises are transferred to the private sector as monopolies.

These and related issues are recognized by the World Bank and the International Monetary Fund and are addressed routinely. These financial organizations have not, for instance, made a policy recommendation to transfer a public monopoly directly to the private sector. It has always been assumed that privatization would promote efficiency as a result of increased competition. Breaking up public monopolies before privatization, and creating wide-share ownership rather than bloc sales of shares have been guiding principles.

In fact, it is recommended that privatization schemes emphasize employee participation in ownership arrangements so that the employees become stakeholders in the privatized enterprise. In 2000, the World Bank put into place its Private Sector Development Strategy (PSDS), a detailed overall privatization plan that promotes privatization but recommends measures to lessen its unwanted effects. It proposes subsidies to the economically disadvantaged to afford the social services transferred to the private sector. The plan suggests that privatization would reduce government overload and thus enable the government to focus its attention on the poor and their needs more efficiently. The PSDS also recommends an increasing role for the International Finance Corporation (IFC), a World Bank financial affiliate, in lending to the private sector to finance retraining for the workers laid off to help them gain marketable skills and find jobs.

It is clear that privatization is a more complicated issue in the setting of developing countries than in industrial countries. Political and economic interests are more firmly embedded in the role of the public sector in the economy in the developing world. If, however, the experience of industrial countries provides any lessons for developing countries, the allocative efficiency gains associated with privatization are too high to ignore. In the past, mistakes were made in the implementation of the privatization programs in the developing countries, largely through discounting the short-run adjustment costs necessary for the transition. If privatization is to continue to play an important role in the World Bank and IMF development strategy, lessons need to be learned from these past mistakes, and a fuller appreciation developed of the historical necessity of public enterprises in the first place.

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Procter & Gamble

FORMED BY TWO SMALL SOAP-MAKERS in Cincinnati in 1837, Procter & Gamble (P&G) grew to become one of the largest manufacturing firms in the world, producing not only soap but countless other household items. James Gamble supervised production of tallow candles and soap made of meat scraps and wood ashes, while his partner William Procter managed the office and sales.

The company became a national success in the latter decades of the 19th century. James Norris Gamble, son of one of the founders, developed a new formula for white soap. An accident at the factory led to a vat of soap being stirred too long. The result was a bar that floated, a novelty at the time. Ivory soap was advertised as safe for both personal and laundry use. The company's slogans for the product ("It floats" and "99 and 44/100 percent pure") helped to increase sales to 30 million cakes per year by the 1890s. P&G was a pioneer in magazine advertising and promotional efforts, and invested not only in mass-production technology but product development, creating a laboratory at the Ivorydale factory site in Ohio. In labor relations, P&G was also an innovator, adopting a profit-sharing plan in 1887 that rewarded employees with a share of dividends, in an effort to undercut labor unrest sweeping the country at the time.

Toothpaste is just one of many consumer products made and marketed by Procter & Gamble.

In the 20th century, P&G continued to introduce products that transformed daily life for American consumers. Crisco vegetable shortening was launched in 1911 with a marketing strategy that combined dealer incentives, free samples, national advertising, and demonstrations. It was a huge success. Tide laundry detergent, launched in 1946, was a marked improvement over others available at the time. Housewives across the country embraced Tide, making it the most popular product in America during the 1950s. Crest toothpaste, first on the market to use sodium fluoride to prevent tooth decay, was another national triumph. In promotion as well, P&G led the way, sponsoring television programs (including the popular "This is Your Life" and "Search for Tomorrow") and using the medium for commercials. The company expanded its operations not just within the United States but globally in the post–WORLD WAR II years.

During the late 1960s and 1970s, P&G came under increasing scrutiny from environmentalists who charged that the chemicals, used in both the production and use of cleaning products, were polluting water supplies and harming animal life. Public pressure forced P&G to find alternatives to phosphate-based detergents. The company also faced lawsuits that linked their Rely tampon brand with potentially fatal toxic shock syndrome. Nevertheless, P&G weathered these crises and continued to grow. By 1980, the company had manufacturing operations in 22 countries, and exported its products to another 100 nations. Today, Procter & Gamble remains a consumer products giant, producing everything from Pampers diapers to Cover Girl Cosmetics to Pringles Potato Chips. And Ivory soap, first developed in the 19th century, remains one of the most highly recognized brands in the world. In 2002, *Fortune* magazine ranked P&G the 93rd largest company in the world with revenues of $39 billion.

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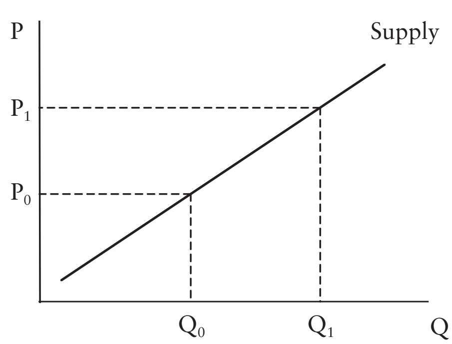
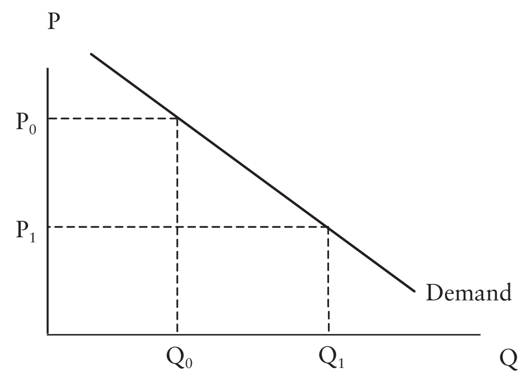
producer surplus

AN INDICATOR OF the welfare of the producers in a market, producer surplus is defined as the difference between the price the producers are willing to charge and the price they actually charge for a unit of a product. The market supply schedule is a preference schedule that shows how much the producers are willing to charge in order to produce a given quantity, assuming a constant cost of production. It is a positively sloped schedule, indicating that profit-maximizing producers would be willing to produce more as the unit price of the product increases.

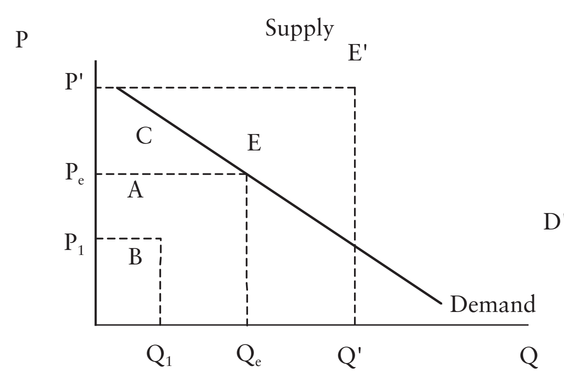
In the graph below, the producers are willing to charge price P_0 for the quantity produced, Q_0. Everything else remaining constant, the producers would be willing to produce a higher output level, Q_1, if they are paid a higher unit price, P_1.



The actual market price of a product that the consumer pays is the result of the interaction between supply and demand. The latter is again a preference schedule that shows the price the satisfaction (utility)-maximizing consumers are willing to pay for a certain quantity consumed, given their level of income. It is negatively sloped, reflecting the inverse relationship between the quantity consumed and the price. Given a fixed income, the consumer would be willing to increase the quantity consumed from Q_0 to Q_1 if the unit price of the product decreases from P_0 to P_1.



The producers and consumers together determine the market price of the product. The market price is obtained at the point where the quantity demanded is equal to the quantity supplied at that price. In the graph below, the market price at which the producers and the consumers agree to sell and buy the product is represented by the intersection of the demand and supply schedules at the equilibrium point E. In short, the equilibrium price P_e clears the market by setting the quantities produced and demanded, Q_e, equal to each other.



Two important issues concerning the producers should be realized. First, the producers, by agreeing to produce quantity Q_e, actually produce any level of output below it, such as Q_1. Secondly, by charging the equilibrium price P_e they make a profit. They were willing to charge a price P_1 for quantity Q_1 and thereby maximize their profits. Now they are actually charging P_e for Q_1. The difference between the two price levels, P_1 and P_e is the producer surplus for Q_1. In a similar fashion, at every level of production below Q_e, the actual price P_e is higher than the price the producers are willing to charge. Hence, the area below the equilibrium price bordered by the supply schedule and the vertical axis, A + B, is the producer surplus, measured in dollars.

A different way of looking at the producer surplus is that it is the short-run profit of the producer. The supply schedule in a competitive market represents the marginal cost at each level of production. The point Q_1, P_1 is the marginal cost of the producer. The price P_e is the marginal revenue, that is, the revenue associated with the sale of Q_1. Hence, the profit associated with Q_1, the marginal profit, is the difference between P_1 and P_e, which is equal to the producer surplus. The area under the equilibrium price P_e bordered by the supply schedule and the vertical axis, A + B, is the total profit of the producer, which is equal to the producer surplus.

The producer surplus area measures the welfare effects of the changes in the market regarding the producers. If the demand schedule shifts up to D', the equilibrium price moves to P' at E'. Since the supply schedule has not changed, the increase in the actual price the producer is charging raises the difference between the price the producer is willing to charge and is actually charging. The difference between P_1 and P' is greater that that between P_1 and P_e. Accordingly, producer surplus increases by the area C, which is the area between the initial and the new equilibrium prices bordered by the supply schedule and the vertical axis, P_eP'E'E. In a similar fashion, this area represents the increase in the profits of the producer because the rise in equilibrium price raises the marginal revenue associated with each unit of sales at the given marginal cost. As a result of the upward shift in the demand schedule, the producer surplus increases and the producers become better off. A downward shift in the demand makes the producers worse off by reducing the producer surplus. [Editor's Note: In the end, it may be noted that producer surplus is the source for profits; and since producer surplus and hence profit increases in response to increasing demand and resultant increasing prices, some theorists consider profits as unearned income and hence exploitive in nature.]

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product

A TERM USED BOTH IN MARKETING and in economics, product exists at the microeconomic and the macroeconomic level. In MICROECONOMICS, it refers to the outputs of production, such as goods and services. Thus the marginal revenue product is the extra revenue a firm can obtain from using another unit of an input factor. In MACROECONOMICS, the concept refers to the output, in unit or value terms, of an aggregate such as a state or country (i.e., to the aggregate level of goods and services), as in GROSS DOMESTIC PRODUCT (GDP) or GROSS NATIONAL PRODUCT (GNP).

Economics studies how primary commodities and produced goods and services, including those that are factors of production, become, by virtue of the relative SCARCITY of their supply, economic goods which are traded on markets. The economic literature has few serious—precise, exhaustive and non-circular—definitions either of products or goods. They are usually assumed as primes or, by begging the question, implicitly defined through the concepts of "economic goods" or "normal goods" (versus "inferior" and Giffen goods). This may be due to the simplistic assumption of homogeneous and perfectly substitutable goods under perfect competition.

Carl MENGER claimed four conditions to be necessary for an object to constitute a good:

1. a human want
2. properties of the object in question which render it capable of being brought into a causal connection with the satisfaction of this want
3. knowledge of this causal connection on the part of the person involved
4. command of the thing sufficient to direct it to the satisfaction of the want.

Products as differentiated objects of demand did not start to play an important role before E.H. Chamberlin's *Theory of Monopolistic Competition* (1933). Product is generally used in a broad sense and is defined as follows: "Anything which makes buyers prefer one seller to another, be it personality, reputation, convenient location, or the tone of his shop, differentiates the thing purchased to that degree, for what is bought is really a bundle of utilities, of which these things are a part." Consumer perception, then, determines whether offerings are the same or different products; and the basis for such determination may be "real or fancied," since the satisfaction of wants depends only on what consumers believe will satisfy them.

Generally, product is a term rather used in the business literature and there it usually is understood broadly as "anything that can be offered to a market to satisfy a want or need," as noted by Philip Kotler. This includes physical goods, services, experiences, events, persons, places, properties, organizations, information, and ideas. The logical problem in identifying products exclusively by their want-satisfying powers is that two products (such as two brands of soft drinks or a soft drink and a smoothie) that satisfy the same want or need (say, a desire for a sweet-tasting drink) must, by necessity, be regarded as identical.

It should be observed that "product" as used in macroeconomics is by no means simply an analogue of an individual good. If nominal GDP is expressed as:

$$Y^N = \sum_{j=1}^{n} P_j Q_j, \qquad j = 1, 2, \ldots, n$$

where P and Q are vectors of prices and quantities produced, the dimension of Y is dollars per unit time, and Y may change at constant Q. The usual way of making the underlying utility, which is assumed to be generated by the quantities of goods Q, congruent with Y, is to compute real GDP as:

$$Y^R = Y^N / P$$

However, real GDP does not have the dimensions of a real product, either. It is a derivative measurement, its dimension being base-period dollars (not dollars per unit good) and thus dependent on the price index used. In the ontological sense, then, aggregates of bushels of wheat, BMW automobiles, or haircuts are just as real as the individual products; GDP and GNP as macroeconomic magnitudes expressed in monetary terms are not.

Product classification. Products have been categorized in several ways. By user category, one distinguishes between consumer products and business (or industrial) products, the first being offered to final consumers and the second, as intermediate goods, for consumption by other producers on the business-to-business market. Consumer products in turn are often thought to be either of the following:

1. convenience products, those goods (such as snacks, staples, or newspapers) consumers purchase frequently, immediately, and with a minimum of effort
2. shopping products, goods (such as furniture, appliances, or dental services) which consumers typically seek out and compare on such bases as suitability, quality, style, or price
3. specialty products (such as cars, designer clothes, or artistic performances), which have unique characteristics or brand identification so that consumers are willing to make a special purchasing effort
4. unsought products, which consumers do not normally think of acquiring (such as smoke detectors or life insurance), or which they are not yet aware, requiring support by advertising and personal selling.

By durability, a distinction between durable and non-durable products is common, where some authors regard three years as the appropriate cut-off point. By tangibility, goods are distinguished from services. Furthermore, marketing distinguishes special groups of products on the basis of characteristics of consumption or distribution. Examples for such classification, often on an ad hoc basis, are FMCG (Fast Moving Consumer Goods), investment products (such as mutual funds or equities), packaged products, or bulk products.

Product characteristics. According to one approach, products are seen as reducible to their characteristics—the objective attributes that determine consumers' subjective willingness to pay for them—rather than as "wholes." Consumer demand is actually not directed at products as such, but rather at their characteristics (or properties) such as size, color, shape, texture, or flavor. Consumer theory has thus been reconstructed in terms of property space rather than product space, differences in substitution between goods being understood as actually reflecting differences in the sets of characteristics associated with them. This model underlies the various approaches of functional (or benefit) segmentation and of positioning used in marketing. The market for a product can be segmented by the attributes that are of primary importance to a target group of consumers. Such decomposition of products into their elements constitutes the basis for perceptual maps and attribute-based multivariate methods in market research, for example those used in factor analysis, cluster analysis, and conjoint analysis.

This approach has been criticized from various perspectives. First, it has been argued that consumers seek benefits rather than characteristics, and that benefits are purely subjective expectations that cannot be reduced unequivocally to objective attributes inhering in products. If benefits are located in the minds of consumers and these arbitrarily decide which benefits they impute to a product, in the expectation that these benefits will satisfy their wants, the regularity with which certain products are expected to satisfy certain types of wants becomes inexplicable.

Even more so, different consumers may perceive different characteristics even if they choose between identical goods. Much of the economic literature has suffered from such ontological equivocation between objective features of products and their subjective differentiation and monetary estimation by consumers: "Commodities are differentiated partly by their very nature (without regard to demand), and partly in response to differences in buyers' tastes, preferences, locations, etc., which are as much a part of the order of things within any broad class of product as they are between one class of product and another," Chamberlin explains.

Second, not only are consumers unlikely to have similar marginal rates of substitution between properties, products are also not reducible to simple sets of characteristics independent of each other. Contrary to the characteristics approach, which expresses higher consumer valuation of particular properties strictly as higher willingness to pay, complex products may have interdependent characteristics. Some products may be such, as in the case of shoes without soles or computers without processors, that our willingness to pay for any other characteristic is reduced to zero if one characteristic is found missing or defective. By assuming an atomistic structure of products, the characteristics approach makes unrealistic assumptions. Products are rather, in ontological perspective, complex structures that consist of part-whole relations, necessary and dependent parts, and boundaries.

Structure of products. For consumers, products do not come as undifferentiated wholes, and marketers must decide on the appropriate level of complexity to give a product offering. Ultimately consumers desire core benefits. At this level, however, there will generally be much competition between products. Producers will therefore attempt to gain differentiation by adding further levels of complexity, which may involve services, such as installation, warranty, delivery, or credit.

This strategy of product augmentation increases the degree of uniqueness of a product and may give producers a competitive advantage. Since consumers choose between total product packages rather than between their core constituents alone, it is total products that are of relevance to marketers. Today, most competition takes place at the level of augmented products; in saturated markets, it is there (and not at the level of core benefits) that product offerings can typically gain sufficient differentiation.

Of course, the added benefits of augmented products must be compared to the additional costs of production and marketing in order to decide on the optimum level of product complexity for any market that will allow for maximum profitability. Product complexity may exceed cognitive constraints or may involve irrelevant components, which would suggest that products need to be broken down into modules.

Modularization, as the strategy of developing simpler parts that may be assembled into a more complex whole on behalf of or by consumers, is one of the dominant options in new-product development. Dell Computer, a leading computer manufacturer in 2003, built its business model on consumer-guided product modularization.

Product hierarchy. The question of the optimum complexity of total (or augmented) products is interdependent with that of the levels of demand. From the perspective of consumers, there is a hierarchy of product levels depending on the scope of demand. Consumers' needs or wants are rarely for an individual product that is already known, but more often for meeting certain needs or wants. Using the example of BMW automobiles, the following hierarchy may be distinguished (where for items at each level an alternative at the same level of demand is specified):

Product family: Automobiles
- Product category: Passenger cars
  - Product line: BMW 3 series
    - Product type: BMW 325i
      - Product form: BMW 325xi or alternate

Consumer demand is typically for the expected benefits of a need family and gradually becomes more specific as consumers retrieve more information about available alternatives. As consumers make decisions at more specific levels, the number of alternative products competing for the consumer budget decreases. In our example, a BMW 325i would be the product that is ultimately desired, and as a branded product it competes with other items of the same product type and product line. Here, attention must be paid to the logical distinction between type and token or, in marketing, between products (or product types) and their various product forms (such as the cabriolet and coupe variants of the BMW 325i, or different package sizes of a particular brand of cornflakes).

Product differentiation. Economists speak of product differentiation when referring to the production of non-homogeneous goods (i.e., those that are not perfect substitutes for each other). Product differentiation is one of the characteristics of monopolistic competition, a market form under which, given no artificial barriers to entry, many firms sell products differing in physical characteristics, location, service levels, branding, or image. COMPETITION can take the form of price competition or, typical for market situations between monopoly and perfect competition, of product (or non-price) competition, in which advertising plays a major role.

The goal of product differentiation is to reduce the price-elasticity of demand by giving products a higher degree of uniqueness and thus to increase market power and maximize profits. Horizontal product differentiation (as in the case of two brands of toothpaste) occurs if consumer would still rank products differently if they were offered at the same price. Spatial differentiation, such as between restaurants or retail stores, is an example. Products are vertically differentiated if, when offered at the same price, all consumers choose to purchase the same one, that of highest quality. Batteries are, in this sense, differentiated by lifespan.

Consumers generally desire uniqueness and variety in products. The idea that one product can suit everyone looks very outdated in the face of consumers' desire for increasingly unique products that stand out among their competition, and meet individual needs and wants. At the same time, a variety of such products are demanded in most product categories. The economic system of free enterprise has proved singularly efficient in producing this desired variety.

Some manufacturers, however, have been taking product differentiation a step further by customizing products for the individual on a mass scale. Mass customization is currently being achieved with physical products on a fairly superficial level, for example with clip-on changeable phone covers, or modular stereo units, but can also be achieved at a more fundamental level. Online retailers, transaction sites and portals (such as Amazon.com, Ebay or Yahoo!) have adopted the strategy of providing individualized offerings for large numbers of customers.

Product brands. One of the most effective instruments of product differentiation is to brand products. Brands are usually defined in relation to products: "A brand is therefore a product, but one that adds other dimensions that differentiate it in some way from other products to satisfy the same need," Kevin Lane Keller wrote in 2003. The question then arises, what are the additional features of a product that turn it into a brand and account for brand equity—the extra monetary value brands enjoy over non-branded, or less-branded, competing products.

The variety of a baker's daily selection is an example of product differentiation: same flour, but many breads.

What causes products such as Coca-Cola, Hershey chocolate, or Campbell soup, to be strong brands and to profit from a price premium while other colas, candies, or soups do not? Two answers have generally been given, depending on whether the difference is located in the perceptual space of consumers or in product space itself.

According to the customer-based view, the "power of a brand lies in what resides in the minds of customers," Keller noted. The higher awareness that consumers have of certain products, together with their set of specific brand associations, contributes to brand loyalty, which in turn accounts for brand equity. Marketing management, particularly advertising, can influence higher awareness, and this view indeed holds that all products can in principle be branded.

Brands are thereby reduced to complex symbols that convey different levels of meaning. According to the American Marketing Association, "A brand is a name, term, sign, symbol, or design, or a combination of them, intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of competitors." The realist view of brands regards this definition as relying on a category mistake. It cannot explain, for example, why, regardless of advertising expenditure, certain products lend themselves to branding more than others or why certain brand extensions succeed while others fail.

The realist view emphasizes the nature of brands as branded products and identifies the conditions for successful branding as anchored both in product space and in perceptual space. Products have features that allow for branding to different degrees. Brands, then, are products that are salient within their categories by being demarcated from other less-branded ones by defensible boundaries (drawn by trademark law, control over distribution channels, advertising, etc.). And brand equity is a function of the degree to which brands succeed in occupying niches in product categories afforded by specific combinations of properties of products and how these are evaluated by consumers.

Product management. Companies producing several products usually organize their business around these products, by employing product managers to be responsible for all decisions concerning one product or brand. In companies with a very wide product mix, management at the level of product categories (category management) has recently gained ground.

In addition to branding, product management must decide on:

1. the appropriate complexity of the total product, particularly the mix between tangible and intangible components
2. the product mix, or product portfolio, to be offered
3. the development of new products
4. product life cycle strategies
5. packaging.

The product mix of any company can be analyzed in terms of the width of the assortment, such as the number of product lines offered, and the length of each product line (or the number of distinguishable items).

A product line is a set of closely related products, for example soaps or sports utility vehicles, and the product mix of a company is the set of all product lines and individual products. BMW, for example, has, in its motorcar division, the following product lines, with several product items (models) in each line and several product types (e.g., coupe, convertible, sedan) for many product items: 3 Series; 5 Series; 7 Series; X5; Z8; M Series. The company has other divisions (such as motorcycles, bicycles, the hybrid motorbike-scooter C1, accessories), some of which are again organized along product lines. Excessively long product lines may lead to cannibalization, i.e. some products taking away market share from other, similar ones within the same line because their positioning in consumers' perception is not sufficiently different (and because the difference in price may outweigh any perceived difference in benefits). Typically, companies want to avoid new product introductions that cannibalize their own product offerings. Excessively broad product mixes may lead to brand dilution if an umbrella brand is used; it may then no longer be credible for consumers that one brand stands for product categories which are perceived to be vastly different.

Product proliferation is a term used to describe the current trend of companies to expand the width and depth of their product mixes. Line extensions, or the addition of new products to product lines under an established brand, and brand extensions, or the application of existing brands to new product categories (and often new product lines), are the main instruments of product management that contribute to product proliferation.

Products are, in an analogy with biology, subject to a life cycle. The product life cycle (PLC) shows the path a typical new product takes from its inception to its discontinuation. This model can be applied to specific need families or industries (e.g., transportation), product families (e.g., automobiles), product categories (e.g., passenger cars), product lines (e.g., BMW 3 series), product forms (e.g., station wagons), product items (e.g., BMW 325i), or a particular brand (e.g., BMW).

Mass production gives way to mass customization, as in printing publications per single-reader preferences.

Only a minority of new products being developed turn out to be successes and maintain themselves over a longer period. More rigorous screening and evaluation techniques in the new product-development process are meant to reduce this "flop rate." The vast majority of new products are modifications of existing products (in form, function, or cost), line extensions, brand extensions, or new category entries, while there are only a small number of new-to-the-world products. While line and brand extensions leave the original products in place, product modifications always replace them. New category entries (such as bicycles within the BMW product portfolio) are products that are new to a company but not to the consumer.

New product management thus involves both the management of product development and that of product diffusion. Depending on the nature of the market segment, diffusion patterns can be very different, and it is this difference that determines product life cycles. In spite of the individual nature of product life cycles, four (or five) phases are usually distinguished: 1) introduction; 2) growth; 3) maturity; and 4) decline. At every stage, particular marketing management decisions are most effective to optimize performance. For example, in the introduction phase many products (particularly if demand is highly price-elastic) will be sold through selected distributors at a lower introductory price. Once demand picks up during the growth phase, price will be raised and distribution intensified; during its decline phase, the product may again be available in discount outlets at clearance prices. Advertising and publicity may start before product launch but may no longer be deemed effective toward the end of the maturity stage.

In retailing, the term stock-keeping unit (SKU) is used for any product that is an inventory item and takes up a slot of shelf space. Retailers manage their business primarily at the level of product forms (with an increasing tendency towards category management), since variants of a product including different package sizes are treated as separate SKUs. Manufacturers typically must provide outlets with their own universal product code (UPC), the bar code that is scanned at checkout counters. Because of this, the individual product item now represents a set of products. For example, three television models being shipped to five mass merchandisers would be fifteen products (1 product item ∞ 3 product forms ∞ 5 unique customer UPCs = 15 separate product items to be managed).

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production, individual/social

PRODUCTION IS DEFINED AS human beings making use of available technology to transform raw materials into new products. The natural environment is a condition for the existence of production because it furnishes the basic substance used by human beings in this process of transformation. Motivation to create new goods that are valued either by the direct producer, his kinship unit, or in the larger society, and the skills necessary to carry out the production are other necessary conditions.

Individual production occurs when the production process is carried out by a single, relatively isolated human being. The angler who sets out in his boat to catch fish engages in individual production, as does the farmer who works the land alone. Classical economics grounds many of its analogies in individual production, and uses these parables as examples for generalized theories of human society. Ironically, classical economics also devalues individual production by treating the inanimate objects used by direct producers as if they were equal partners in the production process. Land and machinery (CAPITAL) are considered as contributing new value alongside labor in the production process. This treatment of land, labor, and capital as partners in the production process is a major point of disagreement between classical/neoclassical, and Marxian ECONOMIC THEORY. The Marxian economists view human labor as uniquely capable of creating new value. This distinction between the classical/neoclassical point of view and that of Marxian theorists is particularly clear when viewing individual production.

The pursuit of individual production. The simplest example of individual production is a case where the only interaction is between producer and nature. This example is one where individual production occurs outside of human society. The *Robinson Crusoe* story and the film "Castaway" come to mind. These are rare instances where individual production occurs outside society, in complete alienation from other human beings. These examples of castaway, individual production are not likely to be of much use in understanding more typical instances of individual production. And since most economic theories are focused on explaining social relationships there, has not been a great deal of attention paid to such examples.

To a certain extent, individual production is mythologized in popular discourse, as well as in some scientific theories. The myth of individual production is particularly important in the UNITED STATES, where the idea of the relatively autonomous, individual producer is at the core of what has come to be called Jeffersonian democracy. The language of American political discourse has traditionally been rich in direct and indirect references to an independent producer who is conceptualized as engaged in individual production, despite the fact that actual production in the United States has historically been dominated by slave- and wage-labor production, which are not individual in nature. In social science, neoclassical economic theory relies heavily upon a notion of trade between such individual producers, each of whom brings his wares to a perfectly competitive market, and where each producer is devoid of any market power. The neoclassical model has a wage-labor market, which would indicate socialized production, but treats wage laborers analogously to individual producers negotiating contracts with other individual producers in a utopian environment, where no such economic agent has market power or any ability to coerce.

However, individual production outside of the confines of a society is rare. Individual production typically occurs in the context of social relationships formed within a specific society or societies. Thus, it is very likely that the farmer who plows his field alone does so in the context of social relationships with other human beings and institutions that are part of a larger society. The farmer's productive efforts are likely to be motivated by these relationships. In this sense, individual production is not autonomous from the other social relationships in the society. Individual production is shaped by these other social relationships.

For example, markets are social phenomena. They are locations where individuals come together to engage in exchange. It is not uncommon for individual producers to sell their creations in markets. Indeed, the first market economy was not capitalist, but probably one in which individual producers met to exchange their products. The presence of markets where individual producers sell their products acts as a critical motivating force in shaping the quality of those products, the timing of production, and the intensity of the productive efforts. Individual production developed a social patina of workmanship quality as a result of the interaction of market exchange (where public opinion about workmanship was expressed in exchange value) with production techniques.

Other social processes have also played an important role in shaping individual production in concrete societies. Religious institutions and beliefs create motivations in direct producers that influence their productive activity. Certain types of products may be taboo, or religious rules may determine the manner in which production may be carried out. Other products may come into being precisely because of religious beliefs, ceremonies and rituals, or taboos. Similarly, family relationships represent another social influence on individual production. The seamstress who creates clothing in her own relatively isolated workspace may do so to satisfy familial obligations.

Another set of social obligations that, under certain historical conditions, shaped individual production arises in feudal relationships. Feudal relationships exist when a direct producer is obligated to create surplus value, in the form of labor, goods, or money, that is transferred to a feudal lord. The feudal direct-producer, also called a serf, often engaged in individual production. In other words, the serf worked alone, albeit to satisfy a social relationship. This social relationship, based on feudal obligations, motivated the feudal direct-producer to engage in production of a certain type and for a certain duration of time. From these few examples it is clear that, under normal circumstances, individual production is socially determined and often dependent upon social relationships outside of the sphere of production.

Individual production may at times blend with certain types of social production, when more than one human being directly participate and cooperate in the production process. Individual production is typically oriented around a craft and craft skills must be taught. Thus, individual production meets social production in the form of apprenticeships, where new individual producers are gradually created in the teaching and learning process. This context for the socialization of individual production may also be the basis for the exploitation of the apprentice by the master artisan. In that context, FEUDALISM may enter the sphere of individual production, albeit temporarily.

Social production: collectivity. When production occurs directly and unambiguously in the social sphere (involving more than one human being), then it moves beyond individual to social production. The factory is an example of a site of social production, the slave plantation another. In these sites of social production, the workers are transformed from individual producers to a collectivity of producers. The production process becomes a new mechanism for the social connections between individuals. In the economics literature, this transformation of the production process from individual to social production has served as the basis for theories of economic evolution from primitive to more modern forms of economic organization.

Karl MARX considered social production a critical factor in the development of capitalism, an economic system defined by the use of wage labor contracts as the basis for employment of direct producers, and which displaced both the individual production of self-employed artisans and farmers and the social production of feudalism and slavery. He argued that the advanced form of social production, that capitalism brought into being, would create a new type of socialized direct producer. While individual production brought isolation and a sense of alienation from other producers, social production was viewed as bringing a sense of belonging and solidarity. This socialized direct producer would see his interests in the collectivity of workers. The day-to-day practice of social production would teach workers the value of cooperation and this would become the basis for SOCIALISM, a social system that would be grounded in the process of transferring control over the production process from external bosses to the workers themselves.

In Marx's conception of economic evolution, socialism would resolve the contradiction of social production under the command of private capitalists. This conception of social production as creating a new kind of human being, a fully socialized worker, presumes that social production requires a certain type of intellectual transformation in direct producers. In other words, social production is presumed as creating an economic agent with a social consciousness, an active awareness of the value of cooperation and mutual dependence. However, social production may also be conceived as dampening such intellectual awareness. Social production under capitalism has evolved into a system of specialization under a command-and-control form of management.

The command-and-control management structure has fostered a separation between work that requires creative planning and evaluation and manual labor, leaving masses of workers involved to spend their time in work that is not intellectually stimulating. References in literature and film to such modern workplaces as creating drone-like behavior indicates the strength of the view that social production under capitalism is producing a less conscious human being, rather than the revolutionary consciousness that Marx had in mind.

Political economists have even gone so far as to argue that the consciousness created in social production may, in certain societies, foster more alienation, rather than less, as workers develop distrust of other workers competing for the same jobs or promotions. This distrust can be manifested as racism in those societies where concepts of race are part of the public discourse, and play an important part in identity formation (the way workers come to see their own identity and the identity of other human beings). Nationalism or jingoism may also be a more important factor in shaping the consciousness of workers than notions of solidarity or commonality with other workers, particularly those from or in other nations. Thus, social production may bring workers together but it does not guarantee that this togetherness will occur in an environment conducive to the type of community that Marx conceived, where the free flow of communication between workers would be coupled with a high degree of awareness of the value of cooperative enterprise.

The reality is that social production does not occur in a vacuum, but is always part of a larger interplay of political, economic, and cultural influences, many of which are controlled from outside of the workplace.

No matter what the impact of social production upon the culture of direct producers, it is clear that the production techniques that have developed over time have favored such production over individual production. If social production is not a sufficient condition for the development of socialism, it has clearly been a catalyst for technological advance and vice versa. Social production has brought with it a wholesale reorganization of workspaces and of society at large.

Social production is almost always hierarchically organized and grounded in social contracts and/or coercion. The focus on workmanship that epitomized individual production has not been completely lost, but it is typically subsumed to efficiency and low-unit cost considerations. The focus on productivity and low cost has facilitated an enormous expansion in the quantity of products available on markets and the creation of a consumer culture that has, in and of itself, had important feedback effects on social production. The coincidence of social production with the growth of capitalist wage labor relationships and mass production technologies has completely transformed contemporary societies.

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production possibilities

WHEN AN ECONOMY'S FACTORS of production and technology are given, production possibilities are the set of the various alternative mixes of output that an economy can produce at a given point in time.

The boundary of the production possibilities set is called the production possibilities frontier, or simply the PPF. Each point in the PPF is defined as follows. Using available resources in the economy to produce some quantity of all possible goods (and services) except one, in the most efficient way, the maximum that can be produced of the last good with the unused resources defines one point in the PPF. A similar exercise can be carried out to determine all other remaining points in the PPF. The PPF describes, therefore, all combinations of goods and services that can be produced in an economy when all of its resources are fully employed, and efficiently so.

Note that, if it were to increase the production of any good, say to produce one more unit of good x, additional resources would have to be allocated for that purpose. However, if the economy were already functioning at its limit, with full employment—that is, if the economy were at its PPF—then resources previously used in alternative activities would have to be displaced and their production levels reduced. This would represent the opportunity COST of the additional unit of x. Hence, the PPF implicitly defines the opportunity cost of producing one more unit of each good in terms of what has to be given up in the production of other goods. It is noteworthy that the opportunity cost of a good need not be constant, and in general it is not. Typically, it will depend on how much of the good in question and of the other goods are being produced; that is, on the specific location at the PPF.

The points in the interior of the production possibilities set, by contrast, involve unemployed resources. It follows that, at those points, the production of any good can be increased without displacing resources used in other activities, and therefore without reducing their production. In fact, at least if all goods are divisible, the production of all goods can be jointly increased until the PPF is reached.

Naturally, the production possibilities set of any economy is not immutable over time. Typically, it changes continuously, although at a very slow pace. Since the available factors of production determine what can be produced in an economy at any point in time (i.e., the production possibilities set), whenever factors of production are added (subtracted) to the economy, its production possibilities expands (contracts). Thus, population growth, due to either demographical aspects or to migration, and investment, for example, are factors that would expand the production possibilities set of an economy.

In fact, the production possibilities set can expand even without changes in the available resources, provided that better technologies, that increase the productivity of the existing factors of production, become available.

Regardless of the cause, growth in the production possibilities set is typically "biased," in the sense that the potential increase in the production of each good may vary depending on the characteristics of the good. For instance, if the growth reflects mainly migration of unskilled labor, then the potential increase in the production of goods that depends heavily on unskilled labor, such as clothing, will be proportionately greater than the potential increase in the production of goods that require little unskilled labor, such as software.

Finally, it is worth noting that the production possibilities set describes only what can be produced in an economy, but it says nothing about what will, or should, be produced. In particular, an economy may operate either at its boundary, the PPF, or at its interior, leaving resources unemployed. That notwithstanding, it is a well known theoretical result that, under certain regularity conditions, a competitive economy without externalities or other market failures will indeed operate at the PPF, fully employing the available resources.

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productivity

A KEY ECONOMIC STATISTIC IS labor productivity. Productivity is a ratio that measures the output of an input or the output of a multiple of factors. Productivity changes reflect the net saving of inputs per unit of output, and thus the increases in productive efficiency.

LABOR productivity is usually the most important measure of productivity because it constitutes a large share of factor cost in value of most products. The Bureau of Labor Statistics publishes labor productivity data measured by output per hour, output per combined unit of labor and capital input, which is a multifactor productivity measure. For manufacturing industries, output per combined unit of capital, labor, energy, materials, and purchased service inputs are reported. However, aggregate productivity growth is a measure that misses most of the story. If the aggregate productivity growth is broken down to the firms' level one can learn about the rate of growth for continuing and new businesses. For example, the new firms entering the Auto Repair Industry accounted for more than total productivity growth between 1987 and 1992 at 2.7 percent, while exiting firms had a slight loss of 0.3 percent during the period.

Labor productivity growth is essential for achieving higher standards of living. Innovation advances productivity. Productivity growth in manufacturing has averaged 4.4 percent per year since 1993. Global competition has forced many manufacturing businesses to compete more effectively with foreign firms. Japanese automobile industry pioneered "lean" production technique, which compelled U.S. automakers to eliminate waste and improve productivity. Innovation in production technology in steel industry also has increased its productivity.

The upsurge of productivity growth after WORLD WAR II was the result of important policy measures adopted by economically advanced nations. The creation of the WORLD BANK and the INTERNATIONAL MONETARY FUND and of the United Nations encouraged economic relations that became instrumental in advancing productivity.

In addition, multinational firms diffused innovation and managerial and technical skills that helped to advance productivity in developing nations. International licensing of patents also helped diffuse technology. American higher-education trained an increasing number of students from the developing countries. Journals and professional associations diffused knowledge and narrowed the productivity gap between the United States and other industrialized nations.

As other nations approached the U.S. level of productivity per person, the rates and levels of productivity began to converge. The slowdown in productivity in the 1970s was widespread due to the oil shocks in that decade. The economic slow down dampened expenditures for research and development. Other factors such as age and gender mix of the labor force, government regulations to protect the environment and promote health and safety increased the businesses' costs and also exacerbated productivity decline. The decade of 1980s witnessed a reversal of this trend, particularly in the United States. The 1990s decade was marked by a rise in productivity growth. The table below contains a summary of the United States' productivity changes in output per hour for all persons for the business sector for 1960–2000.

Productivity Changes in Output Per Hour of All Persons for Business Sector for 1960–2000

Decade	Business Sector	Nonfarm Business Sector
1960–1970	16.9	16.0
1970–1980	13.4	13.3
1980–1990	14.8	12.2
1990–2000	22.1	21.3

In term of percentages, the decade of 1960s witnessed substantial fluctuations. The highest growth rate for business sector was 4.6 percent in 1962 and the lowest in 1969 at 0.5 percent. For the 1970s the highest rate was 1971 with 4.4 percentage increase and the lowest was –1.7 in 1974. In the 1980s, the highest percentage change was –0.4 for 1982 and the highest was 3.6 in 1983. Productivity increase ranged from a high of 3.9 in 1992 and a low of 0.5 percent in 1993. Except for 1995, for most years of the second half of the decade the rate of increase was above 2 percent. The productivity rate increased to 3.4 percent in 2000.

Diffusion of technological innovations and formation of capital have revolutionized many industries. Support for research and development, reward to inventors, and incentives to promote production efficiency can enhance productivity in the future as well.

Real average labor compensation has increased over the long run at about the same rate as labor productivity. Generally, labor cost per unit of output rises slower than the price level when productivity rises. Productivity gain can thus prevent inflation. When productivity rises, price tends to fall.

Productivity varies across industries. The average annual percentage change for selected three-digit industries for 1987–99 ranged from a maximum gain of 10.2 percent to a minimum of –1.7. Productivity depends on various factors. These factors include the available supply of labor, land, capital and raw materials. Education and skills, the method of production organization and social and psychological and cultural factors also influence productivity.

Productivity also varies among different countries, regions, industries, and among workers. Technological factors and training usually play major roles in raising productivity. The evidence is consistent that job-training programs increase the earning of the disadvantaged adults, particularly those of economically disadvantaged women. Firm-based training becomes more relevant as firms experience rapid technological progress. Training in basic literacy and numeracy, in computer skills, or in teamwork would increase productivity. In the United States, companies invest roughly $60 billion a year on education, training, and upgrading skills. Considering the rapidly changing labor force, this is a modest amount.

Government training programs are primarily aimed at workers who lose their jobs and are disadvantaged. Some are designed for welfare recipients to go to work. These trainings usually include some remedial or vocational education. The Manpower Development Training Act (MPDT) was enacted in 1962 to retain technologically dislocated workers, but the Economic Opportunity Act of 1964 shifted its focus toward disadvantaged workers.

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profit

IN SIMPLE TERMS, PROFIT REPRESENTS the residual return to a firm or entrepreneur, or the difference between the revenue generated by the sale of goods and services and the total costs of production. The total costs include the full opportunity costs of the factors used in production of the output plus the premium charged for the risk taking and the costs of using the owner's CAPITAL. Economists make a distinction between two types of profit.

Normal profit is the minimum amount necessary to induce a firm or entrepreneur to remain in business. Essentially, normal profit equals the opportunity costs of the entrepreneur, which in turn implies a zero level of economic or super-normal profit. Accordingly, super-normal profit or economic profit is any profit over and above normal profit. Basic economic theory contends that economic profit can be earned only in the short-run and originates from MONOPOLY power or innovation.

From the accounting perspective the gross profit is distinguished from net profit. The latter represents the residual after all costs have been deducted, i.e., money costs such as wages, salaries, rent, fuel, and raw materials, interest on loans and non-money expenses such as depreciation. If the unit of observation is a corporation then corporate tax needs to be subtracted from net profits to arrive to the accounting category of net profit after tax; while in the case of sole proprietorship the income tax needs to be deducted from net profit. Gross profit is net profit before depreciation and interest.

Economic profit and accounting profit are the same when all of the factors of production, i.e., land, labor, and capital are credited with their respective full opportunity cost. It is important to note that reported profits of publicly traded companies are not profits from the strictly economic point of view. The principal reason behind that fact is the difference between actual money outlays and full-imputed costs of factors of production.

Having defined profit as a residual sum, it is necessary to explain how a factor of production, namely the entrepreneur, can receive earnings above that which would keep her in a particular business. One way to proceed is to examine the leading theories of profit, which go back to the beginnings of economics as a science. It is useful to divide theories of profit by their appearance in economic theory and by their approach. We have, therefore, the classical, neoclassical, Marxian, Austrian, entrepreneurial or dynamic, and modern school of thought. There is overlap among the many theories and none is entirely exclusive of the others. The modern school is simply a synthesis with a number of distinct elements of former approaches.

Classical profit. The classical theory is best expressed by Adam SMITH, David RICARDO, Nassau SENIOR, and James Mill. For these writers, profit is essentially the reward for capital. Writing before Smith, however, were the PHYSIOCRATS who viewed profit as a surplus for the productive sector of the economy, agriculture. Smith and his followers perceived profit as a reward. Since land received rent, and labor wages, it followed that capital owners received profit. Landowners in classical theory still receive a residual, that which was left over after the reproducible factors of production had been paid. It is sometimes hard to distinguish profit from interest among these writers. It would take a century of work by economists to finally come to view the two as separate categories.

All classical views contain two running themes. The first is that profit, like other categories such as wages and rent, is a distributive share. The second is that profit rates tend toward zero because of competition and accumulation, and, in Mill's view, the onset of the stationary state when capital accumulation comes to halt.

Neoclassical profit. The neoclassical view inherits the central element of the classical view that capital receives profit as a reward. The big difference now, however, is that the prices of all factors of production, including land, are determined at the margin. The level of profit is now the opportunity cost of the owner and perhaps manager of the capital goods he contributes towards his firm. Any supernormal profits are eroded by competition among the capitalists. It becomes apparent in this approach that profit rates may differ among industries as opportunity costs differ.

Rents may now be earned by any factor of production and this leads to Alfred MARSHALL's catch-all term, quasi-rent, as it can be applied to any factor of production. Profit theory in this neoclassical form lies in limbo—it is neither wrong nor an adequate explanation of the essence of profit as business people themselves suppose it to be.

Marxian profit. The Marxian theory of profit relies on the exploitation of labor by the owners of the means of production, the capitalists. The capitalists are forever introducing new machines and technology in order to gain greater productivity and efficiency from the workers—exploitation—and enlarge the size of their profit. They engage in this activity because they are rivals attempting outdo one another in order in increase their profit or simply to stay competitive with another. Exploitation of workers is the byproduct of this race to secure profits by means of machines and technology.

Marx's theory was among the first to regard profit in a dynamic sense. His capitalists are competitive rivals in the true sense, and while profit enters through the backdoor of exploitation, the introduction of new technology and the disturbance of the reigning economic order are the true genesis of the origin of profit. Marx's influence on a later economist, Joseph SCHUMPETER, led to a dynamic view of the role of profit as something that arises out of change. The static classical view and its derivative, the neoclassical, would later be modified into the modern view.

Austrian School profit. The AUSTRIAN SCHOOL focused the economic problem on change and profit; profit as an outcome of change and a disturbance to equilibrium. It is best thought of as the disequilibrium approach. Included in this school is the American economist Frank KNIGHT, whose contribution to profit theory ranks among the most influential. The chief element in the Austrian approach is the, as Friedrich von HAYEK would put it, the problem of knowledge. The fact that knowledge is costly and, in its own right, a certain but peculiar factor of production means it must too receive a reward. That reward is profit. However, knowledge is quite unlike other factors of production and its peculiar nature meant that the essence of knowledge must itself be scrutinized.

Before examining the Austrian approach proper, it is important to examine in some detail Knight's theory. Knight begins his analysis by assuming perfect knowledge. In a world of perfect competition there is no existence of profit. Knight clearly outlines the logic of perfect competition and in so doing makes it necessary to examine life outside of this ideal world. Perfect competition in Knight's analysis is analogous to a world without time. The absence of time implies instantaneous change—a change that is required to adjust any disturbance. Without change everything is predictable. Time cannot be ignored therefore, and neither can change which brings along risk and uncertainty.

Knight then probes into the role of knowledge in economic life. He distinguishes between events that can be predicted with a known probability distribution and those that cannot. Those that can be predicted into certain classes with known probabilities are risks that one can be insured and thus do not present a problem with knowledge. Genuine uncertainty cannot fall into any classified scheme and cannot be accounted for in the decisions of the entrepreneur. Genuine uncertainty, however, is met or undertaken by the entrepreneur and if her instincts—it would be incorrect to call them expectations—are correct, positive profits result.

When dice are rolled, bets can be placed. The winner, however, would never call his earnings profit. In fact, since the probability distribution is known, when the game is played over and over again, there is no uncertainty—the law of large numbers. The problem with uncertainty arises because agents cannot make probability distributions as the events themselves cannot be classed, because they have not occurred enough times, or indeed because the events are themselves unknown. It is the entrepreneur who assumes this uncertainty by creating an organization, the firm, by which he is rewarded for this undertaking. It is an undetermined amount he receives because of the uncertainty of his endeavors. The entrepreneur places at risk his owned assets and organizes these means of production to undertake certain tasks. Organization is one of the primary consequences of his attempt to classify unknowns into knowledge and his reward is profit. The individuals who are ultimately responsible for bearing the uncertainty and risk of the organization are the true entrepreneurs in Knight's theory. A neglected economist, Richard Cantillon, who preceded Smith, elaborated a similar view that entrepreneurs receive profit for bearing risks. But his analysis included thieves as entrepreneurs and is therefore perhaps somewhat inadequate.

While Knight stressed profit as the reward for uncertainty-bearing, Schumpeter, took another tack using the Austrian underpinning of the problem of knowledge. In Schumpeter's scheme the entrepreneur is not a bearer of uncertainty, an organization builder to meet the problems of uncertainty, but rather one who actually creates new knowledge and is responsible for its fruition to market. As the new combinations, as he called innovations, were carried out, profit would arise as a reward. The entrepreneur receives profits because she innovates. She brings to market a new invention, a new method of production, a new product, and is compensated with profit. The financiers of such operations, who bear much of the uncertainty and risk involved are not the entrepreneurs and therefore do nor receive profit. They are paid interest.

Profit as interest. One of the stubborn complications in profit theory concerns the place of interest. Only when economists began to think of interest as the proper reward for capital, whether financial or physical, could a proper theory of profit be constructed. Profit must be a reward for a fourth factor of production. The question is: What is the fourth factor of production and what is its reward? Classical and neoclassical theories of profit are, in many senses, theories of interest.

These two methods of Knight and Schumpeter together with their reliance on time, change, and knowledge form the basis for the entrepreneurial approach. The entrepreneurial explanation of profit is the foundation of the modern theory. We can classify it into four categories according to the origin of profit: 1) uncertainty or risk bearing, 2) innovation, 3) organizational, and (4) arbitrage. Although all of these have change as primary cause of profit, the role of the entrepreneur is different in each. The entrepreneur is, however, a distinct fourth factor of production in the modern theory and his reward, profit, is almost always a residual.

But in the modern theory, it is almost just a matter of degree of entrepreneurial contribution to the output of the firm. For instance, if employees bear part of the risk and uncertainty somehow and perhaps receive bonuses for work well done, they are entrepreneurs. But are they full entrepreneurs although most of their compensation comes in the form of wages? Our view here takes the tack that the entrepreneur is an individual and receives as a reward, profit.

Views of profit. Profit as the reward for innovating is among the more widely accepted explanations for the existence of profit. Entrepreneurs who introduce new products, methods of production, new organizations, etc., are accordingly rewarded. The profit incentive plays a significant role in this process. Schumpeter's theory of economic development is the essence of the entrepreneur *cum* innovator. The entrepreneur, however, does not merely create, but also destroys, displacing less fit characteristics of the economic system with those more viable. The process of creative destruction, initiated and carried out by the entrepreneur is the driving force behind the progress of society. The entrepreneur disrupts a Walrasian equilibrium by changing the order of things. The disequilibrium state is the normal state and profits accrue to the entrepreneur.

The second most widely accepted view of profits is that of uncertainty. It is easy to see the connection between the innovation aspect and the uncertainty view. Both are concerned with change and the introduction of new knowledge. In many respects, these approaches represent different sides of the same coin. The uncertainty approach to profits, however, downplays the role of the entrepreneur in some sense. Uncertainty-bearing is in some respects less active than is innovating. Stockholders in the uncertainty version bear the uncertainty of the corporation but do little more than vote for a board that hires and fires managers. Yet, these stockholders do receive a profit as their reward for bearing uncertainty.

The other prevalent theory, that of arbitrage, sees profit as the compensation for using knowledge and taking risks by bringing distant, in space and time, markets into accordance. When a price discrepancy arises between markets, and it may be temporal in nature, entrepreneurs *cum* as arbitrageurs buy low and sell high and thus earn a profit.

The organizational view concentrates on the ability of an entrepreneur *cum* organizer or manager to shape a firm so that it can better make use of existing resources, including the resources necessary to create knowledge and innovations. The better fit an organization creates, the greater the compensation or profit of its organizer.

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profit maximization

THE MAIN OBJECTIVE OF MOST FIRMS operating within capitalist economic systems is profit maximization. It refers to the situation in which firms choose output levels that provide them with the greatest level of profits possible, where profits are defined as the difference between total revenues and total costs.

Profits are characterized in capitalist systems as the factor payment associated with entrepreneurship, an important part of the production process that includes such non-tangible resources as ideas and the willingness to undertake risk. Profit maximization is the incentive to which most firms respond, and as such is a principal component of capitalism. It is important to note that not all firms choose profit maximization as their main goal. Nonprofit organizations, for example, seek to maximize social welfare by providing as many goods and services to as many people as possible with no emphasis on building up profits.

As the difference between total revenues and total costs, total profit represents that portion of cash inflows that is leftover after all of a firm's expenses have been paid. In its simplest form then, total profit refers to the total amount of cash that a firm's owners will have in their pockets with which they may do whatever they choose. Maximizing profits means more dollars in the hands of business owners and consequently more dollars for new houses, clothes, vacations, etc. That is precisely why profit maximization is the main objective of most firms.

In the case of publicly owned corporations, profit maximization means more dollars that either may be paid out in the form of dividends or plowed back into the company as retained earnings. In either case, shareholder wealth increases. An increase in dividends raises shareholder wealth by increasing cash inflows received by stockholders. Retained earnings indicate that a corporation is using some of its profits to improve the company. Consequently, profits are expected to rise in the future, current stock prices rise and shareholder wealth increases.

Maximizing profits can be achieved in one of two general ways. Firms can maximize profits by increasing total revenues or decreasing total costs. A firm's total revenues will be determined by the selling price of its product and the total amount of output the firm sells.

For example, a firm that sells 100 units of output at \$20 per unit will collect total revenues of \$2,000. Should the price rise above \$20 per unit and/or the amount of output exceed 100 units of output, this firm's total revenues would rise and, assuming fixed or sticky costs, total profits would rise as well. Firms can also maximize profits by decreasing total costs. Total costs can be expected to drop as a result of a decrease in a firm's explicit costs of production (e.g., a drop in wages or a drop in the price of a key input in a firm's production process) or alternatively as a result of an increase in factor productivity.

An increase in factor productivity will boost the level of output a firm can expect to receive from a particular resource and consequently will push down unit costs until the price of the resource rises. Consider, for example, an employee working for \$10 per hour who originally produced 5 units of output per hour. Labor costs in this case would be \$2/unit. Should the same employee produce 10 units of output one week later, the firm's labor costs would fall to $1/unit.

Profit maximization plays two extremely important roles in capitalist economies. First, it determines which goods and services are produced, and second, profit maximization heavily influences the flow of dollars in financial systems.

Profit maximization is the driving force behind most firms' production decisions. Firms choose to produce more of a particular product when the profit associated with that product rises and choose to produce less of a particular product when the profit associated with that product falls. The more profitable a product, the more resources will be devoted toward its production and vice versa. Because changes in total revenues will change when price or quantity change, consumers can convince firms to produce more or less of a particular product by influencing profits though price. In this respect, profits can be thought of as a principal method of communication between consumers and producers.

By initiating changes in demand, consumers can influence prices and profits, thus encouraging firms to alter their levels of output in a manner that is consistent with consumer desires. A change in total revenue brought about by a change in consumer demand is not the only factor that may determine how profitable or unprofitable a product is, however. The relative profitability of a particular product will also be influenced by changes in the costs of production. Rising costs mean lower profits. Hence, firms typically respond to rising costs by reducing the number of resources purchased consequently reducing production levels as well. Layoffs are a rational response of a profit-maximizing firm facing higher wages particularly when total revenues have been depressed by a drop in demand. How resources are allocated and re-allocated in a market economy is determined largely by changes in profit margins precisely because most firms choose to pursue profit maximization as their primary goal.

In countries like the United States and others that possess highly developed financial systems, profit maximization provides not only the mechanism by which most production decisions are made but also has a significant impact on firms' abilities to raise financial capital. Stock prices reflect the present, discounted value of firms' expected profits and hence determine how easy or difficult it will be for a company to raise cash by issuing securities. A firm that is expected to be extremely profitable in the future can expect the demand for its securities to be high and consequently can expect to raise large sums of money by issuing marketable securities. Higher profits mean more financial capital for firms. Economic growth, employment, and living standards are substantially improved as high levels of CAPITAL ACCUMULATION are made possible.

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property

See OWNERSHIP.

Protestantism

THE PHRASE "Protestant work ethic" is often quoted ruefully or sarcastically to explain the behavior of the increasing number of people who simply can't seem to stop working, or alternately in reference to the seemingly restless activities of morally upright immigrant forbears. The original uses of the expression, however, were not intended to suggest either that all Protestants work hard or even that only Protestants work hard; the phrase stems from the pen of Max Weber, one of the most influential sociologists of the 20th century, and his now-classic essay of 1904–05, "The Protestant Ethic and the 'Spirit' of Capitalism."

Weber can be said to understand capitalism as a form of profit-oriented enterprise, in which gain is sought through trade, by legal and honest means only, in which the pursuit of business is a career that consists of an orientation to the rational interest of the business at hand, and the search to maximize profit to the greatest extent possible. In his book, Weber argued that the emergence of Protestantism in the 16th century and the theology of Martin Luther and John Calvin had prepared the way for a full-fledged work ethic associated with the Puritans in the 17th century.

In other words, Protestantism did not directly make individuals harder workers; instead, it created the basis for a cultural view, termed "inner-worldly asceticism," that justified work as a moral activity and an end in itself. This view contrasted to pre-modern attitudes toward work (associated with Catholicism) that viewed it as a curse or a necessary evil to be completed in service of the primary goals of human life. Weber uses the example of the uneducated worker facing the transition from agricultural labor to piece work: he must change his orientation from a mentality in which he works only until he has attained sufficient product to meet his needs, to an orientation in which he seeks to fulfill his greatest potential productive capacity.

Capitalism requires not only this new orientation, but also its necessary prerequisites: punctuality, diligence, and willingness to delay gratification. Martin Luther laid the way for this transition by legitimizing secular callings through his doctrine of vocation; Calvin added to it by promulgating the doctrine of double predestination, according to which not all men were saved, but humans could not ascertain who had been justified and who had not. This problem reached its peak in 17th century Puritanism, that Weber argued had equated industry with morality. It made this connection by provoking the believer with a crisis of proof about his prospects for salvation, to which industry and prosperity were proposed as a solution with unintended negative consequences. Ultimately, the only way for Calvinism to surround the doubts created by religious dogma was to seek a perception of the presence of God in the world through the ceaseless pursuit of worldly activity. The final result of the increasing predominance of this Protestant asceticism was a full-fledged pursuit of capitalist ends, an orientation that Weber argued was the worst outcome of the modern world, a so-called "iron cage" of rational control as the predominant mode of thinking, that no longer had need of a religious justification, whose humanistic qualities merely stood in its way.

Thus, his description of the relationship between Protestantism and capitalism is frequently understood as one of the earliest trenchant critiques of emerging modernity. Ironically, the Protestant reformers are read by Weber as having unleashed a process of development that would increasingly secularize the world, for by the 18th century, when Benjamin Franklin was writing, the "Protestant" world-view had become so dominant that it no longer needed its religious underpinnings; everyone, Catholics, Protestants, and even non-Christians, had embraced the Protestant "ethic." Weber's thought stresses a view of capitalism in which concrete administrative and economic developments are subordinated in importance to the philosophical predispositions that permitted them.

A rational orientation toward wage labor is thus more significant on Weber's view than the legal ability of individuals to pursue wage labor won out of the decline of seigneurialism after the end of the 12th century. Weber did not create this view independently; in it, he wove prior work from Georg Jellinek (*The Declaration of the Rights of Man and Citizen,* 1895), Werner Sombart (*The Genesis of Capitalism*, 1901, and Ernst Troeltsch that attempted to relate ascetic Protestantism with modernity and Protestantism in particular with German history. But he was its most intense expositor and defender, and consequently his work has been seminal in sociology of religion, historical theology, and religion.

Criticisms of Weber's ideas emerged as soon as they were published, and he revised and reprinted the essay several times in hope of clarifying fundamental issues. The most troublesome aspects of Weber's ideas relate to his methodology; he relied on a contemporary form of sociology in which, rather than using specific actual examples, he pasted together so-called "ideal types" as proof for his arguments. The consequence of this strategy is that, while the ideas of Protestantism are drawn from theological tracts, no evidence is cited to prove that most individuals of the age actually held these ideas or were motivated by the reasons Weber suggested.

More generally, Weber's work can be read as a response to Karl MARX's conviction that historical development resulted from the motion of cultural ideas in response to economic changes. Weber was trying to suggest in this work that ideas could be just as significant in spurring historical development. Historians have charged that the thesis does not square effectively with reality. Capitalism preceded Protestantism, particularly in Italy, a country that was only marginally tempted by any interest in Protestant theology, where merchant bankers created the financial structures and trade networks fundamental to capitalist development. It developed in parts of the world where Protestantism, and for that matter Christianity, were either unknown or foreign minority religions. Concrete examples of Protestant countries that were not early capitalist successes can be easily cited.

Experts in Calvinist theology have objected that 17th century Calvinism experienced no crisis of proof. They point out that while pastoral literature of the period recommends asceticism in the earthly calling, it also condemns the pursuit of wealth as a pursuit of Satan. Moreover, Calvinism was an international movement; Weber's treatment of it as a monolithic intellectual heritage ignores differences in ideas in France, England, Scotland, Holland and North America. It can also be argued that Weber confused the "works" that Protestant theologians treated (that is to say, the pursuit of good works or meritorious activity) with the worldly activity (industry, diligence, etc.) fundamental to Calvinism; it is precisely the disparagement of good works that separates Protestants from Catholics in the 16th and 17th centuries. Weber also neglects the role and activities of Jews as both rationally oriented in their religion and as mediators and facilitators of capitalist activity. As an alternative to a complete refutation of the accuracy of the thesis, it has also been argued that Weber was correct in his assumption about the relationship of Protestantism to capitalism, but for the wrong reasons. He should have argued that the role of Puritan idealism was rather to push the purification of church government in England, one of the conflicts that precipitated the English Civil War, a conflict seen by some commentators as establishing the fundamental political preconditions for capitalism there.

The multi-causal orientation of Weber's argumentation and the employment of ideal types make it difficult for critics to fully refute Weber's argument despite occasionally contradictory evidence; three generations of sociologists and scholars have attempted unsuccessfully to put the thesis to rest. Weber's ideas were influential in the work of the American sociologists Talcott Parsons and Seymour Martin Lipset. They provide a fundamental orientation for students in the field of Reformation history, and they have won that most affirming of audiences insofar as "Protestant work ethic" is an idea with which almost everyone is familiar.

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public

OFTEN COMBINED WITH other words to form such terms as public education, the public sector, public finance, public goods, public policy, and public choice theory, this word generally refers in some way to government (in the American usage). Public finance is the branch of economics concerned with the analysis of government spending and taxing policies. The interplay between free markets and government, or the public sector, has been a significant focus of economic inquiry for centuries, especially since Adam SMITH's famous publication in 1776.

In *The Wealth of Nations*, Smith attempted to convince his readers that adherence to mercantilist principles promoted poor policies. He argued successfully that the wealth of a nation should be judged by the living standards of its people, not the amount of gold accumulated in the national vault, and that mercantilist policies, designed primarily to promote a favorable balance of trade for the nation, did not necessarily promote the well-being of the people of the nation. Proceeding on the assumption that the goal of any policy is to raise the wealth of the nation, Smith developed the famous invisible hand idea, convincing many that given the right conditions, each person's pursuit of their own self-interest would lead to an outcome that was in the best interest of the entire society.

He argued that the result of freedom is not chaos, but harmony, and that in many cases the best public policy is one of LAISSEZ-FAIRE, a French term coined by the Physiocrat Dr. Francois QUESNAY, meaning that government should let things be. Smith envisioned a limited role for government to protect "the society from the violence and invasion of other independent societies" and to protect "as far as possible every member of the society from the injustice or oppression of every other member of it."

Thus, government should guard national security and provide legal protections to the members of society, by passing and enforcing criminal laws, protecting property rights, and enforcing contracts, but government should then step back and allow free markets to determine what to produce, how to produce, and for whom.

Modern views generally allow for a broader range of government functions.

In particular, there are externalities, both negative and positive, that can be corrected by government action to promote a more efficient allocation of resources. Additionally, a modern list of government functions might include the provision of public GOODS, promotion of COMPETITION through ANTITRUST legislation or regulation of business, pursuit of macroeconomic goals, and some intervention intended to make the distribution of income more equitable.

The traditional theory of externalities leads to the conclusion that free-market equilibrium output is inefficiently high in the case of negative externalities, but the famous Coase Theorem questions the implication that government interference is necessary in each case to correct the problem. In the traditional view, some activities lead to costs that spill over to others. For example, the chemical dioxin is released into the environment by paper mills and may have adverse health effects. The market mechanism provides incentives for entrepreneurs to produce paper, but the market mechanism does not ensure the socially optimal level of production if the social costs associated with producing a product exceed the private costs, that sellers take into account because of an environmental cost that is spilling over to others. According to Coase, the problem is an inadequate definition of property rights. The Coase Theorem states that as long as transaction costs are not prohibitive, private agreements will generate efficient outcomes when property rights are clearly defined.

Economists continue to debate government's proper role in environmental policy. Some believe that government should correct negative externalities by regulating or taxing the activity causing the pollution in order to reduce production to the socially efficient level, while others favor having government assign property rights and then letting free markets determine an optimal outcome. Either way, most agree that markets fail in some way when it comes to environmental protection, so some type of action by government is needed.

The theory of externalities can also be applied to situations in which benefits spill over to others. This theory is used to justify government involvement in areas such as education, public transportation, public health, police and fire protection, and supporting the arts. In theory, we could rely completely on free markets to provide, for example, fire protection. In free market equilibrium, consumers could purchase private fire protection until the marginal private benefits equal the marginal costs. This free market equilibrium would be inefficiently low, however, if the social benefits exceed the private benefits. In this example, external benefits accrue to neighbors who enjoy some protection from the spread of fire by virtue of another family's purchase of private protection. These external benefits are part of the social benefits but are not reflected in the determination of free market equilibrium. Thus, government can potentially improve efficiency by finding a way to increase fire protection to the socially optimal level. A similar argument can be applied to other activities that generate external benefits. In the extreme case, a good can generate social or external benefits that are so substantial relative to the private benefits, that it is hard to imagine the market mechanism providing the good in any quantity. This extreme case refers to what are called public goods.

Public goods. A pure public good is defined as one that is non-excludable and non-rival. A good is non-excludable if it is either impossible or too expensive to prevent non-payers from enjoying the benefits of the good once it has been provided. A good is non-rival if one person's enjoyment of the good does not interfere with another person's enjoyment of the good. A classic example of a public good is a lighthouse; once the lighthouse has been built and provided with the equipment and energy needed to produce light, it would be virtually impossible to prevent one ship from enjoying some benefit from the light as it sails close to the lighthouse. Likewise, the fact that one ship has made use of the lighthouse's light does not preclude other ships from doing the same.

National defense is another example of a public good. This theory leads to the conclusion that the market mechanism will be unable to provide public goods since the market mechanism relies on an entrepreneur's expectation of profit to motivate the entrepreneur to provide the good or service in question. With a public good, it is difficult to imagine how one might profitably sell a good that people can enjoy for free, since by their nature public goods are non-excludable. This issue, often referred to as the free-rider problem, prevents reliance on free markets and often necessitates government involvement. Though, in some cases, it is possible to rely on voluntary support, such as for public television, in most cases the only way a public good can be provided is through taxpayer support.

Smith's invisible hand guarantees that resources will be allocated efficiently if the market mechanism is permitted to operate unimpeded, provided markets are competitive and assuming no market failures. In 1892, Congress enacted the Sherman Antitrust Act, recognizing even then that firms do not always operate under perfectly competitive conditions and that the emergence of MONOPOLY power can interfere with the ability of free markets to promote an efficient outcome. Microeconomic analysis demonstrates that the efficient outcome, where marginal benefit equals marginal cost, is achieved under perfectly competitive conditions, but that the equilibrium output under monopoly conditions occurs where marginal benefit exceeds marginal cost and is therefore inefficiently low.

Public policy. Thus, public policy has outlawed the formation of monopoly, except in cases where monopoly power is legally sanctioned, as with patent protection for example. The government has maintained a commitment to fostering competitive markets by carefully scrutinizing proposed mergers that would lessen competition and even forcing firms with too much market power to break up. Government has also attempted to regulate pricing in some instances, particularly where a natural monopoly has been identified. A natural monopolist can effectively service a market at lower cost than could many smaller, competing firms, meaning that a monopolized industry may actually be more efficient than a competitive industry. This phenomenon is generally the result of economies of scale. In some cases, industries that were formerly regarded as natural monopolies and subject to price regulation intended to prevent monopoly abuse have been deregulated, either because technology has altered the situation or because price regulation has not worked satisfactorily. It is possible that the threat of government regulation encourages firms in some industries to keep prices moderate, and there is little question that government keeps a watchful eye on markets to ensure that they work to the benefit of consumers. In the modern era, government is expected to act as a watchdog to make sure individual markets are operating as they should, and also to monitor the entire economy's performance to ensure that macroeconomic goals are achieved.

In the 1930s, a revolution in macroeconomic thinking was brought about by John Maynard KEYNES. The classical school of thought, begun by Smith and continued by such 19th-century scholars as David RICARDO and John Stuart MILL, concluded that the economy is self-regulating and that very little action by government was needed to achieve the macroeconomic goals of full employment, low inflation, and economic growth. The Great DEPRESSION provided a compelling argument that government should play a more active role in managing the economy, and Keynesian thinking soon began to dominate. According to Keynesian theory, short-run fluctuations in output, employment, and prices are the result of changes in aggregate demand.

Specifically, when aggregate demand is weak, output is low and unemployment is high, and government policy can be used to restore the economy to full employment by stimulating aggregate demand with more government spending or lower taxes. Keynes saw the volatility of investment as the main cause of short-term business fluctuations, and showed that relatively small changes in spending can be multiplied into significant changes in aggregate demand because one person's spending is another person's income. That is, if one person lowers his spending, this causes another person's income to fall, which then results in the second person spending less, and the effect continues through the economy and can result in a RECESSION or depression. Keynes convinced many that government has a responsibility to monitor the economy's performance and enact policies to improve the economy when problems develop. He believed that effective policy could stabilize short-term business activity, resulting in an economy that would operate near full employment with stable prices. The Keynesian legacy has greatly enhanced our expectations, causing us to assign responsibility for the economy's overall performance to policymakers.

Policies designed to make the distribution of income more equitable are probably among the most controversial of public policies. Welfare-reform legislation, passed in 1996, was in large part a response to our dissatisfaction with the way government had been pursuing income redistribution since the War on Poverty of the 1960s. Past policies were blamed for creating a welfare trap, which ensnared victims in an endless cycle of dependence from one generation to the next. Presently, government redistributes income to those in poverty within strict guidelines designed to move people from welfare to work with greater emphasis on personal responsibility. The distribution of income that would result from unfettered markets is believed by many to be too unequal and too harsh to those in poverty, but we also recognize that simply taking from the rich to give to the poor may not be the best way to improve the lives of the poor in the long run.

Public sector. There is no question that the size and scope of the public sector has increased dramatically in the United States. After adjusting for inflation, expenditure by the public sector is about 14 times as large today as it was before the Great Depression, government spending per person is almost seven times as high now, and government spending is more than twice as large as a percentage of GROSS DOMESTIC PRODUCT (GDP). Much of the increase in government spending went toward health, income support, and education, due primarily to programs that were implemented in the aftermath of the Great Depression, notably Social Security and Medicare.

Public Choice theory, which focuses on the incentives of politicians, has been very critical of the growth in government. Public choice economists argue that when government identifies a market failure and seeks to develop a public policy to deal with the market failure, it is not motivated to achieve its goal at the lowest possible cost, but to develop a policy that is favored by voters. In an era when government spending reaches into the trillions and government debt into the billions, public policy decisions are no longer the concern of a handful of economists, but of millions of voters. Most of us have very high expectations of what government can accomplish, but we expect politicians to justify the dollars used to accomplish public policy goals.

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public goods

IF COMMODITIES USED BY one person do not preclude use by other persons (non-rivalry in consumption), then those commodities are public goods. A second characteristic associated with public goods is that they are non-excludable, meaning that it is not possible to prevent individuals from using the good. A good that is both non-rivalrous and non-excludable is called a pure public good.

Classic examples of pure public goods include good air quality, national defense, or roads: The benefits of these goods can be enjoyed by anyone without lessening the enjoyment by others. At the same time, it is difficult to impossible to exclude someone from using these goods if they are there. Pure private goods, on the other hand, are both rivalrous (depletable) and excludable: A can of soft drink consumed by one person cannot be consumed by another person; furthermore one must pay for the beverage in order to consume it.

In between these two extremes, there are several intermediate cases exhibiting some but not all aspects of public goods. Some goods are non-excludable but still rivalrous, like a free parking spot: Everyone can use it, as long as it is not already occupied. Others are non-rivalrous but still excludable (club goods, below). Finally, the principle of non-rivalry may apply within certain limits only: A highway is a public good unless it is close to being congested, at which point additional users will begin to have a negative impact on the travel time of others.

The free-rider problem. Virtually all economies have a need for goods that are inherently public in nature, such as transportation and communication networks, recreational parks, etc. The availability of these commodities creates economic value, but the extent to which these goods can be provided by private firms is limited. This is due to an extreme form of positive externality, as the provision of a public good by one individual benefits a large number of other people as well. The resulting lack of incentives to produce public goods is known as the free-rider problem, which is best illustrated by the following story.

Consider a group of college students sharing a house. Cleanliness of the house is desirable for the students, but it is also a public good: If one person cleans the house, all roommates can enjoy the benefits. Thus, if they agree to share cleaning chores, each student can easily free-ride on the cleaning performed by her roommates. As a result, their prior agreement to share household responsibilities has no force, and the house is left dirty although everyone would prefer for it to be clean.

In extreme cases, when desirable public goods are not produced at all, we speak of market failure. It becomes a very serious matter when public goods such as national security are concerned. Free-riding and under-provision can be overcome in several different ways, however.

Exclusion and club goods. Many public goods are excludable, meaning that mechanisms exist to prevent use by non-paying consumers. Exclusion makes usage rights of public goods marketable, just as in the private goods case. For example, while a country club's private golf course is a public good (unless it is overcrowded), access is typically restricted to paying members. Once a public good is made excludable, it is fittingly termed a club good.

An important application of the use of club goods is information—perhaps the most public good of all, as it can be consumed infinitely often without depleting it. Exclusion is necessary to create markets for information. To make people pay for satellite television, for example, operators usually encrypt the signal and provide the necessary keys to subscribers only (technological exclusion). The patent system and copyright laws, on the other hand, are legal institutions designed to prevent individuals from the unauthorized use of knowledge developed by others (albeit only imperfectly).

Government provision. If exclusion is impossible or prohibitively expensive, public goods can be provided by governments and financed through taxation. Large national projects, such as a country's defense apparatus, are often entirely undertaken by the government. For most types of public goods, however, government provision supplements private production. Philanthropic, religious, and other charitable organizations, for example, provide services that often have characteristics of public goods, while depending mostly on private donations. At the same time, these institutions coexist with state-run social programs providing similar goods. A problematic feature of this coexistence is that increased government provision can be accompanied by a decrease in their private production, an effect called crowding out.

To create incentives for the private provision of public goods, governments can subsidize providers, or levy taxes on non-providers. Taxes and subsidies that are being used to internalize public costs and benefits were first proposed by A.C. Pigou (1932), and are called Pigou Taxes accordingly. They are often applied today to promote the use of new environment-friendly technologies that are beneficial to the public, but also costlier than conventional technologies. For instance, when unleaded fuel was first introduced, it was subject to fewer taxes than conventional (i.e., lead-containing) gasoline.

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Quesnay, Francois (1694–1774)

THE ECONOMIC SYSTEM IN FRANCE that eventually became known as the PHYSIOCRATS school was founded and led by Francois Quesnay. The term *physiocracy,* from the French word *physiocrate* meaning "the rule of nature," was not applied to the school until 1776, after Quesnay's death.

This marked the first time in the history of the discipline of economics that a school of thought emerged with a recognized leader, and a group of followers espousing the ideas of the leader. Quesnay appears to have had little formal education, but acquired a knowledge of medicine and began practicing by the time he was 24 years old. Eventually, in 1744, he obtained a degree in medicine.

In 1749, he was appointed as personal physician to Madame de Pompadour, the intelligent and powerful mistress of Louis XV. He resided in the palace at Versailles and became one of the court physicians for the sovereign himself. In 1750, Quesnay met Vincent de Gournay, who is credited with coining the now-famous phrase LAISSEZ FAIRE, and he became more interested in economics than medicine. Quesnay published his first writing on economics in 1756 and 1757, two articles for the *Encyclopedie* in which he advanced the idea that agriculture had a unique capacity to produce a surplus, which he called the *produit net*.

His famous *Tableau économique*, which may well be the most celebrated single page in economics, was originally constructed for the king in 1758. The *Tableau* was a vivid graphic depiction of the interdependence of three interacting sectors of an economy. Most of the later editions of the *Tableau* also emphasized the advantages of compliance with Quesnay's economic views. By the middle of the 1760s, Quesnay had acquired a number of disciples who served to popularize and clarify his views. The intellectual influence of Quesnay and the Physiocrats was quite strong during the decade of the 1760s, but underwent a rapid decline after 1770.

Quesnay's own interests drifted from economics to mathematics, and when Louis XVI ascended to the throne, Quesnay left the palace as a wealthy man, due largely to the patronage of Madame de Pompadour. After being hailed by Adam SMITH, the *Tableau* fell into oblivion and had to be rediscovered by Karl MARX in the middle of the 19th century.

Smith suggested that physiocracy should be understood as a reaction to the extreme mercantilist policies of Jean-Baptiste COLBERT during the reign of Louis XIV. By the early part of the 18th century, agriculture in FRANCE had suffered to such a degree under Colbertism that a backlash against these policies seemed inevitable. The economic setbacks, combined with significant military defeats that deprived France of Canada and Oriental possessions, left the nation a second-level national power in Europe. The preferential treatment given the merchant class, the waste of the nation's resources on the court's extravagances, and the unsuccessful wars all connected Colbertism with corruption and decline in the French mind.

By the 1740s, several articles had been published that contrasted France's economic experience unfavorably with that of England. Consequently by the 1750s, the climate of opinion in France was favorable to the principles put forward by Quesnay, particularly the emphasis on agricultural and tax reform, and the clamor for economic freedom and competition.

The economic order envisioned by Quesnay was a self-regulating one that thrived on the absence of outside restriction. His key postulate was that only the productive class cultivating the land produced a surplus. The sterile or artisan class merely recovered its costs; the proprietary class or landowners served primarily public purposes. Expansion of the economy, therefore, depended on the expansion of the expenditure of the productive class and the consequent expansion of the surplus. To Quesnay, the composition of expenditure was as important to the economy as its growth and stability.

Quesnay and his followers began the tradition of regarding capital as advances for the productive process, and put emphasis on the role of investment in agriculture. He emulated the success of the revolutionary changes that had taken place in the English agricultural system, but the combination of small holdings, traditional methods, and the remnants of feudal obligation made it difficult for France to adopt such improvements. Consequently, Quesnay became an advocate of *grande* agriculture that involved large-scale operations and technologically advanced methods, and that required heavy capital investment.

Tax reform was also part of the physiocratic platform. By highlighting that only the landowners, and specifically the agricultural surplus, could ultimately bear the burden of taxation, Quesnay and his followers drew attention to the principles of tax incidence and shifting. They advocated direct, rather than indirect taxation—in particular, a single tax on land—that would minimize the cost of collection. They maintained the position that a tax on industry merely taxed land in an indirect and therefore uneconomical way. However, the landowners resisted this argument, and ensuing discussions about the policy revealed some of the defects in the *Tableau.*

The issue ultimately became one of the major factors in the decline of the physiocratic influence because Quesnay argued that competition would reduce the value of the product of the sterile class to its costs of production, but could not show why competition in agriculture would not also reduce its surplus to zero. It seems likely that the concept of the *bon prix* or "good price" for agricultural products was essential to maintaining the surplus product in agriculture, but it was not clear how it was to be sustained. Interpreting it as a legal minimum price would be a clear departure from the laissez-faire environment that they supported.

Quesnay did not advocate an attack on the landed interest but it was possible to interpret his ideas that way. Therefore, the long-term practical effect of his teaching and writing was to help remove remaining obstacles for the development of capitalistic industry in France.

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quota

A QUOTA IS ANY QUANTITATIVE restriction, whether a minimum or maximum, applied to economic, political, or administrative procedures. Political and administrative quotas are generally used to guarantee the representation of specific groups in educational or decision-making bodies. For example, some legislatures require that a minimum number of seats be reserved for women in order to ensure their inclusion in party politics.

Economic quotas aim to alter the outcome that would result under market forces. By restricting the quantity of a good or service produced or traded, an economic quota distorts the price of the good or attempts to avoid the price mechanism of allocation altogether. For example, the ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES (OPEC) establishes quotas for each of the member nations in order to limit the amount of oil available in international markets. OPEC quotas restrict oil output in order to generate or maintain higher oil prices.

Quotas are also used in centrally planned economies, where a particular factory or industry must fulfill a minimum level of output, but this minimum is not dictated by price incentives; it is instead decided administratively. To some extent, large corporations also function in this manner regarding production by some of their divisions, but in this case, price information is likely to have significant weight on the administrative decision.

Quotas are pervasive in international trade and the most common forms are non-tariff trade barriers, although this may be changing. Export quotas are used by nations seeking to keep low the domestic price of a good it exports. A country may wish to quantitatively restrict the export of a good in order to reserve a greater amount of it for domestic consumption. Domestic producers, unable to export beyond the quota established by the government, make their output available for domestic consumption, allowing domestic prices to remain below international price levels. Clearly, this is not in the interest of the producers, who would benefit from selling more abroad at a higher price. EGYPT has an export quota on cotton in order to make available cotton-fiber to the domestic textile industry at lower prices.

Import quotas are far more common than export quotas. Import quotas place a maximum on the quantity of a good that can be imported. Beyond-the-quota imports may be forbidden, or, in the case of tariff quotas, they face a high TARIFF rate. By limiting the availability of the foreign-produced good domestically, the quota pushes the domestic price of the good up to levels above the international price. This benefits domestic producers of the good, who respond to higher domestic prices with higher output. Domestic consumers, on the other hand, are negatively affected as they face higher prices for the good.

Import quotas generate a quota rent equivalent to the quantitative restriction times the difference between the domestic and international prices. The implementation of an import quota therefore requires the creation of an administrative system to designate the beneficiary of this quota rent.

One method that generates government revenue is the auction of import licenses equivalent to the quota. Importers will bid for permits to import a fixed amount of the good, with all permits adding up to the total quota. This system splits quota rent between the government receiving the proceeds of the auction, and the importers who win the bids and who will charge a price above the international price that they pay for the good.

Another practice is to grant import licenses according to administrative criteria such as first-come, first-served, or specific requirements that must be met by the importer. This method of allocating the import licenses reserves the entire quota rent for the importers and leaves great latitude to administrative officials, providing a large incentive for lobbying efforts and kickbacks. The importers obtaining the import licenses do not have to pay for them, but they may be willing to spend the equivalent of the economic rent in order to gain timely and privileged access to administrative agencies. Anne Krueger (1974) refers to these efforts to obtain the licenses as rent-seeking activities.

Another option is to enable the foreign producers or exporters of the good to capture the entire quota rent. This system often takes the form of a Voluntary Export Restraint (VER), which means that the nation restricting imports requests the exporting nation to impose quantitative restrictions on the good exported (essentially an export quota but for the protection of the importing nation). The exporting nation must devise a mechanism for the allocation of shares of this quota among exporters. Perhaps the best-known case is their use by the United States against Japanese automobiles during the early 1980s.

Economists consider quotas to have a negative impact on efficiency. Using the concepts of consumer- and producer-surplus, economists determine that the losses to consumers of the good are greater than the gains of the producers plus the quota rent. The difference, called dead-weight losses, is the result of lower overall consumption and higher output of the good. Furthermore, quotas require administrative interference, creating opportunities for graft and corruption, or at least the use of resources aimed at lobbying on the behalf of particular interests, so additional efficiency losses may exist depending on how a quota is administered. In the case of quota auctions, the quota rent may be divided between government revenue and profits to the importing firm, amounting to a redistribution of benefits from consumers to government and the licensed importers, but not a loss in efficiency beyond the dead-weight loss. However, if firms invest resources on lobbying or paybacks to quota administrators up to the entire value of the quota rent may be used in rent-seeking. In this case, the efficiency loss will be the dead-weight losses plus the value of the resources used in rent-seeking activities since these do not generate any benefits to society.

Domestic producers of the protected good prefer quotas over tariffs because quotas place a specific maximum amount on the number of imports, reserving for them the rest of the market. Under a quota, an increase in domestic demand for the good will push the domestic price of the good even higher. With a tariff, an increase in domestic demand will generate larger imports of the good with little or no impact on the domestic price. In a growing economy, the demand for the good is likely to rise over time, so long as the quota is not regularly updated to accommodate rising demand, domestic producers benefit more under quota restrictions on imports than under tariffs.

Import quotas became an increasingly common form of non-tariff barrier during the post-WORLD WAR II years. With efforts at the GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT) focused on the reduction of tariffs, many countries switched to quotas to shelter sectors that they were unwilling to open to international trade. For example, the Multifiber Agreement (MFA), adopted in the 1960s by the United States, imposes quotas on textile products. Quotas are also commonly used by developed nations to protect their agricultural sectors, as is the case with sugar and dairy products in the United States. The American sugar quota results in prices that are double, and occasionally triple, the international price of sugar. Efficiency losses caused by this quota are estimated at $1.5 billion per year.

According to the Uruguay Round of GATT negotiations, all agricultural and textile quotas are to be replaced by tariffs by 2005. The Uruguay Round also called for the elimination of VERs by 1999, but these have re-emerged under new guises. Even within NAFTA (North American Free Trade Agreement), dismantling the U.S. sugar quota for Mexican exports has proved nearly impossible. Quotas, however, are taking a secondary role as a stumbling block for trade liberalization in comparison to the problem presented by agricultural subsidies.

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R

railroads

PERHAPS MORE THAN ANY other industry, railroads have traditionally served as emblems of capitalism. The invention of the steam engine and the development of rail-building technology were functions of the INDUSTRIAL REVOLUTION. Railroads then spread that mode of industrial production, and its altered ways of life, across whole countries and continents with incredible rapidity, fundamentally changing the economics of production, distribution, and consumption of most forms of agricultural and industrial enterprises. Once networks had been built, railroads altered the character of national economies, but considerable historiographical debates exist about the relative contribution of railways to capitalism as compared with earlier transport revolutions in, for example, river, canal and road transport. Few, however, dispute the role played by railroads in forging both nations and national consciousness in the 19th century. Historians have also been interested in the roles played by railroads in international relations and in the contribution of colonial railroad development to the particular brand of capitalism that emerged in 19th-century Europe.

The development of railway networks presented tremendous opportunities to entrepreneurs, governments, and individual shareholders, but they also presented colossal risks in the potential losses that investors in railroads might incur. The question of the management of risk has not only applied to the question of financial risk, but right from the inception of railroads, the question of their impact on personal safety has been much debated. (In fact, safety has been debated since the death of Member of Parliament William Huskisson on the day of the first inter-city train journey between Manchester and Liverpool in England in 1830.)

Such debates on safety have always been allied to one of the key economic debates on railways, which concerns the question of who should be responsible for developing railway networks and for operating rail services. Can both of these areas of activity be fulfilled by the private sector, or can one or both of them be entrusted to the state? The different roles played by the state and private capital in the development of railroads in different countries arguably tells us a great deal about the culture of capitalism in those nations. More recent economic debates have concerned privatization, the viability of the extensive rail networks developed in the 19th and early 20th centuries, and the social costs that countries bear when such networks are scaled back. Such debates have looked, in particular, at the place of railroads since the development of alternative forms of mass transportation.

The early railroads. The earliest railroads were developed in Britain at the end of the 18th and the beginning of the 19th centuries (such as the Surrey Iron Railway of 1803 and the Middleton Railway of 1758), with iron rails being developed at broadly the same time as steam engines (the first tracks were used in 1776 at the aptly named Coalbrookdale), while rail cars had antecedents in the wooden wagons that were used to transport goods, such as coal along tracks. The first 20 years of the development of railroads were relatively unspectacular, until the opening of the Stockton-Darlington railroad in 1825, where George Stephenson's locomotive provided the first steam-train service run for the public and freight. Even then, it was not until the 1840s that the so-called Railway Mania began, when 272 separate railroad concessions were granted in a single year. It would seem significant that this sudden expansion of the industry quickly followed the report of the Royal Commission on Gauges, which had instituted a common national standard for track sizes in 1844.

The development of the railroad industry in Britain was of crucial importance to the acceleration of the Industrial Revolution; because of this, many other states followed the British example in the hope of keeping pace with the leading world economic power of the day. The British case quickly showed that the combination of iron rails and steam locomotives had massive potential, introducing efficiencies into the heavy industries that were driving the Industrial Revolution, such as iron and coal. Railways also led to the effective transport of raw materials and finished goods in consumer-oriented industries such as textile production, and, ultimately, in mass passenger transportation. The railway boom was significant not just to the material development of a capitalist economy, but also to the introduction of state regulation in order to guide the development of the rail network. The shift it induced in the popular consciousness recognized the potential gains that could come from investing even small sums of capital in speculative stock ventures.

Who runs the rails? Once the success of railroads was demonstrated in Britain, other industrializing states knew that they too would have to develop rail networks. There then ensued a series of debates concerning the development of rail networks, and the operation of passenger and freight traffic, which are central to the connection between the railways and capitalism.

In a country such as FRANCE, as one case study, the arrangements that were devised for the development of railroads are representative of the particular culture of capitalism, which was to characterize all French development in the 19th century. The French parliament debated such questions at great length between 1834 and the passing of the Railway Acts of 1842, legislating the creation of a national rail network (which was then developed at an incredible speed). In broad terms, there were two sides of the railway debate: those who believed that the development and operation of railways could only be entrusted to the state, and those who believed that only private enterprise would create an efficient rail network.

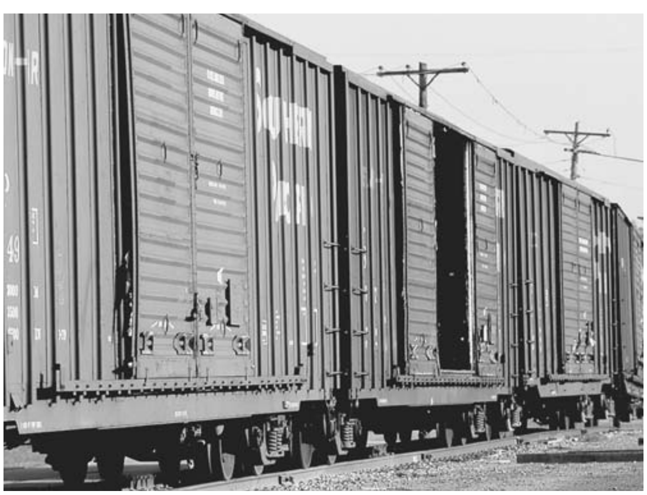
Two very different political groupings—socialists and nationalists—put forward the statist case. According to French socialists, railroads were a natural MONOPOLY that could only be effectively operated by the state, for private enterprise could not be trusted because of its potential to exploit its position to generate monopolistic profits, or to develop a rail network which only served major centers, ignoring less profitable routes, or where capital was wasted with rival entrepreneurs duplicating effort by building competing railroads between major cities.

Right-wing nationalists made a similar case, on a different basis, claiming that the state needed to control rail development because of its strategic importance in France's competition with its neighbors. In particular, French nationalists looked at the state-controlled, rational development of railroads in Prussia, and demanded that the French state play a similar role for fear of falling behind the Prussians in industrial and military power (it was believed the Prussian rail lines would allow quick access for massive troop movements into France).

Liberals, on the other hand, opposed state-direction of railroads, arguing that such projects represented a form of double taxation that hit the poorest in society hardest, for it would be the rich who would benefit most from railroads, and who would, comparatively, pay the least for them.

Free-marketeers argued that only entrepreneurs could develop a truly rational and efficient national system of railroads. Such a stance was well articulated by Pierre Larousse when he asked: "In the end, can one expect from the state the same spirit of perfection which drives private interest? Can one expect the same commitment from state functionaries as one would get from officials zealously overseen by their company bosses?"

The synthetic solution of the French state was to build and plan the network as a state-run enterprise, and to then lease operating concessions to a small number of companies who would operate in distinct regions of France. These six companies—Nord, Est, Ouest, Orléans, Lyon, and Midi—might be described as an oligopoly, but the reality of the situation was that each was granted its own local monopoly. This compromise was typical of the French style of capitalist development, and the solution of the question of railway development was described by writers as the dualist theory or the rationalist theory of French development. The negative eco-



The effect of freight railways on the development of the Industrial Revolution is a topic of debate in the history of economics.

nomic and social consequences of this rational system were overlooked in a mood of general optimism, where politicians from across the political spectrum were keen to be seen as adherents of a cult of progress, and to make grand claims as to the economic gains that such a railway network would bring to France.

Socialist and journalist Pierre-Joseph Proudhon, for instance, claimed that "This transport revolution will eliminate scarcity, allowing producers to bypass intermediaries and to obtain the true value of their goods, creating profits for the worst land, giving work its true value, doubling incomes, and through a fairer distribution of wealth, ensure the end of local famines and depressions."

Rails as revolution. As well as representing important trends in the structuring of capitalist economies, the railroads also inaugurated a series of irreversible social trends, which are an ever-present theme in 19th-century writers' commentaries on the meaning of the railroads, as well as in the works of later critics. Early commentators on railroads, such as Adolph Joanne writing in 1859, identified them as agents of a modernity which would be quickly globalized: "These new tracks, which, in a short time, are destined to cross every surface of the earth (along with the electric telegraph) represent the greatest political, economic, and social revolution in human history." While one might question the hyperbole of Joanne's claim, there is no doubt that railroads changed the character of life in distinct ways across the globe.

Railroads certainly inaugurated new conceptions of time and space, as we know from the many 19th-century novels, poems, and paintings which attempted to describe such changes. Wolfgang Schivelbusch suggests that, "Compared to the ecotechnical space-time relationships, the one created by the railroad appears abstract and disorienting, because the railroad—in realizing Newton's mechanics—negated all that characterized ecotechnical traffic; the railroad did not appear embedded in the space of the landscape the way coach and highway are, but seemed to strike its way through it." In other words, the railway industrialized landscape and experience in a way that had not characterized earlier forms of transport. In doing this, 19th-century writers were attendant to the fact that railroads were not simply connecting people and places, for they were also disconnecting and isolating others (a common theme of novels by writers such as Émile Zola and Guy de Maupassant). As Charles Dunoyer put it in 1840, railways "only serve the points of departure, the way-stations and terminals which are mostly at great distance from each other . . . they are of no use whatsoever for the intervening spaces which they traverse with disdain and provide only with a useless spectacle."

Across the world, optimistic commentators were convinced that railroads would help to create national markets and imbue people with a common, national consciousness. Let us compare, for example, Larousse with J.W. Scott of the American newspaper *Toledo Blade*.

> LAROUSSE: Distinctions between agriculture and industry will soon be academic. There will only be one economic sphere in which town and country have ceased to be distinct worlds, ceasing to keep their different morals, cultures, ideas and laws.
>
> SCOTT: To commercial exchanges through the interior, it would give an activity beyond anything witnessed heretofore in inland trade. A face of gladness would animate every department of toil, and new motives be held out for activity in enterprise. Social as well as commercial intercourse of the people of distant states, would break down local prejudices and annihilate sectional misunderstandings. The wages of labor would be improved, and the profits of capital increased beyond the whole cost of these works.

Such blissful optimism was, of course, a common characteristic of the development of 19th-century nationalisms, and reveals to us the central role played by railroads in the construction of an all-encompassing ideology of progress.

Traveling by rail also meant the acceptance of new risks to one's personal safety, especially in a country like France where Larousse noted, in 1878, that there were five times as many deaths caused by railways as there were in England, eight times as many as there were in BELGIUM, and 21 times as many as there were in Prussia. This poor safety record was something of a national scandal, and Larousse was quick to identify the cause of the dangerous quality of rail travel in France, which was the dualist theory of rail management. Larousse and other commentators blamed rail deaths on the companies' rapacious desire for profits, the lack of desire of government to effectively regulate the railroads, the mutual interpenetration of rail companies and government (many deputies and senators sat on the boards of rail companies), and the desire on the part of many safety inspectors to obtain better-paid posts with rail companies. Similar arguments were being replayed 140 years later in Britain in the wake of rail disasters at Southall, Paddington, Hatfield, and Potter's Bar in a privatized rail industry that borrowed the oligopolistic, rational model originated in 19th-century France.

The indispensability of railroads to capitalist development. The question of how indispensable railroads were in the development of capitalist economies has been one of the principal areas of discussion in economic history, particularly since the so-called "Axiom of Indispensability" overstated the importance of railroads to American economic growth. In the name of a "New Economic History of Railroads" these writers took what they saw to be a truism that structured accounts of American history—that America became an industrial power through railroad development—and subjected this claim to historical and economic analysis. In particular, they concerned themselves with the broader economic impact of railroads as compared to the introduction of earlier forms of transport. Carter Goodrich, for instance, notes "Although the early canals were soon supplemented and later overshadowed by the railroads, it must not be forgotten that the initial reduction in costs provided by canal transport, as compared with wagon haulage, was more drastic than any subsequent differential between railroads and canals. The effect of this reduction was decisive for the opening of substantial trade between the east and the west." Robert W. FOGEL moves on from this point to claim that if railways had not existed, then other forms of transport (such as canals and rivers) could have promoted precisely the kinds of growth that eventually came to be seen as being uniquely indebted to the railroads.

While such a claim seems to have a certain logic, and may act as a useful corrective in our thinking about the indispensability of the railroads, much of the evidence marshaled by its advocates seems to give a pretty clear impression of the revolutionary effect of the railways on the American economy. For instance, in 1851–52 boats carried six times as much freight as trains in America, yet as quickly as 1889–90 trains were carrying five times as much freight as boats. And the comparative advantage of trains was not just their cost (for prices kept falling, commodity transport by rail dropped from 1.925 cents per ton mile in 1867 to 0.839 cents in 1895), but the fact that builders directed rail routes in a way that was not possible with river transport, and in doing so a national market was established across the United States, at precisely the time that a unitary political state was being formed.

Just as had been the case in France, the state encouraged the development of rail networks through the granting of concessions, tracts of land, and grants. Such agreements did not, of course, benefit all Americans, and we find a close connection between the colonial expansion westward, the development of railways, and the destruction of Native-American cultures (as has been amply replayed in so many western movies). Fogel also notes that the economic benefits of the new railroads were not shared equally among corporate interests, for large firms, such as STANDARD OIL, were often able to secure especially low freight costs (rebates) as a means of pushing other firms out of the market.

International railroad history. The development of railroad networks in other states revealed different social and economic questions. In RUSSIA, for example, Simon P. Ville suggests "Russian landowners delayed rail development for fear of the social forces it might unleash," cognizant of the twin development of mass politics and transport in countries such as Britain in the 19th century. The Russian case, where railroad development and industrialization developed rather later than in other European states, also revealed distinct economic problems that came from later development, such as the issue of import substitution, and how one could develop a rail network without relying on foreign labor and hardware. The Russian solution to such problems was a program of tariff protection and the offering of privileged concessions to five key firms who were entrusted with the development of a rail network. Such a policy replayed the idea of a state-sanctioned oligopoly that had been developed in France.

An idea which seems to be related to the new economic historians' questioning of the axiom of indispensability is the issue of the huge levels of investment which were made in railroads in the 19th century, and the question of whether such resources might have been more efficiently deployed elsewhere. Such questions may not seem of crucial importance in a country like GERMANY where around 26 percent of GROSS DOMESTIC PRODUCT (GDP) was spent on railroads in the period 1875–79; or Russia, 25–30 percent of GDP in 1896–1900; but they are certainly understandable in the British context where around half of GDP was invested in rail in the 1840s and countries like Spain, where annual GDP devoted to railroads was at times as high as 90 percent.

The Spanish case is particularly interesting because historians have noted that Spanish railroads often did not connect major areas of industrial production, where the greatest economic gains would have come from rail links. Much of the capital deployed in the development of the Spanish railroads came from outside the country, and outside investors often had different priorities than the Spanish state or industrialists. Similar planning problems occurred in France (where too great an emphasis was placed on Paris as the center of the national rail network); Britain (where there was some duplication of routes); and Germany (where states often intentionally failed to connect their lines to those of neighboring states, for reasons of economic and political competition).

The 20th century. While most European railway networks were built in the 19th century, it was not until the early 20th century that extensive railway networks were built across the globe (and even then, there were some geographical areas, such as most of the Arabian peninsula, that were not served by railroads). Of course, the shape and purpose of many non-European rail networks was determined by European colonial powers, whose chief aims tended to be the military control of colonies, and the use of railways as means to exploit raw materials.

Railroads have also been intimately connected to the history of war in the 20th century. A.J.P. Taylor famously claimed that WORLD WAR I had been caused by a coincidence of European railway timetables, while WORLD WAR II will always be remembered not only for the manner in which railroads were used in troop transport, but for their role in the industrialized genocide of the Holocaust.

Technical innovations in rail have been relatively scarce in the past 100 years (diesel, electrification and an increase in speed stand out), especially compared with the dynamic changes that have taken place in road and air transport. In the second half of the 20th century, governments found themselves having to take account of such changes in the way they developed and regulated rail networks.

Where 19th-century governments had to view railroads as the sole providers of modern transport, 20th-century governments had to develop national strategies that encouraged a range of public and private transport. Such decisions were often heavily dependent on the particular political outlook of governments, so that in post-war Britain one finds different governments nationalizing rail (1946), closing much of the rail network (1965), privatizing rail (1994–97), and then effectively re-nationalizing part of the network (2002).

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Rand, Ayn (1905–82)

CAPITALISM HAS MANY intellectual defenders, but none as uncompromising as novelist-philosopher Ayn Rand. She escaped from the Soviet Union to the UNITED STATES, just in time to witness her adopted homeland's NEW DEAL rejection of free-market policies. She became famous for her increasingly philosophical novels, culminating with *Atlas Shrugged* in 1957; she then switched exclusively to nonfiction.

Rand's political thought begins by defining capitalism in the strongest possible terms: "When I say 'capitalism,' I mean a full, pure, uncontrolled, unregulated laissez-faire capitalism—with a separation of state and economics, in the same way and for the same reasons as the separation of state and church." She then staunchly embraces capitalism so-defined. Unlike so many pro-capitalist thinkers, Rand does not argue that its economic efficiency outweighs its moral shortcomings. While she hails the wealth-creating power of the free market, her defense of capitalism is a moral one. Laissez-faire is, she believes, the economic system of freedom, justice, and individual rights. The leading moral objections to capitalism, conversely, are unjust and totalitarian.

Even firm proponents of capitalism usually find Rand's position unpalatable. How could anyone treat capitalist outcomes as morally privileged, and deny the good intentions of progressive reformers? Her main moral argument rests on the fact that under capitalism, human relationships are voluntary, based on mutual consent. The consumer and capitalist freely exchange money for products; the capitalist and the worker freely exchange money for time. This is the form of social interaction that Rand sees as uniquely consistent with the rational nature of man:

> In a capitalist society . . . men are free to cooperate or not, to deal with one another or not, as their own individual judgments, convictions, and interests dictate. They can deal with one another only in terms of and by means of reason, i.e., by means of discussion, persuasion, and *contractual* agreement, by voluntary choice to mutual benefit.

Government action, in contrast, is fundamentally involuntary. The taxpayer has to pay his taxes, the businessman obey regulations, whether he agrees with them or not. Rand denies that democracy makes taxes and regulation any less coercive; a genuine contract requires the consent of all participants, not 50 percent plus 1. It is morally wrong, she maintains, to use physical force against a person who is peacefully living his life:

> So long as men desire to live together, no man may *initiate* — do you hear me? No man may *start* the use of physical force against others . . . It is only as retaliation that force may be used and only against the man who starts its use . . . A proper government is only a policeman, acting as an agent of man's self-defense . . .

It follows, from this view, that most of what governments do, from price controls and antitrust laws to public education and conscription, is a violation of human rights. Indeed, taxation itself is morally impermissible; government ought to fund its limited activities solely with user fees and charitable donations.

Rand also defends capitalism on the related ground of merit. Those who succeed under laissez-faire produced every penny of their riches and ought to be lauded for their achievements. Indeed, Rand is arguably the most meritocratic thinker in the history of political philosophy, idolizing the productive genius, and condemning his egalitarian critics:

> It is morally obscene to regard wealth as an anonymous, tribal product and talk about "redistributing" it. . . . Anyone who has ever been an employer or an employee, or has observed men working, or has done an honest day's work himself, knows the crucial role of ability, of intelligence, of a focused, competent mind—in any and all lines of work, from the lowest to the highest. . . . When great industrialists made fortunes on a *free* market . . . they *created* new wealth—they did not take it from those who had *not* created it.

What about those who do poorly under capitalism? Rand would not hesitate to point out that this is typically their own fault; in a system based on merit, the "losers" tend to be lazy, irrational, or otherwise culpably deficient. But even if you are unsuccessful solely through bad luck, that it is no reason to scapegoat the better off.

There is obviously little affinity between Rand's ethical outlook and that of Christianity. An atheist, Rand views anti-capitalism as the natural political expression of Christianity's perverse "altruistic" ethic. Indeed, she deplores the very idea of "unconditional love":

> Love is the expression of one's values, the greatest reward you can earn for the moral qualities you have achieved in your character and person, the emotional price paid by one man for the joy he receives from the virtues of another. Your morality demands that you divorce your love from values and hand it down to any vagrant, not as reward, but as alms, not as payment for virtues, but as a blank check on vices.

In contrast to many defenders of capitalism, then, Rand refused to pragmatically appeal to religious conservatives on their own terms. Anti-capitalist politics follow logically from Christian ethics. Furthermore, Rand observes that for all their so-called radicalism, Marxists and other socialists blithely accept Christian morality. Both Christianity and socialism deny producers the credit they deserve, and proclaim the duty of the able to serve the needy. Could not Karl MARX's slogan "From each, according to his ability; to each, according to his need," just as easily have come from the lips of Jesus?

Rand has a mixed intellectual reaction to free-market economics. She disapproves of its utilitarian moral outlook: "The classical economists attempted a tribal justification of capitalism on the ground that it provides the best 'allocation' of a community's 'resources.'" But she nevertheless relies heavily on economists like Ludwig von MISES to answer practical doubts about capitalism. Monopoly? The "monopolies" to worry about are those that governments create by making competition illegal; on the free market, a firm can only become the sole supplier by being the best. Depressions? They are caused by government manipulation of the money supply, and exacerbated by labor-market regulation that keeps wages above the market-clearing level. Labor unions? They should be legal, but it is folly to give them, rather than rising productivity, credit for workers' increasing living standards.

Her economic history is equally unconventional. She praises the wonders of the Industrial Revolution, blaming government intervention and pre-existing conditions for its ills. As she puts it, "Capitalism did not create poverty—it inherited it." Writing in the 1950s and 1960s, Rand prophetically described the grim economic conditions behind the Iron Curtain. At a time when many experts took official Soviet growth statistics at face value, Rand saw only a Potemkin village of "wretched serfs" hidden behind a facade of Communist propaganda.

Rand's distinctive moral defense of capitalism exerted a powerful influence on 20th-century LIBERTARIAN political thought. It is unlikely that the libertarian movement could have attracted a fraction of its adherents by appealing to economic efficiency or utilitarian cost-benefit analysis. *Atlas Shrugged*, her greatest novel, dared to cast entrepreneurs as oppressed heroes and socialists as neurotic villains. While her artistic decision repelled many, it inspired and influenced a generation of pro-market intellectuals.

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rationing

WHEN GOODS OR SERVICES are allocated without relying on prices, it is termed rationing. In particular, it refers to situations in which the amount that people who would like to buy is greater than the amount available, given the prevailing prices. There are two common instances. The first is in situations of very short supplies of goods and services that cover basic human needs, for example, food-rationing in times of emergencies. The second is in the government provision of goods and services below cost, as is the case in many countries with public health benefits. However, rationing also takes place when there is a fixed amount of supply and prices cannot adjust, for example, sold-out sporting events or concerts. To better understand rationing, it is instructive to see how the price system provides for the (non-rationed) allocation of goods and services.

In a market where sellers and buyers are free to enter into price negotiations, there is no need for rationing. If, at any point in time, there are more people vying to purchase a particular good than there are people willing to sell the good (called excess demand), then prices will be driven up. Due to the higher price, fewer people will want to purchase the good, and more people may be willing to sell the good (as one can make more money by selling it). The price system is said to work if prices increase to the point where just as many goods are being offered for sale as there are people who want to purchase those goods. Rationing is needed if prices cannot freely increase so that the amount of the good that is demanded is not brought into EQUILIBRIUM with the amount supplied.

Rationing is often used in times of crises, when basic necessities for living are in short supply. For example, in times of war, many food items are often in very short supply as production and supply lines become disrupted. The price system could work in these instances, but the consequence would be that as prices rise, some people would no longer be able to provide for the basic needs of their families, and widespread extreme hardship and starvation could result. Consequently, other methods for distributing the scarce food supplies are sought and foods are rationed.

Other common examples where rationing takes place in times of crises are the limitations on how many bottles of drinking water or batteries any individual may purchase in the wake of a hurricane, flood, or earthquake; or how much gasoline one is able to purchase during an oil crisis. Similarly, the rotating stoppage of electricity, called rolling black-outs, in California in the summer of 2002 were a form of rationing in the face of a (man-made) energy crisis.

In some instances, equity considerations lead to government provision of some services, even when there is no immediate crisis. This is, for example, the case in public education. The philosophy is that every member of society should be afforded a minimum level of education, regardless of one's family income. Rationing can become an issue, as within a school district, where all students receive a comparable level of education, even though some would be willing to pay a little more to better the quality of their education.

Similarly, some governments provide universal HEALTH care to all citizens. As medical treatments are near costless in terms of the prices charged to ailing citizens, health care may be demanded to such an extent that rationing becomes necessary.

Whenever the amount demanded of a particular good or service is greater than the amount supplied, the question arises: Who actually ends up getting these scarce goods and services? One method used is that of uniform provision, where everyone (more or less regardless of their specific needs or wants) receives the same amount of the good or service. In the case of public education, all students in a particular school obtain the same educational opportunities—it is generally not possible to pay the school administrator an extra $100 a month in order to receive an extra hour of math instruction every week. In some cases coupons, tokens, stamps, or vouchers (which may not be transferable) may be issued to ensure uniform provision. Similarly, in times of war, households may receive vouchers that they can trade for food.

A second common form of rationing is queuing—the first-come-first-serve method, so to speak. This method is often observed where there are unforeseen shortages, as this method of rationing does not require any particular administrative effort (other than possibly keeping order as people wait in line). Thus, you may observe this form of rationing before rock concerts, when people camp overnight to make sure they will be first in line. However, this method of rationing is also common in the public provision of services, in particular, health care. Thus, countries that provide universal health care usually have longer waits associated with the provision of health services.

Finally, a less common method is random assignment or lotteries. For example, the Immigration and Naturalization Service, faced with an exceptionally large number of applications for green cards from all over the world, also uses lotteries in which some applicants are selected at random to be assigned entry visas.

When prices are not able to adjust in a market in order to equilibrate the quantity demanded and supplied, this does not mean that the laws of economics no longer apply and market forces do not matter. Frequently, where one encounters rationing, a secondary market in which trade takes place simultaneously to the primary (rationed) market will co-exist. For example, people who do not feel that they receive adequate education through the public school system may opt into a secondary market of privately funded schools, or consider home-schooling. Similarly, individuals who are dissatisfied with publicly provided health services may opt for alternative treatments or private care.

In some cases the secondary market is banned, for reasons of professed equity or government control. Nevertheless, secondary markets often appear anyway as BLACK MARKETs, such as ticket scalping before sporting events. Similarly, bribes and outright fraud are often associated with rationing.

Another market response, when the pecuniary price cannot increase, is that the cost of the rationed good increases in other ways. When medical care is dispensed at low prices to assure equal access to treatment regardless of income, waiting in line for treatment is not uncommon. However, other inequities may arise: it may be less costly for, say, an unemployed or retired citizen to wait in the doctor's office than it is for an independent business owner, or someone who has to hold down two jobs just to make ends meet.

[Editor's Note: It may even be noted that price itself serves as a rationing mechanism in a market setting. Those able to afford the price receive the product, those not are turned away empty-handed.]

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Reagan, Ronald (1911–)

RONALD WILSON REAGAN was the 40th president of the United States. One of the more popular presidents in history, his tenure was marked by the largest military buildup in history, renewed patriotism, record-setting deficits, economic recovery, and scandal. While some critics argue that Reagan's policies brought about the end of the Cold War and restored confidence in the U.S. government, others argue that his administration was enormously corrupt and had mortgaged the future.

Reagan was born in Tampico, Illinois, and moved around before eventually settling in Dixon, Illinois. Reagan's father, Jack Reagan, was an Irish Catholic salesman, renowned raconteur, and alcoholic, and his constant drinking was one of the reasons he drifted from job to job and from town to town. While Reagan did adopt his father's storytelling ability, he strove to avoid his penchant for excess.

For Reagan, a large part of his life centered around the church; he acted with his mother in skits in the church (including temperance skits), he participated in the services, and he dated the preacher's daughter. Reagan was closer to the preacher than he was to his own father, and biographers have credited Reagan's early church experience with instilling a strong sense of morality.

Reagan also had an active life outside of the church. Reagan worked summers as a lifeguard at nearby Lowell Park and reportedly saved 77 people from drowning on his watch. He was also active in high school (competing in drama, football, basketball, and track), and was elected senior class president.

After graduating from high school in 1928, Reagan attended Eureka College and majored in economics and sociology and did fairly well in his studies; while he did not in fact study, he did possess a near-photographic memory, which helped him pass exams. Upon graduating in 1932 in the midst of the Great DEPRESSION, Reagan convinced a Davenport, Iowa, radio station owner to hire him as a temporary, then staff sports-radio announcer. When Reagan was sent to cover the Chicago Cubs spring training in 1937 in California, he used the trip to take a screen test for Warner Bros. studios.

Reagan was offered a contract, and in a movie career that would last until 1964, he acted in more than fifty films in all. Reagan's most acclaimed roles were as George Gipp in *Knute Rockne*, *All American* (1940) and as Drake McHugh in the 1942 drama *King's Row*; when as president he met Mikhail GORBACHEV, Reagan asked the Soviet leader to tell his staff that not all of Reagan's films were B movies.

Onto the national stage. Politics often intruded on Reagan's life as an actor. Reagan was an active anti-communist. He testified to the Federal Bureau of Investigation (FBI) in September 1941 on communism in Hollywood, became an informant for the agency, and in 1947 testified to the House Un-American Activities Committee.

Reagan was active in industry politics, becoming president of the Screen Actor's Guild in 1947, where he was instrumental in efforts to break the strike of the Committee of Studio Unions (a Hollywood craft union). Reagan was elected Screen Actor's Guild president for five terms, negotiated several union contracts, and used the guild to battle communism in Hollywood. Some biographers claim that it is as union president where Reagan's political values moved from liberal to conservative; Reagan, a Franklin ROOSEVELT Democrat, officially registered as a Republican in 1962.

During the late 1950s, Reagan's film career had begun to slow down. Reagan began to work in television, becoming host and sometimes an actor on *GE Theater* from 1954–62 and *Death Valley Days* from 1964–66, where his contract called for him to deliver motivational speeches at General Electric plants across the country. These speeches were patriotic, pro-business, and anti-communist in nature; over time, however, Reagan started to stress the anti-Washington angle in these increasingly partisan speeches.

It was largely based on the success and effectiveness of these speeches that Reagan was persuaded to enter politics. His first major political act was giving a televised speech in 1964 in support of the presidential campaign of Barry Goldwater, a radical conservative. Reagan ran for governor of California in 1966. Edmund Brown, the incumbent candidate, did not take Reagan seriously, dismissing him as only an actor. Reagan's campaign was heavily managed by a public relations firm rather than politicians, which perfectly fit in with his anti-politician rhetoric. Reagan eventually won the election by a margin of over one million votes by running on a platform of welfare reform and against campus radicals.

Overall, Reagan's governorship yielded mixed results. Although Reagan pledged to lower taxes and shrink the size of the state government, the state budget more than doubled during his tenure. During a time of student protests, his electors identified more with his self-assuredness than his accomplishments, and he served two terms before leaving the governorship.

California as a stepping-stone. Reagan attempted a brief run at the U.S. presidency in 1964 against Richard NIXON, when he announced his candidacy at the Republican convention, but Nixon swiftly defeated his nomination bid. After leaving the governor's office, Reagan planned a more thorough campaign against Gerald FORD for the 1972 Republican nomination, ultimately losing to Ford by a narrow margin. After Ford lost the general election to Jimmy CARTER, Reagan immediately began planning a run for the presidency in 1980.

For his third run for the presidency, Reagan capitalized on an economy that was in tough shape, when double-digit inflation was the norm. Carter had placed an embargo on the sale of grain to the SOVIET UNION in protest of its invasion of Afghanistan, but the embargo was hurting American farmers more than the Soviets. Carter was also particularly vulnerable on foreign policy as the result of his perceived poor handling of the Iran Hostage Crisis. Reagan campaigned on promises of improving the economy and reasserting America's prestige abroad, and easily won the Republican nomination. Along with running-mate George H.W. BUSH, he defeated Carter in the general election.

Throughout his presidency, Reagan adopted the same style of governance he employed in California. He still preferred to have aides work out matters among themselves and then bring a compromise solution to him for approval. Reagan did experience an almost constant turnover in staff during his presidency, perhaps as a result of his laid-back administration style. Whatever internal turmoil existed paled in comparison to the assassination attempt on Reagan's life just 69 days after the president took office. Despite significant injury, Reagan made a publicly engaging and spirited recovery, rallying his staff, and less than a month after the assassination attempt, he delivered an address to Congress on his economic recovery plan.

Reaganomics. Economic recovery had been at the forefront of Reagan's agenda. The new president had been advised by many experts (including Nixon) to concentrate on domestic policy rather than foreign policy, and for Reagan, this meant fixing the economy. Reagan was a champion of supply-side economics, which entailed jump-starting the economy by putting money into the hands of businesses and business owners, on the theory (called "trickle-down") that they would redistribute their wealth by increasing both expenses and the amount of workers. Reagan's budgets, combined with FEDERAL RESERVE policy, did in fact lead to low INFLATION and sustained economic growth. Reagan, however, was also committed to decreasing taxes while increasing the size of the military budget, and record-setting deficits piled up throughout his presidency.

The remainder of Reagan's domestic policy also met with mixed results. The Reagan administration social programs were often perceived as cruel, including a proposal to eliminate free school-lunch programs for needy children. The administration was also heavily involved with deregulation, and often eliminated environmental regulations that affected businesses.

Capitalism vs. communism. Reagan's first term was marred by the bombing of American marines in a peacekeeping force in Lebanon. Reagan's second term was similarly scarred by the revelation that the administration had been secretly selling weapons to former enemy IRAN and illegally donating the profits to El Salvador anti-communist revolutionaries.

The main focus of Reagan's foreign policy, however, centered on the Soviet Union, and his dealings were mainly powered by his anti-communist inclinations. Reagan initiated the largest military build-up in American history, because he believed the Soviets would destroy their economy trying to keep up.

After leaving Washington, D.C., in 1989 at the end of his presidency, Reagan planned to enjoy retirement at his California ranch. In 1994, Reagan was diagnosed with Alzheimer's disease, a neurological disorder that disintegrates the patient's memory. He subsequently withdrew from public life, and as of the summer of 2003, was cared for by his wife, Nancy.

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recession

A RECESSION IS A PROLONGED slowdown or contraction in the economy. The national economies of industrialized nations tend to experience BUSINESS CYCLES, periods of expansion and contraction over time. Recession describes the period between a business cycle peak, when economic growth is high and UNEMPLOYMENT is low, and a business cycle trough, when economic growth is low (possibly negative) and unemployment is high. Although the term, business cycle, implies that the changes are regular and periodic, expansions and contractions are irregular in duration and magnitude.

The business media often define an economic recession as two or more consecutive quarters of decline in real GROSS DOMESTIC PRODUCT (GDP, the value of all goods and services produced domestically in a country during a specific period of time). The Business Cycle Dating Committee of the National Bureau of Economic Research has defined recessions in the UNITED STATES since the 1920s using its own standard: "A recession is a significant decline in activity spread across the economy, lasting more than a few months, visible in industrial production, employment, real income, and wholesale-retail sales. A recession begins just after the economy reaches a peak of activity and ends as the economy reaches its trough." A common criterion for a recession is that it is prolonged; for this reason, there is by necessity a delay between when a recession begins and when it is officially declared a recession.

It is not well understood what causes changes in the business cycle. John Maynard KEYNES argued that the psychology of investors was important in determining economic downturns; he referred to entrepreneurialism as "animal spirits," which he defined as: "a spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities . . . if the animal spirits are dimmed and the spontaneous optimism falters . . . enterprise will fade and die . . ." Consumer Confidence and Investor Confidence indices are modern measures of optimism or faith in the economy that are collected through surveys, and are used to predict changes in consumer spending and investment, and, therefore, changes in the business cycle. In contrast, Milton FRIEDMAN argued that changes in the business cycle were often caused (sometimes inadvertently) by monetary policy.

Governments often attempt to pull their economies out of recession through expansionary fiscal and monetary policies. Expansionary FISCAL POLICY may take the form of tax cuts or spending increases once a recession begins. It could also take the form of a counter-cyclical spending policy such as unemployment insurance, that injects less into the economy when economic growth is robust, and more into the economy when economic growth is weak. Expansionary monetary policy may take several forms. Reducing the fraction of their assets that banks must keep as reserves allows them to offer additional loans. Lowering the INTEREST RATE that the central bank charges to private banks also facilitates additional private lending. A central bank may also use its own resources to buy government bonds back from the private market; this too injects additional cash into the economy. A double-dip recession occurs when an economy briefly pulls out of recession before plunging quickly back into recession.

A recession is shorter in duration than an economic DEPRESSION, which may last a decade and span several business cycles. President Harry S. TRUMAN made the following distinction: "It's a recession when your neighbor loses his job; it's a depression when you lose yours." Ronald REAGAN, when campaigning against Jimmy CARTER for the U.S. presidency in the midst of an economic malaise in 1980, appended to Truman's quote: "And recovery is when Jimmy Carter loses his."

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regulation

IN ORDER TO UNDERSTAND the role of government regulation in capitalism, it is necessary to examine the views of major economists. During the 16th and 17th centuries, when the INDUSTRIAL REVOLUTION was changing the way that the world understood economics, the mercantile school of thought was prevalent. The goal of the mercantilists was to make as much money as possible, and they influenced the British government to accomplish their self-interested goals. Consequently, the British government passed regulations that set high TARIFFS to cut down on the import of foreign goods and stimulated export though various subsidies. The 18th-century French PHYSIOCRATS criticized the mercantilists and promoted the idea that government should stop interfering in economics. With the publication of Adam SMITH's *An Inquiry into the Nature and Causes of the Wealth of Nations* in 1776, classical economics became the predominant school of economic thought.

Classical economists, also known as classical liberals, believed the world was capable of producing only a certain amount of resources, and many of their economic ideas dealt with how these limited resources should be divided among various social classes. Classical economists were dedicated to the idea of LAISSEZ-FAIRE, which literally means "allow to do," and in practice means the government should leave the economic system alone. Classical economists endorsed the ideas of John LOCKE (1632–1704), the founder of classical liberalism, who believed that individuals were born with inalienable rights that no government could take away. This belief heavily influenced American politicians who wrote the Declaration of Independence, which promised Americans the rights of life, liberty, and the pursuit of happiness (the right to own property). Locke's endorsement of laissez-faire also influenced the structure of the U.S. Constitution with its commitment to limited government.

Classical liberals accepted only three basic functions of government: protection from foreign invasion, domestic security, and public works (such as building roads and canals). The way to achieve happiness, in the classical liberal view, is for the government to leave individuals alone to become as prosperous as possible. Along with Smith, David RICARDO is credited with founding the classical system of economic thought. Other classical economists include Thomas MALTHUS, who was critical of many aspects of classical economic thought, and John Stuart MILL who synthesized the theories of Smith, Ricardo, and Malthus. Karl MARX used parts of classical theory to develop a socialist economic theory. John Maynard KEYNES, the founder of what has become known as Keynesian economics, stood classical economics on its head. Some modern economists, often known as post-Keynesians, embraced elements of classical economics, while others continued to endorse some aspects of Keynesian thought.

Adam Smith (1723–90). Smith's *The Wealth of Nations* was a direct attack on mercantilist political and economic practices. As a rule, Smith opposed protectionist policies such as tariffs, but he believed tariffs were legitimate in defense industries. Smith did not support monopolies because he thought they interfered with COMPETITION. He was against most government regulations that interfered with competition. Smith favored FREE TRADE whereby each country specialized, producing cheaper products and greater efficiency of resources. He believed that the wealth of a country was derived from the LABOR of the people. Smith distrusted government, believing that no regulations were possible that could increase industrial output beyond what the capitalistic system could maintain. Therefore, the best thing the government could do for the economy, as a rule, was to let it alone. In his opinion, if left alone, the market would reach the point of highest return. Since the well-being of the nation depended on the wealth of the people, Smith did accept a limited amount of government regulation in the area of education and thought government had a responsibility to regulate protections for workers.

Smith contended that political economy should provide ways for workers to support themselves at subsistence levels and was obligated to furnish revenue with which government could fund public works. The latter, of course, called for TAXES. While taxation was definitely a method of government interference, it was necessary to provide the three basic functions of government. Smith was against public debt, but he recognized that the government needed revenue to pay public servants and to maintain an equitable legal system. However, strict restrictions should be placed on the government's right to tax. Taxes should be based on the ability to pay, should never be arbitrary, and should not require a huge administrative force. Smith agreed with Thomas Jefferson (1743–1826) that "the least government was the best government."

David Ricardo (1772–1823). Overall, Ricardo agreed with Smith about government regulation. In 1817, in *The Principles of Political Economy*, Ricardo introduced what became known as the "iron law of wages," which advocated the belief that natural cycles resulted in subsistence wages. Even if workers were unable to survive, the government should never interfere. Like most classical liberals, Ricardo believed that resources were scarce. If government regulation interfered in the natural allocation of resources, the result might be worse than before. Like Smith, Ricardo advocated free trade both domestically and internationally. Specialization, he thought, allowed each country to consume more goods, which benefited everyone. Ricardo proposed that a National Board, under the oversight of Parliament, be appointed to issue bank notes. He also wanted Parliament to tax wealthy capitalists to pay off the national debt.

Thomas Robert Malthus (1776–1834). Of all the classical economists, Malthus was most concerned with the idea of scarce resources. He was convinced that overpopulation would exhaust available resources. Since the poor were unlikely to practice restraint, he saw nature's method of natural selection as more promising. Hazardous occupations, disease, wars, famines, and the like would lessen the problem of overpopulation if government simply let nature have its way. Therefore, it was wrong to try to pass Poor Laws that eased the suffering of the poor and allowed them to survive. On the other hand, Malthus was in favor of the British Corn Laws of 1814–15, even though they were a form of protectionism. He insisted that they had increased agricultural prices and profits. This support for protectionist policies resulted in a break with Ricardo, and James and John Stuart Mill.

John Stuart Mill (1806–73). John Stuart Mill, the son of economist James Mill (1773–1836), synthesized the ideas of Smith, Ricardo, and Malthus. Mill endorsed the classical liberal idea of laissez-faire, although he contended that government did had some responsibility for guaranteeing social justice. He thought government also had some responsibility for education but did not endorse the idea of public education. Mill's *Principles of Economy,* written in 1848, became the major economic text for the next half-century. Mill suggested that government could use taxes to redistribute wealth and address the inequalities of capitalism. Though he sometimes called himself a socialist, Mill was rarely radical in his economic thought. Like Malthus, Mill was a strong believer in the dangers of overpopulation and became an advocate for birth control. As a young man, he was arrested for handing out birth-control pamphlets. Mill became the first major political theorist to publicly endorse the rights of women and argued that society was mistaken in limiting itself to the resources of only half the population.

Karl Marx (1818–83). Although he drew on the ideas of classical liberalism as well as French and German thought, Marx rearranged those ideas to develop Marxian SOCIALISM. Marx believed that as alienated workers (the proletariat) rose up against capitalists (the bourgeoisie), they would wrest the means of production from the capitalists and place control in the hands of the STATE. Once the state had served its purpose, it was supposed to "wither away." Unfortunately, when Marx's theories were put into practice in communist countries, the state became totalitarian and hardly withered away. Marxist theory advocated the use of land to serve the public good rather than the interests of individual landowners. Marx advocated a heavy progression of graduated income tax, the abolition of all rights of inheritance, confiscation of all property of emigrants and rebels, a national bank to centralize credit, and a universal commitment to labor.

John Maynard Keynes (1883–1946). The work of Keynes brought about a new way of understanding the role that government should play. He rejected the idea that the government was self-regulating. Instead, Keynes advocated a governmental policy of investment and increased spending and reduced taxes. While Keynesian economics is often associated with Franklin D. ROOSEVELT's (1882–1945) NEW DEAL, a move toward government involvement in the economy was already underway before Keynes played an active role in New Deal policies. After 1938, many Keynesian economists were hired by the Roosevelt administration.

Post-Keynesian economics. By the 1970s, government regulation had changed the way that the market works. In the United States, for example, the FEDERAL RESERVE Board sets the interest rate and controls the supply of reserve money and available credit. The government establishes a minimum wage for workers, which is regulated by Congress as the cost of living increases. The government is also involved in mergers, interstate commerce, international trade, and other aspects of business and the economy.

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Reliant Energy

RELIANT ENERGY (formerly Houston Industries) was a Houston, Texas, company providing electricity and natural-gas energy services to wholesale and retail customers in the United States and Western Europe. In 2001, Reliant Energy was the fifth-largest investor-owned electric utility in the UNITED STATES and the 67th largest company in the world. The company traced its origins back to the formation of Houston Electric Light & Power, which was granted a franchise to provide electricity to the city in 1882.

Due to restructuring of the Texas energy market, the regulated and unregulated sides of Reliant Energy split into two separate publicly held companies in 2002. The regulated utility side of the business took the name CenterPoint Energy. CenterPoint Energy's lines of business include natural-gas gathering, transmission, distribution, and marketing, electricity-utility operations in the Houston area, and energy-management services to commercial and industrial customers. The company held $19 billion in assets in 2002.

The other newly formed company, Reliant Resources, focused on serving retail and wholesale energy customers in competitive, unregulated markets. Reliant Resources, which retained the Reliant Energy name for marketing purposes, owns electricity generation assets throughout California, the Southwest, the South, the Midwest, and the eastern parts of the country. Reliant Resources held assets worth $20 billion in 2002.

In the early 2000s, the state of California has alleged that the company manipulated the state's wholesale electricity market by withholding power from its California plants. In response to this news and other turbulence in the deregulated power industry, Reliant's credit rating slipped, and the future health of the company is uncertain.

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Repsol-YPF

REPSOL WAS CREATED in 1986 as a Spanish state enterprise. Its PRIVATIZATION started in 1989, becoming fully private in 1997. During this period, it was primarily dedicated to the processing, distribution, and retailing of OIL and gas products, but also expanded into exploration and production in South America and north Africa. The acquisition of Argentine YPF for $13.5 billion in June 1999, represented a significant expansion that turned Repsol-YPF into the world's eighth-largest oil company. In 2001, it had proven world reserves of oil and gas equivalent to 5.6 billion barrels, produced over 1 million barrels daily and had a daily refining capacity of 1.2 million barrels.

In ARGENTINA and SPAIN, Repsol-YPF dominates the oil and gas sectors accounting for at least 50 percent of transportation, refining capacity, and gas stations in either country.

YPF's history goes back to the discovery of an oil field on Argentine government land in Comodoro Rivadavia in 1907. The Bureau of Mines operated the oil field until nascent oil nationalism in Argentina pushed for the creation of Yacimientos Petroliferos Fiscales (Fiscal Oil Fields) in 1922. General Enrique Mosconi, an ardent advocate of a state monopoly in oil, became its first director (1922–30). From this position, Mosconi promoted the creation of state oil enterprises in other Latin American countries, including MEXICO, where PEMEX would become a state monopoly in 1938. YPF never achieved monopoly status. Foreign companies were edged away from exploration and production, but retained retail privileges, and small domestic companies continued to play a role in all areas of the oil industry.

As part of President Carlos Menem's economic liberalization program, YPF was privatized between 1990 and 1993. Privatization faced opposition in the Argentine Congress and resulted in a reduction of payroll from 50,000 to 10,000 employees. Its more recent acquisition by Repsol has renewed the privatization controversy. Repsol-YPF reported $39 billion in revenue in 2002, making it the 94th largest company in the world.

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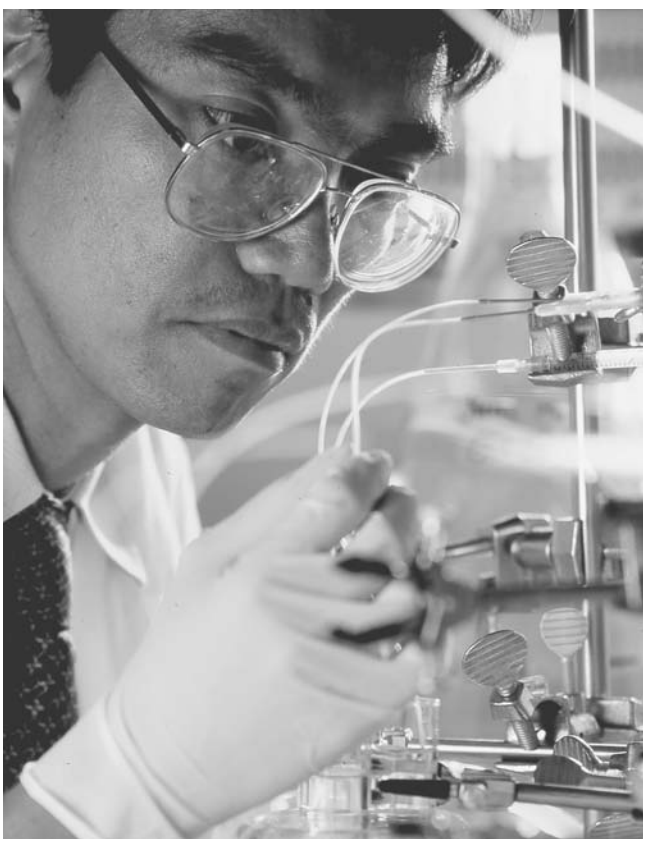
research and development (R&D)

R&D IS A VITAL SET of activities that encompasses the search for scientific invention and the application of ideas to practical processes. The research component comprises the scientific investigation for new knowledge, which may be pure (i.e., guided by the intellectual curiosity of the scientist) or applied (i.e., guided by the needs of a sponsoring body). The development component comprises the commercialization of any scientific breakthrough. The final result, if successful, may be a dramatic innovation or a comparatively minor change to the ways things are already being done. This basic process of invention has been proceeding for thousands of years and has underpinned a great deal of human social and economic development.

R&D is supported by such activities as design, engineering, and learning-by-doing, which are not formally part of R&D, and hence not included in related statistics. While there is a general relationship between GROSS DOMESTIC PRODUCT (GDP) and level of expenditure on R&D, this does not always manifest itself in a positive correlation for economic growth. Countries vary in their ability to provide the macroeconomic stability, network of commercialization, and dissemination of knowledge and efficiency necessary for successful R&D investment.

Given the importance of R&D, governments have long realized it may be better not to allow it to be determined by random distribution of scientists and resources; instead governments have sought to bring together what are now called clusters—or amalgamations of complementary resources such as researchers, laboratory equipment, libraries, industrial facilities, and entrepreneurs—with a view to guiding research and stimulating greater production. The first government to make a serious, centralized R&D effort was the French, in the years following the FRENCH REVOLUTION. A more systematic and larger-scale effort was made by the German government in the last years of the 19th century and the beginning of the 20th.



Research and development, especially in the pharmaceutical industry, is highly skilled and labor-intensive.

Both these efforts, and others, were motivated by the desire for rapid industrialization, and were spurred by the flow of goods from colonies in the Third World, convenient sources of important industrial inputs. As a result, the focus has generally been upon certain industries considered to be of strategic importance, such as armaments and electronics. More recently, countries such as South KOREA or JAPAN, which have successfully attempted to accomplish rapid industrialization, have focused on consumer products (sometimes by using reverse engineering) to rapidly create an export production capacity. Universities have had a crucial role in R&D, and this has been effectively managed when incentive structures are put in place to encourage university-level research to be developed into industrial applications. However, this can lead to problems with intellectual property ownership when sponsoring companies wish to retain exclusive ownership of the results of applied research, a situation that has frustrated some government-private sector research partnerships in, for example, AUSTRALIA. In a country such as Japan, where scientists are renowned for their ability to develop applications, rather than for pure inventiveness, the majority of R&D activity takes place in commercial concerns in which all the returns can be captured by the firm.

Multinational enterprises (MNEs) take an increasingly important role in the international economy and, as their size and scope increase, so too does their level of diversification in different industries. R&D is necessary to take advantage of the network of activities and resources that such MNEs can mobilize. However, it is likely that the MNE will wish to maintain the core R&D function at the home location.

Somewhat paradoxically, in rapidly changing, technologically advanced, and intensely competitive industries, such as electronics and semi-conductors, R&D partnerships between competing firms are very common, especially in comparatively short-term arrangements that focus on specific projects with designated distribution of returns. Projects often lead to products manufactured quickly and cheaply and at low cost—the profit from such products relies upon the value-added component. In other R&D-intensive industries such as pharmaceuticals, aeronautics, and robotics (in which continuous innovation is required), the very high level of return, required to meet the expenses of lengthy, highly skilled, labor-intensive periods of work, necessitates high retail costs of products.

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resource

THE CONCEPT RESOURCE is widely used both in economics and management. Generally, it refers to all input factors of production, i.e., goods that are demanded for their usefulness in producing final or intermediary goods. Specifically, one talks about individual classes of inputs such as natural resources, financial resources, human resources, or knowledge resources, all of which are in scarce supply relative to the amount demanded. Time itself is regarded as the ultimately scarce resource, which needs to be optimized by economic agents.

Economics studies the use of exhaustible and renewable resources, their productivity and rate of depletion, and their impact on economic GROWTH. Management theory investigates the employment of resources for the achievement of corporate goals. The resource-based view of the firm, which has become the dominant paradigm of strategic management thought, interprets firms as collections of resources (core competences, know-how, skills, routines, etc.) on which competitive advantages are built.

By pricing resources such that they find their optimum use, which is the core function of a market economy, capitalism is thought to be the economic system that makes the best use of the available resource endowment. Moreover, through the profit system, it provides the appropriate incentives to expand the resource base beyond the one available or known at a particular time. Both effects—the more efficient use of given resources and the expansion of the resource base—are sources of economic growth.

Classification. At a very general level, one may distinguish between exhaustible (or depletable) and renewable resources, the first category being a fund variable based on a given stock (such as minerals or fossil fuels) and the second category being a flow variable (such as sunlight, wind, or surface water). This categorization is related to the distinction between inanimate and biological resources. The latter (for example, crops, forests, and animal populations) use other renewable animate or inanimate resources (such as soil nutrients and solar energy) for their reproduction.

A biological resource can be as diverse as crops or animals or the production of penicillin molds.

This classification applies also to the social world, where knowledge resources such as innovative ideas or human resources are renewable (though in the short-run they may appear to be in limited supply) while certain raw materials such as gold or bauxite are exhaustible. A further distinction exists between exclusive and non-exclusive resources (i.e., depending on whether or not consumers can be excluded from their consumption or use) and between resources for which rivalry or non-rivalry in consumption holds (i.e., depending on whether more than one consumer can use a resource at any point in time). Furthermore, there is a class of resources (such as beaches or ski slopes) that behave as non-rival resources over a certain range but where congestion sets in once a threshold of users has been reached. Such resources, which are often found in tourism but include also roads and telephone lines, have the economic properties of club goods, for which additional users, by reducing the average cost of using the facility, add to the utility of any one user up to a marginal level whereas additional users beyond this level reduce his utility by imposing congestion costs.

Economic issues. All firms (and households to the extent that they are producers) face, at least in the short-run, resource constraints. This raises the following central questions of resource economics.

1. How scarce are resources in relation to demand, i.e., what are the degrees of their relative scarcity?
2. How should resources best be allocated between alternative uses?
3. At what rate and what price should nonrenewable resources be depleted?
4. Do resources limit economic growth?

The classical economists generally thought of land as a fundamentally limiting factor of production. David RICARDO suggested that the higher-quality (and lower-cost) deposits of exhaustible resources would be exploited first, just as the more fertile agricultural land is cultivated first. Thomas MALTHUS thought that food output was limited to an arithmetic rate of increase whereas the population tended to grow geometrically, which would ultimately lead to declining standards of living.

Neoclassical economic thinking went beyond the limitations of this worldview in two respects: First, it recognized the role of capital and technology in "deepening" scarcer factors of production. LAND, which responded to investment, no longer had any unique significance, and investment in human capital (and in automation) allowed for larger outputs at lower labor inputs. Second, it acknowledged the possibilities of resource discovery and resource substitution as a function of the incentives created by the price system. Capital thus came to be regarded as the only factor truly limiting growth. More recently, it has been argued that even depletable resources would never be fully depleted, because their price can be expected to rise as a function of their increasing scarcity, which will both slow down the depletion rate, and provide incentives to substitute other resources that are available at a lower relative price.

Such arguments still abide by the classical view of increasing costs associated with depletion as a limit to growth. Contrary to this assumption, it has been pointed out that the price of most depletable resources has, over longer periods of time, tended rather to decrease than to increase.

MICROECONOMIC theory suggests that renewable resources are allocated to alternative uses according to the criteria for Pareto-efficiency. A necessary condition for the best allocation of resources is that the marginal product of any resource be the same for all of its alternative uses. Conditions for preserving the necessary minimum for replenishment (such as in fisheries) and for a maximum carrying capacity (such as in wildlife populations) can be defined. The more challenging case is that of formulating conditions for the optimum exploitation of a depletable resource (such as minerals), where intertemporal equilibria depend on factors such as exploration and recycling costs, property rights regimes, and external effects.

Given competitive markets, an optimum allocation between competing uses is achieved automatically. However, market power as under MONOPOLY or monopsony is often thought to lead to different marginal products and thus to misallocation. Furthermore, ignorance of profitable opportunities, lack of factor mobility (e.g., geographical fixation of the labor force or imperfectly competitive financial markets), and institutional constraints (e.g., professional licensing, labor unions, and patent protection) are frequently held to impede the spontaneous occurrence of an optimal allocation of resources. Regulation is often used to achieve a sustainable rate of exploitation, a time path that is meant to be welfare-maximizing over longer periods than market allocation would produce.

An abundance of natural resources is not necessarily a blessing. It has been shown that resource-rich countries tend to experience slower economic growth. They often fall prey to excessive rent-seeking, whereby powerful special interests try to substitute government intervention for the market. Furthermore, resource booms tend to drive up the value of the domestic currency in real terms, thereby dislocating production in other sectors, without a compensating exchange-rate correction when the boom subsides.

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retail

RETAILING IS THE DISTRIBUTION of products to the final consumer for personal use. It is an indispensable and sophisticated activity in a capitalist economy, and the degree of development of an economy at large can often be measured by the development of its retail sector.

Retailing is counted toward the service sector of an economy. Wholesale and retail businesses together are sometimes referred to as distributive trade. In the statistics of the UNITED STATES, retailing comprises groups 52–59 in the Standard Industrial Classification (SIC) and groups 44–45 in the North American Industrial Classification System (NAICS). In the EUROPEAN UNION (EU), retailing covers divisions 50 and 52 in the Statistical Classification of Economic Activities (NACE). According to the Census of Retail Trade of 1997 (which is part of the Economic Census conducted every five years), there were 1,561,195 retail establishments in the United States (+2.3 percent over 1992), generating sales of \$2.546 trillion (+34.7 percent over 1992), using 21,165,111 million paid employees. Survey estimates for retail sales in 2002 amount to \$3.266 trillion. Retail sales (including automobiles) in the 15 member countries of the European Union amounted to €1.720 trillion in 1997.

The numbers indicate a strong growth in retail sales but only a slow growth in the number of retail establishments. In the UNITED STATES, the retail sector has, over many decades, experienced a significant growth of average sales per store (1948: \$74,000; 1972: \$246,000; 1992: \$1,242,000; 1997: \$2,200,270). This is due to a strong industry concentration. Retailing in the United States, and to some extent also in other developed economies, has increasingly become dominated by large firms. Large retailers (those with sales of more than \$10 million) account for just 2.1 percent of all retail firms but 68.0 percent of total retail sales, while small retailers (those with sales less than \$1 million) account for 80 percent of all retail firms but only 12 percent of sales. In some retail sectors, the largest four firms account for more than half of total sales (athletic footwear: 65 percent; toys: 58 percent; general merchandisers: 58 percent).

Measured in terms in revenues, WAL-MART, a U.S.-based chain of discount mass merchandisers and warehouse clubs, is the largest company worldwide (sales in 2001: \$219.8 billion). The second largest retailer, French chain Carrefour, occupies place 35 on the 2002 *Fortune* Global 500 list (sales in 2001: \$62.2 billion), followed by U.S. specialty retailer Home Depot at place 46 (sales in 2001: \$53.5 billion).

Retail functions. Retailers are intermediaries in distribution channels that connect producers and consumers. Their function in a capitalist economy is to facilitate exchange and to demonstrate value for buyers and sellers alike. For manufacturers, retailers as intermediaries reduce the costs of distribution by reducing the number of necessary transactions. Under direct distribution, i.e. without intermediaries, four different products to be placed with eight buyers require 4 ∞ 8 = 32 contacts, while a single intermediary reduces this to 4 + 8 = 12 contacts.

The additional costs of using retailers rather than selling directly to consumers are therefore, in many instances, outweighed by increased efficiency. Retailers increase efficiency also by making products more readily available to target markets. Closeness to the consumer can be a strong competitive advantage.

Retailers not only reduce transaction costs but also help realize value by assuming a number of economic and marketing functions from producers. They provide information about products, store goods, engage in sales promotion and advertising, take physical (and usually also legal) possession of products, and provide information about consumer demand. For consumers, they provide an assortment of products supplied by different manufacturers that could individually be found only at much higher search costs and offer these at convenient locations and times. Retailers also offer a repeatable mix to customers; with few exceptions (such as street peddlers) they are not one-off traders. In this sense, retailers create customer value in addition to the value derived from the products themselves.

Retail space. Most retailers serve customers within a spatially determined area around their location. With the exception of forms of direct retailing, such as catalog shopping or e-commerce, retailers are engaged in spatial competition, with sales areas spreading around stores as concentric circles. The probability of a particular consumer patronizing a particular store decreases with increasing distance from the store. At the same time, proximity to another store will increase, and halfway between the two store locations the consumer will, all else being equal, have an equal probability of patronizing either store. In reality, of course, the relative attractiveness of either store (as reflected in its assortment, service level, pricing, etc.) will also enter the decision calculus of the consumer and will be weighed against travel costs arising from distance. A consumer's probability of patronizing a retailer and the market share of this store are then related:

$$p_{ij} = f(d_{ik}, a_{ik}),\ k = 1, \ldots, j, \ldots, J \text{ and } M_j = \frac{\sum_i n_i p_{ij}}{\sum_i n_i}$$

where:

p_{ij}: probability of potential customer from location i to patronize retail store

d_{ij}: spatial or temporal distance of potential customer from location i from retail

store j in relation to distances from alternative stores $k \neq j$

a_{ij}: attractiveness of retail store j for potential customer from location i in

relation to attractiveness of alternative stores $k \neq j$

n_i: number of potential customers at location i

M_j: market share of retail store j

Also, the number of shopping trips a consumer will make over a certain period is inversely related to the distance from a retail store. Thus, at greater distances consumers will tend to make fewer trips in order to economize on transaction costs, and average check size will be larger.

Based on this general model, various gravitation models for evaluating the sales potential of retail locations have been elaborated (Jones and Simmons, 2000). The most traditional one is Reilly's Law (published in 1929), which stipulates that the portion of household purchasing power at location i, which is located between cities A and B, that will go to A is proportional to the number of residents at A and the distance between i and A.

Sales areas crucially depend on the type of store. In the United States, where the number of specialty stores has declined, supermarkets generally draw their customers from a smaller area around their location than specialty stores or discounters do. In European cities, which typically have a comparatively larger number of specialty stores but fewer shopping centers or shopping malls, the latter often draw customers from a very wide area while specialty stores supply the neighborhood. A critical determinant of sales areas is also the purchase pattern of residents, particularly the number of shopping trips per week, which in turn depends on factors such as family size and location of residence (rural/suburban/urban).

Retail types. Retailers can be categorized by several criteria, depending on the purpose of classification. Structural and functional criteria of classification comprise ownership type, breadth of assortment, size of establishment, degree of vertical integration, degree of customer contact, modality of customer contact, location, legal form of organization, and operational technique.

The most comprehensive typology of retailers is that used by the Census of Retail Trade in the United States, which places all retailers into more than 80 kind-of-business categories within eight major groups (SIC groups 52–59).

At the highest level in a structural or functional typology of retailing, store retailers (such as department stores or supermarkets) may be distinguished from non-store retailers (including all forms of direct marketing and selling), and from retail organizations (such as book clubs). The retail structures of economies, even in highly developed capitalist countries, show great differences, which are due to economic, cultural, social, legal, and geographic factors. The prevalence of types shifts over time.

In less-developed countries, non-store retailers (such as open-air markets and street vendors) and smaller individual stores predominate. With increasing income levels, the total number of retailers typically decreases while the average size of retail establishments increases (and types such as department stores and shopping malls are introduced). But retail structures are often quite different even in countries of similar socioeconomic development. In European cities, where agglomeration density is higher and suburban zones are smaller than in typical North American cities, individual specialty stores predominate while shopping malls are still in their infancy and are usually confined to peripheral locations.

Store retailers can further be categorized by the level of service they provide or by classes of store size (usually expressed by increments in sales or number of employees). By increasing service level, they range from self-service stores via self-selection and limited-service stores to full-service stores. Another common classification is by breadth of assortment (i.e., by the number of product lines carried), and by depth of assortment (i.e., the number of items carried in each product line). Different types of store retailers can then be distinguished.

Department stores (such as JCPenney, Macy's or Marshall Fields in the United States, Fortnum & Mason and Harrod's in Great Britain, or Galleries Lafayette and Printemps in France) are large stores that feature many product lines, each line being operated as a separate department managed by specialist buyers or merchandisers. They often embrace the store-in-store model, being organized within (and sometimes across) departments according to major brands, each of which has its own boutique or kiosk.

Supermarkets are relatively large stores with a low-cost and low-margin assortment focusing on food and household products. Discount stores (such as Wal-Mart and K-Mart in the United States and Metro Cash & Carry in Germany) sell standard merchandise at lower prices and lower margins. They pass on to customers advantages from lower purchase prices, lower inventory costs, a lower service level, and a faster merchandise turnover. Specialist discounters and category killers focus on one product category such as toys, home electronics, or shoes, the difference between these retail types being the depth of product lines and the relative share of branded goods.

Off-price retailers are a more recent innovation and offer, as factory outlets, the surplus or discontinued products of particular manufacturers, or, as independent off-price stores (such as Marshalls), of a combination of manufacturers, at prices below the regular retail level. They offer only a minimum of service, in spartan surroundings, and are still largely confined to North America. One type of off-price stores are warehouse clubs (such as Sam's Clubs and Costco in the United States), which sell a broad assortment of brands and store brands only to members at prices typically 20–40 percent below those of supermarkets and discount stores.

Convenience stores are relatively small outlets with a limited assortment of high-turnover convenience products; they are often open every day around-the-clock and may be attached to other businesses such as gas stations. In addition, there are combinations of individual retailers, in the form of shopping centers or shopping malls, a type of retailing that has rapidly gained importance since its inception in the 1950s. Both types (though not smaller malls such as strip malls) require one or more anchor stores to attract customers.

Although it provides only a small share of final consumption, non-store retailing has recently grown faster than retail stores have. The main types of non-store retailing are:

1. System marketing (also known as multi-level selling or network marketing) as practiced by Avon Products or Amway Corp. in many countries
2. Direct selling (through the channels of the telephone, television, mail, or the internet)
3. Automatic vending (through machines)
4. Buying services (i.e., intermediaries which serve a specific clientele) such as the employees or members of an organization.

Retail organizations are associations of retailers (such as voluntary purchasing chains, retailer cooperatives, or franchises) set up to let individual and often smaller retailers benefit from economies of scale in purchasing and administration). They conduct business on organizational (business-to-business) markets.

By legal types, one may distinguish fully owned stores (with ownership of real estate and buildings or only ownership of equipment and inventory) from franchises. Single stores are distinguished from proprietary chains. Individual stores cannot grow beyond a certain size at which they have achieved a maximum penetration of its spatially bounded target market. This is why retail store growth occurs horizontally, by developing chains of same-type stores at multiple locations. Franchises are contractual relations between a franchiser who develops a retail model and independent franchisees who receive marketing services and certain exclusive rights in return for franchise fees. FRANCHISING is an alternative to the expansion of proprietary retail chains. In many countries, automobile dealerships, fast-food restaurants, gas stations, and convenience stores are organized as franchise systems.

Retail evolution. In capitalist economies, the retail sector is typically a very dynamic element. Several theories attempt to explain the dynamism of the sector through specific features of its evolution. The retail life-cycle theory assumes that types of retailing, much like the products they offer, are subject to a life cycle, the phases of which are innovation, growth, maturity, and decline. The exact shape of the cycle may show great international variability. Department stores, which developed in the United States in the 19th century and were soon introduced in other industrialized economies, took many decades to reach maturity, as experience was gathered about their optimal organization and marketing.

Catalog merchants developed in the 1870s and 1880s, experienced rapid growth, and have remained in a phase of maturity ever since, with no essential changes to the business model. Newer types such as convenience stores or factory outlets have reached maturity much quicker. In Europe, on the other hand, factory outlets are still in the introduction phase. Some types, such as general stores in the United States, have completed passing through the decline stage and have largely left the market.

In Mediterranean countries, Africa, and Latin America, general stores still have strong market shares and are only slowly being replaced by supermarkets. Some types of retail business such as bazaars in Turkey, North Africa, and the Middle East, have proven very resilient and seem to have been in the maturity phase for decades. Though imported retail types may have taken away some market share, bazaars have reacted by changing their assortment; sales to tourists now make up for what has been lost from selling to locals. In free markets, retail structure adjusts very effectively to changing consumer needs and wants and to changes in real estate value.

Two explanations of retail evolution have attained particular prominence. The wheel-of-retailing hypothesis uses price and service offered to explain how retailers start in the low end of the market and move up to higher segments through the addition of extra services and store features, thus creating a gap in the low end of the market, which gives rise to new entrants (and thus "the wheel turns"). In this way, innovation in the retail sector starts always with deciding how to satisfy consumer wants better at lower prices, and this can be achieved only at a low level of service. Research on the development of the retail sector in many countries, however, has cast doubt on whether stores always increase service levels and costs.

Another explanation, the retail accordion hypothesis, suggests that the pattern of retail evolution has tended to alternate between domination by wide-assortment retailers and domination by narrow-line, specialized retailers. This hypothesis of institutional change implies that both diversification and specialization strategies can succeed under certain circumstances. In the United States, general stores came first; as settlements grew, specialists developed; in the wake of urbanization and of growing incomes, department stores which stocked wide assortments were set up for consumers to satisfy more of their wants at one location and thus save on time. More recently, again, a tendency toward more specialty stores has been noted. Critics of the hypothesis have pointed out that it does not apply to all cases of retail evolution and that is not an explanatory model that lends itself to predictions.

Retail management. Like all management decisions, those of retail managers are driven by the SCARCITY of resources (in retailing mainly shelf space) and the necessity to optimize. The principal retail management decisions (apart from planning decisions such as the choice of location and of store layout and size) are those of choosing, developing and implementing the best retail mix.

The retail mix includes all factors that can be controlled by a retailer, e.g., physical facilities, merchandising, pricing, promotion, services, purchasing, and personnel. These, in turn, determine consumer perception and influence store choice decisions. The product assortment can be analyzed in terms of the breadth of the assortment (i.e., the number of product lines offered), and the depth of each product line (or the number of distinguishable items).

In retailing, the term stock-keeping unit (SKU) is used for any product that is an inventory item and takes up a slot of shelf space. Retailers manage their business primarily at the level of product forms, i.e., different sizes or package variants of the same product count as different SKUs. An important assortment decision is that of the ratio between branded products (or national brands) and store brands (or private labels). In discount supermarkets (such as Aldi or Sav-A-Lot), store brands typically have a much larger share than in standard supermarkets (such as Kroger or Safeway), and lines tend to be less deep. The business model of discounters relies on a quicker turnover of fewer SKUs (i.e., on the sale of higher-unit volume at lower margins per unit).

Many supermarkets now charge a slotting fee for accepting a new brand, to cover the costs of stocking and listing it. Positioning of products within the store and on shelves is of crucial importance, and retail management has developed rules of optimal location.

Assortment decisions are always made in combination with purchasing and pricing decisions. In some cases, such as generally for food and other convenience products, retailers will order through wholesalers, in other cases directly from manufacturers. Pricing strategies generally have to chose between high-volume, low-markup (market penetration pricing) and lower-volume, higher markup (price skimming). Everyday low pricing, as practiced by Wal-Mart, is an instance of the first strategy. Price tactics, such as promotional pricing and odd-even pricing, are also widely used in retailing.

Retail performance. The economic performance of (store) retailers is measured by ratios such as sales per floor space, gross margin (actual sales price/purchasing cost), and inventory-to-sales. In 2000, for example, the American retail chain Kohl's took in an average of $279 per square foot, compared with $220 for Target and $147 for Dillard's. In the same year, the gross margin of all retailers in the United States was 27.8 percent of sales; it has remained relatively stable for at least a decade. However, there are significant differences according to types of stores and merchandise.

Men's clothing stores average a gross margin of 44.5 percent and furniture stores a margin of 44.1 percent, while that of warehouse clubs and superstores is only 16.7 percent and that of automotive dealers 17.5 percent. The inventory/sales ratio of all retail stores in December 2002, amounted to 1.31. Since unsold inventory is a cost item, retailers want to minimize this ratio (without, at the same time, defaulting on customer requests for readily available merchandise); smaller ratios indicate that merchandise is turned over faster. For motor-vehicle and parts dealers, this ratio is (without seasonal adjustment) as high as 2.07, for food and beverage stores as low as 0.79. Direct product profitability is a measure of an SKU's total handling costs from the time it reaches the warehouse until a customer buys it and takes physical possession. This ratio often has little relation to gross margins, since high-volume SKUs may have high handling costs that reduce their actual profitability. Collection of scanner data allows for the in-store calculation of numerous other metrics that make retail management one of the most sophisticated fields of business.

Retail trends. Some developments that are likely to characterize the retail landscape over the next years are the following:

1. Increasing emphasis on relationship marketing, i.e., on achieving higher customer loyalty by building long-term relationships based on a high level of satisfaction
2. Further retailer domination of marketing channels, as evidenced by larger size and stronger bargaining power of stores, application of advanced technology (such as scanning and electronic data interchange), and a more sophisticated implementation of the marketing concept
3. Further incorporation of wholesaling and even manufacturing functions as vertical integration advances; already now, grocery retailers such as Safeway and Aldi do their own wholesaling while department stores and specialists like Marks & Spencer and The Gap are involved at all levels including product design and quality testing
4. Further increase in the share of store brands in product assortments of supermarkets, and widening of the price gap to national brands

5. Expansion of hybrid forms of retailers, e.g. supermarkets with bank branches
6. Intensification of inter-type competition, e.g. between self-service and full-service stores
7. Increasing shift to non-store retailing, particularly direct sales and internet sales
8. Further integration of "bricks-and-mortar" and "virtual" retailers, as more store-based retailers offer online shopping and retailers with exclusively online-based customers seek a more secure cash-flow
9. Intensification of competition, mainly based on price, in most categories
10. Stagnation or slow reduction of industry concentration, as the share of large chains will likely decline in some markets.

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Ricardo, David (1772–1823)

DAVID RICARDO WAS a major voice in economics in the final days of the INDUSTRIAL REVOLUTION and continued to dominate the field of British economic history for over 50 years. He was born in London in 1772, the third of 17 children, into a wealthy family of Spanish-Dutch Jews. When Ricardo was 11 years old, his father sent him to Holland for three years to attend Talmud Tora, a special Jewish school. He spent a year studying with tutors after his return, and by the age of 14, Ricardo was serving as an apprentice in his father's brokerage firm. Because his marriage to a Quaker alienated his father, Ricardo was cut off with a legacy of only 800 pounds. He worked hard and, using his extensive understanding of money, Ricardo became a millionaire in his mid-20s. At the age of 42, Ricardo retired to follow intellectual pursuits and enjoy country life on his estate, Gatcomb Park.

Ricardo never went to college and found this fact embarrassing later in his life, but he had an amazing ability to understand complex ideas and translate them into simple terms. Politically, Ricardo became a follower of Jeremy BENTHAM (1748–1832), who believed that the goal of human beings was to pursue happiness and avoid pain. Ricardo rejected his Jewish heritage and became a Unitarian after his marriage, believing that individuals should engage in a search for universal truth rather than limiting themselves to a single creed such as Judaism or Christianity.

In addition to economics, Ricardo studied math, chemistry, geology, and mineralogy on his own, becoming a founder of the British Geological Society. During the course of his intellectual pursuits, Ricardo chanced to read economist Adam SMITH's (1723–90) *Wealth of Nations* and changed the course of economics as well as his own life. Ricardo's critics, such as John Maynard KEYNES (1883–1946), would later claim that Ricardo turned economics in the wrong direction. His supporters, however, argue that Ricardo changed the economist's understanding of political economy.

The focus of Ricardo's study of economics, which he began at the age of 38, was the law of distribution. He wanted to understand how goods were distributed among the various classes of society. Along with most great thinkers of his day, Ricardo believed that resources were scarce. For example, when factory owners received huge amounts of profit, less money was available to be divided among the workers who created the products produced in the factories. Karl MARX, the father of SOCIALISM, traces his economic roots directly to Ricardo's labor theory, claiming that Ricardo promoted the idea that capitalism would have to be destroyed to protect the labor rights of workers.

Early in his intellectual career, Ricardo became friends with two well-known individuals who would influence his life in a number of ways: British economist and philosopher and fellow utilitarian James Mill (1773–1836) became a mentor and political economist Thomas Robert MALTHUS (1766–1834), known for his theories on natural selection, influenced his understanding of economics. Ricardo's first published work on economic theory was a pamphlet, "The High Price of Bullion, A Proof of the Depreciation of Bank Notes," in 1809. The British public called it "The Paper Against Gold" because Ricardo argued that Britain should develop a currency based on metal rather than on gold. His major work was *Principles of Political Economy and Taxation* in 1917 in which he examined various ways to redistribute wealth. Ricardo maintained that the goal of the worker was simply to have enough money to take care of his family at the standard of living to which he was accustomed. Therefore, wages tended to stabilize at this subsistence level. Ricardo believed that investment was the key to personal wealth and invested in funds, land, rents and mortgages. Like Smith, Ricardo wanted to understand how a country could become rich and powerful and still provide happiness and comfort to its citizens.

Ricardo was appointed to a Parliamentary committee created to solve Britain's financial problems and would later serve in the British Parliament from 1819 until his death. Despite his official ties to British institutions, Ricardo was often critical of how the country was run. For example, he claimed that the BANK OF ENGLAND was interested only in huge profits for bank managers and not in serving the interests of the public. Ricardo died in 1923 of a cerebral infection, leaving his wife and seven children an estate of around 750,000 pounds.

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risk

UNCERTAINTY SURROUNDS, preoccupies, and intrigues us. The future is inherently uncertain: it may promise to be better than today, but who can dismiss the possibility of devastating disasters? A farmer faces the likelihood of a flood or drought, a worker may become unemployed, a firm is never certain about the success of its new product, creditors to a firm may never see their investments again. Uncertainty underlying all these circumstances is the fundamental source of risk faced by decision-makers. Risk is what makes tomorrow so relevant and exciting for today, and managing our future and the risks that surround us is a multibillion dollar industry.

Risk, in economics, measures the impact of probability of a loss or a less desirable outcome on well-being, and is an indispensable component of our decision-making process under uncertainty. Economic analysis of risk seeks answers to the following three basic questions: How does individual behavior respond to uncertainty? How do people value (and price) risk? How do individuals and society manage and mitigate risks? The primary objective behind studying risk is to understand people's choices under uncertainty. This understanding is, in turn, used to measure and manage risks, and ultimately "to put future at the service of the present," as Peter L. Bernstein puts it.

One fundamental assumption in economics and psychology about human attitude toward uncertainty is that all individuals dislike risk. The standard analysis of risk and its measures build on this key premise—although in gambling situations, whereby addiction and entertainment are involved, this premise is less relevant. This assumption can be demonstrated by the following example: An individual, with a certain amount of initial wealth, is offered to participate in a one-time coin toss (it is a fair coin). If it is heads, she earns $100, otherwise loses $100. This is a "pure risk": with one-half probability she increases her wealth by $100, and with one-half probability her wealth decreases by $100 (her initial wealth is more than $100). There is uncertainty about the outcome but the offer is otherwise fair, and there is no ambiguity (that is, all possible events and their probabilities are known in advance). The fundamental assumption about attitude toward uncertainty suggests that most individuals would decline such an offer. Therefore, by definition, a risk averse individual prefers the certain outcome of keeping her wealth over accepting the pure risk. A risk neutral individual would be indifferent between the certain outcome and the pure risk. A risk lover would prefer the pure risk over the certain outcome.

The price of risk. Suppose we change the scenario slightly and ask: What is the maximum that the person would be willing to pay to avoid the risk (the coin toss)? What is the price of the certain outcome relative to the risk? The answer would determine the risk premium for the given risk, and measures how much the person would be willing to pay to eliminate uncertainty. In our daily lives, all of us are confronted with similar choices. Insuring a car and paying an insurance premium, can be viewed as paying a risk premium to eliminate (at least some of the) undesirable eventualities. Determining a valid measure of risk premium is important, because it allows the markets to price risk in pecuniary terms, and thus allows us to buy and sell, in short, trade risks. This is routinely done in the stock and bond markets, which have specialized to price and trade risky financial assets.

We often speak of increased uncertainty and increased risk, reflecting the fact that uncertainty underlying our assessment of risk may have changed. When risks change, how do they affect the risk premium? Suppose we modify the coin-tossing example above in the following way: if heads, win $200, tails loose $200. Compared to the previous example this has the same expected value (zero) before the coin is tossed. But, now the stakes are raised. Economic theory suggests that a risk-averse individual would find this coin toss even more risky, and thereby should be willing to pay higher risk premium to eliminate uncertainty. In general, a change in underlying uncertainty is deemed to increase risk only when the risk premium also increases.

Pure risks of the sorts mentioned above are rejected because they entail no (risk) premium or welfare gain over the certain outcome. This suggests that individuals would consider a coin toss only when the offer entails a net expected gain over the initial wealth; that is, only when they are properly compensated for the risk. Suppose we revise the offer, increase the gains (in the event of heads), say from $100 to $110, and keep the losses (if tails) at $100. Now the expected gain or return from the coin toss is $10 (but still not certain). Would this offer be accepted?

The significance of such increments in expected return is that eventually there will be a point whereby the individual is indifferent between accepting and declining (certain outcome) the offer. This breakeven point determines the price of this particular risk. Riskier offers must entail higher expected returns (risk premiums), which is the logic underlying the quintessential tradeoff between risk and return.

To study behavior under uncertainty in general contexts, economists have devised an elegant (but also controversial) framework called "expected utility theory." The framework is based on the notion that individuals are risk averse and have a systematic way of ranking the desirability of probabilities associated with future events. While agents have no influence over the probability of these events, their own actions today have a tremendous impact on how each of these events (should they occur) will affect them. These are the consequences or payoffs associated with each event. Expected utility theory postulates that there exists a (utility) function that represents a particular ordering among probability distributions of payoffs by the mathematical expectation of the utility of the payoffs.

For example, for most households, future labor earnings are their primary source of income, but this income is highly uncertain, as well. The unfortunate prospect of unemployment looms large during recessions. The state of unemployment means low (perhaps no) income, and reduced ability to consume goods and services. With this possibility in mind, most households adjust their current actions. Although they cannot change the likelihood of a recession by their own actions, they have a certain level of control over the ultimate outcomes. They may save out of their current income today, and use these savings as buffer stock should they become unemployed. A low saving rate today would mean taking a risk in which the low consumption payoff has a high probability. A high saving rate today would signal that the individual is prepared to postpone immediate gratification, but secure savings that can later be drawn upon.

In fact, by their saving decisions, the individuals reveal their preferences over the likelihood of future payoffs. Expected utility theory suggests that savings decisions would be based on the weighted sum of the utilities from low and high future consumption, where the weights are nothing but the probability of being unemployed and employed.

The uncertainty of risk. Expected utility theory has found extensive applications in many fields of economics. Capital-asset pricing theory in finance studies how future streams of income are discounted and priced today. Since future income streams are uncertain, there is an element of risk, and the entire capital-asset pricing theory can be viewed as determining the appropriate measure of risk for each asset. Consumption smoothing hypothesis in development economics studies how poor households use market and non-market based institutions to mitigate risks such as starvation, and poor health.

Macroeconomists are concerned about the welfare costs of recessions, and these costs ultimately depend on some notion of risk-adjusted welfare.

Two practical issues arise in studying attitudes toward uncertainty. First, although we may agree on the key premise that all individuals are risk-averse, it would be unreasonable to assume that all individuals share the same degree of risk-aversion. Faced with identical risks and under identical circumstances, people make different choices. An appropriate measure of risk should allow for comparing individuals in terms of their aversion to risk. This is possible if an increase in risk-aversion coincides with an increase in the risk premium. Indeed, an individual is said to be more risk-averse if she is willing to pay more to eliminate a given uncertainty.

Second, we might wonder whether all risk-averse individuals agree on the consequences of a change in uncertainty. Unfortunately, a particular change in uncertainty can result in an increase or a decrease in the risk premium depending on the individual. Consequently, while some may dislike the change, others may welcome it. This occurs because with a change in uncertainty while some desirable eventualities may become more likely, others become less likely. These tradeoffs are not valued equally by different individuals, and may lead to different rankings of risks.

When a group of individuals or a society considers the desirability of certain risks, differences in opinion become very important. Risks associated with anthropogenic climate change and genetically modified foods are assessed very differently across and within societies. While both of these activities change the risks we face in the future, relative costs and benefits are valued differently. The intensity of the current debates over these issues partly reflects the difficulty of ranking risks in a unanimous manner.

Another dimension of the future is the unknown. In order to assess the risks associated with our current actions, we must possess some common knowledge of possible future events, and their probabilities. Risk assessment and management start with information gathering, and measurement (statistics). Life insurance is a prime example because premiums are entirely based on life-expectancy calculations. Such calculations have only been possible after systematic data collection and analysis.

Car insurance rates are determined based on historic trends: Young, male drivers have historically had higher accident rates (a risky group). This is unlikely to change in the short run, so all young, male drivers pay higher insurance premiums. But, how much do we know about the future climate of our planet? Our knowledge is imperfect; there are no probabilities or scenarios that all climate scientists seem to agree upon. The notion that all future eventualities and their objective probabilities are known appears far-fetched. However, for the very same reason every bit of information that would allow us to be more precise about the likely future outcomes is tremendously valuable.

Managing risk. Given that risk is such an important part of our reality, and is undesirable, it is understandable that there are many institutions and financial instruments that have been developed to manage them. Since the Neolithic revolution, farmers have faced uncertainty about their future income and thus risks concerning their survival. Today's agricultural technology (and weather) is very different. So are the risks. What has not changed over time, however, is the desire to manage and mitigate these risks. Farmers have, throughout history, designed mechanisms to reduce the impact of risks on individual welfare, even in the absence of perfect knowledge. These mechanisms have varied from simple, but nevertheless effective self-insurance to sophisticated and sometimes complex market-based securities, such as futures contracts and options. The instinctive, but powerful idea behind all these mechanisms is to ensure that "not all the eggs are in one basket."

Since the details of the institutions and instruments that are used to manage risks vary, first consider the simplest case: self-insurance. The basic idea behind self-insurance is that individuals anticipate risks, and their own actions provide cushions for undesirable eventualities without other parties being directly involved. Peasants have developed very effective self-insurance mechanisms. They typically raise crops and livestock simultaneously. Livestock can also be seen as a buffer against the risk of variations in crop yield, because the availability of animals helps regulate the quantity of calories available for human consumption. During a bumper crop year, peasants increase the number of livestock, and existing animals accumulate body weight. When the crop yield is poor, available livestock gives access to additional food by providing meat, and reducing the demand for animal feed, part of which can also be consumed by humans.

While self-insurance mechanisms are simple, they are also costly for individuals. They require substantial buffer stocks or savings that can otherwise be used for current consumption. The value of these savings is especially high for relatively poor individuals and societies. Even in a bumper-crop year, peasants consume low calories and poor households live hand-to-mouth. Self-insurance can be an effective tool for managing risks, but one that requires considerable personal sacrifices, and is sometimes prohibitive.

Human ingenuity has resulted in instruments and mechanisms that reduce such sacrifices, especially when risks are not perfectly correlated across individuals. Perfectly correlated risks occur when all of us become sick simultaneously (epidemics), and when all farmers suffer from a devastating disaster. Such events are (fortunately) rare. Since risks affect different people at different times, it is possible to share them. This circumvents the large sacrifices associated with self-insurance. Risk-sharing takes advantage of the fact that the total resources available to a group of individuals is larger, and that a given risk can be diversified across the group, or shared. Risk-sharing arrangements can be formal contracts, such as car insurance, which involve individuals who are exposed to similar risks. Extended families and communities can share risks through informal arrangements, whereby help is extended to those who need it the most. While these are non-market based institutions, deeply rooted notions of reciprocity ensure enforcement of appropriate risk-sharing.

The principal idea underlying risk-sharing arrangements is also applicable in contexts where particular risk categories are not perfectly correlated. Perfectly correlated risks occur when different events happen simultaneously, when drought, flood, and pestilence all happen at the same time, and when coffee and tea prices are positively correlated. But, if low coffee prices coincide systematically with high tea prices, and vice versa, a farmer who can divide the land between tea and coffee reduces the fluctuations in income, and thus uncertainty. In effect, the farmer diversifies across a given risk category, or "pools" different risks. The same diversification principle has been advocated as the single most important investment strategy.

Of course, some risks are under our own influence. Smoking increases the risk of lung cancer and cardiovascular diseases. By our own actions (not smoking), we can control the risks that we face. However, this very notion of (however imperfect) control over the future renders some risks hard to insure against. Does the availability of car insurance make people more reckless drivers? Surely farmers cannot control the weather, but do they also take excessive risks when the government extends a crop insurance program? Such incentive problems form an important aspect of contemporary risk management practices.

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Robinson, Joan (1903–83)

JOAN VIOLET ROBINSON was born in Surrey, England. After completion of her studies in economics at Girton College, Cambridge University, she married the young Cambridge economist Austin Robinson in 1926. They had two daughters. After spending a few years in India, Robinson returned to Cambridge and taught there from 1931 until 1971.

Robinson's first important work was "The Economics of Imperfect Competition" (1933). This was a decisive breakaway of economic theory from the assumptions of perfect COMPETITION and an extension of the Marshallian tradition. Later, she became one of the important members of a group of young economists known as the Cambridge Circus, who regularly met for discussion, and played a significant role in the evolving drafts of John Maynard KEYNES' *General Theory of Employment, Interest and Money* (1936). She was a major figure in the Keynesian revolution and produced genuine expositions of Keynes' theory.

Robinson turned her attention to the works of Karl MARX and, in her "Essay on Marxian Economics" (1942), she compares the economic analysis of Marx with modern economic theory. This was among the first serious studies of Marxian economics.

Published in 1956, Robinson's masterwork, *The Accumulation of Capital*, sought to address the issues related to the long-term growth of income and capital—typical issues of concern within the classical tradition—in a Keynesian framework. This was followed by her work on the growth theory, which in conjunction with the works of Nicholas Kaldor, became known as the Cambridge Growth Theory.

Robinson's work on capital, influenced by Piero SRAFFA (1960), exposed the problems arising from capital aggregation, and its serious ramifications for the neoclassical marginal productivity theory of distribution. This led to a well-known debate between American economists in Cambridge, Massachusetts, and economists in Cambridge, England, which became known as the Cambridge Capital Controversy.

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Rockefeller, John D. (1839–1937)

MERGERS BETWEEN OIL giants received significant media coverage in the late 20th century. The giants, EXXONMOBIL, CHEVRONTEXACO, and Amoco are companies that once shared related names. Exxon was once called STANDARD OIL of New Jersey, Mobil was Standard Oil of New York, Chevron was Standard Oil of California, and Amoco was Standard Oil of Indiana. John Davison Rockefeller was the driving force behind the Standard Oil Company, a virtual MONOPOLY that dominated the UNITED STATES oil industry for decades.

John D. Rockefeller was born in Richford, New York. In 1852, Rockefeller attended Owego Academy in Owego, New York. He was very good at mathematics. He attended high school in Cleveland, Ohio from 1853–55, and in the same year learned single- and double-entry bookkeeping, banking, and other business subjects at Folsom Mercantile College.

Rockefeller's business career began as a clerk in a commission sales firm. In 1859, he and a neighbor, Maurice B. Clark, started a company as commission merchants of grain and other goods. Rockefeller began to apply his precise business style and strong work ethic. It did not take long, however, for Rockefeller to grow weary of being a commission merchant. The rewards were too modest.

In the 1860s, Rockefeller's attention was shifted to the oil industry by the oil boom. He found that the oil from the recently discovered northwestern Pennsylvania wells was of high quality and could be refined into several useful products. Rockefeller also discovered that the oil market was nearly perfectly competitive (an industry with many small buyers and sellers, each being a "price taker"). It only took $10,000 to set up a small refinery, making entry barriers extremely low.

Samuel Andrews, experienced with shale-oil refining, joined the team. The firm of Rockefeller, Andrews, Clark & Company was formed in 1863. In 1865, Rockefeller bought out the Clark interest. In 1866, Rockefeller brought in his brother, William D., and they built another refinery in Cleveland named the Standard Works. They also opened an office in New York City to handle the export business, with William D. in charge. In 1867 Henry M. Flagler, a grain merchant turned oil-barrel manufacturer, became a partner.

By 1868, Rockefeller, Andrews & Flagler ran the largest oil-refining operation in the world. They had their own warehouses and distribution center built in Cleveland. The area's railroad systems (providing substantial rebates) and waterway facilitated transportation. From crude oil they manufactured lubricating oil, gasoline, benzine, and petroleum jelly. They improved their refining methods by careful process analysis, and by treating nearly all waste materials so that they could be used. The volatility of oil product prices prompted Rockefeller and Flagler to adopt "Our Plan" that survives today as the logic of competitive structure. An industry in competitive chaos was analyzed, and eventually consolidated into a form that promoted price stability and economies of scale.

On January 10, 1870, John D. Rockefeller, William D. Rockefeller, Flagler, Andrews, Stephen Harkness (a silent partner in a previous business), and O.B. Jennings (brother-in-law of William D.) established the Standard Oil Company of Ohio. At its inception, Standard Oil held nearly 10 percent of the oil business. The aggressive output of many small companies was driving down oil prices. Rockefeller explored the idea of creating a market that had a few large, vertically integrated firms (OLIGOPOLY in today's parlance). Vertical integration is an arrangement where a company keeps the various stages of production, from underground crude oil to the sale of products to final consumers, within the company.

During 1871, moving the company closer to a MONOPOLY, John D. and his partner, Flagler, decided to consolidate all oil refining firms into one (not a few). This action helped eliminate excess capacity and price-cutting. Consolidation involved assessing the value of a rival refinery, and giving the owner(s) Standard Oil stock in proportion to the value of the company. The more talented owners would enter Standard Oil management. By 1872, Standard Oil began to expand to other areas of the United States through these mergers. The company built its own pipeline, in addition to acquiring the pipelines from other companies. By 1879, Standard Oil controlled about 90 percent of the oil refining in the United States. Rockefeller's tasks became broader as the business grew larger. Standard Oil Trust was formed on January 2, 1882. The 43-year-old John D. Rockefeller was the chief. The trust was capitalized at $70 million, but the true market value was close to $200 million.

By 1890, Standard Oil was set up as a nationwide network that reached almost every locality in America. However, domination of the retail markets helped cause the American public to develop a distaste for the company. The attorney general of Ohio brought a suit against Standard Oil. The company lost the suit, and the trust was dissolved in March 1892. Each trust certificate was to be exchanged for the proportioned share of stock in the 20 component companies of Standard Oil. Interestingly, this had no practical effect on the operation of the company.

As time passed, Rockefeller became very wealthy. At one point, he suffered a partial nervous breakdown from overwork. From his early working days, regardless of how much he was paid, he gave to the Baptist Church and local charities. In 1896, Rockefeller let others take on the day-to-day responsibilities of Standard Oil. He shifted his attention toward major philanthropic activities. One of the most significant of these was a donation made to help create the University of Chicago. The total contribution to the university amounted to $35 million.

The industrial-giant-turned-philanthropist began applying funds to human welfare, and to facilitating the creation of institutions that sought to improve human life. In 1901, Rockefeller founded the Rockefeller Institute for Medical Research. The focus of the organization was to discover the causes, prevention, and cures of disease. Many new scientific techniques in medicine, biology, biochemistry, biophysics, and related disciplines came from its laboratory. The organization thrives today under the title Rockefeller University. Perhaps the Rockefeller creation with the greatest global impact was the Rockefeller Foundation. Established in 1913, the foundation has given significant assistance to public health, medical education, food production, scientific advancement, social research, and countless other fields. Rockefeller established other organizations that promoted education (General Education Board, 1902), and public health (Rockefeller Sanitary Commission, 1902).

Rockefeller's death came on May 23, 1937. His life was an accomplished one, characterized by vigorous entrepreneurship, hard work, and success. Many of his biological descendants have gone on to become prominent Americans. His hard work and investments thrive today through the offspring of the Standard Oil Company, two of which are back together. EXXONMOBIL is now competing in a competitive global oil market. Rockefeller personified American capitalism perhaps more than any individual before or since.

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Roman Empire

FROM A SMALL VILLAGE in central Italy dominated by its Etruscan neighbors, came the greatest empire the Western world has known. Legend held that the city of Rome was founded on the Palatine Hill by Romulus, its first king. What is certain is that the empire forged by the energetic, ambitious, and patriotic Romans would be of unprecedented might and durability. Its achievements in government, law, military organization and strategy, engineering, architecture, urban planning, literature, historiography, and oratory serve as models to this day.

At first an aristocratic republic and later a dynastic dictatorship, the Roman Empire often brought long-term and wide-spread stability, peace, commercial activity, and cultural and economic unity to its far-flung dominions. Nevertheless, it also enslaved millions and intermittently produced reigns of unmitigated terror. Although administrative and political skills are often cited as a Roman talent, the unpredictability and brutality of its imperial system was one of its greatest failings. In the end, Rome was a victim of its own excesses. Nevertheless, its achievements are the foundation of Western civilization.

Republic and the rise of empire. The republic was born in 509 B.C.E. when the Romans overthrew their last Etruscan king, the tyrannical Tarquinius Priscus, thereby gaining an aversion to any hint of monarchy and winning independence for their city-state on the banks of the Tiber. Although a republic governed by a senate of elders, inequality remained. The common people, called plebeians, were subservient to the ruling upper class, known as the patricians. The story of the early republic was chiefly the plebeians' successful struggle for representation in the government and expansion of Rome's control over the rest of the Italian peninsula at the expense of its weak and disorganized rivals; thus demonstrating the Roman penchant for military organization, discipline, and diplomacy. Yet, not content with holding sway over Italy, the Romans created great armadas and spread their influence about the Mediterranean. This brought confrontation with Carthage, a formidable military, naval, and trading power of North Africa.

Rome faced the Carthaginian challenge with characteristic determination. The First Punic or Carthaginian War (264–241 B.C.E.) lasted over 20 years and ended with Rome's capture of Sicily. During the Second Punic War (218–201 B.C.E.), in which Rome put almost a quarter of a million men in the field, the young Carthaginian general Hannibal came close to destroying Rome after he crossed the Alps, along with his fearsome war elephants, and attacked northern Italy. After numerous defeats, most particularly at the battle of Cannae in 216 B.C.E. where from 45,000 to 80,000 soldiers were lost, and revolts by conquered territories in southern Italy, Rome persevered and launched an offensive in North Africa, forcing Hannibal to abandon his Italian campaign and return to Carthage. At the battle of Zama outside Carthage in 202 B.C.E., Hannibal's forces were crushed by legions commanded by Scipio Africanus. With its chief Mediterranean rival defeated, Rome was free to mount a series of successful campaigns against the Macedonians in 197 B.C.E. and the Syrians seven years later. After victory in the Third Punic War (149–146 B.C.E.) Carthage was obliterated in 146 B.C.E. Thus, Rome was the unquestioned master of the Mediterranean.

Republican disorder. With Rome's conquests came internal stresses. Its Italian allies demanded equality within the empire, leading to the Social or Italian War of 90–88 B.C.E. The rebellion ended with Roman citizenship, *cives Romanus*, being given to most Italians. Yet power and wealth became increasingly concentrated in the hands of the senatorial class, while the city of Rome experienced rapid population growth, leading to crowded tenements, crime, and unruly mobs manipulated by politicians anxious to garner votes. Such an atmosphere encouraged corruption of the electoral process, and thus distrust of republican institutions and nervousness among the elite.

Tiberius Gracchus and his brother Gaius Gracchus, who each served as tribune, became heroes of the common or equestrian class due to their egalitarian policies of land and tax reform and expanded citizenship for provincials. But when both brothers were assassinated resulting from conservative plots, riots and discontent arose. Finally, martial law was declared under the command of Consul Gaius Opimius. Eventually even the lowest segment of society rebelled. In Sicily and on the peninsula, numerous slave revolts erupted. A gladiator named Spartacus would lead the most notable slave uprising from 73–71 B.C.E. After defeating five Roman armies, Spartacus' slave army was routed by Marcus Licinius Crassus (c. 112–53 B.C.E.), a wealthy and conservative general. In retribution and warning, 6,000 slaves were crucified along the Appian Way.

With continual crises, increasing need for more centralized control of the provinces and armies, and rampant piracy on the sea, the time was ripe for a strong leader. Lucius Cornelius Sulla was the first to assume the mantel. After a victorious campaign against Mithridates in the East, Sulla dared to enter Rome with his legions, dispatched his enemies during a bloody civil war, and imposed a conservative dictatorship (82–79 B.C.E.). Sulla proceeded to reward his soldiers with colonial land, reorganize the senate, reform the courts, reduce the power of the tribunes who represented the common people, and then retired under the illusion that he had achieved the stability Rome required.

Julius Caesar. The late republic produced numerous strong and ambitious leaders who hoped to fill the void left by Sulla. Most notably, Marcus Crassus, victor over Spartacus, and the charismatic Gnaeus Pompeius (Pompey, 106–48 B.C.E.), hero of campaigns against Cilician pirates, Mithridates, and slave rebellions, maneuvered to win the support of the masses and thus, power. While Crassus and Pompey were accomplished generals and political opportunists, neither matched the military genius, political shrewdness, and popular appeal of the young Gaius Julius Caesar (c. 101–44 B.C.E.), heir of a distinguished family that had seen better days.

Caesar was made dictator in 45 B.C.E. for 10 years. This was extended to life in 44 B.C.E. He assumed unprecedented authority and honors, being named *pater patriae* ("Father of the Fatherland") and instituted important reforms, many of which laid the foundation for an imperial system. Yet his rule instilled fear, resentment, and desires to restore the old republic. On the Ides of March (March 15) in 44 B.C.E., conspirators led by Marcus Brutus and Gaius Cassius assassinated Caesar in the senate and unwittingly murdered any hope of restoration of the republic.

Caesar Augustus and the Imperial Order. Marcus Antonius (Mark Antony, c. 82–30 B.C.), Caesar's closest confidant, and the young Gaius Octavius (Octavian, 63 B.C.E.–14 C.E.), Caesar's grandnephew and heir, formed the Second Triumvirate in 43 B.C.E. with Marcus Lepidus as junior partner. After agreeing that Octavian would hold sway in Italy and Antony in the East, and after defeating Caesar's assassins at the Battle of Philippi in 42 B.C.E., Antony and Octavian were soon at odds. At the fateful naval battle of Actium in 31 B.C.E., Octavian was triumphant against Antony and his ally, Queen Cleopatra of Egypt. With Antony and Cleopatra's subsequent suicides, Egypt was made a Roman province.

Octavian claimed both Caesar's name and dream. The senate awarded him the title *princeps* in 28 B.C.E., and he assumed complete command of the army as *imperator*. As tribune, he was the voice of the people, and in 27 B.C.E. he was named Augustus. In 12 B.C.E. he took the position of *pontifex maximus* (chief priest) and was deified in the East. Although retaining the trappings of the republic, such as the senate, the republic was dead. The conservative Augustus then set about reforming Roman society to promote stability and his authority. He appointed senators to secure control of the body, revitalized religion by restoring the temples, promoted morality, encouraged marriage, created the Praetorian Guard to protect the emperor, ended corruption in the governance of the provinces, and established an efficient system of administration. He also expanded the empire to include Galatia in 25 B.C.E., completed the conquest of Spain in 19 B.C.E., added numerous other provinces, and invaded much of western Germania. However, Augustus' ambitions in the Danube-Rhine region were abandoned when Germanic tribes massacred three Roman legions in the Teutoburg Forest in 9 C.E..

The Julio-Claudians. Augustus named his stepson, Tiberius (42 B.C.E.–37 C.E.) his successor. Although less charismatic than Augustus, he set about consolidating the empire. Tiberius' successor and grandnephew Caligula (12–41 C.E.) proved less fortunate. After showing signs of insanity and attempting to force his divinity on the empire, Caligula was assassinated. Caligula's uncle Claudius (10 B.C.E.–54 C.E.) next ruled and expanded the empire into southern Britain, Mauretania, and Thrace, established a professional civil service, and maintained an active public works program, including the port at Ostia. Despite these achievements, Claudius was poisoned in 54 C.E. and was succeeded by his adopted son, the tyrannical Nero (37–68 C.E.), who was accused of causing the burning of Rome in order to clear a site for his new palace. True or not, Nero was deposed and committed suicide before he could be murdered. Thus ended the Julio-Claudian dynasty, and anarchy reigned as various portions of the army installed their choice as emperor. None of these emperors was able to maintain order or authority.

The Flavians. Vespasian (9–79 C.E.), who was proclaimed emperor by the legions in Egypt and Judaea and whose title was accepted by the senate in 69 C.E., founded the Flavian dynasty and provided the strength and stability the empire craved during his 20-year rule. He reformed the army by mixing the legions with soldiers from different localities to inhibit local loyalties, made tax collection fairer, and launched massive public works projects. He rebuilt Rome and began construction of the great Roman Colosseum or Flavian Amphitheater, which became an important political tool as successive emperors strove to surpass their predecessors in bloody spectacles to satisfy the mob. Vespasian's son, Titus (34–81 C.E.), destroyed Jerusalem in 70 C.E. and the rest of the empire was brought under control. The popular Titus succeeded his father in 79 C.E., and completed the Colosseum in 80 C.E.. Titus ruled until his death from plague.

The next five emperors, Nerva, Trajan, Hadrian, Antoninus Pius, and Marcus Aurelius, brought order and took the empire to its greatest height in territory and prosperity. Nerva, chosen by the senate, opened the age of moderation and competent administration. The subsequent four emperors came to power through the wise planning of their predecessors. The last of these "good emperors," Marcus Aurelius (121–180 C.E.), trained from childhood to be emperor, became an enlightened ruler and philosopher, but he confronted plague, rebellion by a general in the East, and Germanic tribes along the Danube frontier in the North.

The Roman economy. Wherever Rome's mighty legions conquered, they built stone roads, chiefly for military purposes and supply, but with secondary benefit to trade and communication. They also constructed ingenious aqueducts, bridges, sewers, amphitheaters, defensive walls, and fortresses, many of which survive. Hence there were benefits to the conquered provinces other than simply the order imposed.

In times of stability and able leadership, the empire fostered peace, commercial activity, and cultural and racial diversity, tolerance, and interchange. The liberal granting of Roman citizenship to conquered peoples most notably shows this general policy of inclusion. Under "good" emperors, currency was stable and taxes relatively fair. Financiers and businessmen appeared, corporations organized shipping, trade routes were established and protected, and iron- and coal-mining encouraged. Cities were founded that expanded commerce, made urban life comfortable for many, and developed regional products for export and markets for import.

At its best, the imperial system provided uniform laws and regulations, supervised critical grain supplies, and permitted development of trade guilds, but there was little industrial innovation and most products were produced in small workshops. The consumerism of the city of Rome encouraged imports from throughout the empire and beyond, but the rich lived in excess, while many others lived in squalor and, at times, as many as one in three inhabitants of the Empire was enslaved, leading to constant fears of slave revolts.

Furthermore, the Roman mob had to be constantly satisfied with handouts, bloody spectacles, and games, and as many as 170 holidays. All this extravagance imposed enormous cost on the treasury and productivity. And the benefits of Roman rule ceased under weak, mad, or tyrannical emperors. But Rome's greatest economic problems came when the empire stopped growing, for its economic strength came from the constant flow of riches and slaves from conquered territories. When the Empire's growth ended, so did the spoils fueling the system.

Division, decline, and fall. Diocletian (c. 245–305 C.E.), who was made emperor by military force in 284, worked to free the government from the military's dominance and created the Tetrarchy, a system whereby he shared power and succession was planned. He completely reorganized the administration of the empire, attempted to stabilize the currency, and fought rampant inflation. He also ruthlessly persecuted Christians.

Upon his retirement in 305, the succession was disorderly despite Diocletian's designs. Strong leadership eventually came under Constantine (c. 274–337 C.E.), who became undisputed emperor after victory at the Battle of Mulvian Bridge in 312. To attempt to regain the empire's stability, Constantine expanded the bureaucracy and divided the empire between East and West, with the Eastern capital, Constantinople, located at Byzantium in 330. He legalized Christianity and accepted the faith on his deathbed. Christianity would eventually become the state religion, and imperial organization would serve as the model for church structure.

Despite the territorial division, the borders of the Western empire proved difficult to maintain. Emperor Valens was even killed in battle with the Goths in 378, a Germanic people who had settled en masse within the imperial borders. The Visigoths sacked Rome itself in 410, and the Vandals did the same in 455. The last Roman emperor, Romulus Augustulus, was deposed in 476 and a Goth, Odovacar, was proclaimed king. The Western Roman Empire was no more.

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Romania

A BIT SMALLER THAN the state of Oregon, Romania is located in southeastern Europe and borders Bulgaria, UKRAINE, HUNGARY, Moldova, former Yugoslavia and the Black Sea. Romania has a population of approximately 22.3 million people (2002). Romania's government is organized as a republic, separated into 41 counties. It gained its independence from Turkey May 9, 1877 and was recognized by the Treaty of Berlin on July 13, 1878. Shortly thereafter, on March 26, 1881, Romania declared itself a kingdom. The current republic was officially formed on December 30, 1947. After the monarchy was ousted, a police-state dictator, Nicolae Ceausescu, took power for several decades. In 1989, Ceausescu was executed and the communist party took power until 1996. The government is currently dominated by the Social Democracy party, in conjunction with the ethnic Hungarian minority party.

Romania boasted a 2001 GROSS DOMESTIC PRODUCT (GDP) of $152.7 billion. The GDP real growth rate in the same year was approximately 4.8 percent. Romania has had a difficult transition from communism since 1989; industries and production facilities did not suit the economic environment or the resources of the country. The INTERNATIONAL MONETARY FUND (IMF) is the partial reason for the 4.8 percent growth in 2001.

At the turn of the millennium, Romania had 44.5 percent of its population below the poverty line. Economists point out the country must overcome extensive economic hurdles in order to contend for a position in the EUROPEAN UNION (EU) possibly in 2007. The North Atlantic Treaty Organization expressed interest, at its November 2002, meeting, in adopting Romania into its ranks in 2004. Romania's membership in both of these economic leviathans will present the country with an excellent opportunity to stimulate its struggling economy.

Romania's main industries include textiles and footwear, light-machinery and auto assembly, mining, timber, construction materials, metallurgy, chemicals, food processing, petroleum, and refining. The majority of the labor force (40 percent) is concentrated in agriculture, producing such goods as wheat, corn, sugar beets, sunflower seed, potatoes, grapes, eggs, and sheep. Romania's major trading partner is Italy, providing 19 percent of Romania's imports and receiving 22 percent of Romania's exports.

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Roosevelt, Franklin Delano (1882–1945)

AS U.S. PRESIDENT from 1933–45, Franklin Delano Roosevelt (FDR) created the foundations of the modern welfare state through his NEW DEAL economic and social reforms. The scion of a wealthy and aristocratic American family, FDR was instilled with a sense of social obligation of the wealthy toward the less fortunate. Early in his political career, FDR supported the fulfillment of this obligation through private institutions and family initiatives. As the Great DEPRESSION of the 1930s deepened, however, FDR forged a new role for government, as guarantor of the economic security of its citizens. Although few economic historians credit FDR's social programs with ending the Depression, the programs did mitigate the suffering of many. The American economy did not fully recover from the Depression, however, until production demand was stimulated by America's entry into WORLD WAR II.

Youth. Roosevelt was born into a prominent family that had resided in New York's Hudson Valley since the 1640s. FDR's mother, Sara Delano, was a sixth-cousin of his father, James Roosevelt. FDR was raised as an only child, though James, who was 26 years older than Sara, was a widower with a grown son. James lived as a country squire on his grand Hyde Park estate and was involved with the family's coal and transportation ventures.

FDR enjoyed a privileged and sheltered upbringing in Hyde Park. He was privately tutored, and spent time in Europe and Campobello (vacation home in Canada) each year. At 14, he was sent to Groton School, a private New England boarding school. Groton's headmaster, Reverend Endicott Peabody, emphasized the social responsibility of his socially elite students to assist the less fortunate. Groton provided FDR's first experience with peers his own age, and he appears to have had difficulty fitting in.

After Groton, FDR hoped to attend the U.S. Naval Academy. However, his parents preferred Harvard University, and that is where he went. Shortly after he began college, in 1900, his father died. At Harvard, FDR made efforts to fit in better than he had at Groton. He joined the Harvard Republican Club and supported nomination of his fifth-cousin Theodore ROOSEVELT as the Republican candidate for U.S. vice president in 1900. Although FDR's grades at Harvard were average, he graduated in only three years. During his third year, FDR became editor of Harvard's daily student newspaper the *Crimson*, and he stayed at Harvard an additional year to oversee publication.

In 1903, he began courting his fifth-cousin-once-removed, Ana Eleanor Roosevelt, the favorite niece of President Theodore Roosevelt (who assumed the presidency after William MCKINLEY's assassination). The two were married March 17, 1905, with the president giving the bride away. In the early years of their marriage, Eleanor gave birth to six (five surviving) children. FDR attended Columbia Law School, but left after passing the New York State Bar exam. He then practiced corporate law with the firm Carter, Ledyard, and Milburn, a job in which he remained restless. Having a different ambition, he mapped out a route to the White House identical to that of his cousin Theodore: New York State legislature, assistant secretary of the Navy, governor of New York, vice president, president.

Public life before polio. In 1910, FDR ran as a Democrat for a seat in the New York state legislature, seeking to represent the predominantly Republican 26th district, Dutchess County. FDR won an upset victory over Republican candidate John F. Schlosser. As state legislator, FDR pursued a progressive, "anti-machine politics" agenda. He championed development of electric power, conservation, women's suffrage, workers' compensation, and maximum-hours legislation. At the same time, FDR obtained his first national recognition by exposing and opposing the corrupt disbursement of patronage appointments by Tammany Hall, the New York Democratic political machine.

The Tammany hall battle brought FDR to the attention of New Jersey Governor Woodrow WILSON. Wilson shared with FDR a vision of progressive government. Both men supported direct election of U.S. senators, regulation of business abuses, and conservation of natural resources. Roosevelt supported Wilson for the Democratic presidential nomination in 1912. In 1913, Wilson's Secretary of the Navy Josephus Daniels appointed FDR assistant secretary of the Navy, a position he held until 1920. As assistant secretary, FDR opposed price-fixing and collusive bidding on the part of defense contractors. He became skilled in handling labor relations and developed a reputation as a friend of organized labor.

In 1920, FDR became widely known through an unsuccessful bid for vice president on the Democratic ticket with Ohio Governor James Cox. He campaigned on progressive ideas and American participation in the League of Nations. Warren HARDING's Republican victory however, pushed FDR out of public life.

After the 1920 election, FDR formed a law firm and became vice-president of a surety bonding firm. In August, 1921, on summer holiday with his family, he contracted polio and many believed it was the end of his political career. Instead, however, it marked a personal and professional turning point. During FDR's illness, his wife Eleanor assumed an active role in the Democratic party. Eleanor's political activity provided a vehicle for FDR's journalist assistant Louis Howe to keep FDR's name in the public eye during his own period of relative inactivity. FDR began a long, and never fully successful road to recovery.

Governor of New York. FDR did not return to national politics again until 1928 when he was instrumental in the nomination of Catholic New York State Governor Alfred Smith as Democratic presidential candidate. In return, Smith successfully supported FDR as successor to the New York governorship. When FDR became governor in 1928, the economy appeared sound. He supported progressive policies such as the development of cheap electrical power, and agricultural reforms to relieve farmers facing falling prices. He remained a friend of organized labor, a relationship cultivated as assistant secretary of the Navy. However, FDR also remained faithful to LAISSEZ-FAIRE market economics.

The 1929 Wall Street crash and subsequent Depression soon led FDR to reconsider his faith in unregulated markets. To avoid failure of an important New York commercial bank, Roosevelt orchestrated a bank merger. The involved businessmen scoffed at his efforts, insisting that a failing bank should go under regardless of the consequences. Roosevelt then appears to have lost faith in business's ability to self-regulate, concluding that BUSINESS CYCLES were not wholly natural events and that perhaps unscrupulous business practices contributed to the depth and length of business-cycle downturns.

As the Depression deepened, FDR became increasingly committed to the view that government should seek to guarantee the economic security of its citizens. He initiated sweeping reforms in New York in support of these beliefs. The National Guard armories were used to house the homeless. Maximum working-hours laws were enacted in order to require employers to "share the work," rather than lay off workers. In addition, FDR created the Temporary Emergency Relief Service, which provided $25 million in public works jobs and direct relief to the unemployed.

In 1932, after two terms as New York governor, FDR ran as the Democratic candidate for president of the

United States. Promising a NEW DEAL for the Depression-stricken American people, FDR overwhelmingly defeated the Republican Herbert HOOVER, who remained committed to laissez-faire economics. In the same election, the Democrats sent large majorities to both houses of Congress.

Presidential years. FDR was sworn into office March 4, 1933. When he took office, approximately 13 million Americans were without work. Banks in 38 states had closed. In his inaugural address, FDR asserted the need for broad executive powers to aid the country against the economic emergency. His first 100 days in office produced a whirlwind of legislation. Two days after taking office, FDR proposed a "bank holiday," and called a special session of Congress. All banks closed. They presented their books to the federal government, which provided emergency funds and promised to reopen only banks with sound finances. This action ended the banking crisis. Notably, the banks were not nationalized.

With this act and the ensuing 100 days, the "Roosevelt Revolution" was underway. The government dramatically entered the lives and business of Americans in ways it had never done before. Although Roosevelt's policies expanded the role of government as protector against the worst excesses of the market, markets remained decentralized. FDR's policies protected and maintained free-market capitalism, despite conservative protests of its destruction.

In 1933, FDR and Congress focused on relief programs. The United States went off the gold standard, providing relief to debtors and exporters. The Civil Works Administration, Home Owners Loan Corporation, Civil Conservation Corps, and the Public Works Administration were all created. These programs brought jobs and relief to millions of desperate Americans.

In 1933 and 1934, Congress continued its efforts to reform business practices through legislation. The Federal Deposit Insurance Company was created to keep banks from failing; the SECURITIES AND EXCHANGE COMMISSION (SEC) was established to regulate the stock exchanges. The Tennessee Valley Authority built dams that provided flood control and inexpensive hydroelectric power, revitalizing the region.

However, the cornerstone legislative enactments of the NEW DEAL, the National Recovery Act (NRA) and the Agricultural Adjustment Act (AAA), both were declared unconstitutional by the U.S. Supreme Court. The NRA authorized labor and management to negotiate legally binding codes of competition regulating hours, wages, and prices within each industry sector. The NRA, which was the first federal statute to recognize the right of unionized workers to collectively bargain, was struck down as unconstitutional in May 1935. The AAA, which supported farm prices through production control and provided subsidies to farmers who adhered to production quotas, was held unconstitutional in January 1936.

In 1935, three major pieces of legislation helped FDR regain office for a second term. The Social Security Act secured federal payment of old-age pension, and also provided for shared federal-state unemployment compensation and financial assistance for the needy, blind, disabled, and dependent children. The National Labor Relations Act (Wagner Act) secured the right of labor to bargain collectively, and established the National Labor Relations Board. The Works Progress Administration, another New Deal program, paid out millions of dollars per month in work relief between 1935 and 1942.

Despite the New Deal relief and reform efforts of FDR's first term, one-third of the nation's people remained in desperate economic need in the presidential election year of 1936. Nonetheless, FDR was re-elected by a landslide. FDR's second term began, however, with his first major political setback. In an effort to reverse the pro-business conservative philosophy of the Supreme Court that had struck down his NRA and AAA programs, FDR proposed increasing the number of justices on the Court from 9 to 15. By personally selecting the six new justices to be installed, FDR hoped to gain control over the composition of the court, and to ensure that a working majority of justices would sustain New Deal legislation against further constitutional attack. Congress rejected FDR's "court-packing" plan, fearing he was over-reaching his executive power. With this failure, FDR never regained the full support of Congress.

A sharp RECESSION hit in the fall of 1937. Roosevelt was slow to respond with increased federal spending that might have stimulated the economy. By 1938, Republican gains in Congressional elections and Congressional concerns over Roosevelt's handling of the Court, and the recession weakened his ability to get his reform efforts passed.

In 1940, however, FDR was re-elected to an unprecedented third term. The war in Europe had loomed large during the second half of FDR's second term. Shortly into his third term, he convinced Congress to pass the lend-lease program, under which the United States supplied arms to Great Britain. In December 1941, Japan attacked the U.S. Navy at Pearl Harbor, and Germany declared war against the United States. These events brought the country fully into World War II. At home, the war production effort was centralized through governmental boards and agencies such as the War Production Board and National War Labor Board, which controlled prices and supervised the allocation of resources. Ironically, these wartime government production programs, rather than merely being the stimulus to the free markets of capitalism, may ultimately have saved American capitalism and lifted the nation out of the Depression.

After being re-elected to a fourth term in 1944, FDR died April 12, 1945, only weeks before the end of war in Europe. FDR is buried at his home in Hyde Park, New York.

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Roosevelt, Theodore (1858–1919)

WHEN AN ASSASSIN'S BULLET killed President William MCKINLEY on September 14, 1901, 42-year-old Vice-President Teddy Roosevelt became the youngest man to hold the office of president. Famous for his energy and enthusiasm, Roosevelt ushered the United States into the 20th century with his bold presidential style, Progressive reforms, and ambitious foreign policy.

Though born into wealth and privilege, Roosevelt's childhood was plagued by poor health. After a year-long European trip and rigorous exercise routines, his health improved. Educated by private tutors for much of his childhood, Roosevelt entered Harvard University in 1876. Following graduation, he married Alice Hathaway Lee, the daughter of a prominent Boston family. The couple moved to New York, where Roosevelt studied law at Columbia University's School of Law before being elected to the New York State assembly in 1884, a position he held until 1885.

However, personal events in Roosevelt's life temporarily sidetracked his political career. On February 14, 1884, Roosevelt lost both his mother to typhoid fever and his wife to complications surrounding the birth of their daughter. Devastated by their deaths, Roosevelt left New York and spent nearly two years on his ranch in the Dakota Territory (what is today South Dakota). He eventually returned to Oyster Bay, New York, in 1886 where he established residency and ran unsuccessfully for mayor on the Republican ticket. Upon his defeat, Roosevelt embarked on a trip to Europe, marrying Edith Carow in London; the couple went on to have five children.

Returning to New York, Roosevelt re-involved himself in politics, both at the state and federal level. In 1897, President McKinley appointed Roosevelt to be assistant secretary to the Navy but he resigned the post the following year with the start of the SPANISH-AMERICAN WAR.

An unabashed nationalist, Roosevelt believed that the Spanish-American War should be waged more aggressively. He formed and became colonel of a volunteer cavalry regiment known as the Rough Riders, and vigorously led his troops to battle. His skirmish victories in Cuba were sensationally reported back to newspaper readers in the United States, and Roosevelt soon became a war hero thrust onto the national stage.

Following the brief war, Roosevelt was elected governor of New York State. As governor, Roosevelt—a Republican who cultivated his own Progressive vision—achieved civil service and tax reforms, and also supported bills to limit the number of working hours for women and children.

This incensed New York's party bosses and they sought ways to move Roosevelt out of his gubernatorial position. At the next Republican National Convention, their efforts secured Roosevelt's place as the vice-presidential nominee under McKinley. Although historians have suggested that Roosevelt was reluctant to campaign for the obscure office of vice president, he proved to be an effective asset to the ticket and the Republicans were elected to White House in 1900. Upon McKinley's death the following year, Roosevelt assumed the presidency.

Roosevelt believed that as president, he was morally and politically obligated to further the interests of the people. He was an enthusiastic capitalist but he supported many of the reforms directed at curing the ills of industrial capitalism in order to protect American democracy from the threat of socialism.

He therefore believed that the government was responsible for assuring honesty in business and extending equal economic opportunities to all. Asserting that his goal was to provide consumers, farmers, laborers, and business interests fair advantages, Roosevelt labeled his economic policy the Square Deal.

Roosevelt was particularly concerned with mediating the interests of business and labor and he quickly earned a reputation for being a "trust-buster." In 1902, Roosevelt initiated an antitrust suit against the Northern Securities Company, a railroad holding company. He achieved the dissolution of the monopoly and celebrated the victory as a sign of the government's power to regulate business.

Roosevelt further established himself as a friend of labor with his mediation of the Anthracite Coal Strike in 1902. By settling the strike, Roosevelt not only broke with his predecessors who had favored business interests over labor, but he also expanded his own executive powers.

Overwhelmingly re-elected in 1904 over Democratic opponent Judge Alton B. Parker, Roosevelt, now serving his own term, vigorously pursued Progressive reforms. In 1906, Roosevelt secured passage of the Pure Food and Drug Act and the Meat Inspection Act, both of which offered consumer protection. Also in 1906, Roosevelt achieved the Hepburn Act, which expanded the powers of the Interstate Commerce Commission.

His commitment to reform legislation extended to natural resources as well. A passionate supporter of the west since his days in South Dakota, Roosevelt made land conservation and the protection of national reserves and forests central to his administration. In 1902, Roosevelt secured the passage of the Newlands Act, which financed irrigation projects. He also encouraged the conservation efforts of the Forest Service and brought environmental issues into the foreground when, in 1908, he summoned a governors' conference to discuss conservation.

Roosevelt's foreign policy initiatives reflected his sense of expanded presidential leadership: He believed that the United States should be a key player in world affairs and built up the army and navy, pursuing aggressive measures abroad. In 1903, he aided Panama in its revolt against Colombia and thereby gained American control over the Panama Canal. One year later, he made the declaration that the United States should be the international guard of all state affairs in the western hemisphere; this policy was known as the Roosevelt corollary to the Monroe Doctrine. (The Doctrine had warned Europe against expanding into the Western Hemisphere.) And it was his interventionist efforts in the Russo-Japanese War, in which he arranged a peace conference between the two countries, which earned him the 1906 Nobel Peace Prize. Through continued diplomacy with Japan in 1907, he also halted the immigration of Japanese laborers to the American West Coast by negotiating what came to be know as the Gentleman's Agreement.

Roosevelt left the White House in 1909 but he did not leave the public spotlight. Dissatisfied with his successor, President William Howard TAFT, Roosevelt ran for president in 1912 on a Progressive ticket known as the Bull Moose Party. Roosevelt's bid for re-election split the Republican votes and secured the victory of Democratic candidate Woodrow WILSON. When the United States entered WORLD WAR I, Roosevelt offered to lead a commission of volunteers into Europe, but Wilson rejected the idea.

Bitter from old age and the tragic death of his son, Quentin, from enemy fire, Roosevelt retired to his home in Oyster Bay, dying there of a coronary embolism. Although in the years before his death his political views had become increasingly liberal and nearly radical, historians have remembered him as "the conservative as progressive."

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Royal Dutch Shell

THE ROYAL DUTCH SHELL GROUP was formed in 1907 as a holding company that essentially encompassed the transportation interests of Shell (UNITED KINGDOM) and the production activities of Royal Dutch (the NETHERLANDS), and can trace its origins to the Far East in the 1890s. Royal Dutch Shell is the world's oldest joint venture, with 60 percent of shares held by Royal Dutch and 40 percent by Shell.

By the late 1970s, leading firms in the global petroleum industry were facing strong competitive challenges, including the increasing power of individual nations, and the emergence of new rivals. Royal Dutch Shell's performance began to deteriorate in the 1990s, and they also faced significant public relation problems. First, the proposed disposal of the Brent Spar oil platform in the North Atlantic aroused a huge outcry from environmental groups and forced Shell to change its plans. Second, in late 1995, the Nigerian government executed a prominent activist author, Ken Saro-Wiwa, who had protested Shell's environmental record, and it was widely felt that Shell did not handle the resulting fallout at all well.

In 1998, Shell undertook an ambitious restructuring program, moving from a geographically based organizational structure to a more business-sector orientation in an attempt to shorten decision-making, and improve flexibility and efficiency. In 2001, Royal Dutch Shell was the third-largest petroleum refining company, having been overtaken by EXXONMOBIL and BP, and is ranked eighth on *Fortune* magazine's Global 500 list of the world's largest companies. Shell employs approximately 111,00 people worldwide, with 11 percent in the Netherlands, 9 percent in the United Kingdom, and 23 percent in the United States. In 2002, its global revenue amounted to $179.4 billion, with oil refining accounting for 78.2 percent, and oil exploration (7.9 percent), natural gas (7.3 percent), and chemicals (6.2 percent) making up the rest. Shell has proved reserves of approximately 9 billion barrels of oil.

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CATHERINE MATRAVES
ALBION COLLEGE

Russia

A COUNTRY STRETCHING from eastern Europe on the west to the Pacific Ocean in the East and from the Arctic Ocean in the north to the Caucasus mountains and central Asia in the south, Russia has a population of 145 million and a GROSS DOMESTIC PRODUCT (GDP) of $1.2 trillion (in purchasing power). Used to being the second superpower in the world prior to the collapse of the SOVIET UNION in 1991, Russia is struggling in the new century to come to grips with the new reality as it tries to build a permanent free market economy and civic society for the first time in its history.

History prior to 1917. Russia (then the Russian Empire) belonged to a group of countries that started the transition to capitalism in the second half of the 19th century. Rural serfdom was abolished and various other reforms aimed at modernizing the country, that had basically been a feudal monarchy, were implemented during the reign of Emperor Alexander II (1855–81).

Alexander II was assassinated by a radical terrorist group whose proclaimed aim was modernizing Russia. The assassination led to a halt in reforms and to a wave of reaction. In the Russo-Japanese war of 1904–05 a small but rapidly modernizing JAPAN defeated Russia which precipitated a political crisis and a new wave of reforms under Prime Minister Peter Stolypin. Stolypin attempted to modernize the Russian agrarian sector (still the predominant sector of the economy at that time) while also fighting against surging radicalism. He was assassinated in 1911, and the subsequent onset of WORLD WAR I plunged the country, and the monarchy that had ruled it for centuries, into chaos.

In March 1917, Emperor Nikolai II abdicated and a democratic republic was declared. It looked as if Russia might finally make a transition to a market economy and political democracy. But the country was too devastated by war and mismanagement that the new democratic government did little to improve. Hence, when communists challenged the state power in November of the same year, they initially met with little resistance and easily gained control over St. Petersburg (the capital of Russia at that time) and Moscow, ousting the provisional government and establishing the Soviet government.

Communists promised to convene and to honor the decisions of the Constituent Assembly that was supposed to decide upon the future political and economic system of Russia. That promise also contributed to the lack of initial resistance to their takeover. But when the Assembly was elected and convened in early 1918, its majority was distinctly anti-communist. The Soviet government responded by immediately disbanding the Assembly and banning all political opposition to the "dictatorship of the proletariat." The country was plunged into a civil war (with foreign intervention) that completed its devastation.

The Soviet period. The communists won the civil war and established their authority across much of the former Russian Empire by 1922. Seventy-nine years of a communist experiment began.

The official Soviet view was that the communist rule represented a new and more progressive social order than capitalism. The communist revolution and the subsequent totalitarian regime consolidated under the rule of Josef Stalin was, according to some, a reversal to the old, pre-capitalist ways of running the society. The Soviet Union did accomplish industrialization and it also educated its people en masse for the first time in Russian history. On the other hand, it had also reintroduced restrictions on the rural population; peasants in collective farms were not given travel documents allowing them to move out of their villages.

Capitalistic relations, however, had been gradually recuperating ever since the death of Stalin and the abolition of extreme political terror. Since the official Soviet economy continued to be strictly centrally planned, illicit market transactions had to flourish in the underworld. By the time communism started crumbling in the second half of the 1980s, whole regions appeared to have fallen under effective rule of shady businessmen who amassed huge wealth, pulling the strings behind the scene still dominated in appearance by Communist Party leaders. Those were the main forces of internal change that finally brought the communist system down in 1991, while the pressure from the West and the surge of the popular movement for democratic change served as a catalyst of those developments.

The basic institutional structure of the new Russian capitalism. The fact that the new Russian capitalism, which started in 1992, is deeply rooted in the informal economic system that had been gradually eroding the communist system from inside for at least 35 years, is of utmost importance. In particular, it means that incentives governing the behavior of economic agents are based on mostly informal institutions controlled by interest groups that had been capturing monopolistic rents even before communism collapsed, and that were often formed in alliance with corrupt or semi-criminal structures. Those lower-tier institutions and the informal framework partially inherited from the planned economy have survived the collapse of communism and have been consolidating their grip on the Russian economy and political system ever since. It is this new system of crony capitalism that is largely responsible for the fact that "A decade after the implosion of the Soviet Union in December, 1991, Russia is still struggling to establish a modern market economy and achieve strong economic growth," says the *CIA World Factbook* (2002).

Russian GROSS DOMESTIC PRODUCT (GDP), and especially industrial output, had been contracting in 1991–98 with the accumulated decline in industrial output of over 60 percent, according to official statistics. Despite its vast natural resources (including large deposits of oil, natural gas, strategic minerals, and timber), living standards, again at least by official statistics, also fell dramatically, with 40 percent of the population estimated to be below the poverty line in 1999. The demise of the Soviet Union and the folding-up of the manufacturing industries left Russia heavily dependent on exports of primary resources, particularly oil, natural gas, metals, and timber, which account for over 80 percent of exports.

The economy has been recovering since 1999 but this recovery, besides starting from a very low basis, is also very much dependent on the increase in oil prices and so far remains rather feeble from the long-run perspective. Structural reforms continue to lag behind, the industrial base is increasingly dilapidated and must be replaced or modernized if the country is to achieve sustainable economic growth. Other well-known problems include widespread corruption, lack of a strong legal system, and capital flight.

What went wrong with economic reforms of the 1990s? When Russia began its transition to a market economy in 1992, the hopes were much higher. The basic ideas behind the reforms introduced after the collapse of communism were appealingly simple. First, price liberalization and the freeing of economic activity would clear the markets by equilibrating the supply and demand and abolishing the arbitrariness in resource allocation inherent in the state control over production and prices. Privatization would then translate profits and losses of firms into incentives to increase production of goods and services for which there was a large unsatisfied demand, and to curtail the production of those which were not actually demanded by the consumers.

Over a longer term, so it was hoped, this should lead to changes in the industrial structure, bringing production capacity in line with market demand. Macroeconomic stabilization policy was designed to complement privatization. Specifically, the imposition of a hard budget constraint on the government and a harsh ceiling on the creation of new money by the central bank was designed to translate itself into hard budget constraints for firms and reduced rent-seeking activity.

Private firms facing hard budget constraints and free prices would, in theory, change the structure of their investment and production to comply with the preferences of the consumers; thus an efficient resource allocation would result. Finally, opening up of the economy to foreign markets would advance the goals of the reform by:

1. Making it easier for the markets to find equilibrium prices (by imposing upon Russia the structure of relative prices prevailing in market economies)
2. Putting pressure on Russian producers from foreign competitors.

The logic above did produce some results. Especially, freeing of prices balanced short-term supply and demand. Long lines and frustratingly high costs of search for almost all goods and services (both for consumers and for firms) characteristic of the Soviet era have completely become things of the past. Affluent citizens of big cities enjoy the degree of consumption choice they could not even dream of 10 years ago. Those less fortunate do not have the luxury of even standing in line in hope of a subsistence ration. On the macroeconomic side, direct subsidies from the government (and/or the central bank) to firms have been abolished, and the government tries to keep its budget deficit and the creation of money supply under control. Most managers of privatized firms now realize that they can no longer rely on the government to help them get over any difficulties that their firms might run into. There is definitely much more attention paid to costs and quality of supplies and to marketing.

However, all this has not been enough to fundamentally change the allocation of resources and the structure of the Russian economy, and to decisively raise the standard of living of the majority of the population.

The most important problem is that the new Russian capitalism still lacks the mechanism translating the system of free prices and improvement in macroeconomic indicators into real structural changes. The reason is not simply the inertia of the past or some peculiar features of the Russian national character. On the contrary, the present Russian economic woes can be understood very easily in terms of people's rational responses to economic incentives.

The first basic structural reality of the Russian economy is its continued dominance by rent-seeking monopolies. If anything, price liberalization and deregulation of the economy freed those entrenched monopolies from any control over their activities whatsoever. Macroeconomic stabilization programs also had a side-effect of a sharp decline in government revenues and its greater capture by special interest groups.

The capture of the government by special interest groups, that had already begun under the Soviet rule, reached an unprecedented scale in the 1990s. It is true that the economy of those special interest groups (call it the parallel economy) in the former Soviet Union had many features in common with a market economy. In particular, it was completely free from any sort of government intervention (but for the need to bribe or harass government officials), in fact, much "freer" than almost any conventional market economy. However, although the parallel economy helped correct some of the inefficiencies of the planned economy, it was the source of many other inefficiencies, some of them perhaps not less serious than those which it helped to remedy. And it is those inefficiencies that continue to plague the newly emerging Russian capitalism.

The first such inefficiency is the absence of a broad constitutional agreement that would delineate property rights and establish a universal method of exchanging and enforcing those rights. In the official economy of the former Soviet Union, property rights were very strictly delineated and enforced. In the parallel economy, however, there was a strong need for private protection of property rights, that, moreover, had to be done while avoiding the detection from the authorities. The continued state of permanent feud between various private enforcement rings (called the Russian Mafia) involves costs which are unparalleled in normal market economies.

The second source of inefficiency, related to the first, is the high degree of market segmentation. Since the parallel economy had to keep its activities hidden so as to avoid detection, it naturally led to a highly segmented market. The number of participants in each segment of the parallel economy is strictly limited, and the flows of goods, capital, labor and information are severely disrupted. These features are largely inherited today, especially in locally owned businesses.

Third, capitalism relying on pressure groups and private enforcement is, by its nature, oriented toward extracting mostly short-term gain. In particular, it does not have a diversified capital market enabling risk-sharing. This has been the main obstacle to the much-needed radical renovation of industrial capacity. In the special case of a resource-rich Russia, it also means that most economic activity is concentrated in the resource-extraction and export-import sectors, to almost complete neglect of other sectors of potential comparative advantage, especially the human capital-intensive sector. The resulting distortion in profitability accruing to different types of economic activity has detrimental implications for the allocation of human talent.

These inefficiencies of the new Russian capitalism were clearly manifested in a spectacular failure of its privatization program, once hailed as one of the most successful among the economies in transition. Privatized firms have not been transferred to new owners who could put their assets to the most efficient use. Instead, they ended-up under the control of organized crime, which derives its income not from increasing the market value of the firm but from diverting revenues and engaging in asset-stripping.

Oligarchic capitalism? The structure of politico-economic power in today's Russia hinges mainly upon:

1. export of primary resources
2. control over the country's power plants
3. money from the government budget.

It is delineation and re-delineation of control over these sources of wealth which has given an impetus to the open formation of major oligarchic pressure groups, and which constitutes their financial bases.

By using money procured from those sources, oligarchic groups have built up empires that encompass not only industrial enterprises, banks and trading companies, but also political organizations and mass media. Although by most formal criteria Russia is a market economy and a presidential republic with democratic attributes such as the Federal Assembly and Constitutional Court, the reality is quite different. It remains to be seen if Russia will be able to disentangle itself from the grip of oligarchic capitalism and make good use of this latest historic chance to become a modern society.

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Russian Revolution

THE RUSSIAN REVOLUTIONS of 1917 took place eight months apart from one another, but were both linked to the crisis Russia experienced in trying to fight WORLD WAR I, and in finding a popularly mandated, effective system of government. The February 1917 Revolution marked the collapse of the old tsarist system of government, an autocracy in which the monarch ruled without a constitution and with an ineffectual parliament. The October 1917 Revolution began the creation of a new order formed by the Bolsheviks, a radical group of Marxists who built the first communist state in history.

By February 1917, the imperial regime of the Romanov dynasty had lost all effective popular support because of the severe strain that Russia experienced during World War I, when the Russian military suffered defeat at the hands of the Central Powers, particularly the German Army. Most historians agree that the Romanovs themselves hastened the destruction of their empire.

For example, Emperor Nicholas II (also called Tsar, from the Russian word for Caesar) tied the success of his reign to the war effort when, against the counsel of his advisers, in 1915 he left Petrograd to take direct command of the war front at military headquarters. The foolhardiness of this decision was magnified when Nicholas II delegated authority for running the government directly to his consort, the Empress Alexandra (or Tsaritsa), even though she had no experience in government affairs. Alexandra suffered from poor health and was devastated that her youngest child Alexis, the heir to the throne, suffered from hemophilia, an incurable disease that kept his blood from clotting. Alexandra found comfort in the peasant Rasputin, whose hypnotic demeanor had a calming effect on Alexis. Even as Rasputin portrayed himself as a holy man, disgust spread throughout Russia that this "mad monk" was actually in control of the government. Indeed, he used his influence with Alexandra to appoint ineffective ministers to important government posts.

By 1917, Russia's government and its under-developed transportation infrastructure were unable to provide enough weapons, ammunition, and supplies for its army. At the same time, Russia's agricultural system was strained by the recruitment of millions of peasants into the army. Wartime inflation and production and transport problems led to a shortage of fuel and food in the cities. The populace of Petrograd, Russia's capital, reached a breaking point in the winter of 1917. On February 23, 1917, women who were waiting in line for rationed bread began a protest that quickly spread among workers, soldiers, peasants, and government officials. Within a week, Nicholas II abdicated in favor of his brother, the Grand Duke Michael, who refused the throne when the government, realizing its own weakness and the unpopularity of the Romanovs, could not guarantee his safety.

With Nicholas's abdication in February 1917, Russia experienced its first revolution of the year, which marked the downfall of the Romanov dynasty and its autocratic form of government. Russia then embarked on a new era that promised a new, constitutionally mandated form of government. Two new governmental authorities arose to fill the vacuum created by the tsarist government's collapse. A Provisional Government was created that had two principal aims. It continued fighting the war on the side of France and England, and it planned for the convening of a Constituent Assembly, or constitutional convention, that was supposed to determine the form of Russia's future political system.

At the same time, striking workers and revolutionaries set up a Petrograd Soviet (Council) of Workers' and Soldiers' Deputies. Hundreds of other soviets were formed across the country, representing soldiers, factory workers, and other groups. The soviets were a type of grass-roots democracy that expressed the opinions of different segments of society and that coordinated revolutionary activity. Thus, after the February Revolution, between the Provisional Government and the soviets, Russia came to be ruled by an unstable system of dual power, in which these two forms of political authority often came into conflict. For example, the Petrograd Soviet passed its Order No. 1, which weakened the Russian Army by granting soldiers the right to elect committees in each military unit, thereby undermining officers' authority and the Provisional Government's attempt to prosecute the war on its own terms.

By October, after conditions on the war front, in the countryside, and in the cities had worsened considerably, the Provisional Government had lost what authority it had held. By attempting to suppress left-wing parties like the Bolsheviks, and by initially showing support for the conservative General Lavr Kornilov to take over the government and establish a right-wing dictatorship, the government pushed revolutionaries into taking action.

Fearing a government crackdown or counter-revolution, Vladimir LENIN decided that the time was right for his party to take power, not in the name of the Bolsheviks, but in the name of the popular soviets. The occasion that they chose was the Second All-Russian Congress of Soviets, a gathering of representatives of hundreds of soviets. On its opening day, October 25, the Bolsheviks took over strategic points in the city, such as roads, railroad stations, telephone and telegraph offices, banks, post offices, and government buildings. Although several hundred people died in the ensuing violence, the Bolsheviks encountered no difficult opposition. Various government ministers were imprisoned and later shot.

After taking power, the Bolsheviks issued five decrees that gained them popular support. The first declaration was an appeal for a "democratic peace" without reparations or territorial annexations. They also abolished the death penalty, a popular move given the Provisional Government's support for executing soldiers who refused to fight. In a country where approximately 85 percent of the population was peasant, they called for distribution of gentry land to the peasants. Also, they appealed for "workers' control" over industry, whereby democratically elected factory committees, not management, would control production. Finally, they declared autonomy for non-Russians in the Russian Empire.

Eventually, the Soviet regime would modify each of these decisions in one way or another: Its 1918 peace treaty allowed Germany to take over large parts of the Ukraine; it allowed selective executions of opponents; it confiscated private farms in a mass collectivization of agricultural lands; it outlawed independent labor unions; and it re-formed the Russian Empire as the Soviet Union, subordinating nationalist aspirations of ethnic minorities to the ideology of communism.

In October 1917, the Bolsheviks still only had control of limited areas of the country, and the elections to the Constituent Assembly, originally planned by the overthrown Provisional Government, took place the following month. When the convention convened on January 5–18, 1918, to determine the future form of Russia's government, the peasant party (the Socialist Revolutionaries) controlled approximately 60 percent of the seats and elected their leader Victor Chernov to chair the assembly. The Bolsheviks won about 25 percent of the seats, with the Kadets (constitutional monarchists) holding about 12 percent and the Mensheviks (moderate Marxists) even less. Lenin, realizing that the convention would be a source of power for the peasant party, disbanded the Constituent Assembly by force after its first session.

In March 1918, the Bolshevik government signed the Treaty of Brest-Litovsk with Germany and paid an enormous price; the Germans occupied vast territories of the Ukraine.

In July 1918, the Bolsheviks carried out an execution of many members of the Romanov dynasty. Russia found itself in a civil war between the Bolsheviks' Red Army and the White Army (supported by foreign mercenaries and monarchists) that sought a restoration of the monarchy. The Bolsheviks' victory helped them to consolidate their October 1917 Revolution and to carry out their vision of the world's first communist state.

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RWE

RHEINISCH-WESTFÄLISCHES Elektrizitätswerk Aktiengesellschaft (RWE) was founded in Essen, GERMANY, on April 25, 1898, when it opened its first electricity plant. More than 100 years later, RWE still operates primarily in the utility industries, acting as a holding company for its many subsidiaries. In recent years, while maintaining focus on its core energy businesses, RWE has also pursued an aggressive growth (via acquisition) and internationalization strategy, particularly across Europe, as trade barriers in services have fallen with the implementation of the EUROPEAN UNION (EU) single European market program.

In Germany, RWE is the market leader in electricity and water- and waste-management, and places second in gas. RWE also operates one of the leading electricity power grids in Europe, and has a commanding global presence in the supply of water. In addition, RWE has a controlling interest in Heidelberger Druckmaschinen (a leading printing systems company worldwide) and Hochtief (a leader in construction and civil engineering). In 2002, total group sales were €46.6 billion. The four core businesses of electricity, gas, water, and environmental services accounted for 51 percent, 12.2 percent, 6.1 percent, and 5 percent respectively. Ranked as the 53rd largest company in the world in 2002, RWE employed 131,765 people worldwide, and return on capital employed was 10.4 percent.

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Samuelson, Paul A. (1915–)

WINNER OF THE 1970 Nobel Prize in Economics, Paul A. Samuelson was born in Gary, Indiana. He completed his undergraduate studies at the University of Chicago with a B.A. in 1935, and continued his graduate studies at Harvard University, receiving a Ph.D. in economics in 1941. Samuelson became a professor of economics at the Massachusetts Institute of Technology, where he was instrumental in building up what is now one of the leading economics departments in the world. The Nobel award was granted "for the scientific work through which he has developed static and dynamic economic theory and actively contributed to raising the level of analysis in economic science."

Most economists would agree that Samuelson has reshaped the way economic analysis is conducted. In his first major work, *Foundations of Economic Analysis* (1947), Samuelson laid out a unified approach to economic analysis using mathematics. He was able to demonstrate that, with this approach, many previous redundancies and contradictions in economic theory could efficiently be resolved. This work has led to the "mathematization" of modern economic theory—a development hailed by most academic economists, but also repeatedly criticized by some inside and especially outside of the economics profession. What these critics often overlook is that Samuelson's mathematics are not for the sake of formalism per se, but rather for the sake of making transparent what are otherwise very complex interactions.

Samuelson once remarked: "I don't care who writes a nation's laws—or crafts its advanced treaties—if I can write its economics textbooks." In this endeavor, Samuelson has had significant success. In 1948, the first edition of Samuelson's textbook *Economics: An Introductory Analysis* was published, and in the early 2000s, it was in its 17th edition. Co-authored with William Nordhaus, this text has been widely used. In 1997, more than 4 million copies had been sold and translations of the text had appeared in more than 40 languages. Two generations of economists around the world have received some aspect of their training directly or indirectly from

Paul Samuelson, author of a standard textbook in economics, takes a keen interest in applying theory to real-world concerns.

this text. Due to the remarkable success of his early books, Samuelson is often considered one of the archetypes of mainstream economists of the latter half of the 20th century.

In the late 1950s and into the 1960s, Samuelson derived what he calls a "neoclassical synthesis," namely, a unified presentation of economic theory that incorporates the main economic insights from the classical period up to contemporaneous theory. In particular, Samuelson attempted to rectify what seemed to be incompatibilities between classical ECONOMIC THEORY and the recent Keynesian MACROECONOMIC theory.

His contributions in specific areas of economics and his solutions to specific problems in economic theory are associated with many modern theories in the areas of consumer choice; international trade; public goods (a single good whose benefit to one individual is largely unaffected by how many other people benefit from it at the same time—e.g., a lighthouse); production theory; finance theory; growth theory; and many modern macroeconomic theories. Samuelson has authored or co-authored more than 100 papers in the top economics journals and he still published regularly in 2003.

Samuelson has always taken a keen interest in applying economic insight to real-world concerns. He has worked in government agencies and as an advisor to many government institutions throughout his life, including the War Production Board in WORLD WAR II, the U.S. Treasury, the COUNCIL OF ECONOMIC ADVISORS, the Bureau of the Budget, and the FEDERAL RESERVE System.

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Saudi Arabia

OCCUPYING MOST of the Arabian Peninsula, Saudi Arabia is at the heart of the Middle East. It is bordered on the west by the Red Sea, the north by JORDAN and IRAQ, the east by the Persian Gulf, and on the east and south by Qatar, the United Arab Emirates, Oman, and the YEMEN Republic. The peninsula is a hot and dry desert with humid coasts and rocky outcrops. Little rainfall means desalinization plants for making fresh water are necessary.

The kingdom is an absolute monarchy of the Saudi family and has 20 million people of Arabic-speaking, Bedouin background. Formed as a country in 1926, oil was discovered in the east provinces in the 1930s, and exported after World War II. Today, Saudi Arabia is the world's largest exporter of oil with an annual trade balance of $25–50 billion, against foreign debt averages of $25 billion for 1999–2000. The currency is the Riyal. GROSS DOMESTIC PRODUCT (GDP) per capita was $8,130, and real GDP growth was 3.7 percent in 2000.

Riyadh is the modern capital of a state developing a modern infrastructure. Mecca and Medina are the two most important cities, attracting over two million Muslim pilgrims each year for the Hajj, the quintessential Islamic pilgrimage. It is important to remember that Islamic beliefs make up a key component of Muslim population economics, especially in Saudi Arabia. From a capitalist perspective, the Hajj impacts the Saudi economy like tourism and international finance, and beliefs like alms for the poor, are similar to state welfare programs. This is to say, religious beliefs often have economic impact.

The country is often embroiled in Middle East strife but usually remains neutral enough to allow oil export. Crown Prince Abdullah continues to move the economy toward privatization of the energy production sector, increased foreign investment, the creation of Saudi jobs, and an overhaul of the tax holiday system aimed at reducing corporate tax from 45–30 percent. Unemployment is high at 20 percent among 20- to 29-year-old Saudi males as many workers for the 8-billion-barrel-a-year oil production (2000) are foreign nationals. Fiscal policies are tight and Islamic, no-interest loan, banking rules apply. Most of the ministries function as family-run, state-controlled entities.

The national revenue continues to be dependent on the price of oil. Though it has significant natural gas reserves, Saudi Arabia has chosen not to export gas. Oil makes up 90 percent of its exports with the UNITED STATES and JAPAN. Imports are largely finished products for the civilian and hydrocarbon market needs with 19 percent from the United States, 9 percent from Japan, 8 percent from the UNITED KINGDOM and 7 percent from GERMANY. The 263.5 billion barrels of proven oil reserves within Saudi Arabia will last 100 years at present consumption rates.

The oil industry accounts for 45 percent of the GDP, mining for 35 percent, and manufacturing for 10 percent. The government still controls most of the economy with the domestic oil company, Saudi Aramco 100 percent state-owned. Major airlines, granaries, and metal production companies are also state-owned.

High-growth needs in domestic power and energy production sectors require billions of dollars of funding for the modernizing and privatizing Saudi state. Thus state-run oil export will continue to be the key component in the Saudi economy and will far outpace non-oil, privatization efforts. For example, in order to raise power generation capacity to 70,000 MW, a 100-billion-dollar investment is needed from 2000–20. Only the state-run oil export business can generate such funding.

Attempts to increase non-oil products have been successful in making the kingdom self-sufficient in wheat and vegetables. However, attempts to subsidize and export the surplus have been only temporarily successful. In 1992, Saudi Arabia became the world's sixth-largest exporter of wheat but internal water shortages soon cut back production. Desalinization plants proved too costly for anything but self-sufficiency needs.

Saudi membership in the ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES (OPEC), mainly consisting of Middle Eastern, oil-producing countries, continues to be vital to the state-run economy begun in the 1960s. OPEC's ability to control oil flow and prices usually means oil prices are consistently between \$20–\$30 a barrel for the industrialized world. The need for oil to fuel industry and civilization in most first-world areas guarantees a market now and in the near future.

A number of factors suggest against the Saudi economy becoming fully privatized or capitalistic in nature, including the small size of the Saudi population, the nature of the global oil industry, the large desert area it controls, and the limited water supply. While Saudi Arabia can be self-sufficient and reasonably comfortable fiscally, these factors work against a traditional capitalist economy of varied industrial surplus production for internal and external consumers.

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saving

A WIDELY USED TERM with different meanings, saving for an individual may be, for example, the portion of her income that was not used for consumption. For an investor, money saved may be in the form of bonds and stocks. For a city, state, or country, saving may be the money that goes into productive uses such as building roads and parks, increasing educational standards, and building new technology.

A useful way to think about individual saving is to consider a worker in an economy who provides her labor service (say, 40 hours a week) in return for wage/income. One of the most critical decisions that the worker makes is how much of her income to spend on consumption goods and services (i.e. grocery, theater tickets, etc.) and how much to save for potential future use.

Why people save is a central question for economists, and has been the center of academic debate. Two of the most important reasons why people save are:

1. To support consumption in retirement years
2. To support consumption by their children (for bequests).

The first reason for saving (for retirement) stems from a well-known economic theory called the life-cycle hypothesis, pioneered by Franco MODIGLIANI (1963) and others. The hypothesis states that consumption and saving decisions by individuals and households, at each point in time, reflect a more or less conscious attempt to achieve the preferred distribution of consumption over the life cycle.

The second reason for saving (for bequests) stems from the notion that human beings like their children and are very motivated to work hard and save for their children's consumption. A study, by Lauren Koltikoff and Lawrence Summers (1981), concluded that the desire to make bequests was the most important motive for saving. Whether saving is for bequests or to support consumption in retirement years, it has important implications for the individual, the household and the economy as a whole.

Aggregate saving. Economists believe that a constructive way to analyze and understand saving data is by aggregating them into what is called the personal (household) saving rate. To take an example, the U.S. personal saving rate had fallen rather drastically during the 1980s. In particular, U.S. personal saving fell from 7.5 percent in 1981 to 4.1 percent in 1988. The decline in the saving rate has been a concern, as saving provides funds to finance investment projects and ultimately the production of capital (one of the key driving forces of market economies).

Several explanations have been offered for this phenomenon. One explanation consistent with the life-cycle hypothesis is that increased Social Security benefits have reduced the need to save for retirement years. A competing explanation, suggests that the increase in the access to borrowing has decreased saving for future purchase of durable goods. A final explanation is that the growing number of double-income families has significantly reduced future financial uncertainty, thus driving the saving rate down. Whatever the reason, the relatively low personal saving rate in the United States has been worrisome, especially to growth economists who believe that saving is inherently related to the economic growth and development of the country.

Since the seminal work of Robert SOLOW (1956), it has been established that the saving rate is one of the most important determinants of long-run economic growth. One way of explaining why this is the case may be to visit the process used in market economies for the production of capital (such as machinery and equipment). The neoclassical model teaches us that capital in the future is equal to the existing stock of capital (net of depreciation) plus present investment. That is, capital accumulation depends crucially on the level of investment in the economy. But investment is the result of, among other things, saving. Most of our saving (such as in the form of demand deposits etc.), is used by firms in investment projects. So there is a direct link connecting saving to investment and another one connecting investment to capital. It is then obvious that saving behavior is extremely important in the process of capital accumulation, and more generally in economic growth and development.

Given the saving rate effect on economic growth and development, economists have tried to obtain estimates across countries. The main finding is that during the period 1960–90, the variation included high saving rates associated with rich countries and low (sometimes zero) saving rates associated with poor countries.

It is possible that not only does the saving rate positively affect income, but also the reverse, that income positively affects the saving rate. One natural explanation is that saving is low in poor countries because people there simply cannot afford to save. This interpretation suggests that people in poor countries are living at the margin of subsistence, and so they cannot afford to reduce their present consumption in order to save for the future. While this argument is plausible for the poorest countries in the world, it fails once we move to richer countries. If residents of Bangladesh (average income per capita $1,050) cannot afford to save because they are on the margin of subsistence, then the same argument cannot be made about the residents of Zimbabwe (average income per capita $2,280), since they should be far above the subsistence level.

Whether for this reason or for others, the opinion that there is something about being poor that lowers the saving rate is certainly intuitively appealing.

Saving and policy. Governments can influence the private saving rates in a number of different ways. One of the most important ways is in setting up national pension plans. Programs such as Social Security in the United States, in which benefits to the elderly are primarily funded by taxes on those who are currently working, do not generate saving (and thus investment). By contrast, programs in which individuals fund their own retirements by saving during their working years generate a large quantity of capital. During the early 1980s, CHILE set up this type of funded pension system, requiring workers to deposit a fraction of their earnings in an account with a private pension company. Partly as a result of this program, the private savings rate, which had been near zero at the beginning of the 1980s, had reached 17 percent by 1991. The success of the Chilean program led ARGENTINA, Bolivia, COLOMBIA, MEXICO, PERU, and Uruguay to adopt similar plans in the 1990s.

A more extreme version of this kind of pro-saving policy was implemented in SINGAPORE. Starting in the 1950s, workers were required to contribute part of their wages to a "central provident fund," which could be used to finance not only retirement but also medical expenditures and the purchase of housing. The government determined the required contribution rate, which reached a high of 40 percent of a worker's salary in the early 1980s. This forced-saving policy was an important determinant of Singapore's phenomenally high saving rate.

Not all pro-saving policies are so coercive, however. The Japanese government, for example, has relied on persuasion to get its citizens to voluntarily raise their saving rates. The government's Campaign to Encourage Diligence and Thrift (1924–26) featured posters on trains and temples, newspaper advertisements, motion pictures, radio messages, and even rallies. In addition, following WORLD WAR II, a series of pro-savings publicity campaigns were carried out by the Central Council for Savings Promotion. Included in these campaigns were programs to educate children about the importance of saving, and the creation of special banks for children within their schools. Japan has experienced one of the highest savings rates in the world in the period since World War II, although sorting out the extent to which this high saving was due to government persuasion is a not an easy task.

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Say's Law

IN CONTEMPORARY discussions, Say's Law of Markets, or simply Say's Law, usually refers to the concept that the production of goods or services automatically constitutes demand for a bundle of goods or services of equal market value. Thus, in aggregate, demand will always be just sufficient to absorb all production, regardless of the volume of output. Sometimes understood as a condition that holds identically at each point in time, and sometimes as the inevitable outcome of equilibrating forces, under either interpretation, it is usually summarized, following John Maynard KEYNES (1936), as the proposition that "SUPPLY creates its own DEMAND."

The rationale behind Say's Law, named for the classical French economist Jean Baptiste Say, is most easily presented in the setting of a one-period BARTER economy. In a barter economy, it is argued, Say's Law holds identically. A shoemaker, for example, may produce shoes either for himself or to exchange for other commodities. The supply of shoes produced for his own consumption obviously equals his demand for shoes, while the supply of shoes produced to exchange for other goods must exactly reflect the extent of his demand for other goods. Thus, the shoemaker's total supply equals his total demand as a simple matter of accounting. Moreover, it is the production of shoes that provides the shoemaker with the means to obtain shoes and all other goods.

While the logic of Say's Law is less transparent in a multi-period monetary economy, the essence of the argument for both the barter economy case and the more complicated case, rests on a relationship that virtually all economists agree upon: The purchasing power of the income generated by production will always exactly equal output. Provided all income is spent, this relationship will establish Say's Law.

Of course, in a barter economy, the purchasing power of income is automatically exercised. Either the shoemaker's shoes are exchanged for goods or they are consumed. In either case, the income that the shoes represent is effectively spent. In a monetary economy, however, things are not so simple. If, for instance, goods are exchanged for cash that is held for its own sake rather than being used to purchase other goods, aggregate demand will fall short of output. Similarly, if income is saved, aggregate demand will fall short of output unless that saving is channeled into investment expenditure by financial markets. Ultimately, defenders of Say's law argue that while such problems are possible in theory, they are not concerns in practice. Either as a result of behavioral relationships, or as an outcome of equilibrating forces, money is always used to purchase goods and savings always equals investment.

Although the Law of Markets bears the name of J.B. Say, it has long been recognized that the principle has distinct roots in Say's predecessors. Joseph J. Spengler (1945) has argued that Say's Law is an outgrowth of the PHYSIOCRATS' conception of circular flow, and many authors have pointed out that Adam SMITH all but enunciates the principle in his *Wealth of Nations*, which precedes Say's first published comments on the subject by more than two decades.

More controversially, several authors have suggested that it was not Say, but James Mill, father of the famous utilitarian John Stuart MILL, who first clearly enunciated the principle. Say first published his ideas in 1803 in his *Traîte d'économie politique*. However, most economic historians agree that his discussion in the first edition, though revised and expanded in later editions, did not contain a statement of what would be recognized today as Say's Law. James Mill's first published discussion of the issues surrounding Say's Law appears in 1808 in *Commerce Defended*. In contrast to Say, Mill's treatment, reiterated in later publications, is largely complete in its initial form and comes much closer to a statement of Say's Law as it is now generally understood.

An apparent consequence of Say's Law is that a nation can never produce too many goods. While nothing prevents specific goods from being temporarily oversupplied, there cannot be an excess supply (or glut) of goods in aggregate if aggregate demand is always equal to aggregate supply.

This proposition was the object of much debate among economists throughout the 1820s and 1830s, an episode that has since been labeled "the general glut controversy." Along with Mill, J.B. Say, David RICARDO, and most other economists of the day viewed general gluts as an impossibility. This followed from Say's Law in their view and meant that economic downturns and surges in unemployment must be caused by mismatches between the demand and supply of particular products.

Thomas R. MALTHUS and J.C.L. Simonde de Sismondi, both of whom were prominent economists at the time, took the opposing point of view, arguing that gluts could be both particular and general. Specifically, both argued that episodes of increased unemployment and declining wages should be viewed as situations in which aggregate demand had fallen short of aggregate supply.

While Malthus' and Sismondi's theories were decidedly more in line with modern economic theory, the defenders of Say's Law clearly won the debate over general gluts. John Stuart Mill published what was widely considered the definitive exposition of economic theory. In his *Principles of Political Economy*, he came down squarely on the side of Say's Law, effectively putting an end to the controversy.

The importance of Say's Law in recent economic history derives from its purported implications for government policy, particularly the appropriate response to a general downturn in business conditions. If Say's Law holds (the argument goes), the appropriate response to a recession is to stimulate production. Government policies that seek to end a recession by stimulating demand without addressing the incentives to produce are bound to be ineffectual, since demand ultimately derives from supply.

The successful defense of Say's Law during the general glut controversy meant that until the onset of the Great DEPRESSION, this was the predominant view among economists. In 1936, however, J.M. Keynes forever changed economic policy with the publication of his *General Theory of Employment, Interest, and Money*. According to Keynes, Say's Law theorists had things exactly backward. Rather than determining demand, production was itself determined by the level of aggregate demand. Thus, the appropriate response to a business downturn is to stimulate the demand for goods and services. In particular, Keynes' argued, the only way to end the Great Depression in a timely manner was to encourage spending on goods and services.

Although Keynes' himself rejected Say's Law, most contemporary economists view Keynesian theory as compatible with Say's Law. For most economists, the appropriate framework for economic analysis and policy prescription is a matter of the time horizon one is considering. In the long run, Say's Law holds and national income is determined by the volume of national production. In the short run, however, Keynes was right; demand is the more important determinant of national income.

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SBC Communications

ONE OF THE LARGEST telecommunications service providers in the United States, SBC Communications began with the formation of the Bell telephone companies in the Southwest in the late 1800s. These local telephone service companies operated as part of the AT&T system monopoly. SBC's modern history begins in 1984, when AT&T divested its local telephone service companies and the companies in Texas, Oklahoma, Kansas, Arkansas, and Missouri became Southwestern Bell. Much of SBC's growth since divestiture has been through its merger and acquisitions, which include Ameritech (in the Midwest), SNET (in Connecticut), and most recently Pacific Bell (in California and Nevada).

Beginning by offering traditional telephone service, today SBC's main lines of business also include wireless telecommunications. The company serves 58 million telephone lines and 22 million wireless customers. SBC folded its wireless operations into a joint venture with BellSouth in 2001 called Cingular. In 2001, SBC had revenue of $54 billion and assets worth $96 billion, making it the 29th largest company in the world.

The Telecommunications Act of 1996 allowed dominant local exchange carriers such as SBC to enter the long distance business after regulators deemed their markets competitive. SBC now offers long distance service in six states.

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scarcity

FORMING THE CENTRAL premise of economic thinking, Webster's dictionary defines scarcity as "a dearth, deficiency; state of being scarce." In economics, we use the concept of scarcity in conjunction with human needs or wants, to explain how economic theory works. Often textbooks define economics as the study of how we use our scarce resources to fulfill the unlimited needs.

The concept of scarcity is used to move the discussion into several other areas such as opportunity costs, PRODUCTION POSSIBILITIES, trade-off, efficiency, economic systems, markets and prices, and the concept of value. Thus scarcity sets the tone for much of economic thinking.

There are many things that are scarce in an economy, such as raw materials for producing goods, water, capital, machinery, goods, and human beings. Scarcity is a concept that applies to individuals as well; we have scarcity of money to purchase all of the things that we desire. We also have a scarcity of time, as there are only so many hours in a day to fulfill our tasks. The scarcity of time leads an individual to think about the opportunity cost of doing one activity as opposed to the other. Thus, we can make a rational choice about how best to use our time.

In economics, the concept of scarcity is used to further the idea of efficiency, by evaluating the actions taken in an economy to utilize the scarce resources. An economy achieves productive efficiency if it produces commodities at the least cost possible, and it achieves allocative efficiency if it produces the goods that are needed in an economy. Using these two concepts we can show how an economy is either successful in making the best use of its scarce resources or fails to achieve full potential due to inefficient use of its resources. Scarcity is thus able to explain the inefficiencies in an economy that practices discrimination of race or gender. By denying work opportunities for women and minorities, one can argue that, the UNITED STATES economy did not achieve its full potential. Since we have a limited supply of resources, it should make sense to use all available resources in satisfying the needs of the people in an economy. This is the idea behind the concept of production possibilities. Any economy can increase its output by including all potential workers and not discriminating and limiting the opportunities for a segment of the population.

The lack of availability of things is also used to explore the concept of market and prices. We are able to show how the price of a commodity often reflects the availability of a commodity. For example, the scarcity of diamonds coupled with its perceived utility results in a high price for it. The value for any commodity is arrived at by the scarcity of the commodity. Thus, areas with abundant water do not place a high value on it, while people living in a desert place a high value on water due to its scarce availability.

History gives us many examples of times when commodities become scarce. This could happen because the resources that we use to produce them are now needed in other areas, thus depriving us of the commodities that we need in our daily life. WORLD WAR II created one such situation in the United States. Since the U.S. armed forces needed metal, rubber, chemicals, and food, to fight the enemy, Americans at home faced a scarcity of many commodities. Requiring people to make sacrifices, and asking them to be frugal, among the things that were in scarce supply were rubber boots, bicycles, birdcages, toasters, phonographs, and alarm clocks. World War II also showed how the scarcity of commodities could lead to potential inflation; policy makers initiated a period of rationing that dampened the threat of inflation. The U.S. government rationed commodities such as sugar, meat, butter, coffee, tires, gasoline, and shoes.

The country of Botswana faces a scarcity of human beings. With 35.8 percent of its population HIV positive, Botswana is losing its people at a very rapid rate. This scarcity of human resource poses a serious threat to the very survival of the country.

Capitalism and SOCIALISM base the central premise of their theories on the notion of scarcity of resources. Capitalists argue that the markets are best capable of deciding how to use scarce resources and thus governments should allow markets to perform this function unhindered. This would lead to efficiency as the highest bidder acquires the resources or goods in the market, exhibiting the clear need for such a resource or good. Karl MARX, however, argued that markets are inherently unstable and lead to the concentration of wealth and power into the hands of the wealthy. Thus, under communism the wealth of an economy can equally be shared by all, and this could lead to efficiency.

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Scholes, Myron S. (1941–)

AWARDED THE 1997 Nobel Prize in Economics (with Robert C. MERTON), Myron S. Scholes was recognized for the development of the Black-Scholes option pricing model. Fischer Black, who died in 1995, was also instrumental in the development of this model. Scholes was born in Timmins, Ontario, Canada, and he had a difficult childhood, as his mother died of cancer when he was 16 and he developed scar tissue on his corneas, which gave him poor vision. This problem was corrected when he was 26 with a successful cornea transplant. Scholes attended McMaster University, graduating with a degree in economics in 1962.

For graduate school, Scholes enrolled at the University of Chicago where his graduate advisor was Merton

MILLER. His Ph.D. dissertation attempted to determine the shape of the demand curve for traded securities. After graduating from Chicago in 1968, Scholes became an assistant professor of finance at the Sloan School of Management where he worked with Paul Cootner, Franco MODIGLIANI, Stewart Myers, and Merton. He also met Black who was then a consultant with Arthur D. Little in Cambridge, Massachusetts. It was during this time period that Black, Miller, and Scholes started to develop their option pricing technology.

Scholes left Sloan and took a visiting faculty position back at Chicago in 1973, leading to a permanent position in 1974. At Chicago, he became interested in the effects of taxation on asset prices and incentives and published papers on this topic with Miller and Black. In 1983, Scholes became a permanent faculty member of the business and law schools at Stanford University.

At Stanford, Scholes continued his interest in the effects of taxation and also worked on pension planning. In 1990, he refocused his energies on derivatives when he became a special consultant to Salomon Brother's Inc. While continuing to teach and research at Stanford, he became a managing director and co-head of Salomon's fixed-income-derivative sales and trading group, and in 1994 he, Merton, John Meriwether, and several other colleagues from Salomon left to found Long-Term Capital Management.

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Schultz, Theodore

THEODORE SCHULTZ is a Nobel Prize–winning economist from the University of Chicago. He won his Nobel with Arthur LEWIS for "pioneering research into economic development with particular consideration of the problems of developing countries."

Schultz grew up in the farmlands of South Dakota. WORLD WAR I disrupted his early education, but he later attended and graduated from South Dakota State College. Schultz became interested in economics as he observed the rapidly changing fortunes of farmers. He was attracted to the University of Wisconsin because of its unorthodox approach to economics. He earned his Ph.D. from Wisconsin in 1930.

Schultz began his teaching career at Iowa State College. He became chairman of his department in 1934 and edited the *Journal of Farm Economics* until 1942. He left Iowa for the University of Chicago in 1943, and stayed there until 1972. He moved to Chicago because of the suppression of a report that adversely affected dairy farmers.

During the early part of his career, Schultz focused on agricultural issues. He first studied crises in American agriculture, and then turned to developing countries. Schultz claimed that there was a counter-productive, pro-urban bias in many policies. He argued that government taxes and price ceilings on agricultural goods stifled agricultural innovation in many nations. He also noted that the U.S. government promoted such innovation.

Later in his career, Schultz turned his attention to education and human capital formation. He showed that the UNITED STATES had a considerably higher yield on investment in human capital, and that this caused rapid increases for investment in EDUCATION. Schultz also studied entrepreneurship as the ability to deal with disequilibria.

Schultz became president of the American Economics Association in 1960. He won the Francis Walker medal in 1972 and his Nobel in 1979.

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Schumpeter, Joseph (1883–1950)

UNANIMOUSLY CITED as one of the greatest economists and sociologists of the 20th century, Joseph Schumpeter developed the field of growth economics, argued that entrepreneurial innovation dictates business cycles, and believed that SOCIALISM is an inevitable successor of capitalism.

Joseph Alois Schumpeter was born on February 8, 1883 (the same year Karl MARX died and John Maynard KEYNES was born) in Triesch, Moravia, then part of the

Austro-Hungarian Empire and now in the Czech Republic, and died of a stroke on January 8, 1950, in Taconic, Connecticut.

Schumpeter was born to a prosperous family. His father, who died when Joseph was four, was a second-generation textile manufacturer. His mother Johanna, who moved with her son to Graz after Joseph's father died, was a daughter of a medical doctor. In 1893, Joseph's mother married a high-ranking officer in the Austro-Hungarian Army and the family moved to Vienna. His mother's short-lived remarriage enabled young Schumpeter to receive an excellent education at the Theresianum, the school for the children of the elite. He entered the University of Vienna, at the time one of the world's centers for economic research, to study law and economic history (the faculty of law taught economics). Friedrich von Wieser, Eugen von BÖHM-BAWERK, and other prominent professors sparked his interests in economy and law, but also in sociology and philosophy. Schumpeter received a doctorate in law in 1906.

After spending a year in England and marrying Gladys Ricarde Seaver, in 1907 Schumpeter went to Cairo, Egypt, where, for a couple of years, he practiced law and worked as a financial consultant. Schumpeter published his first book, *The Nature and Essence of Theoretical Economics*, in 1908 in which he provided a methodological reassessment of neoclassical static theory. With Böhm-Bawerk's help in 1909, Schumpeter became a professor at the University of Czernowitz (now called Chernivtsi in the Ukraine). From 1911–18, he worked as a political economy professor and a chair at the University of Graz. During this period Schumpeter published his early masterpiece, *The Theory of Economic Development* (1912), and several other works that made him a world-famous theoretical economist. The main focus of his early studies was the relationship between the phenomenon of economic development and entrepreneurial innovation that he believed drives the economy. Although he was not a socialist, Schumpeter started developing a theory that capitalism was doomed and socialism, or some other form of public control, was its most probable successor.

In 1919, Schumpeter briefly served as finance minister of Austria as a member of the German Socialization Commission. After being fired from the government post, largely for being perceived as fundamentally socialist, Schumpeter entered banking and investment, which proved to be disastrous, both professionally and personally. He was president of the Biedermann bank during Germany's hyperinflation. The bank collapsed in 1924 while his speculative investments with borrowed money left him with huge debts. In 1925, he re-entered academia as a professor at the University of Bonn. In 1926, the year his mother died, Schumpeter's second wife, Annie Reisinger, died at childbirth. After recovering from grief and depression, in 1926 Schumpeter revised and published the second edition of *The Theory of Economic Development* in which he started developing a monetary theory and analyzing business cycles. He argued that it was essential to provide a dynamic theory of money and analyze cyclical development processes because they generate economic changes. In Bonn, Schumpeter focused on the study of monetary issues that he never completed. This research was only published posthumously in 1970. After firmly establishing himself as an intellectual and economic theorist, in 1932, Schumpeter became a permanent professor of economics at Harvard University.

Schumpeter left Europe and spent the last two decades of his prolific life at Harvard. The main incentive for his abandonment of the cultural world of Europe was the vibrant intellectual climate of Harvard and the opportunity to conduct empirical research on business cycles and the decline of capitalism.

In 1939, Schumpeter published the monumental two-volume work, *Business Cycles: A Theoretical, Historical, and Statistical Analysis of Capitalist Process*, that was unfortunately overshadowed by Keynes' revolutionary theory of depressions and unemployment, *General Theory of Employment, Interest, and Money* (1936), and only became prominent in the 1970s and 1980s. In *Business Cycles,* Schumpeter linked upswings and downswings of the business cycle to innovations that stimulate investment in capital-goods industries. Since new inventions are developed unevenly, business conditions are expansive and recessive. He argued that large entrepreneurial innovations cause Kondratieff Waves that last for decades. Smaller inventions cause Juglar Waves that last for approximately 10 years while Kitchin Waves are shorter still. These waves do not appear with regularity and the DEPRESSION occurred because all three cycles hit a downturn at the same time. For Schumpeter, therefore, the Depression was a part of a necessary process that leads to creative destruction and creation of new sources of economic growth.

In 1942, Schumpeter published *Capitalism, Socialism, and Democracy*, a sociological study that was considered a great success at the time. In this study, he explored the pattern of economic systems over time, focused on socio-cultural advancements, and further developed the argument that the very success of capitalism would undermine its foundations and give rise to socialism. Schumpeter disagreed with Marx that the poor would lead the revolt against capitalism. He believed that the disillusioned intellectuals, who would replace entrepreneurs as the major political force, would instigate the creation of large and powerful centralized governments that would undermine the fundamentals of capitalism.

For the rest of his life Schumpeter devoted himself to teaching and the study of history of economics. Elizabeth Boody, an economic historian specializing in Japan, who married Schumpeter in 1937, compiled and edited his research into a manuscript that was published posthumously in 1954 as *History of Economic Analysis*. This work, an authoritative account of the development of economics from ancient Greece, is still considered one of the greatest contributions to the history of economics.

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Sears, Roebuck & Company

ALVAH CURTIS ROEBUCK and Richard W. Sears founded Sears, Roebuck & Company in 1886. Sears' foray into merchandising started inconspicuously as a side business. He began his working career as a railroad express agent in Redwood Falls, Minnesota. An ambitious fellow, Sears sold coal and lumber to his neighbors in his spare time.

Later, Sears began selling watches on a mail-order basis. He utilized his railroad contacts to expand his market. Soon thereafter, he quit his railroad job to devote his efforts to the watch business. He relocated his operations to Chicago, and opened the R.W. Sears Watch Company. In need of a repairman to fix broken watches, Sears ran a "help wanted" advertisement for a watchmaker. Alvah Curtis Roebuck responded. Sears hired him, and later a partnership developed between the two gentlemen. The company expanded on its offering of watches, and became a mail-order house.

The mail-order business was quite successful. At that time, few Americans lived in cities, and most had limited access to department stores. Sears developed the infrastructure to capture this market. The Sears catalog became a "wish book." The expansion of the railroads and the Industrial Revolution also assisted Sears in his ability to expand.

Sears had the reputation of an unscrupulous businessman. He followed the maxim of the day, *caveat emptor*, or "let the buyer beware." He utilized hard-sell tactics, inflated claims of his products in the catalogs, and introduced bogus inducements to increase sales.

In 1895, Roebuck, only 31-years-old, decided that the merchandise business was too stressful. Sears agreed to buy out his partner's one-third interest for approximately $25,000. Sears, in need of more capital, took on new partners, Julius Rosenwald, and Aaron E. Nusbaum. Rosenwald and Nusbaum operated a clothing manufacturing business, and had sold suits to Sears. Sears' marketing of clothes on a mail-order basis intrigued Rosenwald and Nusbaum. The addition of Rosenwald to the partnership changed the outlook, direction, and morality of the company. Rosenwald eventually succeeded Sears as the company leader when Sears retired in 1908.

From 1895 until 1908, the company was phenomenally successful. Over that period of time, the company realized profits of $11 million and sales grew to $41 million. Sears had an ownership interest in 10 factories.

In 1908, Sears embarked on a new product: prefabricated homes. From 1908 until 1940, Sears sold nearly 100,000 homes via both mail-order and sales offices. Its first book of homes in 1908 featured 22 different home designs, with prices ranging from $650 to $2,500. Sears' success in this venture can be attributed to its marketing strategy, its railroad networks, and building technology.

Sears continued to thrive and prosper. The company opened its first foreign retail store in Havana, Cuba, in 1942, followed by Mexico City in 1947, and then Canada in 1953. In 1973, Sears moved into its new headquarters in Chicago: The Sears Tower, a 110-story building that became the world's tallest building. The headquarters was eventually relocated to a Chicago suburb.

As of the close of fiscal year 2000, Sears operated 863 mall-based retail stores and 1,200 retail locations including hardware, outlet, tire, and battery stores. In the 2001 fiscal year, Sears reported a profit of $735 million, with sales of over $41 billion.

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Securities and Exchange Commission (SEC)

CREATED BY THE U.S. Congress in 1934, the Securities and Exchange Commission (SEC) is an independent, bipartisan, quasi-judicial agency of the federal government. It has both rule-making and enforcement authority.

The primary mission of the SEC is to protect investors and maintain the integrity of the securities markets. Investments in securities of all kinds (whether stocks, bonds, or more exotic instruments) are not guaranteed and can lose all their value. The securities laws are guided by one basic premise: full and fair disclosure of all material information. This is accomplished through two mechanisms:

1. Disclosure, issuers of securities and other parties must make available certain documents such as a prospectus or ANNUAL REPORT
2. Prohibition against misrepresentation, deceit and other fraudulent acts and practices (even where the persons involved are not required to make information available).

These two mechanisms are sometimes referred to as the registration and the anti-fraud requirements. They are distinct requirements. Everyone who is required to register must also abide by the anti-fraud rules; some persons do not have to register but are still subject to the anti-fraud rules.

Disclosure of material information is accomplished at various stages. Initial issuers of securities are required to register under the Securities Act of 1933 unless they have an exemption. Some of these issuers are public companies whose securities are held by large numbers of investors and are traded on various exchanges. These public companies are required to make continuing disclosure in quarterly and annual reports as well as other documents under the Securities Exchange Act of 1934.

The SEC also oversees key participants in the securities industry, including the various stock exchanges, the over-the-counter market, broker-dealers, investment advisors, and mutual funds. The SEC also has regulatory authority over accountants, attorneys, and other individuals to the extent they participate in the securities industry.

Persons who violate the securities laws and SEC rules are subject to civil enforcement actions by the SEC as well as possible criminal prosecution by the U.S. Department of Justice. The SEC brings more than 400 civil enforcement actions every year against both companies and individuals accused of breaking the securities laws. The alleged infractions involve providing false or misleading information, INSIDER TRADING, ACCOUNTING fraud, and other matters.

Creation of the SEC. The SEC was founded during the Great DEPRESSION of the 1930s following the stock market crash of October 1929. While some people argue that the Depression was caused by the stock market crash, the consensus of economists today is that the depression was also caused by other factors; the stock market crash was itself a result of other financial forces leading to the great depression. This led Congress to consider legal measures to reform the securities markets. An end to the Depression depended, in part, on renewed public confidence in the securities markets where business capital was raised.

Many investors had been tempted by the rags-to-riches stories of the 1920s, when some people used easy credit to purchase securities and become wealthy. Approximately 20 million large and small investors purchased stock in the 1920s, although many were not aware of the dangers inherent in the markets and were often ignorant of important information about the companies in which they purchased securities. It has been estimated that of the $50 billion in new securities offerings during the decade of the 1920s, almost one-half became worthless even before the crash of 1929.

There were primitive forms of securities regulation before Congress intervened in the 1930s. Defrauded investors could sue for damages under various common law theories, such as fraud. Many states had enacted securities regulation statutes beginning in the late 19th century. These state statutes are called Blue Sky Laws and typically require new issuers of securities to make public disclosure of information to investors. The name Blue Sky Law is allegedly based on the notion that people who purchase securities often get a financial return no better than the value of a piece of blue sky. After the 1929 stock market crash, Congress felt that these regulations were inadequate to police the large national securities markets.

As a response to the crash and to restore confidence in the capital markets of the United States, Congress passed a series of statutes. The Securities Act of 1933 was designed to regulate initial issues of securities. The Securities Exchange Act of 1934 regulates most other aspects of trading in securities. Specialized statues govern more limited aspects of the securities industry and include the Public Utility Holding Company Act of 1935, the Trust Indenture Act of 1939, the Investment Company Act of 1940, and the Investment Advisors Act of 1940. All these statutes have been amended over the decades in response to new and unique problems. For example, the Sarbanes-Oxley Act of 2002 amended the Securities Exchange Act of 1934 in the wake of financial and accounting scandals at companies such as ENRON.

Structure of the SEC. Each of the five commissioners of the SEC serves a five-year term and these terms are staggered so that one expires each year. No more than three commissioners can be from the same political party. The president appoints the chairman of the SEC from among these commissioners.

The SEC is headquartered in Washington, D.C. It has 11 regional and district offices around the United States, and a staff of over 3,000 personnel including lawyers, accountants, engineers, securities analysts, examiners, and clerical employees. These are divided among four divisions and 18 different offices.

The SEC commissioners meet as a group to interpret the securities statutes, promulgate SEC rules, and engage in enforcement actions. When the SEC promulgates rules, it acts under authority delegated by Congress and its rules generally have the force and effect of law unless they are inconsistent with the U.S. Constitution or federal statutes. When the SEC engages in enforcement actions, it acts in a quasi-judicial capacity and may conduct what amounts to trials against people charged with violations of the securities laws.

Immediately below the commission are the four divisions of the SEC. The Division of Corporation Finance is responsible for public disclosure in initial issues of securities, annual and quarterly filings by publicly traded companies, annual reports to shareholders, proxy materials sent to shareholders before their annual meetings, and documents relating to tender offers, mergers, and acquisitions. The Division of Market Regulation oversees broker-dealer firms (stock brokers), transfer and clearing agents who facilitate the transfer of securities after they are sold, and securities information processors. In addition, the Division of Market Regulation regulates the stock exchanges (such as the NEW YORK STOCK EXCHANGE and the AMERICAN STOCK EXCHANGE) as well as the National Association of Securities Dealers (NASD) and the Municipal Securities Regulation Board. The Division of Investment Management regulates investment advisors and the investment companies such as mutual funds. The Division of Enforcement investigates possible violations of the securities laws, recommends action to the Commission, and negotiates settlements of alleged violations.

Enforcement actions typically begin with a recommendation from the Division of Enforcement. The SEC conducts private investigations after receiving information from various sources including tips from the public and defrauded investors. The SEC has subpoena authority and can compel the production of evidence from a variety of persons. Based on the evidence it gathers, the SEC, through the Division of Enforcement, may recommend a formal proceeding. A trial will then be conducted before an administrative law judge who will make findings of fact and recommendations of law.

The commission reviews the determinations of the administrative law judge and may pursue three possible remedies. First, it may issue administrative remedies such as suspending or revoking the registration of a security; suspending or revoking the registration of a broker-dealer or other regulated person; and, censuring persons for misconduct and suspending them from engaging in the securities industry. Second, the commission may apply to a Federal District Court for a civil injunction prohibiting named persons from engaging in acts that violate the securities laws or SEC rules. Third, the commission may make a referral for criminal prosecution to the Department of Justice.

Securities Act of 1933. The Securities Act of 1933 is sometimes known as the "truth in securities law." Unless an issuer has an exemption, no security may be offered or sold in an initial offering without the filing of a Registration Statement with the SEC and giving each offeree a prospectus. Congress and the SEC have made it clear that registration of a security does not protect investors against loss. The SEC does not have the authority to deny registration based on the merits of a security and does not rule on the fairness of the initial price of a security or the prospects of its ultimate success.

The purpose of registration is to require the disclosure of material facts about the issuer and the security being sold so that investors can make an informed decision to buy. The process of registration does not itself guarantee the accuracy of the facts the issuer discloses, as the SEC does not have the personnel to conduct its own investigation of the underlying facts the issuer does disclose. But false and misleading statements made by an issuer or its agents are illegal. Investors who purchase or sell securities based on false or misleading information have various remedies, including rescission and restitution of the purchase price and damages for lost profits. Other participants in a securities offering such as accountants and broker-dealers may also be subject to liability along with the issuer.

Registration is accomplished on forms provided by the SEC. Information to be disclosed falls into four broad categories. First, the issuer must describe its business and properties. Second, the issuer must describe the security being offered for sale and its relationship to its capital structure. Third, the issuer must disclose information about its management. Fourth, the issuer must present certified financial statements from an independent public accountant. New companies with no operating history will have little to disclose, while existing or large companies will make long and detailed disclosures.

Every offeree and purchaser of a security subject to the Securities Act of 1933 must be given a prospectus. This document, which is often long and detailed, embodies the information contained in the registration statement but in a different format. The prospectus itself is filed with the registration statement as an addendum.

The registration statement and the prospectus are a public document once filed with the SEC. Securities analysts and other people in the industry have access to all SEC public documents and use them in their recommendations to clients on buying and selling securities. Once filed, the Division of Corporation Finance examines each registration statement and prospectus for completion and accuracy. If the SEC obtains information that indicate a registration statement or a prospectus is defective, it can require the issuer to clarify or amend its filing. In extreme cases, the SEC can issue a stop order suspending the effectiveness of a registration and prohibiting future sales of the security. If the SEC determines that a registration meets all its technical requirements, it allows the issuer to begin sales of the security to the investing public.

The filing of a registration statement with the SEC is not the only requirement for many initial issues. The individual states still maintain Blue Sky Laws, which require registration. The Securities Act of 1933 makes it clear that federal law does not pre-empt state law in this area and therefore dual regulation of initial issues exists in the United States.

There are exemptions from the Securities Act of 1933. First, some issuers and their securities are entirely exempt from all the requirements of all federal securities laws. For example, securities issued by the United States, or an individual state, are entirely exempt from both the registration and the anti-fraud requirements. Second, some securities may be exempted from the registration requirement but not the anti-fraud rules. These are usually securities issued to small groups of investors who have certain important characteristics. The philosophy behind these exemptions is based on the need for information which registration will disclose. Some investors do not need such protection since they already have access to the information, such as directors and high-level officers of the issuer. Other investors have the financial wealth to compel disclosure and they can also afford to take a loss if the investment becomes worthless. These groups of investors are sometimes called accredited investors. The SEC has promulgated various rules outlining the registration exemptions.

Securities Exchange Act of 1934. The 1934 Act extended the disclosure doctrine of investor protection. Recall that the 1933 Act only applies to initial issues of securities. Once the initial issue is sold, the 1933 Act regulations cease to apply. But many investors who purchase such initial issues will want to sell their securities in the future and others may be willing to buy. The 1934 Act governs securities traded on a public exchange or over-the-counter. The over-the-counter market has recently grown to include trading by computer on the NASDAQ (the National Association of Securities Dealers Automatic Quotation system).

The 1934 Act requires continuing registration and disclosure by what are called registered companies. These must make quarterly and annual disclosures, as well as other disclosures of important events. Annual reports must be filed with the SEC and sent to shareholders before the annual meeting of shareholders required under state corporation law. Any person who solicits a proxy from a shareholder must register with the SEC. A proxy is the right to vote the shares of another person at a shareholder meeting. Persons who make tender offers to buy sufficient stock to take control of a company must register with the SEC once they have acquired five percent of the stock of the target company. Insider trading by directors, high-level officers, and large stockowners is regulated. Insiders must register their holdings with the SEC and report sales and purchases every month. Profits made from illegal insider trading must be paid to the company.

The SEC promulgated its famous Rule 10b-5 under the Securities Exchange Act of 1934. This rule is not the only fraud restriction contained in the various securities laws, but it has the broadest reach. Rule 10b-5 makes it unlawful to employ any device, scheme, or artifice to defraud. It also makes unlawful the making of untrue statements of material fact or the omission to state a material fact whose omission makes other statements misleading. Rule 10b-5 allows private investors to sue for securities fraud and significantly expanded the reach of the rules against fraud.

Some people, including economists, have criticized the securities laws as unnecessary and unduly burdensome. It is claimed that the securities markets operate efficiently in providing all information without the need for government intervention. Issuers of securities who fail to provide material information will be punished by the market long before the SEC can intervene to impose legal punishment. In fact, the costs of complying with SEC rules detract from the efficient functioning of the securities markets.

Congress has not adopted these criticisms of the SEC and its regulatory structure. In fact, Congress expanded the reach of SEC powers in 2002 after financial and accounting scandals brought companies such as Enron and WORLDCOM to bankruptcy. The SEC now has expanded authority to regulate accounting practices and other areas.

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Selten, Reinhard (1930–)

GERMAN MATHEMATICIAN, economist, and Nobel laureate, Rienhard Selten was born in Breslau, Germany (now Wroclaw, Poland). He graduated from J.W. Goethe University in Frankfurt with a master's degree in mathematics in 1957, and with a Ph.D. degree in 1961. Selten was promoted to full professor at Frankfurt in 1968. He also taught at University of California, and held chaired positions at Free University in Berlin, the University of Bielefeld, and the University of Bonn.

Selten devoted much of his work to the development of game-theoretic solution concepts, used to predict the outcome of strategic problems. For his seminal work on Nash Equilibrium refinements, Selten was awarded the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel in 1994. He shared the prize with John NASH of the United States, and John HARSANYI of Hungary.

Searching for a Nash Equilibrium—a profile of strategies that are best responsed to one another—is the most commonly used way of predicting the outcome of strategic situations (games). While Nash proved that all finite games have an equilibrium point, they frequently possess more than one. This multiplicity makes additional selection criteria desirable. Selten was the first to systematically put further restrictions on Nash's Equilibrium concept, in order to identify "reasonable" predictions.

Selten's most celebrated contributions are the solution concepts of *Trembling Hand Perfect Equilibrium* and *Subgame Perfect Equilibrium*. In the former, each player's strategic choice must be optimal even when there is a small chance that other players make mistakes (that is, they do not play their optimal strategies). The latter applies to strategic situations with a dynamic structure, requiring that each player's choice involves only threats and promises of future actions that are credible, in the sense that they are optimal once a player must make his decision.

Selten showed that all finite games have such equilibria. He published his results in several papers, his ideas were central to what became the Refinement Program in GAME THEORY: The search for ever more sophisticated rationality criteria for selecting the most reasonable prediction in a game.

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Sen, Amartya (1933–)

AWARDED THE 1998 Nobel Prize in Economics, Amartya Sen is known for contributions to welfare economics, the science of how to combine individual values to decide what is best for society as a whole. Born in Bengal (India), Sen has a Ph.D. from Cambridge University and has taught at Harvard and Oxford universities.

Sen grappled with foundational questions in development economics about poverty, hunger, and inequality, their conceptualization, measurement, and cures. In *Poverty and Famines* (1981), he challenged the prevailing view that famines were caused primarily by a shortage of food. He wrote: "Starvation is the characteristic of some people not having enough food to eat. It is not the characteristic of there being not enough food to eat."

In the Great Bengal Famine of 1943, for example, food prices rapidly rose due to wartime speculation and hoarding, and farm workers' wages did not keep up; it was these sorts of factors, he said, that largely caused the famine.

Among his many contributions was to note that the POVERTY index in wide use created little incentive for governments to help the extremely poor. The index was a headcount of those below a specified income level. If a government raised the incomes of the extremely poor nearly to the poverty line, its efforts would not be reflected in a fall in the poverty headcount. Sen proposed instead the poverty gap, the total additional income needed to bring all the poor out of poverty. This index would fall if a government raised incomes of the extremely poor, giving a government recognition and motivation for doing so.

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Senior, Nassau (1790–1864)

BORN IN BERKSHIRE, England, Nassau Senior was originally trained as a lawyer but he gravitated to economics and, in 1821, published his first economic article on the Corn Laws (English laws restricting the trade of grain between England and other countries). In 1825, he became the first Drummond Professor of Political Economy at Oxford University. He wrote many articles on public policy, notably on the Poor Laws and the Factory Act. His major work, *An Outline of the Science of Political Economy*, was published in 1836.

Senior is best known for his abstinence theory of profit. In this theory, he attempted to explain why the rate of profit is positive and why capitalists should be the ones who receive this form of payment. This attempt must be judged successful in that abstinence theory became quite popular in 19th-century economics, particularly in England.

For Senior, abstinence meant "the conduct of a person who either abstains from the unproductive use of what he can command, or designedly prefers the production of remote to that of immediate results." Thus, capitalists will refrain from consuming part of their income so that it can be used for the production of future goods. Senior saw this as a counterpart to the labor of a worker. In both cases a cost is incurred: in the case of the worker there is the obvious cost (disutility) of the labor itself, while in the case of the capitalist there is the not-so-obvious cost (disutility) of not consuming. Senior, however, made it clear that this really is a cost to the capitalist: "To abstain from the enjoyment which is in our power, or to seek distant rather than immediate results, are among the most painful exertions of the human will." As a reward for their respective sacrifices, workers would receive wages and capitalists would receive profits.

This meant that Senior saw abstinence as one of the three factors of production. The three traditional factors of early 19th-century economics were LAND (what Senior called "natural agents"), LABOR, and CAPITAL. Senior replaced capital with abstinence, so that capital, no longer being a primary factor of production, became a result of a combination of the other three. The popularity of this theory was, no doubt, due in large part to its apologetic nature. As opposed to seeing profit as a SURPLUS, derived from the exploitation of workers, Senior saw abstinence as being productive, so that the profit paid to the capitalist who abstained, was payment for this work (abstinence as disutility), and did not indicate any sort of exploitation of workers. This not only morally justified the payment of profit, it showed that capitalism was a fair, non-exploitative economic system. This conclusion was apparently very comforting to the majority of economists of the 19th century.

In addition to his abstinence theory, Senior can be credited with being the first to have attempted to provide an axiomatic basis for economic theory. Anticipating modern developments, he tried to build up economic theory on the basis of "the four elementary propositions of the science." While theoretical advancements have long since supplanted his propositions, the idea of an axiomatic basis for the science of economics is a very modern concept, making his attempt quite noteworthy.

In his writings on public policy, Senior consistently adopted the position that all policy should be in accordance with the evolution of personal freedom. Like contemporary conservatives, he argued that an important measure of the progress of society is its level of individual freedom, and that a paramount duty of government is to preserve and enhance this freedom. Thus, he was opposed to the Poor Law relief of the able-bodied, in which the state assumed responsibility for those who should have the freedom to take responsibility for their own actions. As the driving force of the Poor Law Commission (set up in 1832) and the subsequent Poor Law Amendment Act (a milestone of English welfare regulations, passed in 1834), he was able to influence public policy in a very direct way, based on this economic philosophy. In the same vein, Senior was adamantly opposed to trade unions on the grounds that they restricted the individual liberty of workers to associate (or not associate) with whom they please.

As a final note on his philosophical adherence to what he saw as freedom—in this case his commitment to free markets—Senior gained notoriety for his argument against the Factory Act proposal of reducing the typical working day from 12 to 10 hours (i.e., he argued against the government telling firms how to conduct their business). He explained that since all the profits of cotton mills were produced in the last hour, a reduction of the working day would be devastating, with manufacturers being forced out of business. Unfortunately for Senior, this assertion that the last hour was so profitable was incorrect, and consequently he was severely criticized by his contemporaries and later famously ridiculed by Karl MARX. However, it should be said that Senior was philosophically consistent, even to the extent of defending brutally long working hours. His argument was fallacious, but his position was sound.

Senior's influence primarily comes from his theory of abstinence, which was later taken up by the much more well-known English economists John Stuart MILL and Alfred MARSHALL. However, he can be considered representative of early to mid-19th-century English political economy, as his writings on both theory and policy exemplified the prevailing dominant views on economics.

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Serbia and Montenegro

A STATE KNOWN AS the Federal Republic of Yugoslavia until 2003, the country is a loose confederation of Serbia and Montenegro, two of the constituent republics of the former Socialist Federal Republic of Yugoslavia. The Socialist Yugoslavia consisted of six republics, four of which proclaimed secession in 1991–92. The remaining republics, Serbia and Montenegro, formed a joint state in 1992, claiming the legal succession of the old Yugoslav Federation. However, this idea had been abandoned, and in March 2003, the state name Yugoslavia was replaced with Serbia and Montenegro.

Serbia is the larger of two partner states with the territory of 88,316 square kilometers and with a population just above 10 million, according to the census in 2001. The majority of the population is comprised of ethnic Serbs, with sizeable Albanian and Hungarian minorities. Historically, Serbia was an agricultural economy with a dynamic livestock trade. The structural changes in Serbia's economy began in the early 20th century, when economic dependence on Austria-Hungary ended and Serbia established strong economic ties with major Western European countries. The rapid industrialization of Serbia occurred after WORLD WAR I, and especially after WORLD WAR II. In the late 1990s, the principal industries were production of electrical energy, chemical industry, textile, construction industry, machinery, and metal processing industry.

Montenegro contains an area of 13,812 square kilometers with a population around 700,000 in 2001. Montenegrins, a close ethnic kin to the Serbs, are the majority with Albanian and Muslim minorities. Traditionally, the economy of Montenegro was based on agriculture and animal husbandry. Rapid industrialization of the country occurred after World War II, with the production of electric power, iron, steel, and nonferrous metal industries. In the 1970s, tourism became the most vigorous sector of the economy.

The economy of Serbia and Montenegro suffered greatly due to international sanctions from 1992–2000. The estimated GROSS DOMESTIC PRODUCT (GDP) was $24 billion and GDP per capita was $2,250. The inflation rate was around 40 percent and unemployment close to 30 percent. The major export items include manufactured goods and raw materials, while imports mainly consist of machinery and transport equipment, fuel and lubricants.

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services

SERVICES ARE ECONOMIC activities that yield a product that is not a physical good. As processes, services are extremely heterogeneous in nature, the intangibility of the product being the only attribute common to all services. The extent of the service sector typically grows with increasing economic development. The prevalence of services in creating wealth is therefore an indicator for the degree of structural transformation (or modernization) of capitalist economies.

A category of goods. Services are notoriously difficult to define, and a plethora of definitions have been suggested. They are conventionally portrayed as a category of GOODS that are intangible, invisible, and perishable, and that require simultaneous production and consumption, while physical goods (or commodities) are tangible, visible, and storable, and do not require direct interaction between producers and consumers. However, this characterization applies, if at all, only to personally delivered services.

Some services have elements of tangibility (e.g., the printed report of a consultant or a computer program on a diskette), visibility (e.g., haircuts or theater plays), storability (e.g., automatic telephone-answering systems or online databases) and may not require direct contact between producers and consumers (e.g., automated teller machines or online services). The production of physical goods generally involves a service component, and most products are indeed bundles that include services (e.g., automobiles are offered with warranty, service guarantees, and financing options). Conversely, complex products—such as cruise vacations or dental care—in which services predominate may also include physical goods. Neither is transience a clear criterion for separating goods and services, as may be illustrated by ice cream (a physical good) and the long-lasting effect of a medical surgery (a service).

There is no agreement on whether services are a category of final goods (or products), or rather input factors (or intermediary goods). According to the terminology of the International Organization for Standardization, services are "results" while "service delivery is an activity." Another definition, by economists Valarie Zeithaml and Mary J. Bitner, on the other hand, sees services as "deeds, processes, and performances" and thus emphasizes their process character rather than that of final products.

An alternative definition sees a service as "a change in the condition of a person, or of a good belonging to some economic unit, which is brought about as the result of the activity of some other economic unit with the prior agreement of the former person or economic unit," explains T.P. Hill in a journal article. Implicit in this conception is a focus on change and a distinction between the production of a service and its output. Changes, in contrast to goods themselves, cannot be transferred from one economic agent to another; changes can also not be owned.

For example, a composer effects changes (in paper and ink) by producing a score, which enables an orchestra to effect further changes (in bodies of air) that leave behind a residue in the form of a marketable CD. Economic value is imputed to the composer's actions (or to the actions of a designer of automobiles) on the basis of the market value of their end results, which are tradable goods. This definition ultimately implies that services as such are not any subcategory of goods and that, by implication, there are no trade-able services.

Because of the difficulty of drawing ontological boundaries between physical goods and services, and because in reality most products are bundles of both, the business literature conceives of products as placed in a spectrum that stretches from "pure" commodities to "pure" services, with nearly all products being positioned somewhere on this continuum. The more product differentiation progresses and products become augmented, the more they assume the character of wholes that can no longer be dissected into two clearly distinguishable categories of parts.

The service sector. As with other economic activities, services can be measured either on the demand side, as a share of aggregate consumption, or on the supply side, as a share of aggregate production. Since there is no generally accepted definition of services, the service sector is notoriously difficult to demarcate regardless of the method. This is why the service sector, as the "tertiary" sector, is often simply seen as the residual economic activity after the primary (agriculture and extractive industries) and secondary (manufacturing) sectors have been defined. One consequence of this categorization is that activities comprising the tertiary sector are extremely heterogeneous. The process of tertiarization, i.e., the rapid growth of the service sector at the expense of the primary and secondary sectors in practically all (and particularly in the most developed) economies, makes the absence of clear sector definitions an unwelcome fact.

As countries experience economic growth and development, the service sector typically takes up a larger share of employment and GROSS DOMESTIC PRODUCT (GDP), a process that is also referred to as structural change. In low-income countries, services contribute on average 44.9 percent to total value-added; in middle-income countries, this share is 51.9 percent, and in high-income countries, 67.3 percent. In the most advanced countries, services account for more than 70 percent of GDP. In 2001, the service share of GDP in the UNITED STATES was 73.9 percent (and in LUXEMBOURG as high as 80.1 percent). About 75 percent of employment was in the service sector including the public sector.

In the *Economic Census of the United States*, services take up chapters 41–89 in the Standard Industrial Classification (SIC) code (though only chapters 70–89 are called "Service Industries") and chapters 42–81 in the North American Industrial Classification System (NAICS). In the EUROPEAN UNION (EU), services comprise sections G to Q (chapters 50–99) of the NACE classification. The magnitudes rely on supply-side measurement.

Such service sector demarcations are by necessity arbitrary. Products that are closely related from a consumer's point of view are often categorized differently. Newspapers, for example, are usually classified in manufacturing, whereas their online versions, together with television and broadcasting, are services, though all are media products and respond to the same type of consumer demand. Tourism demand usually is for a bundle of products of which some have a more tangible (food and beverages or souvenirs) and others a more intangible character (folklore performances, transportation, or travel insurance).

Precise demand-side definitions of the sector are therefore impossible. But similar problems affect supply-side definitions. Services are not only produced by typical service businesses; manufacturers offer warranties and repair services, delivery, financing, and maintenance. Moreover, the degree of outsourcing heavily determines measurement of sector size. If, in a manufacturing firm, engineers, accountants or computer programmers are on payroll, their product is counted toward manufacturing output; if the firm outsources these tasks to specialized firms, it would be counted toward the service sector. Thus, while the size of the service sector has undoubtedly grown, and services make by far the greatest contribution to value added in most economies, its exact dimension cannot be quantified with precision.

Service classification. Several methods of classifying services have emerged. The functional method, which is generally used by international organizations and national income statistics, groups traded services—which must be distinguished from non-tradable services—according to the tasks they perform. Factor services (i.e., returns to the use of factors of production) may be contrasted with non-factor services. Functional classification also allows traded services to be separated into primary services (that is, unskilled labor services such as domestic help, guards, and the like), intermediate services (for example, transport, non-life insurance, advertising, communications, databases, and business services), and final services (such as travel, life insurance, and real estate rentals). Such classifications rely on an ad hoc taxonomy rather than on economic or behavioral criteria.

From the perspective of the demand side, a distinction between business services and consumer services is often made. Business services are those that are typically demanded by firms, e.g., insurance, financial services, and wholesaling. Consumer (or personal) services are then all residual services or those typically demanded by households (e.g., haircuts, surgery, hotel accommodation, restaurant meals, education, social work, and entertainment). More recently, the fastest-growing branches of business services, those providing knowledge and information (which includes software development, systems management, and communication), have been categorized as the knowledge-based services, or the quaternary sector of the economy. Clearly, there is a significant overlap between the two categories; service sector classifications always have a degree of artificiality.

From the perspective of the supply side, public services (i.e., those that are provided by governments of different types) may be distinguished from private services provided by participants on competitive markets. Detailed classification systems such as those underlying statistics of national accounts break service providers further down into service industries.

From an economic point of view, services can be embodied or disembodied (or splintered): "Basically one has to draw a distinction between services as embodied in the supplier of the services and requiring their physical presence where the user happens to be, and services which can be disembodied from the supplier and provided without a physical presence being necessary," explains economist Jagdish N. Bhagwati

From the perspective of international trade, services can be defined by reference to the location of producers or consumers. The GENERAL AGREEMENT ON TRADE IN SERVICES (GATS) classifies services into four modes of trade: services supplied across borders such as international telephone calls; services consumed abroad such as tourism; services provided by establishing a commercial presence in a foreign country such as a foreign branch of a commercial bank; and lastly, services provided by the movement of natural persons across borders such as consulting.

Economic issues. The traditional concept of services implies certain economic characteristics. Foremost among these has been the belief that the production of services creates lower increases in productivity than the production of commodities. Consequently, classical economists such as Adam SMITH dubbed services "unproductive labor" that could not make any lasting contribution to the accumulation of wealth. Having criticized the French PHYSIOCRATS who considered agriculture as the most productive activity, Smith considered manufacturing to be the only real "engine of growth." His argument influenced a long tradition in economics that includes Karl MARX who, in *Capital*, dismissed the economic value of services as such but admitted that they have value for the capitalist: "A writer is a productive laborer not in so far as he produces ideas, but in so far as he enriches the publisher who publishes his works, or if he is a wage-laborer for a capitalist."

Such views neglect the comparative advantage countries have historically found in the service sector. Early in the history of England, its wealth came from shipping, finance, and overseas trade because of its location. SWITZERLAND gained its pre-eminence in international finance because of its topography, geographical location, neutral policies, and strict bank secrecy. These factors, together with the natural amenities of landscape and culture, made Switzerland also one of the pioneers of tourism. Services thus hardly increase solely to absorb excess labor from production; they are frequently the objects of final consumer demand.

The notion that production of commodities (or physical goods) is of higher value than production of services betrays confusion over final products. It is not the case that services can only achieve value by becoming input factors to commodity production, as Hill's definition implies. Services such as advertising, accounting or product design are inputs to the production of other goods or services; services such as opera performances, haircuts, or television programming are, as consumer services, final products that are demanded for their own sake. The economic question is then, rather, how to explain the fact that service sector growth correlates so strongly with economic growth and development, and why structural change occurs in spite of the relatively lower capacity of services for productivity growth.

A rather skeptical answer, in the line of Smith, is in the center of the debate on services. According to William Baumol, personal (though not necessarily business) services suffer from a "cost disease" or an "unbalanced productivity growth." Due to the essentially personal and labor-intensive nature of services that admit of little or no mechanization, productivity tends to lag behind the manufacturing sector, and costs in service businesses are bound to rise over time. Baumol argued that this has three consequences:

1. Relative prices in industries with low productivity growth (such as healthcare, legal advice and law enforcement, social work, food service, or sanitation) will rise faster than prices in high-productivity industries
2. Relative employment will rise faster in industries with lower productivity growth
3. Overall productivity growth will fall as the labor force is shifted to low-productivity industries, given constant shares of output.

This model would explain why employment growth in the advanced economies has, over the recent decades, been almost exclusively in the service sector while nominal wages have fallen behind those in manufacturing and services at the same time take up growing shares of economic output. Tertiarization thus comes at a price.

However, Baumol's argument applies only to personal—or rather to embodied—services. It is disembodied (or "splintered") services such as telecommunications, software, and the production of music CDs that have been the main engine of economic growth and that explain increasing service sector shares in GDP. Disembodied services are services that can be stored; they rely on physical carrier media and are reproducible like other physical goods. Thus this type of services creates high levels of productivity increase although personal services generally may not, explains Bhagwati. Furthermore, it has been shown that productivity has been systematically underrated even in personal services. The introduction of electronic data processing, self-service operations, wage payments per output, and of more sophisticated methods of management have improved the total factor (including the labor) productivity even in personal service industries.

The two most widely misunderstood concepts in the economics of services are productivity and innovation. Measurement of productivity is hampered by the application of models developed for the primary and secondary sectors. Some service sectors such as transportation and banking have experienced significant productivity gains. It is also not true that services as such allow for little innovation, which in turn would make them a stagnant sector of the economy. The nature of innovation in service industries is indeed distinct from the other sectors. More so than in manufacturing, it includes processes and organizational innovations, such as new forms of delivering customer value or of managing customer relationships. Service innovation and productivity gains, as exemplified in new approaches to engineering and product design, are also often not attributed to the service sector, which distorts measurement.

In international economics, it is assumed that some, though not all, services are trade-able, and that the theory of comparative advantage applies equally to the service sector. Although trade in services has historically been addressed in multilateral agreements, it has become a pivotal issue as services have emerged as a major component of world output. In 2001, services constituted about 60 percent of the world's output according to WORLD TRADE ORGANIZATION (WTO) statistics, and international trade in services continues to grow rapidly. Trade in services has increased particularly in developing countries, accounting for more than 80 percent of total export revenues for some nations. Particularly smaller nations have found it profitable to specialize on the production and trade of services for the rest of the world. In recognition of the growing importance of services in the world economy, the GATS has become the first attempt to draw international trade in services into the WTO multilateral framework of rules and market access guidelines.

Currently, two issues are at the forefront of GATS negotiations. First, WTO members disagree vehemently over the liberalization of financial sectors. Economically advanced countries are pushing for open financial markets while developing countries are resisting rapid liberalization. Second, many nations worry that liberalizing trade in services may weaken local sovereignty. Local governments clamor that open service markets will jeopardize control over land use, licensing, environmental health, and local content and production rules in media. Only further rounds of trade negotiations will resolve these issues.

Management issues. The inherent differences between services and physical goods require a different approach to services management. The intangibility of services as traditionally understood leads to a number of problems for service providers: consumers cannot test services before consumption; the results of a service often cannot be seen (e.g., insurance policies); and patenting is not possible. The inseparability of production and consumption, that characterizes many but not all services, has implications for human resource management, as consumers often cannot distinguish between a service and the person delivering it.

The heterogeneous nature of services means that mass production is impossible, that consumers' perception of service quality is highly variable, and that legal issues of warranty may arise. The time-perishable nature of services, in turn, gives the matching of supply and demand greater prominence than in the production of material goods. Many services are also subject to capacity constraints because they are, for example, produced in theaters, restaurants, cable networks, airplanes, hotels, or nature parks; all of these provide facilities that, if they remain unused, perish for that time period.

Service management has developed several strategies and tools to deal with these specificities, among which are the following:

1. Addition of material elements to service packages to increase visibility
2. Implementation of yield management systems (i.e., differential pricing and price incentives) at non-peak times so as to maximize overall capacity utilization
3. Development of reservation and flow management systems to reduce waiting
4. Increased customer participation to reduce labor input
5. Blueprinting of service delivery (i.e., development of flowcharts for service provision and training of staff to these standards)
6. Introduction of service standards and of customer guarantees and warranties (e.g., ISO 9000 standards or zero-defects programs)
7. Use of customer relationship management (CRM) and customer loyalty programs as pioneered by airlines and now widely used also in other service industries
8. Intensification of human resource management strategies such as employee empowerment and enhanced training in service delivery and customer service
9. Expansion of branding, including co-branding of services with physical goods.

Service trends. The following trends may be identified in the service sector and are likely to characterize its further development: New forms of hybrid combinations between physical goods and services will emerge, as competition forces companies to augment products by way of the inclusion of services (e.g., banking, mail, catalog shopping, and pet grooming services in retail outlets). Increased prepackaging of services will develop, which thereby become stored (e.g., self-instruction courses, do-it-yourself legal kits, medical self-testing devices, etc.). Further development of services offered and delivered on the internet will proceed (e.g., counseling, education, investment, translation, etc.).

Economists point to an enhancement of the service content in the production of physical goods, particularly due to an increasing RESEARCH AND DEVELOPMENT (R&D) intensity in product development (e.g., biotechnological and pharmaceutical products). As companies seek stronger economies from specialization, internally produced services are likely to be further replaced by externally contracted services. Expansion of franchising and other forms of distributing systems of service delivery and marketing can also be expected. Extension of services to business-to-business markets should continue; producers of intermediate goods increasingly are marketing a total product that includes associated services. And, as more countries open their service markets, under the GATS process, trade in services is expected to grow significantly. Overall, these trends would suggest that sectoral change has not yet come to an end even in highly developed economies, and that the service sector is poised for further expansion throughout the world.

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Sharpe, William F. (1934–)

ONE OF THREE RECIPIENTS of the 1990 Nobel Prize in Economics, William F. Sharpe (with Harry M. MARKOWITZ of the City University of New York and Merton H. MILLER of the University of Chicago) was honored for pioneering work in the theory of financial economics.

The trio, in their separate-yet-parallel research activities, added their own building blocks to the financial market theory. According to Assar Lindbeck of the Swedish Academy of Science, "The theory would have been incomplete if one of them had been missing. Together, they created a complete picture of theory for the financial market, which has had great importance in research and education."

Sharpe's contribution, called the "Capital Asset Pricing Model" and refined from earlier suggestions by Markowitz, cites a way of matching potential gain from an investment with potential risk. Since its introduction, it has become an investment standard in the securities market, continuing to be used by corporations, banking institutions, and pension fund managers.

Sharpe had barely begun to know his native Boston when his father's National Guard unit—thus, his family—relocated halfway across the United States to Texas in 1940. A year later, with the outbreak of WORLD WAR II, the Sharpes moved again, this time farther west to California. There, the family remained, long enough for Sharpe to enroll at the University of California, Berkeley, his sights set on a medical degree. Once he embarked on his course of studies, however, he realized that his interests actually lay elsewhere. Changing curriculum, he transferred to the University of California, Los Angeles, to seek a degree in business administration.

In 1955, Sharpe earned his B.A. and a year later his master's degree. He credits two particular professors at UCLA as being guiding lights to his future career: J. Fred Weston, who introduced him to the vast changes taking place in the world of finance, and Armen Alchian, a sleuth of sorts, who taught his students to question everything, to concentrate on essential elements and never surrender their own ideals. "I have attempted to emulate his approach to research ever since," Sharpe says in his autobiography.

Following a brief stint in the U.S. Army, Sharpe took a position of economist with the RAND Corporation. Besides taking part in various high-level, deep penetrating research projects, he worked on his doctorate in economics. It was at that time, while working on his dissertation, that Sharpe met Markowitz.

As Sharpe remembers, "I worked closely with him on the topic, Portfolio Analysis Based on a Simplified Model of the Relationships Among Securities. Although Harry was not on my committee, he filled a role similar to that of dissertation advisor. My debt to him is enormous."

Through most of the 1960s, Sharpe served as finance professor at the University of Washington's School of Business. During these years, the seed of what would become his Nobel achievement grew, sprouting its earliest versions in a report he wrote for the *Journal of Finance*, published in late 1964.

The year 1970 witnessed two important events in Sharpe's life. Not only was he invited to accept a teaching position at Stanford University—where he would remain for the next quarter-century—but the publication of his book, *Portfolio Theory and Capital Market*, met with widespread praise. By 2003, Sharpe was still conducting research and working with the National Bureau of Economic Research to study bank capital adequacy, designing a new course at Stanford on international investment management, and, one of his proudest accomplishments, founding Financial Engines, a firm providing online investment advice.

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Siemens

RANKED BY *Fortune* magazine as the 22nd largest company in the world, Siemens is a German conglomerate founded in 1847 that, in 2002, had 426,000 employees worldwide and net sales of over $90 billion.

Founded as a small manufacturer of telegraph equipment, Siemens grew in its 150-plus- year history to have over a dozen business units, including Information and Communication Networks (the largest unit), Information and Communication Mobile, Business Services, Automation and Drives, Building Technologies, Power Generation, Transportation Systems, Automotive, and Medical Solutions.

In the mid-19th century, Siemens started a program of technology research that resulted in discoveries such as a new way to generate electricity (1866). The company also inaugurated employment practices that were quite humane and somewhat radical for their time, such as an employee pension fund (1872) and an 8.5-hour workday (1891).

Some notable business and technological successes for Siemens were the first electric railway (1879); the first subway on the European continent (1896); laying the foundation for the European long-distance telephone network (1921); the first automatic traffic lights in Germany (1926); development of the first pacemaker for heart patients (1958); and the first 64-kilobit computer memory chip (1981).

Siemens's success has been both a blessing and a curse. Its diverse businesses and far-flung operations have made it hard for anyone at Siemens to know what others are doing. One contract in Malaysia was saved, for example, when a Siemens employee discovered by chance that the company had already done a similar project in Denmark and could transfer the technology.

In the late 1990s, Siemens sought to re-invent part of itself as an e-business. At the turn of the 21st century, the effort appeared to be succeeding.

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RGMS ECONOMICS

Simon, Herbert A. (1916–2001)

IN 1978, THE ROYAL Bank of Sweden awarded the Nobel Prize in Economics to Herbert Simon, citing his "pioneering research into the decision-making process within economic organizations."

A half-time economist by his own reckoning, Simon professed himself to be a monomaniac about decision-making, a central aspect of human activity in so many fields of scientific inquiry that a list of the fields of knowledge to which Simon contributed would include: economics, psychology, political science, sociology, public administration, organization theory, computer science, cognitive science, and philosophy.

A major stimulus to Simon's work on decision making processes was his dissatisfaction with the economists' classical theory of omniscient rationality, HOMO ECONOMICUS. When applied to the study of business activity, this theory depicted businesses as individual economic agents that make optimal choices relative to the goal of maximizing profits under constraints posed by market and technological factors. Under this approach, predictions about business decisions are made to depend exclusively on the characterization of the choice environment dictating the constraints for individual choice. The approach excludes a positive role in decision making processes for organizations and their structural features, Simon argues.

The dictum that "human behavior is intendedly rational, but boundedly so" captures Simon's preoccupation with individuals' limited ability to define goals, and to identify and rank alternative means for pursuing them. In light of individuals' bounded rationality, Simon viewed organizations as structures intended to overcome the limitations of any single individual to cope with complex decision- and-problem solving tasks.

In his 1947 book, *Administrative Behavior*, Simon describes organizations as pursuing general goals or ends by identifying generally specified means, that are themselves the ends of a set of more detailed means, and so on, in a chain of ends-means relationships. An organization pursues the resulting hierarchy of subgoals by attributing decision-making responsibilities to individuals, as well as by providing them with information, resources, and incentives so as to favor the conformity of their decisions to the general goals of the organization.

The concept of bounded rationality was given a more precise formulation in Simon's later work by introducing the notions of "search" and "satisficing." In most choice contexts, the alternative choices are not known and given to decision makers. Rather, they have to be identified through the acquisition and processing of information, which Simon calls search.

Relatedly, Simon observes that the search for alternatives terminates with the identification of a decision or a solution to a problem well before the entire set of possible choices is explored. Instead, borrowing from research in empirical psychology, he argues that the search would stop upon identification of an alternative that achieves the decision maker's aspiration level (a notion of how good an alternative he or she should find). This process for selecting, Simon calls satisficing.

Exploiting the availability of computers during the 1950s, Simon found himself drawn to developing computational models of human reasoning and decision making. He made an early and lasting impact on the emerging fields of cognitive science and artificial intelligence.

As a half-time economist, Simon spurred and contributed to a burgeoning literature in evolutionary and institutional economics exploring the implications of bounded rationality and the organizational dimensions of decision making and problem solving. Partly under the stimulus of his work, even the dissenting majority of economists, wedded to the theory of omniscient rationality, have embraced the study of social organizations and information-processing activities.

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Simon, Julian (1932–98)

JULIAN SIMON IS MOST famous for "The Bet" with Paul Ehrlich. Ehrlich, a biologist with a Malthusian outlook, believed that rising world population was destined to result in higher prices and SCARCITY of resources. Simon recognized that as prices of resources rose, the profit incentive to develop new ways of harvesting those resources, or to find substitute resources, also rose. For this reason, Simon was optimistic that in the future, resources would be abundant and cheap.

In 1980, Simon offered Ehrlich the following bet to test their competing predictions. Ehrlich could choose any five metals. The two would create a hypothetical account that included $200 worth of each metal. If in 10 years the value of the hypothetical account were above its original $1000 (adjusting for inflation), Ehrlich would be declared the winner. If in ten years the value of the hypothetical account were below its original $1,000, Simon would be declared the winner. The loser would send the winner the difference between the original value of $1,000 and the final value of the account.

Ehrlich accepted the bet and chose copper, chrome, nickel, tin, and tungsten. By 1990, the price of each of the five metals was below its 1980 level. Ehrlich sent the victorious Simon a check for $576.07. Simon's victory in this bet illustrated that economics is not, as Thomas Carlyle called it, the "dismal science," but rather it offers great reason for optimism about the future: Resources will be more abundant, and standards of living higher, thanks to technological innovation; for this reason, Simon described the human intellect as "The Ultimate Resource."

Simon is also responsible for a system of allocation with which most airline travelers are familiar, offering rewards to people who voluntarily surrender their ticket on an overbooked plane. Prior to 1978, airlines dealt with the problem of overbooked flights by bumping passengers involuntarily (airlines often chose elderly and military passengers because they would be less likely to complain). For 12 years after Simon first suggested a system of compensating volunteers, airlines and the Civil Aeronautics Board were uninterested, but in 1978 Simon found a sympathetic ear in Alfred Kahn, the first economist to chair the Civil Aeronautics Board. Today, the system is in widespread use.

Simon was born in Newark, New Jersey. He was given the middle name Lincoln because he was born on that president's birthday. Simon writes in his autobiography that he was "born an economist" but he also took pride in the fact that he was not formally trained as such; as a result, he wrote, he was not instilled with conventional ideas in economics that were wrong.

He studied experimental psychology as an undergraduate at Harvard University and earned an M.B.A. and a Ph.D. from the Graduate School of Business at the University of Chicago. He served on the faculties of the University of Illinois, Hebrew University, and the University of Maryland. His research spanned the economics of advertising, population, and immigration.

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Sinclair, Upton (1878–1968)

WHEN A NOVEL ABOUT the brutal exploitation of immigrant labor in Chicago meatpacking, *The Jungle,* was published in 1906, it was the year's bestseller and a worldwide sensation, translated immediately into 17 languages. Its young author, Upton Sinclair, would remain a prolific writer and opponent of capitalism throughout his life, but would never again recapture the imagination of the reading public as in that vivid early novel.

The Jungle was a metaphor for capitalism. Sinclair associated capitalism not with modernity but barbarism: the savagery of POVERTY, the primitiveness of corruption, and a dog-eat-dog world in which individual gain triumphs over common good and the powerful devour the weak. Chicago's giant meat trusts, Sinclair argued, led their workers to the slaughter as surely as cattle. To Sinclair, there was a civilized alternative to the ruthless economic jungle. The answer was SOCIALISM, a cooperative and democratic system of production.

The Jungle's nauseating images of rat feces ground up into sausages, gangrenous cattle butchered and sold, and preservatives and dyes used to disguise decomposition in canned meat resulted in a massive public outcry. Middle-class and elite readers, including Republican President Theodore ROOSEVELT, tended not to be moved by Sinclair's evocation of the plight of immigrant workers so much as disgusted by Sinclair's depictions of what they might be eating. When European nations levied trade sanctions against American meat, even the major packers sought to improve their image. The outcome was the Pure Food and Drug Act of 1906, which strengthened government rules and inspections.

Sinclair, of course, wanted capitalism overthrown, not mere amelioration of its worst effects. Jurgis Rudkus, the earnest, hardworking, daft hero of *The Jungle*, says again and again, "I will work harder," yet he falls deeper and deeper into misery until his conversion to so-

Upton Sinclair's revelations about the meatpacking industry led to increased government regulation.

cialism at the end of the novel. Jurgis was a powerful counterpoint to Horatio ALGER'S myths of "rags to riches," and the novel won many recruits to the cause of the left, but the novel's primary effect was conveyed by Sinclair's quip, "I aimed at the public's heart, and by accident I hit it in the stomach."

The Jungle resulted in reform for the consumer rather than equality for the worker. Modern liberal oversight aimed not at socialism but at preserving capital accumulation through regulation to prevent competitive pressures from undermining the system's stability and legitimacy. *The Jungle*, in this sense, is the quintessential novel of the Progressive Era. Not inappropriately was Sinclair grouped as a muckraker along with journalists Ida Tarbell, Ray Stannard Baker, and Lincoln Steffens.

Born in Baltimore, Maryland, to a Southern family with a long line of naval distinction, Sinclair had a childhood overshadowed by his salesman father's alcoholism. He was raised primarily by his mother in conditions of threadbare gentility. When he was 10, they moved to New York. Precocious, Sinclair attended City College at age 14 and enrolled in graduate studies at Columbia University in 1897. To support his studies and his mother, Sinclair, at 15, began writing cheap mass fiction, cranking out boys' military stories under pseudonyms. The acquired habit of quick writing enabled him to produce nearly 100 books in his lifetime.

Sinclair's first novels under his own name were sentimental, romantic, and unsuccessful, but he evolved toward socialist politics and naturalism. In 1904, Sinclair published an article in *Appeal to Reason,* a socialist paper with nationwide circulation printed in Kansas, called "You Have Lost the Strike! And Now What Are You Going to Do About It?" Addressed to Chicago stockyard workers, the article held that the answer to workers' troubles was political action at the ballot box by voting for the Socialist Party. *Appeal* editor Fred Warren admired the piece and advanced Sinclair $500 so that he could travel to Chicago, the epicenter of the American industrial proletariat, to dramatize the conditions in fiction. Sinclair spent weeks interviewing workers and walking through Packingtown's giant concerns, acquiring realistic details. *The Jungle* began appearing in serial form in *Appeal to Reason* in 1905.

The hope of Sinclair and Warren was that *The Jungle* would be to wage slavery what Harriet Beecher Stowe's *Uncle Tom's Cabin* was to chattel slavery—a clarion call for abolition. *The Jungle* did not have the same precise effect, but it was phenomenally successful. Published in book form by Doubleday, it enjoyed runaway-sales success, netting Sinclair tens of thousands of dollars. He sunk his new fortunes into establishing a commune for writers and artists in Englewood, New Jersey, but the colony burnt to the ground a year later, leaving Sinclair penniless.

Sinclair wrote many novels critical of capitalism, including *King Coal* (1917), *Oil!* (1927), and *Boston* (1928), but his seriousness was somewhat undercut by his enthusiasms for telepathy and odd dietary regimes. Sinclair was arrested for protesting the massacre of miners at Ludlow, Colorado, outside John D. ROCKEFELLER'S New York offices in 1914, and arrested again in California for trying to read the Constitution aloud in 1923. When he ran for governor of California in 1934, he won the Democratic primary on his program to End Poverty in California (EPIC) but lost the general contest after a heavily funded smear campaign against him.

Sinclair won a Pulitzer Prize for *Dragon's Teeth* (1942), one of the novels in his 11-volume series centered on the hero Lanny Budd. *The Jungle* continues to inspire muckraking successors, most notably Eric Schlosser's examination of the hamburger industry in *Fast Food Nation* (2001).

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Singapore

A SMALL CITY-STATE located across the Johore Strait from MALAYSIA, Singapore experienced extraordinarily high levels of economic growth and technological development in the last three decades, and in the early 2000s enjoyed one of the highest GROSS NATIONAL PRODUCTS (GNP) per capita in the world.

Sir Thomas Stamford Raffles of the BRITISH EAST INDIA COMPANY established a trading post on the island of Singapore with the permission of the Malay Johore Sultanate in 1819. An 1824 treaty with the Dutch recognized British control of the island. Drawn into the world commodities market, Singapore grew quickly as a transshipment center for rubber and tin from the Malaysian hinterland bound for Europe.

When WORLD WAR I ended in 1918, the British recognized Singapore's vital strategic importance in protecting their Asian colonial interests. The British Navy developed Singapore's harbor facilities and the shipping industry flourished until war with JAPAN in 1942 ravaged the country's economic infrastructure. The British colonial regime, reinstated after WORLD WAR II in 1946 proved unable to address Singapore's labor unrest, inadequate housing, and low wages left in the war's wake. In 1959, unemployment remained at 13.5 percent

This unfavorable post-war economic climate prompted many Singaporeans to call for independence. Lee Kuan Yew, a fourth generation Singaporean of Chinese ancestry educated in England, rose to national leadership as a founder in 1954 of the People's Action Party (PAP). To aid the cause of independence, the PAP formed an anti-colonial united front with Singaporean Communists, but it soon became clear that the PAP's political ideology was dedicated to fee market capitalist rather than socialist economic development.

In June 1959, Singapore became a self-governing part of the British Commonwealth and joined with Malaya, Sarawak, and Sabah to form the Malaysian Federation in September 1963. Tensions between ethnic Malayans and Chinese over control of the new federation soon boiled over into violent confrontations and the two sides agreed on Singaporean independence from Malaysia in 1965.

Despite efforts in the 1950s to build up Singapore's industrial capacity in tin and rubber processing and maintenance support for shipping, manufacturing was only 11.9 percent of GNP in 1960 and 94 percent of Singapore's exports were re-export of goods not produced in Singapore. In the 1960s, Singapore's economy was cut off from the Malaysian market after independence, and hard hit by a1968 British announcement of military withdrawal resulting in the loss of 38,000 jobs in related industries.

Lee Kuan Yew's PAP government addressed these economic crises with a series of policies designed to attract multinational corporations and reduce Singapore's regional dependence. In a pattern similar to other high-growth Asian economies, the government of Singapore actively promoted the growth of technologically sophisticated export industries. The government gave tax incentives and access to inexpensive capital to favored industries, and kept labor costs low by shifting a large share of the responsibility for worker welfare to the state. These policies apparently worked and Singapore enjoyed an average annual real GROSS DOMESTIC PRODUCT (GDP) growth of 12.7 percent between 1965 and 1973. Although the oil shocks of the early 1970s slowed Singapore's growth, it continued to enjoy annual growth rates of 8.7 percent between 1973–79.

Realizing that much of Singapore's comparative advantage rested with its well-educated and relatively inexpensive labor force, Lee Kuan Yew's government resisted labor union demands for higher wages. In return, the government tried to appease labor by looking out for the workers' welfare with paternalistic policies in housing, healthcare, and education. Between 1960 and 1985, the Housing and Development Board built 500,000 apartments and housed 88 percent of Singapore's population.

The government also promoted the growth of Singapore's financial services industry. The Monetary Authority of Singapore established a system for offshore banking that encouraged nonresidents to deposit funds in Singapore to be invested in southeast Asia. The Stock Exchange of Singapore was established in 1973 and, in 1983, funds held by nonresidents and invested outside Singapore were granted tax exemption. Today, Singapore is the region's leading provider of financial services.

Singapore's government also used economic incentives to manipulate social practices in ways it believed would improve the country's economy. People were encouraged to buy a "stake in Singapore" and purchase homes built by the Housing and Development Board. The Central Provident Fund retirement program promoted individual and family self-reliance by holding savings in individual accounts to be returned to workers with interest upon retirement in contrast to the Social Security model of taxing the young to support the old. The government also promoted population control by charging couples higher rates for the education and health care of their third and additional children. This policy was modified in 1986 to grant tax rebates to women with college degrees who had more than two children, in an effort to supposedly raise the genetic and educational level of the population.

In the 1980s, Singapore's government responded to changes in the global economy and to pressure from Singaporeans who felt their country was over-regulated. In 1983, the government's Trade Development Board looked for new up-and-coming industries and actively promoted electronics, printing and publishing, textiles and timber processing. A severe recession caused by declining world demand for petroleum, semi-conductors, and computer components hit Singapore in 1985. This led to a decline in demand for hotels, shopping centers, and apartments built in the earlier construction boom and resulted in many facilities remaining vacant. Opposition to the PAP became more vocal and the government became concerned that it was unable to maintain the level of service that Singaporeans had come to expect.

To improve its reputation, the PAP launched two campaigns. The first campaign was primarily ideological and appealed to Singaporean identity as one of the "Asian Tigers" characterized by Confucian values, community cooperation, and successful economic development. The other campaign was more practical and attempted to privatize state-owned business and shift the burden for medical and welfare services to the private sector.

Singapore's population of 4.45 million (2001) enjoys a per capita GDP of $24,700. The $106.3 billion GDP is composed of 33 percent manufacturing and 67 percent financial and other services. Singapore's exports of $122 billion include machinery, electronics, consumer goods, chemicals, and mineral fuels. Malaysia, the UNITED STATES, HONG KONG and JAPAN are Singapore's major export markets. Singapore imports $116 billion worth of products such as machinery, equipment, petroleum, chemicals, and food.

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Sinopec Corporation

CHINA PETROLEUM and Chemical Corporation, better known as Sinopec Corporation, is a vertically integrated energy and chemical company. Its scope of business is wide-ranging and includes: exploration, development, production and marketing of petroleum and natural gas; refining, marketing, production and sales of petrochemicals, chemical fibers and fertilizers; storage and pipeline transportation of petroleum and natural gas; importation and exportation of petroleum, natural gas, refined oil, petrochemicals, and chemicals; research and development; and technology and information.

Sinopec is CHINA's second largest oil producer, but the country's largest producer and marketer of oil products (gasoline, diesel, and jet fuel). It also leads the way for China-supplied petrochemical products (synthetic resin, fiber, and rubber).

Sinopec was created in February 2000, pursuant to the company law of the People's Republic of China. Following international models, Sinopec sets a standardized structure of corporate governance, with centralized decision-making, delegated management, and specific business targets handled by specialized departments, or units. More than 70 subsidiaries are either wholly owned or comprised of equity participation. Among them, they operate businesses devoted to exploration and production, refining, chemicals, marketing, foreign trade, and RESEARCH AND DEVELOPMENT. The latter effort has won a national award. Some of the more important subsidiaries are Shanghai Oil Field, Ltd., Sinopec Sales Company, Ltd., and Sinopec International, Ltd.

Sinopec sees itself as a first-rate competitor in China, but aims to become a world-class competitor in its industry. Successes have been based on its early maximization of profits, its ability to deliver shareholder return, and its belief in customer satisfaction, discipline, and integrity.

Since 2001, the company has followed four main strategies: resource expansion; market expansion; investments; and cost reduction. Of the latter, Sinopec immediately demonstrated its earnestness through an overall reduction of $2 billion, and another of $1.57 billion through elimination of duplicate and unnecessary job positions.

Reported revenue (mid-year 2002) was $40 billion, making Sinopec the 86th largest company in the world.

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slavery

STATISTICS ALONE CAN be a modest pointer to the horrors of slavery during the dawn of capitalism. America had 33,000 slaves in 1700, nearly 3 million in 1800 and over 6 million in 1850. During this period, 1.5 million slaves died during the passage to the New World, and between 10 and 20 percent died within a year of landing.

If history is the world's court, then modernity and capitalism stand accused before it for the rise of New World slavery. Scholars have suggested that it points us towards the "dark side of progress" in that the inhumanity of the system developed side by side with huge steps forward in knowledge and technique, such as the exploration of the Atlantic and the development of new navigational techniques.

At the heart of the system lay an irresolvable contradiction. The colonizers of the New World were those who rejected most strongly the old order in Europe. Yet just as unfree labor was dying out in Europe it began to develop on a massive new scale in the Americas. This contradiction was only resolved by the complete racialization of New World slavery so that skin color/ethnicity and slavery became inextricably linked.

Origins of slavery. Slavery, of course, was not invented in the 17th and 18th centuries. Apart from ancient GREECE and Rome, it had persisted in small pockets in different parts of Europe and the Middle East throughout the Middle Ages. New World slavery, however, was distinct from earlier instances of the practice in several significant ways. The buying and selling of slaves in the Ancient World (200 B.C.E. to 200 C.E.) reflected the policy of the state or particular individuals as opposed to a more generalized economic project. In other words, Roman slaves were sold because they had been captured, while in the New World African slaves were caught in order to be sold. In the Middle Ages slaves were allowed to own property, ply trade, and hold state positions.

There were also provisions and numerous instances of slaves buying back their freedom. Slavery was not confined to any particular ethnic identity. White people were frequently galley slaves in the Mediterranean navies and the actual word "slave" is derived from "Slav" pointing to the hold of the institution over Eastern Europe. Historians have shown that Africans or persons of African descent were a clear minority as slaves in 1500, but became the majority by 1700.

Slavery in the New World. The beginnings of New World slavery can be traced to the Spanish conquest of the Americas. Christopher Columbus sent some of the Arawaks people who first greeted him to be sold as slaves in the Caribbean. There were also some unsuccessful attempts to use Native Americans as slaves. Due to the severe decimation of the indigenous population of the Americas, the British Crown and colonists alike turned increasingly to a different source of labor, the buying of slaves off the coast of West Africa.

Slavery took off on a massive scale when PORTUGAL, Holland, England, and FRANCE began commercial cultivation of tobacco and sugar in their colonies. The crops demanded a huge labor force and free immigrants from Europe were not prepared to provide it.

The conquest of colonies was vital to England's economic growth and the profits of slavery paved the way for English industrialization. The capitalist development in agriculture created a landless workforce ready to emigrate or work for low wages at the newly emergent English factories. The transformation of the English economy helped to create a market for the new commodities in the colonies. Profits from the plantations assisted this economic process in certain crucial ways.

First, it raised the level of economic prosperity in their sheer scale and hence advanced industrialization. Second they provided much needed credit to the new generation of industrialists. The early industrial processes involved a lengthy turnover time, when a capitalist might have to wait a long time to realize the profits from an investment. In such circumstances credit was vital. The profits of slavery helped to lubricate this process. Financial bills, drawn on plantation products such as sugar or tobacco, began to circulate as a form of money. In the absence of sufficient institutional sources of credit, plantation funds helped to fill the gap.

Initially, it was wage labor that worked the new plantations in Barbados and elsewhere. White indentured servants from England would be contracted to work for three, five, or seven years for the plantation after which they would be free to pursue other employment. In 1638, Barbados had 2,000 indentured servants and only 200 African slaves. By 1653 there were 20,000 slaves and only 8,000 indentured servants.

White indentured servants faced enormous hardships on the estates. The work was extremely hard, conditions appalling and life expectancy was short. Escaped servants were made to serve double time for their master. A repeated escape could lead to branding. Like slaves, the servant was regarded as a piece of property and was valued according to the amount of tobacco or sugar that could be expected to be produced before the indenture expired.

The plantation owners faced two problems. As the demand for the plantation exports rose rapidly they needed more and more labor. As emigration from Britain was, by and large, voluntary it could not guarantee to meet the needs of the system. At the same time, stories drifted back of life in the colonies, which tended to discourage volunteers for the indenture system. Thus it was the growing demand for secure supplies of labor that produced the shift toward African slavery. In this context, the mid-17th century saw the rapid growth of the slave plantation in the English Caribbean.

The extremely hard conditions of the plantation colonies meant that the owners, and the colonial authorities, always faced the possibility of revolt. As long as black slaves and white servants worked alongside each other this included the possibility of joint action, however temporary. In 1676, for example, Bacon's rebellion in Virginia had involved servants, slaves, and freemen.

Rare as such risings might have been, they terrified those in authority. Increasingly, laws were passed to enforce racial segregation. Such laws helped to create a form of racial solidarity among the white colonists. Increasingly whites, even poor whites, could identify themselves as a part of the privileged race. The privilege of their color exempted them from slavery and granted them certain civil rights. The plantation owners' fear of resistance and rebellion evolved into a more general white fear of black rebellion. In these ways, slavery was crucial to forming the new racial identities in the American colonies.

These new identities and structures tended to undermine white opposition to slavery. Slavery came to be identified with black Africans. In turn, black people were identified as slaves or potential slaves. These racial divisions were sharpest in the English-speaking colonies in the Caribbean and North America. In the Spanish, Portuguese, and French territories there developed a far bigger free-black population. Here blacks could begin to demand some of the rights of the white citizen. In the English colonies such a blurring of the racial boundaries did not emerge and the number of free blacks remained small.

The scale and conditions of slavery. The deadly scale of the slave trade cannot be underscored. Between 1600–1850 about 12 million Africans were shipped across the Atlantic from West Africa to European colonies in the Caribbean and North America. The slaves were captured by raiding parties, imprisoned at coastal forts, and forced to endure a horrific voyage as human freight.

The "standard space per slave" laid down by the British-run Royal Africa Company was five feet long, 11 inches wide, and 23 inches high, for a voyage lasting 9 or 10 months. Around one in six of the slaves died on the journey. Those who survived were sold at auction into a life of brutal labor on plantations producing tobacco, sugar, and cotton. It was not only the slaves who suffered. African society as a whole was hurled back. The population of Africa stagnated and in places fell. One estimate is that the population of about 25 million in 1850 in West and Central Africa was about a half what it would have been had there been no slave trade.

The whole process was directed by state-backed "adventurers" and bankers who became the pillars of industrial Britain. It was not only the merchants directly involved in the slave trade who gained. The "triangular trade" saw slaves carried to the Americas; sugar, tobacco, and other goods then shipped to Europe; and then European products sent to the coast of Africa to begin the triangle again. Each leg of the triangle benefited a separate group of merchants.

The early British capitalists' use of "free labor" (labor which must sell itself on the market) at home gave a vicious dynamism to their profit-making. This meant they could then exploit unfree labor on a totally new scale. There was an organic connection between free labor and slave labor structured into the capitalist system as a whole. Slave money financed the massive cotton mills where generations of "free" workers spent a vast portion of their stunted, short lives. The use of big workforces on the plantations was a model for the creation of factories in Britain. Even the use of child slaves in the Americas was the template for the use of children who were pressed into wage slavery in the mills. Infant paupers were taken from the workhouses and transferred to textile firms. As an account in 1842 says, "These children are sent off by wagon loads and are as much lost to their parents as if they were shipped for the West Indies." Calling the conditions of early industrial workers "slave-like" was no exaggeration.

In the Barbados sugar cane fields, slaves were unlikely to live for more than four or five years. Many died in their teens or early 20s. In Manchester, in 1840, the average age at death for laborers was 17. The Irish laborers, the European factory workers, and agricultural proletariat were all kin to the slave. That is why there was an almost instinctive unity between poor whites and slaves that their owners and employers made great efforts to extinguish.

Slave rebellions. Slavery first became the focus of public controversy in the 1760s and 1770s as Britain's imperial order was plunged into crisis. The loss of American plantations in 1776 was a major blow to both the Empire and the pro-slavery lobby. There was also the memory of slave rebellions.

The first turning point for the West Indian plantation regime came in 1739 in Jamaica during the First Maroon War. The British had to sue for peace after they failed to defeat an army of escaped slaves who lived "free" from then on. In 1763, rebel slaves in the Dutch colony of Berbice (Guyana) expelled their masters from the southern half of the colony. But these uprisings could be contained by the colonial powers. It was the powerful ideas carried on the wind of revolution that swept America and then France in 1789, which really set the cane fields alight.

Saint Domingue (Haiti, as it is known today) was a French slave colony and the pearl of the slave economy. In 1791, the slaves of Saint Domingue claimed their liberty when they rose up under the leadership of cattle-keeper Toussaint L'Ouverture. Toussaint turned his slave army into a magnificent fighting force, crushing the plantation owners and then the elite of the Spanish, French, and British armies.

In Paris, an insurrection gave power to the most revolutionary section of the French bourgeoisie, who condemned "the aristocracy of the skin" and decreed slavery abolished. They sent 330,000 rifles to Toussaint. The slaves inflicted huge losses on the British forces sent by Prime Minister William Pitt to retake the island for slave-owning interests everywhere. The bones of at least 20,000 British soldiers lie beneath the soil of Haiti.

The slaves forced the British to surrender and then drove them from the island. These slave rebellions coincided in Britain with the growth of the first mass working-class movement, Chartism. Anti-slavery was a massively popular movement to the great discomfort of the rulers.

Opinion regarding slavery within the ruling circles of Britain started to change after the loss of the American colonies. Arguments against slavery began to gain a foothold amongst important members of Parliament. Organizations such as the *Society of Friends* in Britain had been campaigning against the slave trade for many years. They had presented a petition to Parliament in 1783 and, in 1787, had helped form the *Society for the Abolition of the Slave Trade*. Conservative politicians like William Wilberforce (1759–1833) became loud critics of slavery within Parliament.

Most of Wilberforce's Tory colleagues, however, were opposed to any restrictions on the slave trade and when he presented his first bill to abolish the slave trade in 1791, at the House of Commons, it was easily defeated by 163 votes to 88.

Abolition of slavery. In February 1806, Lord Grenville, a leading Whig politician, argued in Parliament that the trade was "contrary to the principles of justice, humanity, and sound policy." The Abolition of the Slave Trade bill was passed in the House of Lords by 41 votes to 20. In the House of Commons it was carried by 114 to 15 and it become law on March 25, 1807.

British captains who were caught sustaining the trade were fined 100 pounds for every slave found on board. However, this did not deter the British slaver. Captains of slave ships tried to decrease the fine by throwing the slaves overboard.

One opinion of the anti-slave trade campaign was that the only way to end the suffering of the slaves was to make slavery illegal. The more conservative view held by people such as Wilberforce was that the slaves were not "ready" to be granted their freedom.

There existed, however, more radical views on slavery. When the Society for the Abolition of the Slave Trade was set up in 1783 it had an exclusively male organization. Leaders such as Wilberforce were opposed to the participation of women. As a result women such as Elizabeth Pease, Anne Knight, Elizabeth Heyrick, and Mary Lloyd began forming women's Anti-Slavery Societies after 1823.

The anxiety that women would advocate a more radical strategy regarding slavery proved to be correct. In 1824, Elizabeth Heyrick published her pamphlet *Immediate not Gradual Abolition*, arguing passionately in favor of the immediate emancipation of the slaves in the British colonies. The Female Society for Birmingham had established a network of women's anti-slavery groups and Heyrick's pamphlet was distributed and discussed at meetings all over the country. In 1827, the Sheffield Female Society became the first anti-slavery society in Britain to call for the immediate emancipation of slaves. Other women's groups quickly followed.

Finally in 1833, the British Parliament passed the Slavery Abolition Act giving all slaves in the British Empire their freedom. The irony remained that the British government paid compensation to the slave owners in proportion to the number of slaves that they had owned.

(Editor's Note: The story of how slavery affected the development of economic and social conditions specifically in the UNITED STATES after the AMERICAN REVOLUTIONARY WAR is a long history unto itself, not the least of which was slavery's role in the AMERICAN CIVIL WAR.)

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small business

SMALL BUSINESSES ARE often considered the backbone of a capitalist economy. It is their intrinsic dependence on entrepreneurship that sets them apart and makes the performance of the small-business sector an indicator of the degree of economic freedom prevailing in market economies.

Definitions of small businesses are by necessity arbitrary. They can either be functional or based on criteria of size. Functionally, small businesses tend to be managed by owners, use legal entities of sole ownerships, partnerships, or limited-liability companies, and have weak MARKET POWER (or the ability to significantly influence market prices). They predominate in industries with many participants although they may enjoy local monopoly. Thus, the U.S. Small Business Act defines a small business concern "to be one that is independently owned and operated and which is not dominant in its field of operation."

Determination of size is effected on an industry-by-industry basis. The size of organizations can be measured in a number of ways. Relative to the industry it is competing in, the size of a business may be measured by its market share. Its relative ability to influence market prices will also depend on the concentration ratio—the distribution of large and small businesses—in the industry. In absolute terms, output and input measures of a firm alone are used to assess and compare its size, common output metrics being receipts, value added, and total assets, and the most frequent input metric being the number of employees.

The small-business sector. The demarcation of the small business sector in any economy depends on arbitrary criteria. In the United States, the Small Business Administration (SBA), an entity of the federal government, defines whether a business is small and is thus eligible for government-subsidy programs, and preferential treatment in contracting. The North American Industry Classification System (NAICS) uses these size standards, and federal agencies are bound to apply them in procurement and contracting. The standards define the largest a firm may be, together with all of its affiliates, and still be considered a small business on an industry-by-industry basis; there is no general upper limit. Numerical definitions are almost always expressed in either the number of employees or average annual receipts (with the exception of industries such as power generation, where megawatt hours is used). The most widely used size standards are 500 employees for most manufacturing and mining industries, and $6 million in average annual receipts for most non-manufacturing industries.

However, many exceptions exist. In much of farming, small businesses are limited to annual receipts of $0.75 million, in much of construction to $28.5 million, and in certain manufacturing industries to 1,000 employees or less. Wholesale merchants are limited to 100 employees, new car dealers to $24.5 million, and gasoline stations with convenience stores to $23 million. Certain service businesses, such as travel agencies, are limited to $3 million while certified public accountants may have receipts of up to $7 million, and computer-system design services may have receipts of up to $21 to qualify for this status.

Based on these definitions, small businesses in the United States comprise about 99 percent of all employers and 48 percent of private-sector employment. They produce 50 percent of GROSS DOMESTIC PRODUCT (GDP) and are the source for two-thirds of new jobs. Nearly three-quarters of all U.S. businesses have no payroll at all, being managed by self-employed persons; because non-employers account for only 3 percent of total business receipts, they are not included in most official statistics. There are strong differences by NAICS-based industries: Ninety percent of businesses in construction employing 85 percent of all construction workers are small businesses, while only 22 percent of utility companies employing 11 percent of all utility workers fall under this designation.

Since the 1970s, the number of small firms as a share of all firms has remained rather stable while large firms have generated more employment and sales. In fact, the small-business share of U.S. economic activity, as measured in terms of employment or output, is considerably less than that of comparable businesses in JAPAN, GERMANY, ITALY, the NETHERLANDS, the UNITED KINGDOM, and other European countries (1999 statistics).

In the statistics of the EUROPEAN UNION (EU), the size standards of Small and Medium-Sized Enterprises (SME) are less inclusive than in the United States (though a special subcategory of medium-sized enterprises is added). According to the official definition, each enterprise must be independent. Only up to 25 percent of the capital or the voting rights may be owned by one enterprise, or jointly by several enterprises, which are not themselves SMEs (this threshold may be exceeded if the business is held by public investment corporations, venture capital companies, or institutional investors).

Micro-enterprises have fewer than 10 dependent workers. Small businesses have between 10 and 49 dependent workers, achieve an annual revenue not exceeding €7 million, or an annual balance-sheet total not exceeding €5 million. Medium-sized businesses have between 50 and 250 dependent workers, achieve an annual revenue not exceeding €40 million, or an annual balance-sheet total not exceeding €27 million. These definitions of small business generally do not vary by industry. For domestic purposes, they may vary between member countries; but access to regional and structural funds and to other subsidies depends on the shared EU definition, which increasingly comes to dominate standards in individual member states.

More than 93 percent of the 18 million businesses registered in the EU employ fewer than 10 persons, and 49 percent of businesses have no employees. In the United States, 78 percent of all enterprises have fewer than 10 employees, which indicates the stronger role of micro-enterprises in the EU. In general, industry structure in Europe tends to be less dominated by large corporations. The German Mittelstand (literally, "middle class") is often regarded as the backbone of economic reconstruction after WORLD WAR II and as the engine behind the strong growth of exports. It is, however, not revenue or number of employees that define the Mittelstand. Rather than by firm size, businesses falling under this designation are united by a strong entrepreneurial spirit, by having their equity held predominantly by members of a family, and by being largely managed by family members with the intent of keeping the business independent.

The explanation for the fact that the overall importance of small businesses has grown while their share of the main macroeconomic aggregates has remained relatively stable, lies in the difference between static and dynamic measurement. Overall, small businesses grow and decay faster than large corporations; the smaller business sector is more dynamic and volatile than that of larger firms. When measured in terms of entry and exit, and in the change of contribution to economic performance, the small business sector is more important for the U.S. economy than simple shares of employment or output in any given year may indicate.

In the United States, small businesses are often managed as franchises, a legal form that has been accepted with greater hesitance elsewhere. In manufacturing, small businesses are also often part of a hub-and-spoke system, as suppliers to large manufacturing firms. A cluster of companies producing automotive parts has developed in the wider region around Detroit, with various forms of ties to the Big Three automobile firms.

In Europe, small firms are frequently parts of regional networks (industrial districts), specialized in particular industries, that together attempt to achieve external economies of scale in RESEARCH AND DEVELOPMENT (R&D), production, and marketing. There is, for example, a fashion network (clothing, shoes, accessories, etc.) in northern Italy and a precision-machinery network in Germany, operating as horizontal clusters of equals rather than dependent suppliers to large firms. The Italian experience with, and theoretical work on, industrial districts built on ideas of the economist Alfred MARSHALL, has become a major point of reference in the international debate on regional policy promoting endogenous development.

Entrepreneurship. Entrepreneurship and small business are not synonymous concepts, though it appears that the second implies the first. In fact, quantity and quality of entrepreneurship are independent of firm size, while the success of small firms virtually always depends on a critical level of entrepreneurship, which makes entrepreneurship a necessary, if not yet sufficient, condition for successful small business management. Small businesses can be a vehicle both for entrepreneurs in Joseph SCHUMPETER's sense—innovators who introduce new products and processes that change the industry—and for managerial executives or owners. The latter group includes many franchisees, shopkeepers, and persons in professional occupations, whose businesses may grow but hardly at rates that would be considered extraordinary. Thus, a physician or lawyer may, without special entrepreneurial alertness, start and manage a small professional firm that enjoys a relative regional monopoly; but without a superior degree of entrepreneurship it is unlikely to exhibit significant growth. Innovating entrepreneurs challenge incumbent firms by introducing, for example, inventions that make current technologies and products obsolete. Through this process of "creative destruction," as Schumpeter describes it, they contribute not only to growth but also to economic development.

Economic issues. Until quite recently, the prevailing wisdom was that bigger is better. The theory of the firm, which uses tools of microeconomics to analyze the structure, conduct and performance of businesses, assumes that there are advantages to size. As the average costs of production decrease when fixed costs are spread over greater output volumes, a business benefits from economies of scale.

Moreover, companies that are active in several lines of business may additionally benefit from economies of scope. In markets where consumers are price-sensitive, large firms can pass along some of their cost advantages

Restaurants are one example of small businesses in America that have annual sales of less than $6 million.

to consumers, which may drive smaller firms out of business or into market niches not served by large firms. Schumpeter described how large firms outperform their smaller counterparts in the process of innovation and competition through a strong positive feedback loop from innovation to increased R&D activities, which allows them to be the technology leaders: "What we have got to accept is that the large-scale establishment has come to be the most powerful engine of progress," Schumpeter writes.

However, neoclassical economics also assumes that there is a point of diminishing return at which increasing size no longer brings about lower costs, and further expansion may even increase costs. With increasing use of a factor of production, its marginal productivity tends to decline. As a business grows, it tends to become increasingly bureaucratic, since more resources are used to administer its own structure, rather than to produce goods and services for the satisfaction of customers. Its owner or manager is faced with the need for the specialized knowledge required to support the main operations, and to coordinate activities among the growing number of people in the organization.

Slowness to respond to changing market needs, difficulty in communication, and increasing administrative overhead costs are other problems affecting larger firms. Division of labor in the business implies coordination costs, which in turn may reduce overall efficiency. The theory of the firm thus assumes that there is an optimum firm size (or minimum efficient scale) at which average costs are minimized for a given technology.

It has been suggested that because of technological and environmental changes, smaller businesses can now often achieve the economies of scale formerly reserved for large organizations, and that optimum firm size has thus been decreased. An example can be seen in the U.S. steel industry, where giants (such as U.S. STEEL, now USX, and LTV) went through a period of serious decline because of their inability to compete with Japanese and European mills, nearly all of which were smaller and produced at lower cost. As a result of changing production technology (using electric furnaces instead of coal- or gas-fire blast furnaces), newly available raw materials (such as recycled scrap), and changes in market demand, "mini-mills," such as Nucor or Birmingham Steel developed in the United States, produce specialty steel at a more competitive cost.

More generally, the widespread adoption of flexible automation has decreased the minimum efficient scale in many industries, which has resulted in a shift from large to smaller firms. Entry by firms into an industry is apparently not even substantially deterred in capital-intensive industries in which scale economies play an important role, as smaller companies have developed strategies to make up for disadvantages in production costs.

Optimism about the economic viability of small businesses has been strengthened by economic research. Gibrat's Law of Proportionate Effect predicts that the growth rate of a given firm is independent of its size. Numerous empirical studies have tested this hypothesis. For small and new firms, there is substantial evidence suggesting that growth is actually negatively related to firm size and age. However, for larger firms, particularly those having reached the minimum efficient scale level of output, the evidence suggests that firm growth is unrelated to size and age.

Moreover, contemporary approaches to industrial economics see the growth potential of firms not exclusively determined by cost factors but also by the available resources. Smaller companies may make a comparatively better use of the competencies, knowledge, and management skills available to them and thus gain competitive advantage.

Management issues. The management challenges specific to small firms include the start-up process and growth strategies. Successful start-ups require a professional business plan deriving an analysis of expected revenue and expenditure over a period of time from a careful analysis of the company and its products, competition, market demand, and environmental factors. The entry and growth strategy of businesses must take into account factors such as the degree of competition, the start-up costs and entry barriers to be faced, and the extent of economies of scale in the industry. Where economies of scale cannot be achieved within a firm, small businesses have the opportunity of achieving them externally, particularly through cooperation on the market (e.g., in purchasing or marketing consortia).

Two constitutive decisions are the legal form in which a business shall be run and the sources of funding. Most small businesses are sole proprietorships, partnerships, or limited-liability companies. Opportunities for starting a business are often afforded by franchising and licensing. Traditional sources of funding are personal savings, loans from family or friends, small business loans from the SBA or state offices of economic development, and collateralized bank loans. Modern forms of funding include VENTURE CAPITAL, whether in the form of "business angels" (private investors of smaller amounts of equity capital) or of investment banks.

Growth need not depend on the coverage of total markets. The business strategy literature shows that focused market coverage strategies can be as profitable as broad ones. Niche strategies, through product specialization, geographic specialization, or customer specialization, give small businesses the opportunity to achieve economies of scale on a small but defensible segment of the total market. Business start-ups are likely to focus on specific segments.

As companies grow, they typically build up market share on the segments initially served (market penetration), and then either develop new products for these segments (product development) or market their existing products to new segments (market development). For most businesses, then, growth beyond a certain threshold (at which the currently served market is maximally exhausted using the current strategy) involves diversification. Small businesses typically opt for related diversification, the development of new products that are similar to or can be used in conjunction with products that the organization currently provides (e.g., line extensions such as the development of soap-filled sponges by a company manufacturing cleaning agents).

Small businesses typically prefer horizontal growth to vertical integration, since the incorporation of backward or forward linkages into the value chain incurs higher risks and costs, and is therefore the preferred strategy of larger corporations. Recently, the trend in most markets has gone in exactly this horizontal direction, as companies have increasingly outsourced input factors and services (instead of producing these themselves), thus creating new opportunities particularly for other smaller businesses. Related diversification leads to the highest levels of profitability for two reasons. Firms are generally better able to transfer a key competency to closely related products and markets due to resource specialization. Furthermore, the combination of technology and marketing to create value may produce a synergy effect. Smaller size facilitates the development of synergies between different functional parts of organizations.

Firms tend to grow in a step-function in the direction of under-utilized resources. The limits to firm growth are the limits to resources. These resources determine the industries entered and the associated profits. For small businesses, in the long run, management capacity may be the critical resource. The two demands on managerial capacity include the need to run the firm at its current size and to achieve growth. The firm's growth often slows as it adds managers due to the time required for training and integrating, which explains why small businesses are often best run by family-owners. Once these new managers are fully incorporated, growth can return.

The concept of management being both an accelerator and brake for the growth process is known as the Penrose effect. This effect is based on the idea that management has three functions, namely those of managing current operations, planning future developments, and developing future managers. An attempt by a firm to increase its rate of growth will involve:

1. A diversion of managerial efforts to planning this growth resulting from a constraint on new managers because of training needs
2. This diversion of effort results in less effective management of current operations and hence reduced current profitability
3. This reduced profitability suggests a management constraint on growth (the Penrose effect).

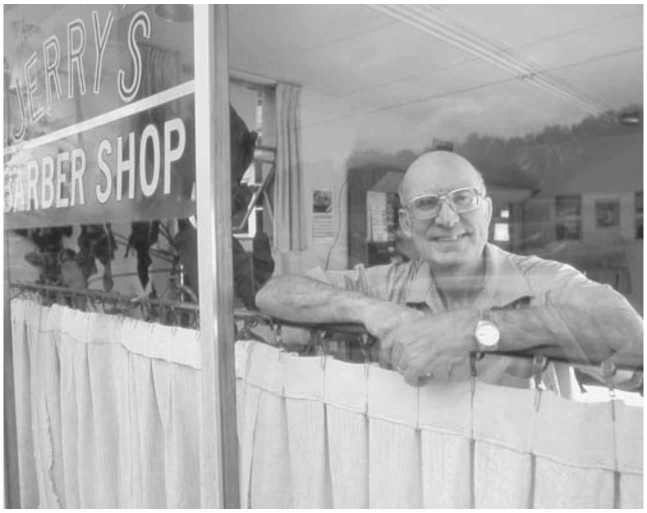
The smaller firms are, the less likely they are to be negatively affected by it.

Because firms typically do not employ all types of their resources at the same rate, capacity differs among resources. Excess capacity will motivate managers to expand in order to fully utilize the resource. Additional resources are subsequently required to complement the full employment of current resources. The optimal growth for a new venture, then, involves a balance between the full exploitation of existing resources and the development of new ones. Because resources tend to be specialized, the firm is most likely to grow or diversify in a direction related to its original core mission.

Public policy. In the period after WORLD WAR I, big business developed at a rapid pace. Policy in the United States was divided between allowing for the demise of small business on economic grounds, and preserving it for social and political reasons.

Following previous ANTITRUST legislation, the Robinson-Patman Act of 1936 intended to give small independent retailers a measure of protection by reining-in the market power large firms could achieve through predation. Out of precursor institutions such as the Reconstruction Finance Corporation and the Smaller War Plants Corporation, the U.S. Congress, in 1953, created the SBA, followed by affiliated support programs such as the Small Business Investment Company (SBIC). These moves to protect less-efficient small businesses, and maintain their viability, were often criticized as attempts to protect competitors rather than competition. Partially in response to such criticism, the focus of public policy has shifted away from protecting market structures toward the stimulation of entrepreneurship.

In Western Europe of the pre-World War II era, large corporations typically had smaller market shares than in the United States, and there was no comparable tradition of antitrust legislation. As a consequence, less of a need was felt for official support programs for small businesses. In the years following World War II, this situation gradually changed. Germany, for example, pioneered a very business-friendly legal framework that strengthened small business but did not institute a government bureaucracy such as the SBA. In many European countries, employers' federations, such as chambers of commerce, have assumed the role of supporting small business, and often they have access to public funds for this purpose. In Europe, too, public policy now attempts



Most small businesses, like this barber shop, are sole proprietorships, partnerships, or limited-liability companies.

to support entrepreneurship, R&D, and innovation rather than SMEs as such.

All developed countries, and many developing countries, currently support small businesses in some form. This can be through subsidies (such as grants, loans, sureties, tax breaks, training schemes, preferential contracting rules, etc.) or through regulation, which involves exemption from requirements to which other businesses are subject. In the United States, SBA, SBIC, and affiliated institutions give loans and a range of other services in support of small businesses. In addition, individual states operate similar programs, often in the form of enterprise zones. In the EU, various community programs channel loans and other subsidies to SMEs. In addition, member countries have their own assistance programs.

Throughout the Organization for Economic Cooperation and Development (OECD) countries, however, policies have changed over recent years. The focus has shifted away from instruments essentially constraining the freedom of firms to contract—through regulation, competition policy, or antitrust law. The new emphasis is on enabling the creation and commercialization of knowledge. Such policies include encouraging R&D, venture capital, new firm start-ups, and the cooperation between universities, research institutions, and small firms. In the United States, the Small Business Innovation Research (SBIR) program enacted by Congress in 1984 (as a result of the Small Business Innovation Development Act) is an example of this new approach. It requires federal agencies (such as the Department of Energy, Department of Defense, NASA, or the National Institutes of Health) to set aside a certain share of their extramural R&D budgets for SBIR, from which small businesses are to benefit.

Small-business trends. It may be argued that small firms make two indispensable contributions to the economy. First, they are an integral part of the renewal process that pervades market economies. New and small firms play a crucial role in experimentation and innovation that leads to technological change, productivity, and economic growth. Second, small firms are the essential mechanism by which millions enter the economic and social mainstream of societies based on market economies.

Small businesses, and particularly new ones, are seen more than ever as vehicles for entrepreneurship, contributing not just to employment and economic growth but also to innovation and competitive power. The focus of the debate has shifted from small businesses as a social good that should be maintained by public policy at an economic cost, to small businesses as a vehicle for entrepreneurship. In fact, economic research has established that a cost in terms of foregone economic growth will be incurred from a lack of entrepreneurship.

There is ample evidence that economic activity shifted from large to small firms in the 1970s and 1980s, a trend that has continued since. In the United States, the share of the 500 largest corporations (Fortune 500) in total employment dropped from 20 percent in 1970 to 8.5 percent in 1996 and to 7.9 percent in 1999. Increasing differentiation of consumer wants, together with the instability of markets in the 1970s, resulted in the demise of mass production and the rise of flexible specialization. From the perspective of production, this means that economies of scale have lost importance; from the perspective of industrial organization, it has led to the decentralization and vertical disintegration of large firms. Furthermore, better and more inexpensive forms of communication have lowered transaction costs, which no longer present an insurmountable disadvantage for smaller firms. As much of economic activity becomes more knowledge-intensive, the playing field is leveled further—for there is no reason to assume small firms cannot hold their own in the production and particularly the application of knowledge. All of these trends have provided for more auspicious conditions for small business than ever before.

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Smith, Adam (1723–90)

WIDELY ACCLAIMED as the founder of modern economics, Adam Smith's importance lies not so much in the originality of his individual ideas, but in his putting these ideas together in a compendium of knowledge, *The Wealth of Nations* (1776). Unlike the work of previous economists, this book was widely read and very influential. Before his death, it had been translated into all the major European languages, and Smith was being quoted as an authority in the British Parliament.

Probably the most famous phrase associated with Smith is "the invisible hand." Smith uses this concept as part of an explanation of why businessmen will prefer to invest domestically rather than overseas when they are free to make the choice. Smith says:

> . . . and by directing that industry in such a manner as its produce is of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for society that it was no part of it. By pursuing his own interest he frequently promotes that of society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the public good.

While Smith used this expression in a specific context it has come to serve as a broad metaphor for Smith's vision of how a market economy works. It is the unintended outcome of individual actions; it is not the product of anyone's rational design. This idea has political and ethical as well as economic significance.

Smith lived during the Enlightenment, a time when many intellectuals were enthusiastic about the possibilities raised by the success of science, especially physics. Part of the impact of this scientific viewpoint was that virtually all educated people saw the natural world as driven by impersonal, non-moral forces. Gravity and inertia had replaced the gods Thor and Zeus as the world's movers. By this time, almost no one would have thought to explain a crop failure moralistically, for example, because he had offended the rain god.

Smith's assertion that a person can promote the social good, even when he does not intend to, is a step toward explaining the social world in the manner of natural science. The goodness of one's intentions is irrelevant if the workings of the economy can be understood mechanistically.

This idea remains a source of controversy. Any number of contemporary issues, such as child labor in Third World factories owned by multinational corporations, intellectual property rights for drug companies, or the effects of globalization on the standard of living of the poor, to name a few, contain an element of moral outrage over the intentions of the responsible companies or governments. This outrage comes into conflict with economists' suggestions that well-meaning legislation or boycotts could create a worse situation.

The Wealth of Nations is a seminal document of political liberalism. It argued that a system of individual liberty is compatible with, even necessary for, national prosperity. This is still cited today by economists as a key reason for limiting the scope of government intervention into economic matters.

Most of the work in economics since Smith has been concerned with representing, refining, extending, applying, criticizing, or interpreting the invisible hand. Among the ideas to be found in modern economics that come from Smith are:

1. exchange creates wealth
2. the market is a system that regulates itself through PRICE
3. CAPITAL theory
4. international TRADE theory

Exchange creates wealth. Smith argues this in the first three chapters of *The Wealth of Nations*. Specialization and division of labor make labor more productive. This occurs for three reasons:

1. Specialization causes skills to improve
2. Less time is wasted setting up and cleaning between jobs
3. Familiarity with a particular job leads to thinking about how the job could be done better.

This leads to better techniques and to the introduction of machinery.

In order for people to specialize there must be opportunity to exchange. Why work in a pin factory, if at the end of the day all you get is lots of pins. To have a motive for being a highly productive specialized pin maker, you must believe that you can trade the excess pins you don't want for other things you do. It should be noted that logically this argument could run in either direction. Exchange depends on specialization as much as specialization depends on exchange. Smith's argument, however, is that specialization depends on exchange. In this chapter Smith also argues that the general phenomenon of increased productivity through exchange and specialization is not the result of brilliant human planning, but that it was instead a consequence of a natural human propensity to "truck, barter, and exchange." This is one expression of the idea that the market system is an unintended consequence of human action. Smith also points out that it is "not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest." We are not fed by good intentions.

The market is a system regulated by prices. Here, Smith explains the theory of exchange value, and, more important, the connection between market price and social coordination. In 21st-century terms, Smith presents a vision of the economy as a self-organizing system cybernetically controlled by feedback from prices.

The central claim is that supply tends to suit itself to effectual demand. Smith defines natural price as the cost of bringing a good to market. This cost consists of wages, rents, and profits, all at their natural or normal level. Market price is what the good actually sells for. Effectual demand is the amount demanded at the natural price. Market price can deviate from natural price if supply does not equal effectual demand. For example, if too little supply is brought to market, then those who want the product and are able to pay more will bid up the market price. With market price greater than natural price, sellers of the good receive a greater than normal profit. This attracts others to this particular industry, or allows existing producers to pay higher wages and rents to attract new resources. The effect is to increase the supply of the good, driving down the price. When the market price equals the natural price, which occurs when supply equals effectual demand, there is no incentive to change the level of production.

This, then, is an EQUILIBRIUM. If this is true for all products in the economy, then a market system tends to produce exactly what people want and for which they are willing to pay the cost.

This is how a market system solves the problem of how to direct the actions of specialized workers. The self-sufficient farmer knows how much wheat to grow because he knows how much bread he wants. How does the specialized wheat farmer know how much wheat to grow, or even whether to grow wheat, rather than, say, oats, when he doesn't even know how his wheat is going to be used? Smith's answer is that he will be adequately guided by the price of wheat and the prices of his inputs. If he can earn more growing wheat than by doing something else, he can help himself and he will inadvertently serve society.

Capital theory. For Smith, division of labor and the consequent increase in labor productivity depend on two conditions: the possibility of exchange and the prior accumulation of capital. Capital is defined as that part of a person's "stock" that is reserved for the purpose of earning further revenue. Capital is divided into two major parts. Circulating capital consists of goods purchased for resale, goods meant to maintain productive labor, raw materials, and money for trade purposes. Fixed capital refers to factories and equipment, farm animals, and improvements in the land.

There are three reasons why the division of labor requires a prior accumulation of capital. First, there is a gap between the application of labor and the emergence and sale of the product. Capital is needed to sustain workers during this interval. Second is the increased productivity of specialized labor. Since a given number of specialized workers can produce more than the same number of unspecialized workers, the former need more materials per capita with which to work. These materials must be amassed beforehand if the workers are not to be idle. Finally, division of labor tends to lead to the introduction of machinery. The construction of such equipment must be performed in advance of it becoming productive.

Capital is the result of parsimonious lifestyles. Smith distinguishes between productive and unproductive labor. Productive labor adds value to a thing that it works on, while unproductive labor does not. Agricultural and manufacturing workers are productive, while menial servants are not. Wealth used to support servants merely evaporates. People with profligate lifestyles, such as rich, idle landlords, tend to use more of their wealth in the support of unproductive laborers; hence they destroy or at least do not accumulate capital.

International trade theory. Smith argues for free international trade on the same basis as he argued for noninterference with domestic exchange. It permits international specialization, hence greater prosperity. To insist on making everything domestically, such as producing wine in Scotland, would make no more sense than a farmer insisting on making his own shoes. A generation later, David RICARDO strengthened this argument with the principle of comparative advantage, which remains the core idea of international trade theory.

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Smith, Vernon L. (1927–)

OF THE TWO RECIPIENTS of the 2002 Nobel Prize in Economics (along with Daniel KAHNEMAN of Princeton University), Vernon L. Smith was recognized "for having established laboratory experiments as a tool in empirical economic analysis, especially in the study of alternative market mechanisms."

Born in Witchita, Kansas in 1927 during the economic boom before the Great DEPRESSION, Smith was raised by two politically active parents. His mother was a devoted socialist, who strongly identified with, among others, Eugene Debs' beliefs. It was his parents' influence, and the Great Depression which dominated his early childhood, that led him to pursue his scientific career.

While studying for his degree in electrical engineering at the California Institute of Technology in 1949, Smith was intrigued by a general economics course, and decided to change his course of study. He received a masters degree in economics in 1952, and earned his Ph.D. at Harvard University three years later.

Smith's Prize-winning work, mainly involving laboratory experiments, both refuted and upheld some famous economic theories not tested by controlled experiments. While it was his socialist attitudes that led him to the study of economics so that he could effectively prove the inefficiencies of a capitalist system, his research undeniably showed the efficiencies of such markets. One of his earlier experiments tested one of the most fundamental aspects of modern economic study. The equilibrium price, a theoretical concept set by past economists, is the price that is equally acceptable to both sellers and buyers under perfect market competition. Using a number of subjects, Smith randomly assigned them as either a buyer or a seller for a given good and allowed them to set a price. Using the data of both the buyers and sellers, Smith concocted a "reservation price" of each good, or a lowest-acceptable selling price and a highest-acceptable buying price, respectively. Based on the distribution of the reservation prices of the given goods, Smith was able to calculate a set equilibrium price of each good. It wasn't until he published his results in 1962 that he made a surprising discovery. The prices were obtained in the laboratory were very similar to their theoretical values, even though the subjects did not have sufficient knowledge to calculate such a price. Later experiments undoubtedly confirmed the agreement of the theory with the initial laboratory experiments.

Smith was also able to test the theoretical predictions of different types of auctions. In one controlled laboratory experiment, he upheld the notion, then only theoretically proven, that a seller could expect the same amount of revenue in an English auction (buyers increase their bids until no higher bid is recognized) as they could in a sealed second-bid auction (highest bidder pays second-highest bid.) Smith also refuted the theoretical equivalence of the Dutch auction (a high bid is eventually lowered into an acceptable one) and the first-price sealed auction (highest bidder pays his bid.)

Smith is the author of many essays covering a wide range of economic theories, including ones published in the *Journal of Political Economy* and the *American Economic Review*. In 2000, he compiled some of his best works for the publication *Bargaining and Market Behavior: Essays in Experimental Economics*. A year later, Smith and six of his colleagues left the University of Arizona to form the Interdisciplinary Center for Experimental Science (ICES) at George Mason University, which at the time of its inception was directed by Smith. At ICES, Smith continued to conduct controlled experiments and solidify developing economic theories.

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social democracy

A POLITICAL MOVEMENT that promotes a peaceful and reformist transition from capitalism to socialism is termed a social democracy. The theoretical origin of modern social democracy as a political and economic movement dates back to Eduard Bernstein (1850–1932), a German political theorist and historian.

Bernstein argued that Marxism and the revolutionary left of his time were wrong to assume that the forces inherent to capitalism would push it first to a crisis, and then to collapse as a result of a workers' revolution. Instead, Bernstein and his fellow socialists of the time, especially those in the Social Democratic Party in GERMANY, proposed a gradual approach to power within a democratically elected political environment. They argued the effectiveness of promoting social reforms that target the well-being of the working class and economically disadvantaged, without an overthrow of the governmental system. In short, Bernstein promoted replacing capitalism with economic socialism within a politically democratic regime. The social democratic reforms and ensuing social change would strengthen the middle class and the social democratic movement. Eventually, social democracy would permanently replace capitalism.

Although social democracy became a powerful political movement upon its inception in the 19th century, it was not until after WORLD WAR II that social democrats came to power in Western European countries. Two developments related to the war helped the social democratic cause. First, the war strengthened the state, rendering the statism of social democrats familiar to many people. Second, the transition from the war economy to the peace economy called for extensive social welfare programs, increasing public interest in the social welfare state.

These two developments led to the social democrats' rise to power and to the acceptance of a new social contract between government and citizens. The new arrangement of the rights and responsibilities of citizens fostered tolerance to an increasingly progressive tax scheme, which provided the revenues necessary to finance the expanding social welfare programs. In addition, the strong economic growth in Western European countries in the 1950s and 1960s created an economic environment where the tax-and-spend policies of social democrats were tolerated by the capitalist class. Moreover, both had a common enemy in communism in the Soviet Union.

The two oil shocks in the 1970s changed the fortunes of the social democratic movement. Shrinking economies led to large budget deficits, high interest rates, unemployment, inflation, balance-of-payments problems, exchange-rate instability, and crowding-out of the private investment. Neo-liberal parties capitalized on the worsening economic situation and held social democratic governments responsible for excessive social-welfare programs, emphasizing their adverse macroeconomic effects. With the rise of the neo-liberals to power, social democracy itself, ironically, entered an era of crisis. Throughout the 1980s and early 1990s, social democrats and indeed the left in general, lost touch with the people in most industrial countries, with the exception of Scandinavia. The powerful counter-revolution staged by the neo-liberals and led by Margaret THATCHER and Ronald REAGAN, caused social democrats to lose their political and economic base. Aggressive privatization and liberalization policies implemented in the UNITED KINGDOM and the UNITED STATES, along with significant cuts in social-welfare programs, successfully brought back some semblance of economic stability and growth.

It was in the late 1990s, with the Labor Party's ascent to power in England, that social democracy was revived, although in a rather controversial manner. Growing discontent with market liberalism and increasing inequalities between economic classes led to political power changes in the industrial world. Left-of-center President Bill CLINTON, and later Tony Blair and Gerhard Schroeder, were elected to office in the United States, Britain, and Germany, respectively. Shortly after entering office, Prime Minister Tony Blair adopted the neo-social-democratic view of Anthony Giddens known as the Third Way. Anthony Giddens is a sociology professor and director of the London School of Economics and Political Science. His book, *The Third Way* (a phrase which had been used extensively during the Cold War years by European social democrats), attracted both praise and condemnation upon its publication in 1998.

The Third Way argues that market liberalism and communism have failed as economic and social systems. A political and economic system that would serve the people should emphasize economic and social justice, equality of opportunity, personal responsibility, civil society, and freedom. At the same time, the role of private business in the economy as an engine for growth should be acknowledged. Proponents of the Third Way regard it as a means of modernizing social democracy to fit the realities of the rapidly changing contemporary world of globalization and technological advancement. According to them, social democracy in the modern era cannot rely on the old tax-and-spend policies that would lead to big but not necessarily effective governments, and that would limit competition and incentives, constraining markets and technological change. *The Third Way* proposes instead a social, political and economic system that is based on a balance among the state, economic markets, and civil society. In this new social contract, it is the responsibility of the citizens to realize that they cannot indefinitely remain in a position of receivership as welfare dependents. At one point, they have to give back to society by working. On the other hand, it is the responsibility of the state to implement policies that would minimize government borrowing and inflation, maintain regulatory authority, and use supply-side measures to increase growth in the economy and thus raise employment.

The emphasis on supply-side measures in this neo-social-democratic agenda is a radical shift from the old social democratic norm of relying on Keynesian demand management policies. The shift is based on the recognition that the state needs to help private business enhance productivity and profitability in the globalized and ever-more competitive world economy. The expansion of the business sector would have net positive employment effects lessening the pressures on the domestic social welfare system.

Thus, the strategy is founded on the argument that the social benefits of a one-dollar tax cut allowed to businesses are significantly higher than a one-dollar increase in social welfare expenditures. Furthermore, the state plays an important role in enhancing the human capital of the work force and emphasizes education as a means of enriching human capabilities enabling access to gainful employment. These measures lessen the need for an extensive social welfare system and for a large state.

One of the main criticisms of the Third Way is that it takes the state from its historic role as the provider of last resort on the demand-side of the economy to a role as a partner with private business on the supply-side of the economy, leaving economically marginalized groups vulnerable. Other critics have condemned the Third Way for its narrowness since it is based primarily on Anglo-Saxon culture and experience. Nevertheless, the Third Way social democrats have been making progress in several countries. The market-oriented approach of the Third Way is being adopted to lessen the burden of large and expensive social welfare systems even in Scandinavian countries, the bastions of old social democratic welfare states. SWEDEN, NORWAY, and DENMARK are experimenting with variations of the Third Way, combining markets with reforms directed at reducing the economic burden of the welfare state.

In the last two decades of the 20th century and in the early 21st century, social democrats have been in search of a new identity. The seeming success of neo-liberalism and the failure of socialism have rendered many people skeptical of the statist policies embedded in old-fashioned social democracy. The Third Way is an attempt to regain the public's trust in social democracy by providing a non-radical, reformist alternative to market liberalism and socialism.

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social security

THE TERM SOCIAL SECURITY has two meanings. In economics, it refers to the social security of a country's population; in the general UNITED STATES population, social security usually refers to the Social Security Administration.

The development of capitalist economies in northern Europe in the 18th and 19th centuries brought with it heightened levels of poverty and unemployment as livelihood came to depend on the exchange of labor for wages. Increasing social conflict over the distribution of wealth in the context of this commoditization of labor generated a greater social demand for the state provision of relief, and a growing disaffection of the working classes. The need to create market conditions conducive to capitalist accumulation spurred innovations in poor relief and risk management resulting in the expanded social domain associated with the institutions and social practices of social security. Accordingly, the origin of social security systems, first in Europe in the 30 years preceding WORLD WAR I, followed by North and South America, and later by colonial authorities in much of what has come to be known as the Third World, is conventionally explained in reference to the heightened insecurity of individuals attendant on the erosion of extended networks of social support, the transformation of the family, and the migration of rural labor to the cities.

In alternative accounts, social security appears variously as a "social wage," emblematic of the expansion of legal and political rights to social rights tied to citizenship; as society's demand for protection against the vicissitudes of the market. For John Maynard KEYNES and William H. Beveridge, key theoreticians of expanded social provision, the minimal guarantee of income is deemed essential to mitigating the evils of the un-regulated market and, more significantly, to regulating production and consumption for both the working and non-working population. Marxian perspectives, on the other hand, view the rapid expansion of social security in capitalist societies both as the outcome of class-struggle by workers to better the terms of their exploitation, and capital's concession to labor to ensure social and political stability and a productive work-force.

In contemporary usage, the term social security refers to social insurance and social assistance public programs designed to protect individuals and families against the contingencies of life and the vagaries of the market that result in the loss of income due. Comprising a range of measures including, old-age pensions, health-care, public housing, unemployment, sickness benefits, child allowances, social security practices, sometimes subsumed under the larger category of the welfare state, vary widely across countries in terms of levels of benefit, coverage, administration, political legitimacy, and the particular mix of public-private means by which these goods are provisioned. Social insurance—the state distribution of benefits based on compulsory individual contributions for old-age, unemployment, and sickness—is typically seen as an earned right based on income replacement from work. In contrast, social assistance programs, providing targeted assistance to needy groups based on means/income tested basis, involved greater administrative intervention, encroachment on privacy, and generally entailed a stigmatization of recipients.

Although access to social security has been recognized as a fundamental human right (in articles 22 and 25 of the 1948 Universal Declaration of Human Rights adopted by the United Nations General Assembly), with a variety of social security systems in place in more than 170 countries today, positive evaluations of the material benefits of social security systems, particularly its role in alleviating poverty and redistributing wealth have been challenged by Marxian and neo-Marxian scholars who see social security programs predominantly in reference to the regulation of labor. Thus, expansive social security policies are seen as central to mitigating civic disorder; and minimalist ones crucial to reinforcing work norms. Contemporary scholarship, however, drawing heavily on post-structural approaches (especially the work of Michel Foucault) is increasingly concerned with social security's disciplinary and regulative functions in post-industrial societies, particularly in the context of social security cutbacks in virtually all advanced capitalist democracies at the turn of the century.

Deeply skeptical about claims about social security's effectiveness in attenuating inequality in capitalist societies, post-structural critics suggest that its primary function in society is in relation to the production of identities and their effective social management. In contrast to direct modes of the regulation of the poor (for instance, in 18th century workhouses), the modalities of power in liberal democracies rely on the production of subjects via the many micrological channels through which power operates. On these accounts, Keynesian social security programs were vital to the production of a sociopolitical order in which classifications between the deserving and the un-deserving poor, claimants and non-claimants constituted the national-citizen/worker as the normatively produced subject of liberal governance. In contrast, cutbacks in social security spending and the marketization of social provisioning currently underway in most advanced capitalist democracies in response to heightened global economic competitiveness are seen as emblematic of new practices of governance appropriate to the new spatialization of the economy as global, and the reduced capacity of the nation-state. Cutbacks in social security spending, the privatization of insurance, pensions, and health care, and the attempt to move the unemployed needy from welfare to work-fare under conditions of heightened surveillance and behavioral scrutiny constitutes, critics suggest, a new moral technology calculated to fashion a changed subjectivity in accordance with the new axis of self-governance appropriate to the economic and political rationalities of later capitalist societies.

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socialism

THE BIRTH OF THE IDEA of the socialism grew out of important European events in the late 18th century. The participants' philosophy about the nature of society itself would lead to the full formation of the conceptual socialist ideal nearly 100 years later.

The INDUSTRIAL REVOLUTION that swept Britain, beginning in the last quarter of the 18th century, was a massive dislocation in social life: old communities were destroyed; people were forced off the land and into the tyranny of the factory; industrial diseases multiplied; hunger, poverty and illness spread; life expectancy fell. At the same time, however, several ingredients of the Industrial Revolution held out the prospect of an end to these ills. The new machinery of production that developed, especially during the early 1800s, offered the possibility of sharply reducing drudgery and toil and of massively increasing the production of wealth to eliminate poverty forever. In reality, the Industrial Revolution did no such thing. Rather than leading to an improvement in the conditions of labor, the new industry was used to increase the fortunes of a few—the new industrial capitalists. Nonetheless, some writers saw in the Industrial Revolution an enormous potential for improving the human condition. Even some well-intentioned bankers and factory owners came to believe that the forces of the Industrial Revolution should be harnessed to serve human ends.

It wasn't until the works of Karl MARX nearly 100 years later that the ideas of democracy and economics intertwined into socialism.

Marx was the first major socialist thinker who came to socialism through the struggle for democratic rights. As a young man in Germany during the early 1840s, Marx edited a newspaper, which supported the widespread extension of democratic liberties. Increasingly, Marx came to the view that the political restrictions on democracy were a result of the economic structure of society.

When the government closed down his newspaper in 1843, Marx moved to Paris. There he encountered a vibrant working class and socialist movement. Several years later, Marx moved to England where he undertook a painstaking study of the nature of the capitalist economy. Out of his experience in France and England, Marx developed a consistently democratic and revolutionary socialist outlook.

The young Marx came increasingly to believe that no society, which was divided into exploiting employer and exploited worker could ever achieve full democracy. So long as the capitalists held the bulk of economic power in society, they would continue to dominate political life. Full democracy, Marx argued, required the overcoming of class division in society.

Marx was also the first major socialist thinker to make the principle of self-emancipation—the principle that socialism could only be brought into being by the self-mobilization and self-organization of the working class; a fundamental aspect of the socialist project. Marx's prediction of the working class leading a revolution rang true in the early 20th century, when the Bolsheviks, led by Vladimir Lenin, overthrew Czarist Russia and transformed it into a self-proclaimed socialist state. The initial system of government, as American journalist John Reed described, was inherently democratic: "At least twice a year delegates are elected from all over Russia to the All-Russian Congress of Soviets . . . This body, consisting of about 2,000 delegates, meets in the capital in the form of a great soviet, and settles upon the essentials of national policy. It elects a central executive committee, like the Central Committee of the Petrograd Soviet, which invites delegates from the central committees of all democratic organizations."

However, the brave and courageous ambitions of the state to turn Russia into a land of working class prosperity proved to be just that, ambitions. Instead of a new hope for the working class, Russia became a totalitarian state, never realizing it's full potential, and collapsing in the late 20th century.

What passed itself off as socialism was generally an elitist and authoritarian doctrine strongly resembling the anti-democratic visions of socialism. There were, of course, major national liberation struggles, such as those in China and Cuba, which freed colonial nations from the oppressive grip of a major world powers. As victories against imperialism, these movements were justly deserving of support. But the claims of the Chinese and Cuban regimes to be socialist have stained the image of genuine socialism everywhere, much like the Josef Stalin regime of the Soviet Union. History has yet to see a true, successful socialist society.

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Solow, Robert (1924–)

BORN IN BROOKLYN, New York, to children of immigrants, Robert Merton Solow would eventually become one of the major figures of American neo-Keynesian macroeconomics. Along with Trevor Swan, he authored the seminal articles in the modern scientific literature on economic growth. In 1987, he was awarded the Nobel Prize in Economics for his work on the topic.

A good student from an early age, Solow won a scholarship to attend Harvard University in 1940 at the age of 16. After two years of schooling, he left Harvard to join the army, but at the conclusion of WORLD WAR II, he returned and began to study economics and statistics. Under the guidance of Wassily LEONTIEF, he earned a B.A. and then Ph.D. in economics from Harvard. In 1951, shortly before graduating, he accepted a position teaching statistics and ECONOMETRICS in the Massachusetts Institute of Technology economics department, where he remained until his retirement.

In 1956, Solow published his most important theoretical paper on the topic of growth, "A Contribution to the Theory of Economic Growth." In it, he showed how the then-standard model could be modified to provide a much more satisfactory account of how growth takes place.

According to the Harrod-Domar model, economic growth is inherently unstable in the sense that if the national savings rate ever deviates from its equilibrium value, the economy will be put on a path leading further away from equilibrium. Solow felt that this feature of the Harrod-Domar model was implausible, given the relatively smooth growth observed in the real world. He showed that the problem is eliminated if production is modeled with a neoclassical production function and prices in all markets are flexible. In his model, the capital-output ratio automatically adjusts to insure that the demand for output expands at the same rate as production, regardless of the savings rate.

In addition to his theoretical work on growth, Solow was the first to demonstrate that technological improvement, rather than capital accumulation and population growth, is responsible for nearly half of all economic growth.

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Sony Corporation

A PIONEER IN THE production and global distribution of consumer electronics, Sony's early growth paralleled JAPAN's dramatic recovery following defeat in WORLD WAR II. Masaru Ibuka and Akio Morita incorporated the Tokyo Telecommunications Engineering Corporation (Tokyo Tsushin Kogyo) in May 1946. In 1950, the company marketed the first magnetic tape recorder in Japan, and developed equipment for the Japan Broadcasting Company (NHK) and its first stereo radio transmission in 1952.

In 1953, Ibuka and Morita gambled on new transistor technology. Morita negotiated an agreement to license Western Electric's transistor design for a fee of $25,000. Japanese government officials, however, were reluctant to permit a small company to spend Japan's scarce reserve of dollars on such a risky venture. After several months of lobbying, the government finally issued a foreign exchange permit. The company produced the first successful transistors made in Japan in May 1954. It manufactured Japan's first all-transistor radio in 1955 and the world's first pocket-sized model in 1957.

In 1958, Tokyo Telecommunications changed its name to Sony, which was easy to pronounce in most languages. The name combined the Latin word for sound (sonus) with the English word sonny, which Ibuka and Morita associated with adventurous youth unafraid of overturning established practices. In the early 1960s, Sony was true to its rebellious image when it marketed portable 5- and 8-inch televisions in the American market while competitors built the biggest possible sets. Sony also gambled on new technology when it entered the color television market. Unwilling to simply copy RCA's shadow mask color system, Sony engineers experimented for nearly seven years to produce a brighter color picture before announcing the Trinitron in April 1968.

Sony helped to create the home-video industry with its 1975 introduction of the Betamax video tape recorder. The Sony Betamax soon came under attack when Universal Studios and Walt Disney Productions alleged that home-video recording violated television program copyrights. After a long legal battle, the U.S. Supreme Court ruled in 1984 that personal recording for later viewing was permitted under copyright law. Sony also engaged in a 12-year struggle over video format after JVC introduced the incompatible VHS system in 1976. Since availability of movie titles proved decisive in the Betamax defeat, Sony acquired CBS records in 1988 and Columbia Pictures Entertainment in 1989 to better control "software" production for its electronic devices.

Other Sony innovations include the 1979 Walkman portable stereo, the 8mm camcorder in 1985, and the 1994 PlayStation video game system. In 2002, Sony reported sales of $53.1 billion worth of electronics, video games, music, motion pictures, and financial services, making it the 37th largest company in the world.

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Soros, George (1930–)

A HIGHLY SUCCESSFUL investor, multibillionaire, and philanthropist, George Soros is also the author of seven books on globalization, financial markets, and what he calls the "open society." His Quantum Fund has achieved an average annual return of over 30 percent, among the highest of any investment funds.

Born in Hungary, Soros lived under Nazi occupation during WORLD WAR II and briefly under post-war communism. He then went to capitalist England and, in 1952, graduated from the London School of Economics. There, he studied under philosopher Karl Popper whose essay, "The Open Society and Its Enemies," and whose philosophy of science deeply impressed Soros.

Like Popper, Soros holds that human beings have imperfect knowledge of the world. Society is therefore likely to reach the best solutions to the world's problems only if it allows free and open debate by people of diverse views. His philanthropic efforts, beginning in 1979 and working through his Open Society Institute, have mainly been dedicated to creating institutions that support an open society. He has given enormous funding to build universities, civic organizations, and other democratic institutions in Eastern Europe and the former Soviet Union. The Open Society Institute has also funded programs in the United States, including the campaign to legalize the medical use of marijuana.

While Soros is perhaps best known for having risked $10 billion in a successful bet against the British pound in 1992, ultimately making $2 billion on the deal, he also insists that financial markets are inherently unstable and must be contained. This is because, in financial markets, unlike markets for physical goods, there is "reflexivity"—two-way causation between the thinking of players and the outcomes in the market. What players judge will happen affects what they buy and sell, and hence affects the market's behavior. But market behavior, in turn, affects players' judgments.

Players' views easily become progressively divorced from reality, leading to speculative bubbles and crashes. Apart from using the idea of reflexivity to explain why financial markets are inherently unstable, Soros also used the concept to predict turns in the market and thereby reaped large gains.

As a reformer, Soros has proposed making both the WORLD BANK and the INTERNATIONAL MONETARY FUND (IMF) less dominated by developed countries, and strengthening the International Labor Organization as a way of promoting labor rights and standards worldwide. To reduce world inequality, he also has proposed creating a global development fund administered by a board of eminent persons and funded by country contributions with special drawing rights.

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South Africa

THE ECONOMY OF South Africa was for many years agricultural; that is, until the late 1800s, when diamonds were discovered near Kimberley (1867) and strains of gold were found along the banks of the Witwatersrand River (1889). A whole new era opened, hopeful miners populated the country well into the 20th century. It was not until the 1940s that South Africa's two major industries, mining and agriculture, became developed enough to produce a variety of commodities. The country was still very much dependent on the rest of the world for manufactured goods. Starting with the end of WORLD WAR II, 1945, South Africa began manufacturing much of its own commodities, to the point that it became an efficient distributor of goods to major urban centers throughout the sub-Saharan region.

Since the 1940s, South Africa has experienced a series of across-the-board growth rates—high and low—from hungry years when the economy seemed doomed to failure, to years when the economy was among the highest and most enviable in the world. For example, the South Africa that existed in the early 2000s, a magnet to foreign investors, bears little resemblance to the country of only a few decades ago. Under economic sanctions, South Africa's economy struggled as foreign powers shunned the nation's policy of apartheid, or government sponsored segregation.

With apartheid behind it, the country can be described as a middle-income, developing nation with an abundant supply of resources and well-developed financial, legal, communications, energy, and transport sectors. Its stock exchange ranks among the 10 largest in the world, and is accompanied by a wide infrastructure supporting ongoing major shipment transactions with other parts of the globe.

South Africa's GROSS DOMESTIC PRODUCT (GDP) at the end of 2001 was $412 billion, with a per capita GDP of $9,400. These figures speak for themselves when comparing them with the 1991 figures—a mere decade earlier. At the end of 1991, the GDP was $131 billion and the per capita was $3,110.

But, this has been no surprise to economic forecasters monitoring the country's performance. Annual GDP growth between 1994 and 1997 fluctuated between 1.5 percent and 3.4 percent. A brief global financial crisis (1998) saw a small percentage drop, but in 1999 it quickly rebounded. The success indicated by the GDP ratios is very much due to the government's consumer inflation policies. Until 1997, inflation had been running in double digits; in 1998 it read 6.9 percent—a dramatic drop. By 2000, inflation had dipped below 6 percent.

South Africa's government explains its priorities are to upgrade its forces to better fight crime and corruption, create more jobs, provide education for those who cannot afford it, train the unskilled, house the homeless, improve and expand health care coverage, alleviate poverty and maintain growth in economy.

"South Africa continues to lack skilled labor," notes the U.S. State Department's *Country Commercial Guide to South Africa*. It lacks labor in "not only the professional fields, but also in practical technical fields. This skills' shortage results from the inherited shortcomings of the educational system (and) the departure of skilled laborers to more lucrative employment abroad."

The state of the labor force remains South Africa's greatest challenge. 2001 figures report a 30 percent unemployment rate, a leftover casualty from the apartheid period. The fight to cure poverty has also been a long, hard battle. In 1990, the government began a long-term program aimed at sustaining economic growth and redressing socioeconomic disparities. The Reconstruction and Development Program (RDP) sought to create programs to improve the daily lifestyles for the "vast majority." Under the RDP, basic human services, education, and health care policies were re-examined and solutions presented. Not long after, the RDP was dissolved as a single unit, but the work it began was divided into several governmental bodies. Improvements continued, but perhaps without a single, tightened initiative such as the RDP, the war against unemployment became less focused.

In 1996, the government issued the four-year-long Growth, Employment and Redistribution plan, better known as GEAR. GEAR committed to open markets, privatization, and an investment climate that brought a greater discipline to the economy, using MACROECONOMIC policies. Some success was evident, but by 2000 it became obvious that GEAR failed to boost formal, ongoing employment and to empower the black population with more social middle-class mobility—two of its chief objectives.

Other, strictly budgetary-type reforms paralleled GEAR's timeline. The Medium-Term Expenditure Framework and the Public Finance Management Act, both successful, gave South Africa the ability to more accurately monitor the economy. As well, trade procedures were liberalized, import tariffs lowered and, with the country's acceptance of the obligations chartered by the WORLD TRADE ORGANIZATION (WTO), a free-market system was formally adopted.

In 1999, the South African Cabinet, the European Council of Ministers and the European Commission approved the South African/European Union Trade, Development and Cooperation Agreement. According to the U.S. State Department's report on South African commerce, the pact obliges the EUROPEAN UNION (EU) to "full liberalization of 95 percent of South African imports over a 10-year period, while South Africa is to liberalize 86 percent of EU imports over a 12-year period." This includes, particularly, agricultural goods.

South Africa's agriculture accounts for about three percent of the GROSS NATIONAL PRODUCT (GNP) but comprises some 31 percent of the labor force, per 2001 estimates. Major agricultural output includes produce and meat products.

Being a country rich in minerals, South Africa is the world's largest producer and exporter of gold and platinum, the latter having overtaken the former as the biggest foreign-exchange earner for 2000. Mining has played the main role in the economic development of the country. Beyond the gold and platinum, the country is also the world's largest producer of manganese, chromium, vanadium, and alumino-sillicates. It is the globe's number-two producer of vermiculite and zirconium, and third in the diamond mine industry. During the early 2000s, the world demand has affected the prices and costs of certain mining sectors, causing transformations within the South African mining industry. Mining companies have been, for the most part, restructured and merged.

Exports reached 29.1 percent of GDP in 2001, up more than 11 percent from 1991. Major overseas trading partners are the UNITED KINGDOM, the UNITED STATES, GERMANY, ITALY, BELGIUM, and JAPAN. Because of its strategic, active investment in both the Southern African Customs Union (SACU) and the Southern African Development Community (SADC), South Africa has been able to increase its relationship—and business of trade—with fellow sub-Saharan African countries.

In 2003, a Reuters news story announced that South Africa remains an optimistic haven in the eyes of 30 of the world's economists. Polled, the experts declared that they see the country promising—and practicing—improved growth, a stable inflation, a steady rate of exchange, and lower interest rates.

On the corporate side, the U.S. State Department foresees certain businesses and non-agricultural service industries growing in the South African economy. Some of these are the cellular industry and the internet-service provider industry. The computer and software services market are expected to continue to expand. Opportunities exist for enterprising technology companies.

The tourist industry has also grown in South Africa. By the late 1990s, the World Tourism Organization ranked South Africa among the top leisure travel destinations, with six million visitors annually.

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Spain

BEARING LITTLE RESEMBLANCE to the postcard land of conquistadors, vineyards, pastoral hills, and Don Quixote, the Spain of the 21st century ranks fifth economically in overall Europe and number 10 among the world's most technology-minded, industrialized nations. Its GROSS DOMESTIC PRODUCT (GDP) ended 2001 at $828 billion, effected by Spain's early membership in the EUROPEAN UNION (EU) IN 1986, and its adoption of the EURO currency in 2002.

Spain's history was shaped by Phoenicians, Romans, and Germanic tribes, which all had a strong influence on the people of the Iberian Peninsula. Perhaps the greatest artistic and intellectual ferment in Spain was under the Moors, the Islamic conquerors who crossed the Straits of Gibraltar in the early 700s and ruled the land for more than seven centuries. Universities, unique architecture and an age of religious toleration were all fostered by the Islamic rulers. After many conflicts with Christian forces, the Moors were finally ousted in 1492. That same year, Christopher Columbus crossed the Atlantic under the Spanish flag and revealed the New World to Europe.

The next century was the height of Spain's power and influence throughout the world. Some historians point to Spain as the first true worldwide empire. In addition to colonies from the Philippines to Mexico, Spanish kings controlled all or parts of what are now PORTUGAL, the NETHERLANDS, ITALY, and FRANCE. The economic realities of managing an empire did not match the country's ambitions, however, and Spain went into a decline that saw it lose nearly all of its colonial possessions by the late 1800s.

In the early part of the 20th century, Spain saw its traditional culture and economy clash with modern political and social forces. The clash culminated in 1936 with the outbreak of the Spanish Civil War. Fascist dictator Francisco Franco, with the help of fellow fascists Adolf Hitler and Benito Mussolini, emerged victorious from the civil war and ruled until his death in 1975. He left Spain in the care of King Juan Carlos I, who soon led Spain toward democracy.

With such a heritage of exploration and colonization, the Spanish administration of the early 21st century continues to support privatization of the economy—as well as liberalization and deregulation—and some tax reforms that have been helpful in sustaining growth. Although Spain's unemployment rate has reached levels of 14 percent, the worst of the EU countries, the rate has fallen steadily since the late 1990s. "Spain has been transformed in the last three decades from a rural, backward, agricultural country into a nation with a diversified economy and strong manufacturing and service sectors," explains the Spanish government. Rising from the list of periphery countries to prosperous core nations such as GERMANY, ITALY, and the UNITED KINGDOM in the early 20th century, Spain and its economy found itself exceeding those countries' growth averages later in the century.

A strong factor of Spain's economic strength is continuing legislation that promotes modernization of technology and entry into the highly competitive, aggressive circle of top European technology markets. Thus, foreign investors eye Spain's attributes with an interested eye.

Investors come from both abroad (including the UNITED STATES) and heavily from among Spain's fellow members in the EU, some 55 percent of total investment. This includes FRANCE, the NETHERLANDS, and Germany. In speaking of its economic ties to Spain, the German Embassy writes, "Spain is an attractive country for investment. . . . The Spanish economy assumes an increasingly international dimension and this has resulted in greater economic activity."

Traditionally a farming country, Spain's agricultural export (now 8 percent of the GDP) has been shrinking since the mid-1950s, subordinated by the rapid growth of manufacturing, mining, construction, and services. Agricultural output, though somewhat diminished in a modern era, has certainly not become unimportant. Products include, as they have for centuries, olives, tomatoes, grapes, sugar beets, wheat, citrus fruits, strawberries, lemons, and oranges. Olive oil is produced in quantities incomparable with the rest of the world. Wine products abound, coming especially from the rich, fertile regions of Andalucia, Rioja, and Jerez de la Frontera.

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Spanish-American War

THE SPANISH-AMERICAN War of 1898 was a turning point for the UNITED STATES. Victory over the empire of SPAIN in this brief conflict marked America's debut onto the world stage. In the aftermath of the "splendid little war," Americans emerged confident, energetic, and eager to spread their presumed blessings and values of democracy, Christianity, and unbridled capitalism to the world as the United States took its place alongside the great and powerful nations across the globe.

The background of the Spanish-American War can be traced to American interest in CUBA, a colony of the Spanish Empire in the late 19th century. Located only 90 miles south of Florida, Cuba's proximity to the Caribbean and to America proved a source of economic and security interest to the United States. In 1895, Cubans revolted against Spain for their independence. Americans, outraged with the Spanish treatment of the island residents, sympathized with the Cuban rebels.

Historians have also suggested that American business interests favored war with Spain over Cuba. War could spur business growth in the United States, end Spanish control of Cuba, and allow American merchant interests to expand their Cuban trade. A delay in intervention might cause damage to American investments in Cuba; thus, military action was required to protect economic interests. However, such economic interests were not necessarily consistent with the business community as a whole. By the late 1890s, the U.S. economy was rebounding and members of the business community feared that military involvement in Cuba would hamper the natural recovery of the market-based society.

But in general, Americans were in favor of *Cuba libre*, or free Cuba. Concerns over Cuba were intensified through the activities of the "yellow" press, journalists who sought to increase newspaper circulation by sensational treatment of news from Cuba. The reports of the yellow press enraged and mobilized Americans against Spain. Tensions between the two nations continued to grow until they erupted in war in 1898.

The immediate catalyst for military conflict was the sinking of the U.S.S. *Maine*. While visiting Havana, Cuba, the American battleship was blown up, killing 260 American sailors. Although the cause of the explosion was unknown, it moved Americans to rally against Spain and mobilize for war.

Inspired by the call to arms—"Remember the Maine!"—the American victory over Spain was easy and quick. Only 379 of the nearly 280,000 men who served in the American armed forces died from enemy action. The financial cost of the war was also small, amounting to roughly $250 million. In particular, American naval power proved crucial in destroying the Spanish fleet in the Caribbean. The war also projected the heroism of a rising Theodore ROOSEVELT who led his crew of Rough Riders up San Juan Hill on the island.

Although the war itself lasted only a few months, the effects were far-reaching. With the 1898 Treaty of Paris, a defeated Spain agreed to free Cuba and to cede Puerto Rico and Guam to the United States. Additionally, the Philippine islands, located in the Eastern Pacific, were sold to the United States for $20 million. By acquiring these lands, America gained control over international resources, especially the sugar trade, and thus provided an important source of capital to the American business community.

Having established its military and economic predominance, the United States emerged from the Spanish-American War with territories in the Caribbean and in the Pacific. These new land claims ignited a debate between imperialists, supporters of a United States empire, and anti-imperialists, those against an expanded American empire. On one hand, American business interests relished the commercial advantages that control over the Philippines, Cuba, and Guam promised, but alternatively, some Americans were skeptical and anxious over the implications of an American empire.

The debate played out in the presidential election of 1898 between anti-imperialist, Democrat William Jennings Bryan, who argued that imperialism abroad would only bring despotism to domestic soil, and Republican and imperialist, William McKinley, who won a decisive victory.

The economic and political respect and recognition that the victory over Spain afforded the United States propelled the nation into the foreground of global power and inaugurated an unprecedented sense of nationalism at the dawn of the 20th century.

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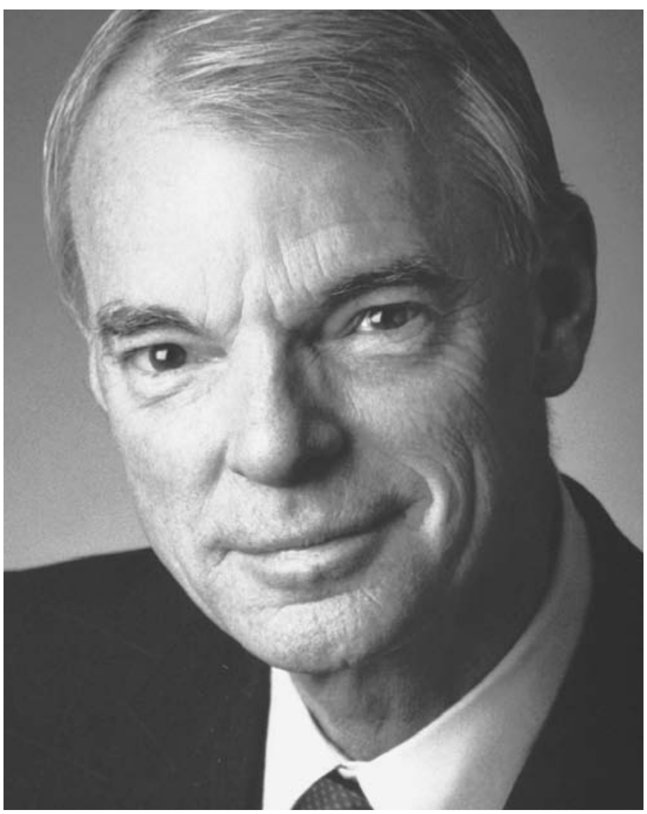

Michael Spence proposed that people "signaled" their value to employers by citing their achievements during job interviews.

Spence, Michael (1943–)

A. MICHAEL SPENCE WAS born in Montclair, New Jersey, completed his B.A. at Princeton University in 1966 and his M.A. at the University of Oxford two years later. He obtained a Ph.D. from Harvard University in 1972. Spence was awarded the Nobel Prize in Economics, jointly with George A. AKERLOF and Joseph E. STIGLITZ in 2001, for his work on signaling in markets with asymmetric information.

Spence's groundbreaking work began with his Ph.D. dissertation at Harvard, in which he developed his theory of market signaling in labor markets. To understand his theory, consider the following scenario: An employer has difficulty assessing the productivity of a job applicant and thus offers a wage that is based on the average ability of prospective employees. This means that workers that are highly productive end up with wages that do not reflect their high abilities. Spence pointed out that these workers may have another option. Instead of working at the average wage, they may attempt to "signal" their higher ability to the employer and demand a higher wage. In order for a signal to yield a higher wage offer, it must be the case that the signal reveals the worker's ability. The high-productivity worker has to find a credible signal that low-ability workers would find too costly, even if they were subsequently granted a very high wage.

In Spence's (deliberately highly stylized) model, education serves as such a signal. It is assumed that education is costly due to the effort spent on obtaining a degree. People who tend to be more productive, however, find it less costly to do so than people who are less productive. Thus, education levels may serve as a signal of how productive one is. It should be noted, that as a lifelong educator, Spence has been disappointed by his model being interpreted to imply that education is merely a signal and does not serve productive purposes.

It has been noted that signaling is not purely an economic phenomenon, as evidenced in biological natural selection. In order to attract mates, many animals will use resources, which by themselves serve little other purpose, to signal health and thus good genes (e.g., extravagant colorings and feather displays of male birds).

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Spencer, Herbert (1820–1903)

IN POPULAR THOUGHT the phrase "the survival of the fittest" has long been overwhelmingly associated with Charles Darwin's theory of evolution. In fact, it was Herbert Spencer who coined the phrase in *Principles of Biology* (1864). Indeed, Spencer set forth his theory of evolution before Darwin's theory was known and interestingly, in distinct contrast to Darwin, Spencer's evolutionary theory was derived for his contemplations on human society. For much of the 20th century, however, Spencer's writings were dismissed entirely as the product of a simple-minded and ideologically dangerous quack. In this respect, however, one must note that Spencer was a prolific scholar with a strong scientific orientation who forcefully insisted that social phenomena be studied using scientific methods.

Moreover, next to John Stuart MILL, Spencer was the most widely read nonfiction writer in English of the 19th century. At least 1 million copies of his books were sold, and his most important works were translated widely, appearing in Arabic, Chinese, French, German, Italian, Japanese, Russian, and Spanish.

Spencer's learned contemporaries often referred to his scholarship with the highest praise. For example, Darwin once stated that Spencer was "by far the greatest living philosopher in England; perhaps equal to any that have lived." And Alfred MARSHALL, the doyen of British neoclassical economics, said of Spencer, "There is probably no one who gave as strong a stimulus to the thoughts of the younger Cambridge graduates 39 or 40 years ago as he. He opened a new world of promise; he set men on high enterprise in many diverse directions; and though he may have regulated English intellectual work less than Mill did, I believe he did more toward increasing its utility."

Spencer was born in Derby, England, and had a lifespan coinciding closely to that of Queen Victoria. Of the nine children born to William George Spencer and his wife, Harriet Holmes Spencer, Herbert, the eldest, was the sole survivor. His father, a highly respected schoolteacher with strong anti-authoritarian and dissenting religious views, did much to incline Herbert toward a lifetime of nonconformity.

Initially, Herbert's formal education was carried out by his schoolteacher father and his uncle. After three years, Herbert, declined his uncle's offer to finance his studies at Cambridge University. Consequently, from age 16 on, Herbert was largely self-educated. He published his first work, *On the Proper Sphere of Government*, at age 22. Spencer tried a career as a schoolteacher, for a few months, and then was employed as a railway civil engineer for approximately four years. His true love, however, was writing on philosophy, the natural sciences, and social policy, which significant inheritances from his father and two uncles permitted him.

Spencer was a prolific writer whose interests ranged over philosophy, ethics, biology, sociology, and political economy. His grand ambition was to link these subjects together into a holistic system of thought he labeled the "synthetic philosophy." In brief, Spencer sought to apply the principle of evolutionary progress to all branches of knowledge. While most modern scholars recognize serious deficiencies and errors in Spencer's system of thought, it is worthwhile to review briefly his key contributions to political economy.

Spencer, like Karl MARX, envisioned society as evolving toward a utopia. Spencer's utopia, however, was an extreme version of LAISSEZ-FAIRE capitalism, even more extreme than that envisioned by Adam SMITH in *The Wealth of Nations* (1776). Spencer believed that such a society would best maximize the happiness or welfare of society. To his credit, Spencer made a careful distinction between the welfare of society as an entity and the total welfare of society viewed as an aggregation of the individual levels of welfare of all the members of society. Spencer, the political LIBERTARIAN, of course, argued strongly for the latter concept. In Spencer's utopia, all members of society would be free to do what they desired as long as they did not infringe on the happiness of others.

From this, it followed that the role and coercive powers of government must be sharply circumscribed. In Spencer's view, "Men developed the state for one purpose only—protection from each other and from other societies." Consequently, the proper role for government is the establishment of a legal system to enforce private contracts and to punish acts that harm others, and the establishment of a military for defensive purposes. Like Marx, as well as modern American libertarians, Spencer had a very hostile view of COLONIALISM and foreign military adventures and feared the rise of the authoritarian, highly coercive "military state." Spencer's view on the proper role of government, of course, rules out the socialist centrally planned economy as well as virtually all welfare state activities such as the supply of education, most laws regulating business, legal impediments to international trade and finance, and even laws regulating, for example, sanitary conditions. Perhaps Spencer's most controversial belief, however, was his rejection of any form of government aid to the poor, a view that came to be labeled as "Social Darwinism." A key postulate of Spencer is that all beings possess different capabilities. From this postulate, his evolutionary theory as stated in *Social Statics* (1851) led him to assert that the whole effort of nature is to rid itself of "feeble elements." And in *Man Versus the State* (1884) he stated: "It is the universal law of nature—a law that a creature not energetic enough to maintain itself must die."

Clearly, from a modern perspective his views on poverty seem extreme and cruel. Yet, Spencer did present a perceptive analysis of some key problems and dangers inherent in the vast expansion of government that took place in the first two-thirds of the 20th century. Spencer clearly saw the basic problems and deficiencies of the socialist centrally planned economy. As economic scholars such as Ludwig von MISES and Friedrich von HAYEK argued cogently and at length during the 1920s and 1930s (and a view now overwhelmingly shared by mainstream economists), a centrally planned economy results in vast inefficiencies due to massive information and incentive problems. A socialist economy, in practice, would fail to result in a workers' egalitarian utopia. Inevitably, various political and social elites of necessity would arise to run the government, to organize production, and to supervise the workers. In the early 1990s, the collapse of the socialist economies of the former Soviet Union (RUSSIA) and eastern Europe provides empirical support in this respect.

Moreover, in the latter third of the 20th century, both economic theory and much real-world experience suggest that the growth of the modern capitalist welfare state may have gone too far. A crucial element underpinning this revised view is the recognition that not only do markets sometimes fail to achieve socials goals but there exists also a wide domain of government failure. In this respect, Spencer was remarkably farsighted: He argued that the government had no way of accurately assessing and then summing the utilities of its citizens and therefore cannot legislate efficient laws, programs, and policies. The fundamental difficulties of using various democratic voting mechanisms to ascertain social preferences finally was recognized and rigorously developed by Nobel laureate Kenneth ARROW in his pathbreaking work *Social Choice and Individual Values* (1951).

In addition, Spencer clearly perceived that special-interest groups would generally dominate a democratic political process and that the outcomes emerging from the democratic political process would seldom reflect the general welfare of society, but rather the narrow interests of the strongest political pressure groups. Indeed, Spencer feared that the government bureaucracy itself would form one of the strongest pressure groups, promoting the cumulative expansion of government at the expense of society's general interest.

Finally, Spencer argued that government producers are inherently inefficient, a key reason being that such producers operate in an economic environment free from the incentives and discipline of the market. Indeed, modern economic theory has greatly weakened the case for direct government production, and much rigorous empirical research now supports the comparative efficiency of private enterprise.

While modern scholars recognize many errors and deficiencies with respect to Spencer's grand theory of science, Spencer had several important insights with respect to political economy that resonate with modern scholars. And while most will reject Social Darwinism as a scientific basis for poverty policy, many might agree with Spencer's contemporary, Mill, who strongly argued for the expansion of government-provided poor relief on the grounds that "energy and self-dependence are . . . liable to be impaired by the absence of help, as well as its excess."

In this context, it seems instructive to note that in 1992 a major campaign slogan of President Bill CLINTON's was his mantra, "We will end welfare as we know it." In 1996, the U.S. Congress passed welfare reform legislation that ended the 60-year federal welfare entitlement and replaced it with a new program, Temporary Assistance for Needy Families, with a five-year lifetime cap on benefits.

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spice trade

THE TERM, SPICE, describes natural products from a particular region in demand beyond their point of origin because of their flavor or odor. When Vasco da Gama's crew rounded the Horn of Africa, their motivation was twofold; they risked their lives "for Christ and for spices!"

Commerce in spices was so heavily entwined in the visions and plans of European explorers and conquistadors that it is commonly seen from the Western perspective as one of the first motivators in the development of Mediterranean wealth in the late Middle Ages, and the emergence of capitalist features of the international economy after 1500. In fact, the spice trade is one of the oldest human enterprises, stretching back 3,000 years or longer. It was well underway by Old Testament times; in Genesis 37:25, the boy Joseph is sold by his brothers to spice traders.

Those spices of greatest interest to Europeans (balsam, nutmeg, ginger, cinnamon, cloves, and pepper) originated in different regions of Africa and Asia and had to be transported to their European markets. The most ancient trading centers for spices in Eurasia were located in the Molucca (Spice) Islands of Micronesia and Sabaea, a territory in Southern Arabia (the origin of the Queen of Sheba, who brought spices to King Solomon upon their marriage); the oldest common trade routes for spices, along the Indian Ocean and the Silk Road, date to the 1st century B.C.E.

Italian cities such as Venice and Genoa served as a gateway for spices to Europe. The commonplace of elementary school learning, that Europeans wanted spices to disguise the taste of spoiled preserved meats, is patently false, since eating spoiled meat sickens its consumers no matter how it tastes; rather, spices were used as preservatives, in medicines, and to improve the taste of the immature wine that everyone drank. Most importantly, they provided a sign of ostentation and luxury for those who could afford them. The culinary conventions of the wealthy in medieval and early modern Europe demanded vast quantities of spices, in proportions that modern consumers would deem unpalatable.

Spices were thought to ease digestion and enhance fertility. The assumption that the Portuguese sought independent direct access to spice markets in the East because of drastically rising prices for spices in Italy, due to the Venetian monopoly, has not been supported by recent research, which suggests that prices for pepper in particular (the spice most desired by Europeans) had been falling in the late 15th century, in line with the general decline of the Venetian economy. In fact, the Portuguese entry into the spice market seems to have raised spice prices, since their penetration into the Indian Ocean after 1498 increased the costs of regional producers in protecting their wares from seizure, and exacerbated the problem of unregulated spice traffic.

While Portuguese spice distribution initially triumphed over that of Venice, Venetian trade recovered somewhat in the short term, for at least initially, Portuguese spices were found by contemporaries to lack the potency of their Venetian competition (either because they came from different species, or because of the rigors of the ocean voyage). The Dutch and English quickly joined the Portuguese and Venetians, increasing both competition and the size of the markets they supplied. By the 1520s, however, the Venetian spice trade was practically defunct.

The creation of the Dutch East India Company ultimately gave the Dutch a near monopoly over the trade in fine spices and a heavy portion of the market for black pepper, a condition achieved not only by Dutch influence on European markets, but also due to the company's success in controlling production of spices in its colonies, influencing commodity prices by stockpiling product in years of high production, ending the Silk Road trade, and disrupting native trade arrangements

The spice trade, dominated by Portugal, Venice, England, and Holland, included pepper, cinnamon, and cloves.

for spices in the East, replacing them with Dutch ships.

Controlling the Asian markets was key, for European consumption notwithstanding, Asians are estimated to have consumed three-quarters of available spices in the early modern period. By the 1720s, the Dutch were burning pepper and nutmeg in order to maintain price levels, and the Dutch East India Company went bankrupt in the 1790s, when European spice consumption waned due to a decline in the consumption of meat and changing culinary tastes; the company had failed to move significantly into the profitable and expanding cotton trade. Additionally, by the 18th century, the French had created spice plantations in their colonies, and Americans entered the pepper trade.

By the late 19th century, different agricultural exports (especially sugar, coffee, and tea) had eclipsed spices in importance, both as a segment of world exports and as a factor in economic and political relations. The last vestige of the spice trade's former notoriety was reflected in a pepper speculation scandal in the 1930s. De-colonization finally released the spice trade from the control of European powers when it was no longer of central importance, but spice exports still account for more than 1 billion dollars of world exports.

Fernand Braudel suggested peripherally in *Civilization and Capitalism* that the spice trade was essential for the development of capitalism in its cultural and economic outcomes: Profits from long-distance trade were huge and concentrated (not dissipated among numerous middle-men, as was the case with the grain trade); the spice trade was allegedly the most efficiently organized of all the European markets and caused the expansion of distribution networks; it generated connections between two zones of the nascent world economy; and crucially, it created among Europeans the long-term interest in accumulation and consumption fundamental to the success of capitalism.

This argument is probably essentially correct, but the significance of spices as a sole cause for these events is overstated. Rather, the spice trade moved in tandem and interacted with a number of developments now considered crucial for capitalist development. The attractiveness of spices imported by Muslim traders both sustained the primacy of Muslim civilization and played an important role in eliminating Europe's "in kind" payment system and returning it to a money economy by the end of the High Middle Ages.

It has also been suggested that the desire for spices caused both the contraction of the European money supply at the end of the 15th century (the "bullion famine") and was an important factor in motivating the desire of the Spanish crown to import American silver, which expanded the European money supply (and fed a steady inflation) in the 16th century. International business contacts fed the development both of financial instruments like the bill of exchange (a means of international currency exchange and money transfer before the advent of banking), and formal and informal institutions that guaranteed the enforceability of contracts. Increased business aided the development of uniform accounting procedures.

These are all developments, however, that have their roots in the international luxury trade of the late Middle Ages; they are not specific to the spice trade. Other factors more closely define the relationship of the spice trade to the growth of capitalism, especially the founding and development of joint-stock companies like the Dutch East India and its English counterpart, which provided an initial forum for capital investment, accumulation and reinvestment, and also funded further exploration of territories unknown to Europeans via private-sector investment.

Several scholars have suggested that the early joint-stock companies were the predecessors of present-day, multi-national corporations, though others emphasize the economically conservative nature of their activities. Nowhere did the spice trade move more obviously in tandem with European trends than in the area of its relationship to MERCANTILISM, the leading economic philosophy of the early modern world, where the fortunes of the spice trade mark the highs and lows of the fortunes of this idea.

The Portuguese search for spices was fueled by the same mercantilist dictate that heated the European search for colonies, the idea that imported products should not be purchased from competitors but only be consumed if they could be drawn directly from one's own colonies. At the same time, popular demand for spices and interest in consuming foreign imports from other countries demonstrated the inability of national governments to control the developing world market; thus demand for consumption of spices played an important role in demonstrating the need for a shift from mercantilist to capitalist political economies in the early modern period.

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sports

GREATER BY FAR than any recreation in the world is the playing or viewing of the games of sport. It overshadows the lure of the cinema, the theatre or any other event designed for public consumption. Under the term "athletics," sports has become an industry in many nations, driven by not only thirst for competitive skill, but by the intrinsic engines of commercial value. Games of sport, be they indoor or outdoor, whether they constitute tossing a ball through a hoop or batting a ball over a stadium wall, draw crowds by the tens of thousands. Basic by nature, fulfilling a need for diversion, the range of sports has become much more—an exact economical science.

By modern definition, the world of sports demands that an active participant be adept in some form of physical exertion. Practicing skills, the participant also maintains a certain form of discipline to keep talent finely tuned, to play the sport to the best of her ability, and, simultaneously, follow a pre-set agenda of rules governing the contest.

Some games are based on the team concept—that is, that a number of players serve as a unit to outscore another team of like individuals. Examples of these types of sports are baseball, football, basketball, and soccer. Then there are the individually based sports, when a sole player is pitted against another demonstrating similar talents. More often than not, this genre includes golf, skiing, swimming, fencing, track, and archery.

The origin of sports is obscure. The ancient Greeks contested players against players in assorted athletic festivals, such as javelin-throwing and running. Romans, too, practiced combative fencing and swimming, but they concentrated on brawn over the Greeks' brainpower. Wrestling, which had probably begun with the cave man, was refined into an art form.

In the Middle Ages, military-minded knights jousted, lance to lance, in an effort to demonstrate might. Tournaments of swordplay, polo, and falconry became popular among the flowered society; the lower castes played soccer.

The modern sports era started in the late 19th century. Stickball, renamed baseball, and refashioned by Abner Doubleday, became the epitome of sports-like challenge in the UNITED STATES, whose good-time approach was imitated by other athletics. The Olympics, which had been played under freely ungoverned rules, were formalized in 1896.

Sports that had known only local interest have become world-known due to a widening media and an enhanced transportation system. American baseball, boxing, and bicycle-racing found new fans in Europe; bullfighting drew Americans to Spain; cricket, for years British, replayed across the Commonwealth; and hockey, initially Canadian, generated new teams in America and France.

The 20th century recreated the field of sports into something vast and eternal; sports transformed from a pastime into a fever—especially in America. The country, worn from the cares of WORLD WAR I, slid into the fun-seeking 1920s when "anything carefree," to quote a popular idiom, became the thing to do. "Sultan of Swat" Babe Ruth and "Iron Man" Lou Gehrig of the New York Yankees became bigger American heroes than George Washington. In "winning one for the Gipper," Notre Dame's Knute Rockne and his "Horsemen of the Apocalypse" lit the spotlight on collegiate sports, which have grown ever since. Outside of arena-placed sports, people found great exercise in cycling, tennis, boating, and gymnastics.

A new industry internationalized. Before long, the Federacion Internationale de Football hosted its premiere World Cup in 1930; that same year, the Commonwealth Games drew amateur players to an Olympic-like series of meets; the Pan American Games (1951) united athletes from the western hemisphere.

While women have been actively involved in sports for decades, the 20th century saw a huge effort of female competition in the professional circuits. Babe Didrikson Zaharias' golfing feats in the 1940s, for instance, helped provided a threshold for women's' progress, proving that not only men can make athletics a full-time career. Since the mid-20th century, the world has seen the once male-dominated sports clubs spin off equally professional franchises for women—the Ladies Professional Golf Association (LPGA), the Professional Women's Bowling Association (PWBA), the Women's National Basketball Association (WNBA), the Ladies Professional Bowlers Tour (LPBT), to name the largest.

Sometimes, sports have been overshadowed by politics. In the late 1930s, Adolf Hitler raged when an African-American, Jesse Owens, outran his Aryan Olympians. After some Western nations boycotted the 1980 Olympics in Moscow due to the Soviet invasion of Afghanistan, the Soviets avoided the 1984 games in Los Angeles.

The business of sports. With the new millennium, the sports industry is richer, more diversified, sharper, and more business-oriented than ever before. From college court play to the professional leagues to the international Olympic games, the industry is a balance sheet of blacks and reds.

In the United States, the sports industry generates revenues of some $100 billion annually. Like any mammoth corporation, the major professional sports leagues survive on long-range planning and, season by season, often on spontaneous decision-making. The National Football League (NFL), Major League Baseball (MLB), the National Basketball Association (NBA), the National Hockey League (NHL), the Professional Golf Association (PGA), and worldwide soccer have their cycles of ups and downs. Economic problems brought about by low gate attendance, players' salary caps, marketing costs, to name just a few, continue to keep franchise owners—and the cities in which they play—alert and vigilant. However, one factor remains constant: the better the output, the meatier the income. Not surprisingly, that factor parallels any marketable product.

More concisely, in sports it all comes down to two things, both greatly related: public interest and national exposure. Teams with the most value—that is, those that increase the fastest in value—are those with the most formidable presence. This applies to all sports. One of these presence-making devices is, of course, television.

Football. In no other sport is the media factor more obvious than in the National Football League. The NFL, the most-watched, most popular American sports commodity, outpolling baseball by nearly a 2:1 margin, collected about $77 million in television revenue in 2002, according to the Associated Press. The NFL's $2 billion ancillary television-rights contract with the DirecTV satellite service dominates other broadcast athletics. Noting those types of media figures, NFL Commissioner Paul Tagliabue expressed to *USA Today* that, "The key for us is that our programming still stands far and away above all other sports programming . . . in terms of the size of our audience, the diversity of audience strength and the demographics."

Keeping media partners happy has been a golden key. Revenue generated through television contracts, Tagliabue said, has allowed most of the networks to show a profit on their NFL coverage. Flexible scheduling has been a part of the success.

Another element of the NFL's success is its strategic policy on its players' salaries. A strict salary cap ensures that, unlike baseball and basketball, no team can outspend another over a multiple-year period. The result is that there is a constant rotation of team members; it becomes almost impossible to retain the same roster of players even after a playoff year. This keeps not only the fans hopeful that their team has a chance for the full run, but also generates interest among the media. For instance, in 2002, the strategy helped to earn major television contracts with ESPN, ABC, CBS, and Fox.

Forbes magazine noted an interesting aspect, "The NFL system ensures that every team makes money, whether they win or lose . . . The 32 NFL teams sold out 90 percent of their games this year [2002] and played a total stadium capacity of 95 percent. . . . All NFL teams prosper from this league-wide success."

Baseball. Major League Baseball (MLB) operates under less-liberal rules when it comes to the team-sharing principle; the milieu of teams share only 25 percent of the league's inter-media revenue. This may be one reason why Baseball Commissioner Bud Selig in a December 2001 meeting of the House Judiciary Committee on Capitol Hill painted a dire—if not tragic—picture of the MLB's economic problems. According to Selig, the MLB lost more than $500 million (due largely to stadium operating costs) during the 2000/2001 season despite record revenues of $3.5 billion. However, in a rebuttal that has caused somewhat of a stir between the factions, *Forbes* magazine contested Selig's figures, claiming that the MLB's misled calculations are a true case of crying wolf.

In the meantime, local media revenues remain constant for Major League Baseball games, but, again, the deals effected between teams and outlets are not as even-handed as the NFL system. Unfortunately, geography determines how successfully (or unsuccessfully) baseball clubs can market their teams to the media. Doug Pappas, who operated the internet's "Business of Baseball Pages" for the Society of American Baseball Research, wrote of the 2001/2002 season: "Media revenues are heavily affected by the size of a club's local market. The (New York) Mets and the (Arizona) Diamondbacks have identical media contracts on a per capita basis, but because the New York metropolitan area is so much larger, the Mets gross $32 million more."

Clubs based in smaller cities have fewer game opportunities open to them. While a traditional media schedule consists of 150 broadcast games, those teams located at the bottom of the roster lack staying power. The Kansas City Royals, for instance, telecast 81 games, the Cincinnati Reds 85 games—all on cable. The Montreal Expos, which lag in the rear, received no English-language coverage.

Hockey. Hockey, which originated in and is still most popular in Canada, continues to have troubles of its own. The National Hockey League (NHL) flounders. Fiscal monetary problems, growing since the turn of the millennium, have reached a point that some forecasters are predicting what has come to be known as an "Armageddon on Ice." Into the year 2003, certain franchises have reached the threshold of bankruptcy court.

The league relies on gate receipts; it does not engender the vast media revenues enjoyed by the NFL, NBA, or the popular Major League Baseball teams. Gone—at least in hiatus—are the days when the public filled seasonal seats and private boxes. The larger corporations that once gobbled up blocks of tickets a season in advance can no longer afford the luxury. The Los Angeles Kings have reportedly lost $100 million over the last eight seasons, and the Florida Panthers have recently taken out a loan for $30 million. Even the most popular teams, such as the Stanley Cup–winning New Jersey Devils, have not seen a full house for a long time. Nashville and Phoenix, at one time considered two of the NHL's biggest supporting cities, now turn out less than 13,000 spectators per game.

Television revenues are minimal for this major sport; each team is allowed a mere $6 million. Of course, this might have to do with the overall fan-barometer, which puts fan interest below the NFL, the NBA, baseball, and even the majority of popular college games.

NHL Commissioner Gary Bettman, however, has not thrown up the white flag. He sees hope in the creation of a salary cap—strangely enough players' salaries continue to be high—and a reworking of certain aspects of the game. Quoting Bettman, "We must have a system that enables our clubs to be economically stable and competitive."

Basketball. The National Basketball Association (NBA) has been, since the early 1990s, thriving—and it continues to do so. Much of the thanks go to Commissioner David Stern who took over the association's reins in 1980. Seeing a corporation sagging with financial worries (17 of the 23 teams were losing money) and other problems (high drug use among the players), he turned the situation around. Cleansing the NBA's image was important, but on its heels came Stern's explosive marketing drive—to nurture the game until it was as big and important and dynamic as anything the American sports-loving public could imagine. If some criticized his carnival master tactics, Stern proved them wrong. Since Stern's appointment, NBA's revenues have risen seven times higher, almost all the teams show a profit by season's end, and attendance has increased a whopping 60 percent.

Stern's strategy was multi-point, the main elements being to upgrade the quality of players, promote visibility in the community, peak advertising, create satisfying media coverage and spread revenue sharing. It all worked.

But, what worked best was his priority—to glorify the NBA player by selecting several role models to represent the NBA league as a whole. Stern didn't have to look deeply into the rank and file; the names popped up as colorfully as their successful—but until then sadly overlooked—talents. Larry Bird, Earvin "Magic" Johnson, Julius Irving, and Michael Jordan, each in their own season, came forth as the caryatid of good sport and winning values.

Jordan is credited, especially, for turning the game into something more palatable to the eye. Simply, his airborne style sired many imitators, and those imitators, in trying to "be like Mike," presented their own brand of backhanded shots and curving lay-ups.

Media networks—NBC, CBS, ABC, ESPN and other cable stations—clamor for NBA time. In 2003, revenue exceeded $250 million, amplifying what NBC Vice President Ken Schanzer prophesied in the early 1990s: "The NBA can be extremely profitable."

"Because of the growing interest in the NBA from fans and advertisers, the networks began to shower the league with money," says sportswriter Joshua Levin. Even though in 1980 NBA games were unheard of outside the United States, by 1989 "over 50 foreign countries could regularly view NBA games," Levin continues. "The networks more than doubled professional basketball's telecasts from 20 to 42."

Professional Golf Association. The Professional Golf Association (PGA) is the world's largest sports organization, 27,000 members strong, including the Ladies' PGA. Illustrating the popularity of the game, 2001 sales estimates show a 58-percent growth, or $58 million. If that's not a hole-in-one, it's close.

The majority of association members are club professionals. The organization conducts some 40 tournaments annually and operates four major competitions. These "notable four" are: the Ryder Cup (featuring American and European players); the PGA Championship (in which only top professionals are invited to participate); the Grand Slam (considered the toughest competition between the most aggressive players); and the Champions Tour (formerly the Seniors' Championship). Other enthusiastic championships are the British Open and the Master's Tournament.

Although golf remains one of the most-watched sports on television—combining relaxing but artful play with beautifully landscaped country clubs and courses—some media woes may crouch on the horizon, due to what *Business Week* has called "senior-itis."

The Champions Tour has a history of success, playing generally from January through October and carving up for itself pieces of the pie worth many millions. (The 2001 purse weighed in at $59 million.) Corporate sponsorship has been impressive with TD Waterhouse, 3M, MasterCard, and others. But television viewership is sinking overall despite the wide audiences that newcomers such as Tiger Woods can draw.

Soccer and the World Cup. Most famous and beloved of all international sports, soccer (also known as football) is one of the oldest in existence. According to research done by Michigan State University, "The earlier varieties of what later became soccer were played almost 3,000 years ago," and are evidenced in 1004 B.C.E. Japan and 611 A.D. China. "The early Olympic games in ancient Rome featured 27 men on a side who competed so vigorously that two-thirds of them had to be hospitalized." Today, the sport is played throughout the globe, mostly in Europe, Asia, Africa, and South America. Currently, 203 countries belong to the Switzerland-based governing body, the Federacion Internationale de Football Association, or FIFA. There are six confederations, comprised of geographically succinct countries within each—Asian, African, North Central and Caribbean, Oceanic (Australia and New Zealand), South American, and European. The African confederation is the largest with 52 members.

The price tag for soccer is non-existent. Traditionally a billion-dollar business, a net-worth-and-expense ratio cannot be determined because of the clandestine nature of each club's finances. But, one thing is certain. Over the last couple of seasons it has become apparent that, to quote *Sports Illustrated*, "Soccer's finances have gotten into a mess, as far as many major clubs and countries are concerned."

The problems are most obtrusive when reviewing the economy of the annual World Cup event, the world of soccer's annual tribute to itself. Finances have been diminishing since the collapse of ITV Digital (Britain) and KirchMedia (Germany), two long-time promoters of the games. As well, franchise clubs are disintegrating. "Fiorentina, formed 90 years ago, twice Italian champions and the first winners of the European Cup in 1961, went bankrupt," writes *Sports Illustrated*, "while several Belgian clubs suffered a similar fate."

To add to the woe, FIFA's World Youth Championship 2003 tournament has been put on hold. Originally scheduled for March/April 2003, the committee was forced to postpone the games in the United Arab Emirates due to the outbreak of war in Iraq.

The Olympics. Every four years since 1896, during the summer and winter seasons, top ranking amateurs from the world's nations meet to vie for gold-, silver- and bronze-medal rankings in the world Olympics. Across the globe, people whose countries are represented in the many events are glued to their televisions, cheering on their own. Most viewers, however, do not see what it takes—or costs—to produce the inevitable greatest athletics show on earth.

There are differences between the summer and winter games, beyond the basic agenda of sports categories. Winter Olympics involve fewer countries, fewer games, and fewer athletes. Television contracts are, therefore, less for the Winter Games.

Yet, when Utah won the opportunity to host the XIX Winter 2002 Games at Salt Lake City, for example, it was a major undertaking and had a dramatic fiscal impact.

Seventy-seven nations were involved, 78 events took place. In all, 2,399 athletes participated—886 women, 1,513 men. A media's heaven, 8,730 media personnel came to Salt Lake—2,661 press persons, 6,069 broadcasters—from around the world.

The games generated a significant amount of employment, earnings and output in the Utah economy prior to and during 2002. More specific figures come from the Governor's Olympic "Demographic and Economic Analysis" committee: Output was estimated at $2.8 billion, including all sales and Olympic-related factors. More than 22,000 jobs lasting one year were created. The jobs represented some 21.4 percent of projected employment growth, according to 2001 figures. Salaries amounted to $900 million. Fifty thousand visitors were anticipated daily; visitor spending charted at $123 million.

Although final figures are not available, prior estimates of net revenue to state and local government were anticipated at $80 million to $140 million. This range was based on models of earlier games, the 1988 Winter Games in Calgary, Canada, and the 1998 Summer Games in Atlanta, Georgia. The 2002 Olympics was expected to generate $236 million in gross state and local government tax revenue and $120 million in additional expenditures for services rendered by the state and local government.

The city of Houston, Texas, is considering hosting the 2012 Games. After preliminary analysis, Economics Professor Steven Craig of the University of Houston views the opportunity as "a significant benefit to our city (with) an economic impact of $4.3 billion to the area."

Marketing, the biggest game in town. Shoelaces, jerseys, golf balls, tennis balls, nets, cleats, caps, water bottles, socks, trading cards, and so very much more—the long list of products is inevitable and as diverse as the wide arena of sports. Every team insignia, professional, college, domestic, and foreign, seems to be popping up on just about everything one could think of, from binoculars to stocking caps to bedsheets and quilts to Christmas-tree ornaments. If one of the more popular players endorses a product or if his or her photo appears on it, then the price automatically escalates . . . a Tiger Woods cap, an Air-Jordan pair of shoes, a Shaquille O'Neal sweatsuit. The sports shops and memorabilia manufacturers aren't batting an eye to this, because in that blink they might miss a beat.

The Sports Authority, America's number one sporting goods retailer operating nearly 200 stores in the contiguous United States, finished January 2003 with a revenue base of $1.43 billion, one percent up from last quarter. And as forecasters eye 2004, they foretell of another jump up to come. Nike, designer and developer of sports footwear, totaled $7.7 billion for the last nine months of 2002. Competitor Reebok International, Ltd., earned a 5 percent increase in 2002 over the previous fiscal year, accruing $3.13 billion. Clearly, the business of sports plays a major role in the economies of capitalist societies, reaching into all aspects of entertainment, manufacturing, marketing and distribution.

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INDEPENDENT SCHOLAR

Sraffa, Piero (1898–1983)

BORN IN TURIN, Italy, Piero Sraffa entered the law faculty at Turin in 1916. He completed his doctoral thesis in financial and monetary theory in 1920 and then made a trip to Britain to conduct research, where he met John Maynard KEYNES (1883–1946) for the first time. Also, in 1919, Sraffa met the Italian revolutionary, Antonio Gramsci (1891–1937), and was his close friend until Gramsci's death in prison. Both of these meetings greatly influenced Sraffa's life.

Sraffa's first essay (1926), which was first published in Italian in 1925, confronted the foundations of the orthodox analysis of Alfred MARSHALL. In 1927, he was granted a lectureship at King's College, Cambridge University. However, when Sraffa experienced anguish in presenting his unorthodox ideas, Keynes created the librarian at the Marshall Library of Economics position to keep him there.

At Cambridge, Sraffa collected and edited David RICARDO's works to produce an impressive edition. He also undertook a research project to rehabilitate classical economics. This research came to fruition with the publication of *Production of Commodities by Means of Commodities: Prelude to a Critique of Economic Theory*. In it, Sraffa solves Ricardo's problem of finding an invariable measure of value. This not only revived classical economics, but also provided the foundations for a critique of the marginal approach to capital and distribution, based on the notion of factors of production.

Production for subsistence. Sraffa starts with a simple example of a two-commodity subsistence system. Suppose that the only commodities produced and consumed in a society are corn and iron. To produce 400 units of corn, including all the necessities of workers, we need 260 units of corn and 14 units of iron. Similarly, to produce 20 units of iron, we need 140 units of corn and 6 units of iron. Then, operations for a production period (say a year) would be written as follows:

260 corn + 14 iron ∅ 400 corn
140 corn + 6 iron ∅ 20 iron
400 corn 20 iron

In this system, since 14 units of iron must exchange for 140 units of corn, the exchange (or price) ratio between them must be one unit of iron for 10 units of corn for this economy to be able to function. No other price ratios would work.

Production with surplus. Next, Sraffa examines a similar economy with a surplus. Here the same quantities of input yield output of 570 units of corn and 20 units of iron. So we will have:

260 corn + 14 iron ∅ 570 corn
140 corn + 6 iron ∅ 20 iron
400 corn 20 iron

Thus, there is a surplus of 170 units of corn. Assuming that the rate of profit (r) is equalized through competition, and that the surplus is distributed equally between the two industries, we can set the price of corn to 1 and solve for the price of iron pi in the following system:

$(260 + 14pi)\ (1+r) = 570$
$(140 + 6pi)\ (1+r) = 20pi$

The solution to this system is $pi = 14$ and $r = 0.25$. Note that these systems can be generalized, and that prices are determined without any reference to utility or marginalism.

Sraffa treats the whole of wages as variable and incorporates it into his system and asserts that the system can move with one degree of freedom. Thus, if wages are set, the rate of profit and all of the prices can be determined. Sraffa then proceeds to investigate the basic classical problem. Assuming that the method of production remains unchanged, what happens to prices and profits when the net national product has to be divided between laborers and capitalists? He proceeds to give the wage successive values ranging from 1 to 0. When wage (w) is equal to 1 the whole national income goes to wages and profits (r) are eliminated.

"At this level of wages the relative values of commodities are in proportion to their labor cost, that is to say to the quantity of labor which directly and indirectly has gone to produce them," explains Sraffa. Conversely, when w is equal to 0, all of the national income goes to the capitalists. However, it is important to note how profits and prices behave in the intermediate range.

Prices diverge from their labor contents in the intermediate range, and Sraffa's explanation of this phenomenon is the same as that of Ricardo and Karl MARX. He writes that "the key to the movement of relative prices consequent upon a change in wages lies in the inequality of the proportions in which labor and means of production are employed in the various industries." Prices diverge from the labor content according to the ratio of labor to means of production—composition of capital—in different industries. Prices are higher than their labor contents in industries with higher than average composition of capital, and are lower than their labor contents in those industries with lower than average compositions. Thus, only in industries with average compositions of capital prices reflect actual labor contents. The product of such an industry could potentially serve as a "standard commodity" by which the value of other commodities could be measured.

However, due to the interdependency of the production process—outputs of one industry is an input to other industries—the value of the means of production does not remain constant as the wage changes. Therefore, if a commodity is to act as an invariant measure of value, it must not only be produced with the average composition of capital but, also, the inputs into its production along with their inputs and so on in an infinite regression must be produced with the average composition of capital. Surely, such a commodity is not to be found, but a mixture of commodities—a "composite commodity"—that possesses these characteristics would be fine. Construction of such a commodity is a major theoretical contribution by Sraffa that reinvigorated classical economics.

Finally, Sraffa introduced the possibility of the re-switching of technique of production—the possibility that the same method of production may be the most profitable of a number of methods of production at more than one rate of profit (r) even though other methods are more profitable at rates in between—this fueled the "Cambridge Capital Controversy," that was very damaging to the marginal productivity theory of distribution.

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stagnation

THE TERM, STAGNATION, is used to describe the absence of vigorous economic activity. While orientation of various theorists differ, the idea that stagnation is a predictable fate of capitalism can be traced to the very beginnings of classical economics. The inevitability of stagnation was seen either as a natural, biological, or historical, social phenomenon. Analogously to the organic world, societies age; that is, the growth stage is followed by stagnation, and ultimately with decay. The end phase comes as a result of depletion of natural resources and/or interplay of forces intrinsic to capitalist economy and society. The common thread in the majority of theories of stagnation and breakdown is the assumption that the capitalist system is not viable without growth. Where theories differ is the belief that economic policies may overcome stagnation; the proponents of the doomsday scenario deny the possibility that economic policies are capable of defeating stagnation.

The major interest in stagnation emerged after the prolonged economic crisis of the 1930s. In particular, the works of A. Hansen (1938, 1941), P. Sweezy (1942), P. Baran (1957), Sweezy and Baran (1966), and P. Sylos-Labini are of major interest. During the economic boom of the 1960s the analysis of stagnation became less attractive to economists. However, the prolonged economic crisis of the 1970s renewed the researchers' attention to this phenomenon. The simultaneous occurrence of prolonged unemployment, overall increase in price level, i.e., INFLATION, and low productivity growth brought a new term into popularity in economics, stagflation. The focus this time was on structural changes in the world capitalistic economy.

The decline of manufacturing, the process of deindustrialization, and the inflexible corporate and bureaucratic structures were seen as the major culprits of stagnation in the modern era. Similar to the analysis of DEPRESSION, the analysts were quick to point out that the oligopolistic structures of modern capitalist economies were the principal obstacles for introduction of technological innovations. The dissatisfaction with modern societal institutions and hierarchical structure of the corporate world intensified pursuit for an alternative path of economic development. The echo of calls for alternative technologies, and particular, region-sensitive policies for economic development, appears to be a dominant argument in the current anti-globalization debate.

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Standard and Poor's

A WIDELY INFLUENTIAL provider of data related to financial investments, analysis, and valuation, Standard & Poor's is known most of all for its benchmark index of U.S. economic ratings, the S&P 500.

Standard and Poor's was founded in 1941 with the merger of the Poor's Publishing Company and the Standard Statistics Bureau. In 1860, Henry Varnum Poor (1812–1905), an editor and transportation analyst, published a study on the American railroad system, *The History of the Railroads of the United States and Canada*. In part due to the book's success as a guide for investors in railroad companies, Poor went on to establish a company to provide information about American businesses to the investor in industrial concerns, who had, according to company's motto, "the right to know."

The Standard Statistics Bureau was founded in 1906 by Luthur Lee Blake to sell financial information about American companies to banks. The Bureau went on to provide previously unavailable information for the investment market, charting debt ratings first for corporate bonds, and then in 1940, for municipal bonds as well.

The central purpose of Standard and Poor's is to research and evaluate the integrity of a given company's balance sheet and performance potential, in order to judge and publish opinions on the relative merit of investing in that company. These opinions are given an alphabetic rating system, with AAA at the top of the scale and the lower value rankings (such as B or CCC) indicating less secure investment opportunities. The riskiest gradations have earned the name "junk" bonds in the market.

The S&P 500 developed over several decades in the early 20th century.

The Standard Statistics Bureau had, as early as 1923, introduced stock market indicators, intended to provide an alternative more suitable for professional investors than the popular but limited DOW JONES Industrial Average (DJIA) then in use. Initially the company rated 26 industrial groups comprised of 233 companies, calculating these figures for publication on a weekly basis. The company soon realized the need for more timely reporting, and in 1928, switched to a reporting format that could be calculated on a daily and then eventually an hourly basis, the S&P 90 Stock Composite Index, rating a group of 50 industrial, 20 railroad, and 20 utility companies. With the merger of Poor's and Burke's firms into Standard and Poor's in 1941, the company began to actively position its 90 Index as a superior alternative to the DJIA. By the early 1950s, S&P's indices had attracted considerable attention and subscribers, including several departments of the U.S. government.

The benchmark 500 figure was introduced on March 4, 1957. The stocks chosen represent not the most valuable stocks but rather a cross-section of stocks from companies representative of important patterns and leading sectors in the economy. Due to the advent of increased computational technology, the 500 index was recalculated at one-minute intervals throughout the business day. The index's presence and influence soared during the 1960s. When the U.S. Department of Commerce established its Index of Leading Economic Indicators in 1968, the S&P 500 became one of its foundational components. McGraw-Hill acquired the company in 1966.

The Standard & Poor's system of indices continued to evolve and expand from the 1960s onward, as the company cemented its central position in the financial market. In 1976, the 500 Index was restructured to reflect 400 industrial, 40 utilities, 40 financial, and 20 transportation stocks and, for the first time, to reflect stocks outside the NEW YORK STOCK EXCHANGE (NYSE). In 1986, the index began to be calculated and disseminated on 15-second intervals for the first time. In 1988, in order to reflect an increasingly dynamic and fluid U.S. economy, the number of companies within each economic sector was allowed to fluctuate (or "float"). In 2001 the company created the Global Industry Classification Standard Direct (GISD).

In 2003, the S&P 500 comprised 500 market-weighted stocks traded on the NYSE, the AMERICAN STOCK EXCHANGE (AMEX), and NASDAQ. Standard and Poor's Index Committee oversees the S&P 500. Consisting of seven members, this highly influential body meets periodically to adjust corporate membership in the 500, adding or subtracting companies in order to maintain an optimum representative mixture of stocks.

Though criticism has been voiced about its ongoing utility and competing economic indices (such as the Wilshire 5000 and the Russell 3000), the index remains virtually synonymous with the American stock market into the 21st century. Presently, the company exists in two main divisions, Ratings Services, which maintains the data indices, and Information Services, which oversees a wide array of electronic reporting media.

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Standard Oil Company

THE STANDARD OIL COMPANY was founded in 1882 in the early days of the petroleum industry. In 1859, Edwin L. Drake had revolutionized the industry when he discovered that he could actually drill for oil underground. Nineteenth-century Americans used oil for heating lamps, as a lubricant and in some medicines; but since there were no automobiles at that time, gasoline, a byproduct of the petroleum industry was simply discarded.

John D. ROCKEFELLER saw the potential for great growth in the petroleum industry and, along with his partners, Maurice B. Clark, H.M. Flagler, and S.V. Harkness, Rockefeller was soon operating Standard Oil, the largest oil refinery in Cleveland, Ohio. Rockefeller's foresight and keen business sense soon led the company to expand by purchasing other refineries, and they were soon producing over 12 million barrels a year. By 1875, Standard Oil had spread its operations across the country. A trust agreement was signed in 1879 and amended in 1882 giving the power of this huge corporation to nine men who oversaw the operations of 40 companies and who received a portion of profits. Standard had achieved a monopoly of the petroleum industry with 75 percent of the nation's refining capacity, 90 percent of the pipeline facilities and 15 percent of crude oil products. Its holdings extended to railroads, gas, copper, iron, steel shipping, and banks and trust companies. It seemed as if Standard Oil would control the entire petroleum industry, but politics soon intervened.

The state of Ohio sued Standard Oil Company, claiming that it was violating the term of its charter by operating businesses in New York, New Jersey, Kentucky, Indiana, Kansas, Nebraska, and California, in addition to Ohio. The Ohio court decided in favor of the state. However, politicians in New Jersey had recently changed their laws to allow companies chartered in the state to become holding companies owning and operating a network of companies throughout the nation. Standard Oil moved their operations to New Jersey. As the petroleum industry grew, competition became fierce, and Standard Oil developed a reputation for ruthlessly buying up other companies by any means.

In 1904, presidential candidate Theodore ROOSEVELT promised to go after huge corporations that had developed into monopolies, and the federal government sued Standard Oil New Jersey. In 1911, the Supreme Court of the United States ordered both Standard Oil Company and the American Tobacco Company to break up into a number of separate companies. The basis for the decision was the Sherman Anti-Trust Act, which had allowed Congress to regulate the operations of corporate trusts. Standard Oil became 34 separate companies, although some of the individual companies kept the name Standard Oil. John D. Rockefeller retired, but Standard Oil New Jersey continued to grow. In 1911, the company had 6,078 shareholders. By 1963, the number had grown to 702,000 and had extended its operations around the world. Mobil Oil Corporation, Amoco Corporation, Chevron Corporation, and Exxon Corporation can all trace their roots back to Standard Oil.

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state

THE STATE IS A POLITICAL entity that comprises a set of institutions to rule, govern, and police a political unit. The state is a contract among the individuals who govern and live in the political boundaries of the state. The state in Thomas Hobbes's *Leviathan* is known as the "artificial man." It is a grouping of individuals who agree on the creation and operation of the governing body.

The Western state has its origins in Greek city-states and in the theories of Greece's most influential philosophers, Plato and Aristotle. Plato, in the *Republic*, discussed the characteristics and workings of the ideal state. In Plato's conception there would be three distinct classes within the state: the statesmen, the civilians, and the police. The rule by the statesmen would be rule by the best, that is, the aristocracy. Aristotle believed that perfection could only result when an organization is created to administer the tasks associated with government.

Adam SMITH contributed one of the more indelible views on government and the state. His LIBERTARIAN position is one that impacted later writers and indeed, 19th-century British politics. Smith (1937) writes that:

> The first duty of the sovereign, that of protecting the society from the violence and invasion of other independent societies, can be performed only by means of a military force. . . . The second duty of the sovereign, that of protecting, as far as possible, every member of the society from the injustice or oppression of every other member of it, or the duty of establishing an exact administration of justice. . . . The third and last duty of the sovereign or commonwealth is that of erecting and maintaining those public institutions and those public works, which, may be in the highest degree advantageous to a great society.

The state in neo-institutional economics is viewed as a device to reduce transaction costs. Ever since Ronald COASE's (1960) famous paper on EXTERNALITIES, a world of zero transaction costs means that if property rights are well defined, parties involved in any dispute will make an agreement so that an efficient outcome results. This is a world of minimal government since only property rights need be defined. D.C. NORTH (1979) contributed one of the more important theories of the state in this vein. North sees the state very much as an organization such as the firm, and as Coase asserted (1937) in another seminal paper, the firm is a mechanism that solves the exchange problem when transaction costs are high.

North (1981) defines the state as "an organization with comparative advantage in violence, extending over a geographic area whose boundaries are determined by its power to tax constituents." The ruler in this geographic area has a monopoly as far as government is concerned but the ruler is constrained by threats of new order, opportunistic behavior of the agents of the state, and measurement costs. North clearly incorporates the transaction costs involved with the operation of a variety of organizations including the firm. One can almost picture the state as a large encompassing organization structured like a firm and created to minimize transaction costs.

Hobbes, in *Leviathan*, asserts the necessity of government and the state emerges as a struggle for power in which the strong win and get to govern. The machine created by the rulers is essential for enforcing the rules and laws of society, and the rulers erect and keep a police and judicial system. Hobbes applied geometry to his theory of the state, with an absolute ruler at the top and a hierarchy of underlings who answer to the ruler. Hobbes visualized a form of the state in which civil society is based on a set of laws and government, which rules by force and provides the clockworks by which a well-functioning society operates. Civil war in Hobbes's mind is the greatest hazard facing the sovereign because it means the suspension of civil society.

The state of nature, as the theory of the state was often called, received a thorough treatment in John LOCKE's philosophy. The right to judge and discipline people is a defining characteristic. In Locke's view, the people ought to be sovereign. The following of the rules of government constitutes the social contract. He also argued for the separation of legislative and executive powers and if these powers abuse their positions, the people have a right to overthrow the existing government. The rights of life and property are protected under natural law according to Locke.

In the natural reason argument, such as Locke's and later Jean-Jacques Rousseau's, in the original or nascent stage of mankind, anarchy reigned, but by reason people came together and formed the social contract, or the state of nature. They can come together and form what

Robert Nozick (1974) calls protective societies. And since only one protective association is feasible—one can think of this kind of state as a natural monopoly—a dominant one will be installed in power. This protective association will serve as an agent for the inhabiting individuals in protecting property and life. How would such an association arise? One answer is given in an invisible hand explanation from Nozick:

> Show how some overall pattern or design, which one would have thought had to be produced by an individual's or group's successful attempt to realize the pattern, instead was produced and maintained by a process that in no way had the overall pattern or design in mind. After Adam Smith, we shall call such explanations *invisible-hand explanations*. ("Every individual intends only his own gain, and he is in this, as in so many other case, led by an invisible hand to promote an end which he has no part his intention.") . . . Invisible-hand explanations minimize the use of notions constituting the phenomena to be explained; in contrast to the straightforward explanations, they don't explain complicated patterns by including full-blown pattern-notions as objects of people's desires or beliefs.

Thus, the invisible-hand explanation would explain the theory of the state as a group of interacting individuals, who, without intending to do so, form a society that protects themselves, from others and one another. This form of state comes without design. Competition among the societies or associations that form will give way to a prevailing governing body or sovereign. This sovereign would then consciously place a set of rules or laws that would constitute the government.

The capitalist form of state has several defining characteristics. The state acts as a MONOPOLY and as the owners of CAPITAL who exercise certain rights over the workers of the society. The state also places constraints on free markets. Since the state controls the supply of money, it also controls the means of exchange. The state sets laws by which all economic actors must follow. The state is an institution that controls the motions of capitalist society. It sets the rules that the players must follow and polices the agents of capitalist society.

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State Farm Insurance Companies

ONE OF THE LARGEST financial institutions in the UNITED STATES, State Farm is the nation's leading auto- and home-insurance company. *Fortune* magazine ranked State Farm as the 63rd largest company in the world with revenues of nearly $47 billion in 2001. State Farm provides INSURANCE for many other products and services including, but not limited to: life, health, disability, long-term care, boats, mutual funds, and savings accounts.

State Farm was started by George J. Mecherle in 1922 because he believed that farmers, who drove less and had fewer losses than the general population, should pay less for insurance. Thus, he began State Farm as a mutual automobile insurance company owned by the policyholders in Bloomington, Illinois. Then, in 1928 another office was opened in Berkeley, California, the company's first branch office. Today, State Farm has 25 operation centers in 13 national zones.

Recently, the insurance industry has suffered multi-billion dollar losses for various reasons (State Farm included). One of the largest reasons is home mold claims. The industry, as a whole, has paid out over $1 billion in claims (and this statistic was as of May 2002, and there are still more claims). As the leading insurer of homes in the United States, State Farm has paid the largest share of the claims. To cope, State Farm began excluding mold claims and raising rates as much as 30 percent in some areas. In early 2003, State Farm was still working out what will and will not be covered in many states.

Another reason for the large insurance losses is the attacks of September 11, 2001. Shortly after the attacks all insurance companies began to raise their rates. Much of this was due to re-insurers. Re-insurers insure direct insurers such as State Farm. State Farm, however, did not suffer as dire financial effects from September 11 as some other direct insurers did, but the total monetary impact was still unknown 18 months later. Insurance analysts point out State Farm raised rates, in part, because other insurance companies were raising rates.

State Farm has also recently been a victim of several weather catastrophes. Auto claims rose dramatically in the early 2000s due to hurricanes, floods, fires, and winter storms. A sluggish economy has also caused a rise in insurance rates, and overall, for the year 2001, State Farm lost $5 billion. However, State Farm is expected to weather the difficult financial times and remain one of the leading companies in property and casualty insurance in the United States.

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static and dynamic analysis

THE CONCEPTS OF STATICS and dynamics are frequently encountered in scientific analysis. In general physics, statics and dynamics have specific meanings. Statics is associated with a position of rest, and dynamics with motion. The two concepts are also encountered in economic analysis with different applied meanings and uses. In analytical economics and related fields, dynamics is sometimes associated with disequilibrium and structural adjustment, sometimes with economic growth, and sometimes with economic evolution, as well as others. The two concepts lead to static theory and dynamic theory respectively in economic analysis and hence their relative meanings are very important in understanding the whole process of economic logic.

Statics. Statics is a timeless concept in economic analysis at a given datum. A static system is one where the key endogenous variables are viewed as timeless in position. In this case the system does not evolve as time passes by, neither does it change in any significant way with time. It may, however, change due to some exogenous shock on some or all the key endogenous variables that define the state of the system. The solution to a static system always yields a single solution vector. Such a solution vector always describes a rest position of the system at a given datum.

The concept of key endogenous variables is important in defining and distinguishing statics from dynamics in economics. This importance reflects the reality that the state of the economic system composed of resource allocation, income production, and distribution is continuously evolving. For static description of the system these key endogenous variables are taken to be invariant with time.

The static state is a convenient starting point for theoretical characterization, modeling, analysis, and study in order to understand the behavior of the evolving economic system at each time point, and thus offer an opportunity to use policy variables as exogenous shocks to move the system to a desirable state when there are deviations from the desired state. The concept of staticity is a logical tool that allows the theorist to reveal the behavioral conditions of the complex economy at any point in time. Given the static characterization of the economy we then examine conditions, regularities, and laws of behavior of the economic agents in the static state. An example of static economy is described by the condition that factors of production composed of capital, labor, and technology are given.

Dynamics. Generally, dynamics is a time-dependent variable concept of the system. In economics, a system is defined as being dynamic when the key variables describing the state of the system at every time point are themselves functions of time. Time enters either as an implicit or explicit variable of the system whose motion may involve simultaneous changes along the time path, as well as shifts of the path, due to the behavior of the time-dependent key endogenous variables.

The specific solution obtained for any posed problem in a dynamic system generally yields a set of vectors that will define a solution time path of the system. Each key endogenous variable of the system's solution is a vector that defines its path in reference to time. The key endogenous variables may be interdependent and, hence, simultaneously determine their time states and system's states with the passage of time.

Dynamic analysis is, thus, a logical extension of static analysis. They mutually define themselves. Dynamics is a generalization of statics and statics is a specificity of general dynamics. Dynamics, like statics, is a logical tool that allows the theorist to simultaneously connect and generalize the static analysis of resource allocation, income production, and distribution, not at a time point, but over time. In this way, the theorist can reveal the behavioral conditions of the complex economic system over time.

Given the dynamic characterization of the capitalist economic system by relaxing the assumption of staticity, the theorist derives theorems and laws about the behavior of economic agents in the economic system, as the key endogenous variables and the system itself move along their time paths. From such a dynamic perspective, a dynamic theory is advanced in order to derive and analyze the behavioral conditions and regularities so as to provide a framework for dynamic economic policy of the general system and the endogenous key variables.

Evolution. Evolution is a general process of change of the system whose path depends essentially on the behavior of all or some of the key endogenous variables and the information system that defines the environment of behavior. It does combine statics and dynamics. The process may or may not be time-related. When the process does not depend in an essential way on time we say the process is time invariant. If the process depends on time in an essential way, we say that the process is time-dependent.

For example, disequilibrium analysis in economics may be time-dependent or time-invariant depending on the specification of the system or a subsystem and conditions and laws of motion governing the system's behavior. Connected to statics, dynamics and evolution are comparative statics and dynamics, which fall under the general theory of sensitivity analysis.

General sensitivity analysis. Every decision or control process is optimal relative to a given environment that is described by an information set. The information set is summarized by a set of parameters that establishes the parametric space. Sensitivity analysis is devoted to the study of the effects of parameter variations or changes on both static and dynamic systems in the parametric space (in other words to study the system's behavior as the given information is altered). The resulting analyses lead to the development of sensitivity functions that depend on the system's parameters.

Comparative statics. Comparative statics is part of sensitivity analysis. It deals with comparative analysis of the behavior of key variables of equilibrium states of static system. It is thus a mathematical technique of employing static theory to analyze and compare the values and conditions of different equilibrium states when we impose changes on the parameters of the system.

The objective is to investigate the distributive behavior of the key endogenous variables of the system from one static equilibrium to another, and derive conclusions and theorems without regard to transitional process between equilibria. Alongside the comparative statics is the concept of quasistatic changes, which is a limiting process that generates the locus of equilibrium states, which defines the path of a sensitivity function. Examples in economics are the income and price consumption curves, where income and prices are the parameters that summarize the information for optimal consumption and production decisions.

Comparative dynamics. Comparative dynamics is also part of sensitivity analysis. In this analysis, the parameters are time-dependent in such a way that they define the parametric space that is changing with time. It is a mathematical method for analyzing and comparing conditions and vector values of different dynamic equilibrium paths of a dynamic system when we impose variations on the time path of any parameter. The process is to derive theorems or empirically testable propositions about the behavior of decision or control variables as they move through a dynamically parametric space.

As such, the analysis takes account of shifts of the time paths of the parameters and the rates at which the parameters move along their time paths if such rates induce shifts of the time paths. The sensitivity functions are obtained through variational methods.

The comparative analysis is much simplified if the two changes occur either independently or in isolation. Generally then, the comparative dynamics is not different from comparative statics in the sense that both seek to derive theorems or testable propositions as the decision or control variables traverse over the parametric space. This is another way of viewing Paul SAMUELSON's correspondence principle between comparative statics and dynamics where the sensitivity functions of comparative dynamics are generalizations of those of comparative statics, all of which may be viewed in terms of simulation processes.

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Stigler, George J. (1911–91)

IN 1982, GEORGE J. STIGLER, whom some colleagues described as the quintessential empirical economist, was awarded the Nobel Prize in Economics for his seminal studies of industrial structures, functioning of markets, and causes and effects of public regulation. Noted for his lifelong research on the workings of industry and as a champion of deregulation, his studies have raised theoretical questions about rent controls, minimum wage laws, and antitrust.

Painting a picture of Stigler's achievements, fellow Nobel laureate Milton FRIEDMAN recalls his friend's career. "He was one of the great economists of the 20th—or any other—century. . . . Intellectual history was his first field of specialization and a deep understanding of the ideas of the great economists of the past gave him a strong foundation on which to build an analysis of contemporary issues."

Raised in the Seattle-area suburb of Renton, Washington, he was the only child of European immigrants Josef and Elizabeth Hungler Stigler. Their son would remember, many years later, how his father, a brewer who had learned his trade in Bavaria, was forced to surrender his trade when Prohibition outlawed the manufacture of liquor during the 1920s. Before Joseph found his niche in real estate, he tried many other jobs; the Stigler family moved several times in the interim.

Stigler excelled in school with a clear aptitude for learning. He entered the University of Washington in 1928 and earned a B.A. four years later at the height of the Great DEPRESSION. Since job prospects were virtually nonexistent, Stigler decided to remain in academia to pursue an M.B.A.

Attending Northwestern University in Chicago, Stigler became acquainted with a new group of academics and curriculum that changed not only his career, but also his life. He discovered economics and decided to earn a doctorate.

For much of the following decades, until his death in 1991, Stigler would be associated with either Northwestern University or with what became popularly known as the CHICAGO SCHOOL of economics. Influential persons included economics professor Jacob Viner, economic historian John Nef, and economist Henry Simons, with whom Stigler would remain a lifelong friend. But, the figure who impressed him most was Frank KNIGHT, economics professor, analyst, and social philosopher who mentored him during his dissertation. Knight, Stigler said, instilled in him "a devotion to the pursuit of knowledge . . . a sense of unreserved commitment to truth."

Stigler carried that commitment with him to Iowa State University in 1936 when he accepted a position as assistant professor.

Throughout the latter half of the 1930s and the first half of the 1940s, Stigler moved between a staff membership with the University of Minnesota; a war efforts research position with the Statistical Research Group of Columbia University; and, in 1946, a professorship with Brown University. When the smoke of WORLD WAR II cleared, the Mont Pelerin Society, a global consortium aimed at preserving freedom in trade, invited Stigler along with 36 other members to Switzerland to meet on issues regarding world economics. The experience was so enlightening and upbeat that he remained a member of the society the remainder of his life.

Over the next 10 years, Stigler taught economics at Columbia University. He was persuaded to return to Chicago in 1958 by the dean of Northwestern University, Theodore Schultz. Stigler's impact on the Chicago scene proved immediate and long-lasting. Known as a tireless, succinct writer in his field—by this time he had written several books and a plethora of journal articles—he took over editorship of the *Journal of Political Economy*.

Simultaneously, he established the Industrial Organization Workshop, providing economists a key testing ground for contributions to the area of industrial organization. In 1977, he founded the Center Study of the Economy and the State. His summer periods were spent researching at Stanford's Center for Advanced Study in Behavioral Sciences.

The last two decades of his life saw Stigler as either president or director of economic associations, or taking part in government activities, such as the National Committee on Antitrust Laws and the Securities Investor Protection Corporation. This ongoing participation culminated in his receiving the National Medal of Science from President Ronald REAGAN.

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Stiglitz, Joseph E. (1943–)

BORN IN GARY, INDIANA, Joseph Stiglitz received his B.A. from Amherst College in 1964, and went on to get his Ph.D. from the Massachusetts Institute of Technology in 1967. By age 27, he was appointed a tenured professor of economics at Yale University, and also taught in various positions at Oxford, Stanford, Princeton, and Columbia universities.

From 1993–97, Stiglitz served on President Bill Clinton's COUNCIL OF ECONOMIC ADVISERS—first as a member (until 1995) then as chairman. From 1997–2000, Stiglitz was senior vice president and chief economist at the WORLD BANK. As one of the founders of the "Economics of Information," Stiglitz was awarded the Nobel Prize in Economics in 2001 together with George AKERLOF of the University of California, Berkeley, and A. Michael SPENCE of Stanford University. The Nobel committee cited "their analyses of markets with asymmetric information," and noted that Stiglitz "clarified the opposite type of market adjustment, where poorly informed agents extract information from the better informed. . . ." and ". . . has shown that asymmetric information can provide the key to understanding many observed market phenomena, including unemployment and credit rationing."

Stiglitz also made fundamental contributions to several subfields of economic theory—MICROECONOMICS, MACROECONOMICS, industrial organization, international economics, labor economics, financial economics, and development economics—through more than 300 papers and 26 books. Stiglitz received more than 15 honorary doctorates, held numerous international positions as a consultant to institutions or companies such as the Ford Foundation, US-AID, the Federal Reserve Board, and the Inter-American Development Bank. His notoriety with the general public, however, began toward the end of 1997, when he started a severe and open criticism of the INTERNATIONAL MONETARY FUND (IMF) and the "Washington Consensus" while still being chief economist of the World Bank. Described by economists and authors as a "rebel within the system," or "heretic among the economic policy elite," Stiglitz "challenges the policies of the international financial community" and "has undone the conventional wisdom that dominated policy-making at the World Bank, the IMF and the U.S. Treasury Department," says author Ha-Joon Chang.

The ASIAN FINANCIAL CRISIS (1997) was a defining event for Stiglitz. With respect to IMF's failure in handling, among others, the Asian or the Russian crisis (1998), Stiglitz asserts that "half a century after its foundation, it is clear that the IMF has failed in its mission." In his view, "market fanaticism," premature capital liberalization, excessive privatization ignoring social and political costs, and unbalanced trade liberalization have been the main errors within a framework of exaggerated budgetary austerity measures or "shock therapy." Stiglitz compares the IMF failures with some examples of successful experiences: CHINA, POLAND, or HUNGARY. In those three cases, the governments refused a standardized and imposed IMF-remedy and opted for national programs.

In those cases, the local governments were involved and had a more coherent and gradual approach. Stiglitz argues in favor of a broader approach and longer-term perspective in macro- and microeconomic crisis-management: Social and political costs, safety nets, the dangers of liberalization of capital markets, the value of education, macroeconomic stability, sustainable development are important aspects which have to be taken into account rather than concentrating only on budgetary or monetary parameters. Stiglitz has also taken positions on two controversial questions, world trade liberalization and globalization. In his view, trade liberalization has been at the detriment of developing countries (developed countries obliging developing countries to open their markets for industrialized goods while continuing to protect their markets for their own "sensible" goods such as textiles or agricultural products) and globalization may have had positive effects, but to a major part of the developing world, it did not bring the promised benefits but a destroyed environment, increased corruption, and social dissolution instead. "Today, globalization does not work for the poor, for the environment, for the stability of the world economy," Stiglitz says.

The way GLOBALIZATION is handled by world economic institutions is the problem, rather than globalization by itself. As for solutions, he advocates in favor of democratic (egalitarian voting rights) and transparent international institutions, development as a "democratic social learning" on the basis of durable, equitable, and democratic policies and a more positive view of government action. In July 2000, Stiglitz founded the Initiative for Policy Dialogue, a network of social science experts, to provide an alternative to the IMF and World Bank for countries in need of sound economic policy advice.

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stock dividend

AN AMOUNT OF CASH some companies distribute to all their common stockholders during a given year is termed a stock dividend. Traditionally, well-established companies that have constant profits (sometimes nicknamed "blue chips") usually distribute quarterly dividends. Blue chips include banks, oil companies, public services, telephone companies, insurance companies, and some income trusts and royalty trusts. Dividends can be distributed regularly (annually, quarterly, monthly) or sometimes are announced as special dividends that are given only once (for instance when a division of the company is sold). Growth companies and high-tech stocks usually choose not to pay dividends, but issue preferred shares that promise to give settled dividends if the company is profitable in the next year.

The dividend yield is a percentage that demonstrates the relative importance of a dividend compared to a stock's price. For a stockholder, it appears more lucrative to get a $1 dividend from a $10 share (10 percent yield), than a $1 dividend for a $100 share (1 percent yield), because in this first case it would cost less to benefit from the same cash distribution. Here, the dividends are the same but the yields are very different.

When the dividend is effectively paid, the amount is automatically taken off the value of every share outstanding and later given back to the stockholder. The ex-dividend date is the first day of negotiation after the dividend (the amount of the distribution) has been subtracted from the share's price. This maneuver is made before markets open. Depending on companies' policies, the cash dividend is effectively paid a few weeks after the ex-dividend date. In other words, a stockholder has to buy his shares at least one day before the ex-dividend date in order to be paid its dividend (and keep in mind the three-day delay for official delivery of shares asked by most financial institutions).

The philosophy that lies behind dividend policies could be stated (and amplified) this way: "We are a stable company that makes constant profits; these earnings could be given as premiums to some preferred employees or managers, they could as well be reinvested or used to pay our debts, but we rather choose to share these revenues with our stockholders, who are nothing less than the owners of this company." Since members of the board and employees are often stockholders of their company, they also benefit from fair dividend policies.

A good dividend, usually, is a yield superior to the current interest rates or at least 3 percent of a share's market value. If, for some reason, a share loses half its value, its dividend yield is subsequently doubled. When this situation happens, some companies are tempted to readjust their dividend policy by cutting it, as did Bank One in July 2000, MCI in June 2001, and EL PASO CORPORATION in February 2003. In these situations, history proves that some stockholders' reaction can be punitive.

Paying dividends means a company has constant profits and cash flow; it is a sign of financial health. If for some reason a share loses its value, the frustrated shareholder can still stick with the company because of its regular dividend, which is perceived as a minimal compensation for a weak market performance. Some companies constantly increase their annual dividend (MERCK, Royal Bank of Canada).

When a company cuts its dividend, this proves there are problems with earnings, insufficient cash reserves, or lack of liquidities. According to "Nightly Business Report," American Telephone and Telegraph (AT&T) caused a major commotion on December 20, 2000, when it announced it would cut its dividend for the first time, after more than 100 years. It was suddenly reduced to 3.75 cents compared to 22 cents a year earlier. For the same reasons, Trans-Canada Pipelines lost almost half of its market value in less than a week, when it said it would provisionally reduce its quarterly dividend (from 29 to 80 cents a share). These market reactions can be explained because many stockholders choose and stick with specific companies because of their generous regular dividends.

In other countries, stock dividends are treated in different ways. For example, in France, the amount of some companies' stock dividend (FRANCE TELECOM, VIVENDI UNIVERSAL) is often negotiated with their stockholders present at every annual general meeting, depending on recent profits. This situation would be impossible to imagine in the United States, where these decisions about dividend policies are made exclusively by the members of the BOARD OF DIRECTORS and imposed on stockholders without any possible negotiation. Even Warren Buffet's Berkshire Hathaway, a famously profitable enterprise, has never paid any dividend to its stockholders.

Many companies not paying dividends say they prefer to reinvest earnings into acquisitions and capital spending. These arguments are more than contestable. First, sharing profits with stockholders should never be seen as a waste or squandering, because stockholders invested their money in the first place when they bought their shares. Second, investors who get money on a regular basis from the company they own might resist the temptation to cash-in their profits when the share value improves. Third, dividend payouts are in no way to be considered as a gift to stockholders, but rather as a compensation for the risk involved in a stock investment, specially for long-term investors. Last but not least, the dividends are subtracted from a share's value; what is gained in dividends is temporarily lost in market value.

A strong dividend is sometimes presented by some financial analysts as an obstacle to growth. This is, perhaps, a fallacious and subjective argument. Better management, reasonable compensations, lower bonuses for board members, and lower expenses in general are the best ways to assure prosperity in any enterprise. In the end, a company's dividend policies are tangible proof of a company's attitude toward its stockholders.

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stock market

THE CONCEPT OF STOCKS, and stock markets for trade of those stocks, have great antiquity. Originally known as stock exchanges, these markets were established in specific locations for organized buying and selling of financial tools known as securities. Today securities include stocks, BONDS, futures, and options.

Predictions for future stock markets range from virtual, online markets with no members or physical stock exchanges to predictions of eclipse by new methods of raising funds for ventures. Whatever the future holds, the stocks and bonds that are offered by companies, governments, and other entities are bought, traded, and sold on stock markets around the world to help fund the growth of capitalism as the economic system of dominance today and for the last two centuries. If one key component of capitalism is surplus production, the other surely is the generation of capital to fund surplus production, and as a result of the sale of surplus production. The question of how to create initial capital surplus for investment to create the surplus production of goods for trade and profit is answered by the role of stocks and other securities traded in stock exchanges or markets around the globe.

From the time of merchant enterprises seeking riches in overseas markets the question of how to fund these risky, but extremely profitable ventures has been addressed by the concept of stock, or selling a share of the venture in return for the investor's VENTURE CAPITAL or financial backing in the amount of the share sold. But how can all of the potential investors be brought together? By forming a stock exchange or meeting area where potential investors could exchange stocks. The potential funding for enterprises was only limited by the number of investors and their capital limits. The more investors, the more venture capital for the venture. The investors also had the benefit of selling and buying stocks from other investors at these centralized exchanges or stock markets.

History of the markets. Sharing risks in overseas ventures goes back at least to the times of the Roman sea trade across the Indian Ocean. Wealthy Roman families shared in the financing of such ventures as noted in the primary source of unknown origin, "The Periplus of the Erythrian Sea." OWNERSHIP shares or stock in a company were sold for French textile mills in the 1100s. The Bank of Venice issued government bonds back in 1157. However, it was not until the Age of Exploration in Europe that the large-scale, joint-stock companies came into their own as means for complete strangers, albeit strangers with money or financing, to pool their resources by buying stock in the ideas and trade of an overseas trade company.

The Medieval and Renaissance markets in countries such as ITALY had long seen trade in securities and commodities. Most of this involved credit papers traded between banks. Even speculation of which merchants could pay up at what interest rate was common, even though usury or interest was officially discouraged in the Middle Age societies of Europe and the Middle East. Paper money in CHINA also influenced this speculation of the future about debt collection from past business deals. However, what expeditions needed was funding just for future enterprises without being tied directly to bank notes of the past, or as promise notes from governments involved in wars. Capitalists needed capital, real funding for their future ventures. Most historians would say this was the start of capitalism.

The joint-stock company emerged as a way to spread risk for distant sea voyages that hope to make a profit from trade with foreign markets. The Columbus voyages and the Vasco de Gama voyage of 1498 are good examples of the kinds of expeditions that led to joint-stock ventures.

In Antwerp, BELGIUM, in 1531, a stock exchange involving Dutch companies and banks is noted. Antwerp was a major shipping and trading center and most early stock exchanges developed near such trade ports. Brokers gathered to trade shares and the investor could actually see the expedition representing the company and the stocks of ownership in the company that the investor held. The investor could also be present when the expedition returned laden with riches from international trade in spices and bullion, or other mediums of exchange, if the expedition returned at all. The risks of piracy, storm, and corruption were great, so only the wealthiest merchants and nobles made up the core of early joint stock investors.

The first English joint stock company, the Russia Company of 1553, was formed to fund exploration of the fabled Northwest Passage to Asia via the Arctic Ocean. The offer to buy stock in the Russia Company was much like an Initial Public Offering (IPO) of today. The expedition met with failure to reach Asia, as did the Columbus voyages, but an agreement for exclusive trade with RUSSIA was reached and the early investors reaped great riches as the stock rose. The first English, inland joint-stock companies were formed as the Mines Royal and the Mineral and Battery for mining purposes in 1568 and were associated with German metallurgists.

In 1558, the Hamburg Exchange in the German states was established and Amsterdam founded an exchange in 1619. In the 1600s, competition emerged from stock companies for the funds of the investor. In 1599 and 1600, the British and Dutch East India Companies were founded to fund trade in India, especially for pepper. The Dutch West India Company followed in 1621 to compete with British interests in the Americas.

Between 1634 and 1637 "tulip mania" gripped Holland. Speculation on the price of tulips sent prices to all time highs, but market bubbles burst every few days and lead to 95-percent price drops. In some cases, shares of a tulip bulb were being traded for the value of an entire estate! The historical episode is very similar to stock market speculation and futures of today.

In 1640, Charles I of England forced the BRITISH EAST INDIA COMPANY to sell him its stock futures on two years of pepper imports, then sold the stock at a loss for ready, short-term cash. Charles was facing revolt and was short of cash. The move is eerily similar to hostile takeovers today, and to massive stock sell-offs by CHIEF EXECUTIVE OFFICERS (CEOs) and company leaders who leave the company stock with little value.

The advent of the rumor. London and Paris established stock exchanges in the late 1600s to help combat such overt manipulation of individual stock companies. However, a different form of stock value manipulation soon took hold. The rumor! Between 1719–21, two infamous speculative episodes clearly indicated the need for official stock markets rather than speculation in joint-stock companies of trade and exploration. The Mississippi Bubble occurred when French speculators attempted to fund French trade growth associated with Louisiana, INDIA, and China. The Mississippi Company was given exclusive rights to the trade but too many notes were issued by the Banque Royal and its bubble burst even before the venture was underway. The finance minister was blamed for the subsequent withdrawal of bullion from Paris and London markets to cover the losses, and was dismissed.

The South Seas Bubble is a similar story, when the South Seas Company was set up to break the Spanish monopoly on South Seas trade. The mania that ensued produced the inevitable bubble burst. Much of the speculation was created when the company claimed it would take over the national debt of England, an unrealistic goal, if it were successful. Such claims by companies still excite speculators despite their lack of credibility. Manipulation of the market by rumor has deep historical roots.

In the 18th century, stocks were used to fund infrastructure needs of industrial civilization, and industry itself. Canals, ironworks, ports, and the like were constructed by companies that sold shares to an increasingly broad public. England was considered the leader in such stock enterprises.

The growth of world markets. By 1792, the foundations for the largest stock exchange in world economic history were being laid on the old Wall Street in New York City. The NEW YORK STOCK EXCHANGE (NYSE) as it is now known, grew from an exclusive trade agreement between a handful of merchants to the global leader of all stock markets by the 20th century.

Today, stock markets from New York to Frankfurt, from Dehli to Tokyo, help fuel the growth of global capitalism. To be traded on stock markets of today, a company's stock must be listed by attaining certain requirements. However, many stocks are no longer sold at specific exchanges and are known as unlisted and traded over the counter (OTC). This usually involves TECHNOLOGY such as telephones or computers and hint at some of the future possible changes in stock trade and stock markets.

Technology continues to transform the world of traditional stock markets into automated exchanges around the world.

In the United States, the NYSE and the American Stock Exchange (AMEX) are two of the largest, but nine regional exchanges also exist and the major OTC exchange is the emerging NASDAQ Stock Market (National Association of Securities Dealers Automated Quotation market). In Europe, the NASDAQ equivalent is the EASDAQ (European Association of Securities Dealers Automated Quotation market), which serves the EUROPEAN UNION (EU). Other major physical stock exchanges, in addition to the NYSE and AMEX, include: London, England; Paris, France; Tokyo, Japan; Frankfurt, GERMANY; Hong Kong, China; and Toronto, CANADA.

For the next few decades, the changes introduced by technology into the traditional world of physical stock exchanges will likely continue to increase the power of automated exchanges such as the NASDAQ and EASDAQ at the expense of market share for traditional exchanges such as the NYSE or London. How far the pendulum of power will swing may largely depend upon how much of a shift takes place in value and production concerning traditional surplus production of industrialization, involving real products *vs.* post-industrial production of surplus "human capital production," such as ideas or mental products.

For the moment, stock exchange transactions still involve real dealers and brokers on real stock market or exchange floors in an often chaotic environment. Dealers buy and sell from their own portfolios, or inventories of securities. Brokers execute trades representing clients and receive commissions and fees for their services. Sometimes the same person can act in both roles.

Today, corporations seek new capital from a variety of investors including banks and stock-market investors. Typically, when a corporation needs to raise capital investment they will issue new securities in a primary market with the help of investment bankers. The investment bank obtains some of the new securities at a reduced, negotiated price in return for offering the rest of the new securities for investors on the open market in an IPO. The corporation is thus guaranteed to receive its needed capital directly from investment banks in a timely fashion. The investment bank then becomes the middleman in passing on its newly purchased securities to the secondary market. The corporation is not usually involved in the trading of its stock on the secondary market or open stock exchanges where most private investors purchase stock.

Although corporations or companies may not be involved in the secondary markets they do monitor the stock value of the company on the secondary market. The better the stock performs or trades in value, the better the company's future borrowing position with investment banks will be.

Additionally, the value of corporate stock is also closely watched by the corporation's owners, its STOCKHOLDERS. The stockholders expect a return for their investment in the form of increasing stock value on secondary markets, dividend payments associated with stock performance, or from both. Today, a company's success is measured not only by how well it performs in terms of profit and loss in capitalistic trade markets, but also by how well or poorly the company stock performs in secondary stock markets.

Stock markets today. Stocks are still the main form of securities traded in stock markets. Stocks are shares of ownership in companies owned by the stockholders. Stockholders usually receive dividends as a portion of the company's profit margin, when the company is profitable. Stockholders usually benefit by trading company stock, by buying it at a lower price and selling it at a higher price. However, stockholders face risk as well. A company usually has to suspend dividends if it is unprofitable. A stock's value may decrease below a stockholder's purchase price and may have to be sold at a lower price, considered a loss.

A company can only list its stock on one exchange and strict regulations apply to the buying and selling or trading of stocks. Some exchanges, such as the NYSE, have high requirements that can be met only by the largest of companies. For instance, to be listed and traded on the NYSE a company must have at least 1.1 million shares outstanding or available for trade, and those shares must be valued at $100 million or more. Thus, each share must stay above one dollar in value or the company may risk being delisted.

Basically, different exchanges meet not only the needs of geographical regions such as North America but also the needs of different types and sizes of companies. The NYSE lists, large, well-established companies such as GE (GENERAL ELECTRIC has been a member since 1896), or FORD MOTOR COMPANY. The NASDAQ, lists smaller, technology-based companies with huge growth potential. AMEX usually lists small- to medium-sized companies between the extremes of NYSE and NASDAQ. Energy companies involved in oil and gas are good examples.

Much of the securities trade is conducted by brokerage firms that are called upon to execute trades by individuals and trade groups. Only members of the stock exchange can actually conduct a stock transaction and such "seats" on exchanges are limited and expensive. In 2002, an NYSE member seat for trade cost over $2 million. Membership has its privileges and brokerage firms also get to vote upon exchange policy. Such policy allows these firms to charge fees for their trade services. Still, the venture is risky as brokerage clients can default on margin loans extended by the brokerage firm.

At traditional stock exchanges, such as the NYSE, which currently has five trading floors in New York City, a typical trade revolves around a post. A stockholder or client initially places an order to trade a security such as a stock with a stockbroker of a stockbroker firm. Sometimes, institutional brokers are used if the client is a bank or institution and the purchase is in bulk. In any case, the order is moved to the stock floor by a variety of traditional and electronic methods so that a floor broker for the stockbroker firm, or institutional broker, actually carries the order to a post where all stocks associated with that company are traded. A specialist at the post will manage the auction process as different floor brokers exchange buy and sell orders or trade the company stock. The specialist informs the floor brokers of the final price agreed upon in the ongoing auction. After-hours trade also takes place when markets are closed. Such trading is highly controlled because of the time differences between different markets around the globe, and the international nature of modern transnational corporations.

Although the stock price is usually subject to supply and demand laws, the cases of historic inflation of deflation of stock value are still common today. Often companies, such as the 1719–21 French Mississippi Company, never came into existence yet reached astronomical value, and were traded on the markets of the day with great gains and losses realized by investors. Some companies may not produce a profit, but do produce cash and product flow such as Amazon.com of the early 2000s. These companies see stock price fluctuations based on the idea that stockholders and investors expect the company may, one day, produce a profit or that the stock is simply a good investment, to be bought low and sold high, based on current or future market conditions. So, in essence, the secondary stock markets are speculative as well as market-driven.

Stock values and market-trading volume are also affected and effected by non-economic events making for volatile cycles. The 1970s saw the NYSE affected by the Richard NIXON presidency scandal, the end of VIETNAM WAR, and the Jimmy CARTER presidency. The 1980s looked like an era of recovery as stock values soared, only to be burst by the October 19, 1987, DOW JONES Industrial Average drop of 508 points, the largest in history. Two days of unprecedented volume followed with a total of over 400 million shares traded. The 1990s saw the collapse of the Cold War and a further meteoric rise of market values on the NYSE. But on October 27, 1997, the Dow Jones plunged again 554 points. Another record high was achieved by the Dow on January 14, 2000 at 11,722.98 and was followed by the largest single-day gain of almost 500 points on March 16, 2000, to close at 10,630.60.

Stock markets can also influence each other. Global stocks and technology companies played a major role in the traditional NYSE, but their overvalue on the NASDAQ at the millennium led to stock values plummeting on April 14, 2000, by 617 points.

The terrorist attacks on the World Trade Center in New York City led to a four-day closure of the NYSE. When it reopened on September 17, 2001, a record 2.37 billion shares exchanged hands.

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stockholder

THE STOCKHOLDER (or shareholder) is a person (or an institution, sometimes another company) who holds at least one share of a registered company. Theoretically, the stockholder is truly a co-owner of a company, along with possibly millions of other co-owners, recognizing the fact that some companies have more than a billion shares outstanding. In other words, to buy just one single share is enough to be considered as a stockholder, and therefore to be entitled to attend the company's annual meeting, and to vote on the board of directors' propositions.

Ownership of each share allows one vote at a company's annual meeting; the shareholder may vote in person or (in advance) by mail, sometimes by telephone or through the internet. Companies always indicate how to vote according to the board of directors' recommendations, and shareholders who don't vote are understood to vote along with the company's suggestions. Stockholders automatically receive the company's ANNUAL REPORT every year; they are paid cash dividends if the company distributes STOCK DIVIDENDS to common shareholders. Some stockholders prefer to ask for a certificate of the shares they own; others just leave these proofs to their broker and therefore can sell their shares with just a phone call to their advisor.

There are many ways to get shares from a company. They can be bought through a broker or with an account from a discount broker; or obtained by employees from their specific enterprise; or sometimes bought directly from some big companies (if the buyer already owns at least one share). Some companies (such as banks) can give bonus shares instead of cash dividends if stockholders ask for this procedure. At any moment, a stockholder may give his or her shares (or a part of them) to another person, a charity, or an institution.

Occasionally, some companies write stockholders of less than 100 shares and propose that they sell their few remaining shares, or buy enough shares to get a total of 100. Shareholders are free to ignore that proposition. Usually, shares are sold by blocks of 100, but this is no obligation. Because of the transactions fees, most individual stockholders own between 100 and 10,000 shares of a company, depending on stock value.

Two opposing philosophies lie behind the relationship between stockholders and a company's BOARD OF DIRECTORS. Some companies don't hesitate to make decisions that unavoidably weaken shareholders' value, such as issuing new shares (and therefore diluting all the shares' value), reducing or cutting dividends, and giving generous premiums and performance bonuses to senior executives or directors.

Other companies are better managed and more dedicated to their shareholders, paying good dividends and listening to stockholder suggestions. A company's attitude towards its shareholders can be analyzed at the annual meeting, when a company has to present and comment on individual shareholder's propositions (usually about the directors' salary and compensation) in front of all the company's stockholders. These active shareholders see themselves as the true collective owners of a company, considering employees, directors, and members of the board as their employees.

Usually, the most important shareholders (in percentage) are institutional investors or in some cases, mutual funds; the members of the board are not always the owners of the most important amount of shares of their company.

Shareholders can behave differently from one annual meeting to another, depending on how the stock and company are performing. Individual shareholders will often complain at the meeting if the annual dividend isn't high enough (compared to the company's profits), or if executive compensations are considered too high.

Many associations of investors and shareholders exist in different countries that advocate stockholder interests. As one example, in CANADA, former provincial minister Yves Michaud was the first to denounce the high salaries of members of the board of some Canadian banks; he later founded an association of small investors, working as a pressure group to obtain more respect from the banks' executives and board members toward individual stockholders, presented as the real owners of companies. In fact, in recent years, many investors from different countries went to court to protest against accounting irregularities, or to raise other ethical issues about a company's management.

Stockholders' reactions are one of the most impossible things to control or to predict. STOCK MARKET reactions are mostly led by important institutional shareholders, whose massive moves, orders, recommendations, and advice (upgrades, downgrades of specific stocks) can influence fluctuations. In these matters, the size of some institutional stockholders can be more influential than the number of many small- and medium-shareholders. Nonetheless, there is always one buyer for every seller, depending on prices and how many shares are offered.

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Stone, Sir Richard (1913–91)

A BRITISH ECONOMIST who focused on empirical measurement, Sir Richard Stone was awarded the 1984 Nobel Prize in Economics. The Nobel committee cited his "fundamental contributions to the development of national income accounts."

While Stone attended Cambridge University initially, he studied law but switched to economics because of the Great DEPRESSION. Stone believed that it was possible to make the world a better place by better understanding economics. Stone studied under Richard Kahn in King's College. There, he met John Maynard KEYNES. Stone joined Keynes' Political Economy club and attended some of the lectures that Keynes gave while writing *The General Theory of Employment, Interest, and Money*.

Stone graduated from Cambridge in 1935. He was offered an opportunity to conduct further research as a student, but moved on to a brokerage firm instead. After marrying, Stone began to publish statistical reports in *Industry Illustrated* and also co-authored one of the earliest estimates of the marginal propensity to consume.

In 1939, Stone joined the newly formed Ministry of Economic Warfare and first focused on statistics of shipping and oil. He then transferred to the Central Economic Information Service, where he met James MEADE. Meade and Stone compiled data for a rudimentary national account on expenditures, income, and saving. Stone worked on this project as Keynes' assistant in the Treasury department, during the remainder of the war.

Stone traveled to the UNITED STATES and CANADA to examine similar efforts to compile data on national accounts. He found that others had, in fact, gone into greater statistical detail than he had, and that these different approaches needed adjustment to make country comparisons possible. Stone spent three months at Princeton University, where he began to write a paper on defining and measuring national income.

After the war, Stone became the director of the department of Applied Economics at Cambridge. He also got involved in the Organization for European Economic Cooperation, working on the implementation of the MARSHALL PLAN. Stone directed the National Accounts Research Unit. Through this agency, he set up national accounts for monitoring the progress of nations under the Marshall Plan.

Stone also wrote on consumer behavior. In 1954, he published *The Measurement of Consumers' Expenditure and Behaviour in the United Kingdom, 1920–38*. The statistical techniques of this book now seem basic and standard, but were cutting edge at the time. Stone's department was clearly at the forefront of developing statistical methods in economics.

Stone directed the department of applied economics until 1955. In that year, he became the president of the Econometric Society, but lost his directorship due to the efforts of some Cambridge Keynesians. He and Alan Brown then started the Cambridge Growth Project. Stone and Brown focused on modeling the British economy. They eventually constructed one of the largest econometric models of a national economy. Stone continued his work on national income accounts for the rest of his career, which ended with his retirement in 1980.

Stone's method was explicitly empiricist: He believed that economic analysis begins with facts, out of which economists formulate hypotheses, or theories. Theoretical models should then be combined with goals for improving the existing economic system to form policies, along with a plan to implement them. Experience with policies would then cause us to reconsider the facts.

While there is nothing wrong with looking at statistical data, the complexity of economic phenomena makes empirical analysis particularly difficult. We must also consider political motivations since, as Stone notes, policy goals do enter into analysis at some point.

Stone's work on consumption and national accounts won him fame during the heyday of Keynesian economics. The decline of Keynesian economics diminished the importance of his work on consumer expenditures and behavior. His most lasting influences are in developing national income accounting and in popularizing econometric analysis in general.

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strikes

THE JOINT WITHHOLDING of labor by a group of workers in order to protest and thereby influence some activity of their employer, or some condition of employment, is termed a labor strike. The return to work typically depends upon the employer meeting a set of, usually evolving, demands, or occurs because strikers give up or are fired. A related, less common phenomenon, the lockout involves the refusal of an employer to grant entrance to the workplace until certain conditions are met, or the employer relinquishes.

To classify strikes, we may first distinguish between three broad, but not necessarily exclusive, categories:

1. Contract strikes: strikes over the provisions of a future (or possibly existing) labor contract, usually concerning wages or working conditions
2. Recognition strikes: strikes seeking employer recognition of a UNION or other organization as the bargaining agent for a group of workers
3. Political strikes: efforts by large groups of workers from several industries, sometimes joined by employers, to achieve significant political change by withholding labor or closing down sectors of the economy. Political strikes that span many industries are called general strikes.

Strikes in categories 2 and 3 above often involve wage and working condition issues as well.

Wildcat and political strikes. Within each category we may further distinguish between sanctioned strikes, called by unions or bargaining agents, and wildcat strikes, spontaneous strikes likely to arise either before unionization has been established, or during an ongoing contract period (which unions are typically required to observe by refraining from strikes). Wildcat strikes usually fail to achieve worker demands; occasionally unions have joined ongoing wildcat strikes, sometimes with success.

Political strikes most frequently arise in unstable political environments, e.g., RUSSIA before and during the 1917 revolution. The early 2000s general strikes in VENEZUELA, which demanded new elections or the resignation of President Hugo Chavez, offer a contemporary example. A less dramatic political strike occurred in South Korea in January 1997, when tens of thousands of workers struck for 23 days protesting labor reform legislation. Political strikes have complex dynamics that distinguish them from the largely economic strikes of concern in the history of capitalism.

Contract strikes emerge within established union-management relationships, whereas recognition strikes, which assume a greater historical importance, represent efforts to establish such relationships when they do not exist, or to resist employer efforts to end them. In the United States and many other industrialized countries, recognition strikes are largely a phenomenon of the past. The last great wave of recognition strikes occurred in the United States during the 1930s. Contemporary economic theory, accordingly, has tended to focus on, or be more applicable to, contract strikes.

Economic theories of strikes. On the surface, contract strikes may appear irrational: Workers lose wages and employers lose production and sales. In principle, the parties should be able to negotiate a solution that leaves them both better off than any outcome following a strike. Using similar logic, John HICKS (1933) argued that strikes primarily reflect failures of negotiation caused by inaccurate appraisals by union leadership, membership, or employers concerning the willingness or ability of the other party to hold out, or come to terms. Hicks accordingly expects the incidence of strikes to decline with bargaining experience.

More recent theory finds the notion of negotiation failure insufficient, but builds on Hick's notions of divergent information and expectations among the players. Orley Ashenfelter and George E. Johnson (1969) argue that strikes reflect internal union politics. They arise when expectations among union members prevent the leadership from signing a contract it might otherwise accept. In order to avoid internal challenges, the leadership calls a strike, which serves to reduce the membership's (initially unrealistic) expectations, until a contract can be signed. Note the decision to strike is rational for the leadership because it helps them maintain their position. Furthermore, it reflects an information problem: The membership does not understand the employer's true position.

Asymmetric information theory, advanced by David Card in 1990, takes the information dynamics of strikes further, arguing that firms know their current profit position and workers do not (in a variation, the employer does not understand the sentiment of the union membership). Firms can benefit from withholding private information, since disclosing high profits could encourage worker demands for higher wages. Strikes then force employers to reveal their true profit picture in the process of settlement: Firms with high profits yield to strike demands following a relatively short strike, whereas low-profit firms cannot yield and will endure a long strike instead. This theory predicts that high firm profits will be associated with relatively low incidence and duration of strikes.

In another variation, Melvin W. Reder and George R. Neumann proposed in 1980 that bargaining is a sequential learning process. Over time, unions and employers develop negotiating techniques, routines and procedures that reduce the incidence of strikes, but such development absorbs time and resources. The more costly the prospect of a strike to both sides, the greater incentive they have to develop negotiating protocols. Accordingly, industries with higher strike costs are expected to experience fewer strikes.

The above theories primarily address contract strikes, though internal politics and information issues may arise in recognition strikes. John Goddard offers an alternative and somewhat broader theory, stressing institutional context, which applies to both recognition and contract strikes. Goddard argues that strikes emerge as expressions of discontent by workers and their agents; strike incidence responds to conceptions of fairness and legitimacy concerning pay and the exercise of authority in the workplace. Goddard predicts that the likelihood and duration of strikes will increase with the following five factors, all else equal:

1. The levels of discontent and solidarity among workers
2. The degree to which employers emphasize cost containment and efficiency as opposed to stabilization and accommodation
3. The extent to which strikes are viewed as effective relative to workers' alternative manners of expressing discontent, such as quitting
4. The militancy of negotiators and pressure from workers
5. The degree of uncertainty and imperfect information among negotiators.

Note that argument 4 overlaps with Ashenfelter and Johnson and that 5 essentially incorporates asymmetric information theory.

In this context then, contract strikes represent efforts to voice discontent over proposed (or possibly current) contracts and conditions, while recognition strikes express more fundamental discontent concerning the state of bargaining representation for workers, or lack thereof.

Significance and history. Contract strikes obviously cause short-term disruptions in on-site production, sometimes interfering with production in linked industries and consumer activity, as in the case of significant transportation strikes or, in an earlier era, coal strikes. Aggregate effects of strikes, at least in developed economies, are less clear-cut. Two interesting questions emerge: Do strikes increase labor's overall share of income, and do strikes reduce aggregate productivity growth? Studies report mixed results. One study, for example, finds no significant impacts of strikes on labor's share of income in the United States between 1949–92, though it does find a modest positive effect of unionization on labor's share before 1980. Another study finds that the British strikes of 1970s had negligible effects on aggregate output and work efficiency, though unions had a modest negative effect on work efficiency.

In terms of the development of capitalism, recognition strikes have played a far more substantive role, at times signaling transformations of labor relations or the failure of attempts to do so. Recognition strikes have typically occurred in the early to mid-stages of industrialization, when labor relations often remained unsettled. Between 1870 and 1940, for example, the United States experienced several waves of recognition strikes, punctuated by a few key strikes. These strikes often involved considerable violence.

The strike wave of 1884–86 represented an unsuccessful movement of both skilled and unskilled workers to achieve union-bargaining status, higher wages and an 8-hour day. After a successful strike that forced railroad magnate Jay GOULD to bargain with unions in 1885, the movement began to disintegrate after an anarchist threw a bomb at a rally of strikers in Haymarket Square, Chicago, in May 1886. Significant police and judicial suppression of union activists followed; historians describe the response as a "police terror." The Pullman railway strike of 1894, which spread from Chicago into a national strike, represented a similar unsuccessful combination of skilled and unskilled workers. Over the objections of several state governors, the federal government supported the Pullman Company by sending troops to confront strikers, often violently. Strike leaders were jailed and the American Railway Union eventually dissolved. These strikes signaled the end of early attempts by mainstream unions to organize unskilled as well as skilled workers. From the 1890s through the early 1930s successful union activity centered around the American Federation of Labor (AFL), which focused on organizing skilled crafts workers (e.g., carpenters), with no significant attention to unskilled mass production workers.

During the second half of the 1930s, at the peak of Franklin ROOSEVELT's NEW DEAL, the Congress of Industrial Organizations (CIO) split from the more conservative AFL to launch a wave of confrontational recognition strikes that fundamentally transformed U.S. labor relations. By organizing large numbers of unskilled and skilled mass production workers on an industry-wide basis, CIO strikes forced many large corporations (e.g., GENERAL MOTORS, U.S. STEEL) to recognize large industrial unions for the first time, thereby belatedly achieving important goals of the 1880–90 strike waves. A considerably more peaceful wave of CIO strikes in 1945–46 reaffirmed unions' position as bargaining agents, and focused future union and strike activity on wage and working condition issues (contract issues) while it eliminated more radical notions of sharing in enterprise management from labor's agenda.

These last two strike waves initiated a postwar labor accord which generally observed the following features: Many mass-production industries bargained with national unions setting 2–3 year contracts over wages and working conditions; negotiated pay increases tended to reflect both increases in national labor productivity and inflation; at the local level, union committees met with local management to work out grievances over working conditions; management retained its discretion over investment and the overall organization of work. On the whole, management sacrificed some flexibility with respect to setting wages, detailed work assignments, and dismissal policies in order to gain relative labor peace. In 1955, the CIO merged with the AFL, forming the AFL-CIO; the merger itself reflected the relative stability of the labor accord. Subsequent strikes involved considerably less violence and usually occurred only at the end of specified 2–3 year contracts. The combative era of U.S. labor relations had ended.

Strike trends around the world. Finally, a key strike has signaled erosion of the labor accord in the post-1980 period. After the federal government broke the air-traffic controller's (PATCO) strike, a more aggressive (though nonviolent) period of strike-breaking and anti-union activity by employers has emerged, ultimately contributing to a decline in union influence.

While the institutional details concerning the realms of union bargaining, the role of government in labor relations, and the role of political parties differ significantly, many industrialized countries underwent a roughly similar process. Recognition strikes occurred during a transition period, followed by a more stable period with established bargaining procedures. The UNITED KINGDOM, like the United States, experienced a history of highly confrontational strikes. Strike waves of 1889–90, 1910–13 and 1919–20, preceded the emergence of more stable, though not necessarily calm, labor relations after the late 1920s. As in the United States, a decline in union influence followed a successful government effort to break a key strike, in this case the 1984–85 miners strike.

Finally, in SPAIN the transition from the Francisco Franco dictatorship to democracy was marked by a strike wave from 1977–84; more stable labor relations followed.

For many developing countries, political strikes and waves of economic strikes of both types have reflected unsettled labor relations, at times foreshadowing significant transformation. British and French colonies in Africa experienced strike waves, including several general strikes, from mid-1930s to the early 1950s, signaling the process of developing an urban labor force and more significantly the terminal phase of the colonial era.

In BRAZIL, the combination of industrialization in the post-1950 period with shifts in government between relatively democratic rule and military dictatorship has been associated with waves of economic and political strikes; the former typically occurring during democratic periods, and the latter arising primarily during the transition from military to democratic rule. Even in the 1980s, Brazil experienced four general strikes. In Bangladesh, a 1996 port strike followed a contested election and threatened the country's international trade and access to foreign exchange.

Overall, strikes reflect an evolving natural tendency in continuing history of capitalism. In labor relations, the interests of employers and workers coincide to the degree that they need each other to produce the output upon which their livelihoods jointly depend, yet their interests differ over the distribution of the fruits of production and at times over the organization of work. Because group dynamics in employment relations necessarily involve substantial information and collective-action problems, an almost utopian vision of settling all labor conflicts by agreeable informed bargaining, or via individual market actions of quitting one's job or dismissing a worker, will continue to elude us. Rather, the political economy of labor relations will periodically engender strikes as an important avenue for expression of discontent over wages, working conditions, authority in the workplace, and sometimes politics in society at large.

While output and wages are indeed sacrificed in the short run, the feasible alternative is worse. Accordingly, democracies permit strikes, striving to channel expressions of discontent into relatively peaceful avenues. Dictatorships, on the other hand, fearing organized dissent of any form, usually prohibit them, perhaps ultimately to their own demise.

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subsidies

SUBSIDIES ARE negative TAXES. They are government expenditures that aim toward increasing the supply of certain GOODS, or to increase the income of particular individuals and organizations. These expenditures get disbursed to private organizations and individuals, such as farm subsidies, food stamps, and corporate welfare. One rationale behind subsidies is that market PRICEs will sometimes not reflect underlying consumer demand.

Markets move resources to their most highly valued uses when competition drives prices to marginal costs. When the additional cost of acquiring more goods equals the benefits from acquiring these goods, consumers have gained as much as they can from trading. These results from competition imply that trading benefits only the buyers and sellers who negotiate terms of trade. Buyers and sellers exclude third parties from their business completely.

Some goods end up benefiting people who do not pay for them. If someone charged admission to a field surrounding a fireworks show, people could see the same fireworks without paying from miles away. These free-riders reduce total revenue for fireworks, in this case. Since private businesses supply goods according to the profits they earn out of revenue, reduced revenue through free-riding diminishes market supply. Free-riding implies that there are social benefits to the private supply of goods. It may be economically efficient to subsidize private enterprises when social benefits exist, whether it is more efficient to pay for goods privately through individual purchases, or collectively through taxes. If the costs of excluding consumers who do not pay for goods that entrepreneurs supply are high, then we might improve economic efficiency by subsidizing their production out of general taxes, thus forcing payment by would be free-riders.

The other main rationale behind subsidies is that consumers may not have the "right" values. Some goods may have merits that many people do not appreciate. Efficient markets will undersupply such merit goods because consumers will spend too little money on goods whose positive benefits escape them, even when entrepreneurs exclude all free-riders.

One area where we might consider subsidies is education. Some contend that education makes people better citizens by instilling civic virtues in students. This may be true. However, it is important to consider the extent to which markets cover social benefits. Education increases personal lifetime income. It also provides benefits to employers by increasing worker productivity. The existence of these private benefits explains why employers and students (not to mention their parents) often pay much for tuition at private schools. If these private expenditures provide at least as much education as we need to instill civic virtues in students, then the social benefits are infra-marginal, or irrelevant to the actual amount of private supply. Social benefits require subsidies only when they extend beyond private supply. Many colleges and universities receive subsidies, but given the existence of significant private expenditures on this level of education, it is not clear how much the social benefits of education matter to economic efficiency.

Government officials can deal with extra-marginal externalities by implementing per-unit or lump-sum subsidies. Lump-sum payments have certain advantages over per-unit subsidies. It is usually simpler to disburse lump-sum payments than to implement per-unit payments. Also, lump-sum payments can result in better resources allocation. For example, a per-unit transfer to low-income families for food changes the relative prices of food with respect to other goods. The recipients of this additional income may want to use it to buy something other than food, like clothing. Given the substitution ability of different goods, subsidy recipients may be better off spending additional income from lump-sum transfers.

Since subsidies come from the political process, they might sometimes exist for purely political reasons. Businesses lobby for subsidies not to promote economic efficiency, but to increase their private profits. Narrow interests can exert considerable influence, so businesses may succeed in securing subsidies in excess of their social benefits. Some subsidies exist simply as political payoffs to those who produce private goods. Also, competition for subsidies expends real resources. This competition can dissipate much of the gains to subsidization.

For example, the U.S. government provides a subsidy to sugar farmers. By keeping the U.S. price for sugar above the world price, the sugar program costs consumers $1.4 billion per year. Individual farmers receive millions in subsidies from this program. There are surely some instances where markets supply less than ideal amounts of goods. There is no apparent reason for this to be true of sugar. The point is that neither private enterprise nor public subsidies provide ideal solutions. Subsidies promote economic efficiency only when social benefits affect the actual margin of production and when the public sector suffers from relatively small imperfections.

Another questionable justification for subsidies is to support declining industries. Following the September 11, 2001 terrorism attacks, the airline industry received large federal subsidies. Similarly, the federal government also bailed out Chrysler when it came upon hard times during the late 1970s. Subsidies helped these industries, though it is not clear that this was economically efficient. Reduced demand reflects the fact that consumers want different goods. This has the effect of pressuring producers to improve efficiency and product quality. Failing this, weak demand will result in the redirection of resources toward other, more efficient and valued industries. Subsidies counteract the effects of demand reduction, and may, in fact, be resisting the reallocation of goods to more highly valued uses. Some feel that it is worthwhile to secure certain industries and jobs in order to preserve communities and particular ways of life. While some may value these things, others realize that subsidies can seriously impair economic efficiency.

The argument can be made that art needs subsidies because there are too few who appreciate its true value. While this notion appeals to many, discerning the merits of any merit good is a difficult matter. Whose opinion should rule in determining what constitutes good art? How can we know how much of a subsidy any particular artwork merits? Markets do foster the supply of art in many ways, but given the difficulties in sorting out allegedly objective merits in art, the case for art subsidies is far from certain.

Subsidies can make income distribution more fair, or used to promote national goals. Welfare programs such as food stamps and pension programs such as Social Security subsidize private consumption. Also, there is support for subsidies for the defense and export industries, to support nationalistic political goals. Such moral and political justifications for subsidies are inherently controversial. Lobbying by interest groups can swell the size of these subsidies, justified on equity grounds with other subsidies. That is, people may want subsidies not to promote fairness or national goals, but simply as a means to gain income at the expense of those who earned it legitimately.

While subsidies may promote efficiency, equity, or political ends, there are potential problems with them. Entrepreneurs in markets have an incentive to invent methods of excluding free-riders. Entrepreneurs in politics have an incentive to increase subsidies beyond reasonable levels. The case for them is far from clear, yet subsidies exist in many forms, and are in fact a well-entrenched part of the public sector.

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subsistence theory

THE WORD "SUBSISTENCE" refers to the basic needs of a human being: food, water, clothing, and shelter. The concept of subsistence has been used in various economic theories dating back to the writings of Thomas MALTHUS, David RICARDO, John Stuart MILL and Karl MARX. In the 20th century, Arthur Lewis has utilized this concept of subsistence to propose his two-sector growth model.

Ricardo initiated the discussion by exploring the value of commodities produced, and hence the value of labor and the wages paid to labor. He presented the argument for a subsistence theory of wages that pointed to the fact that wages paid to a worker will equal the amount needed to sustain the worker and his or her family. The necessity to sustain a family is predicated by the creation of future workers by the family.

Ricardo makes a distinction between the natural price of labor and the market price of labor. The natural price of labor is the amount of money needed to purchase commodities that will sustain the worker and his family. The market price of labor is the wage received by the worker in the market. If the market wage rate is higher than the natural wage rate, this results in the worker being able to purchase things beyond the necessities. The worker and his family is happy and prosperous and this leads to larger families and thus an eventual increase in labor. This increase in supply will cause the market wage rate to decrease. However, if the worker receives a market wage less than the natural price of labor, then the impact on the worker is severe as he is unable to sustain himself. This could lead to an increase in the suffering of the worker and his family, which in turn could reduce the number of workers available. This potential decrease in workers could increase the wage received by the worker. Thus, under the Ricardian theory, wages will automatically revert back to the level that is sufficient for a worker and his family to sustain themselves.

Malthus, using the Ricardian argument for subsistence wages, presented a dire analysis of human development. In his theory, Malthus argued that the production of food follows an arithmetic progression, while the increase in population follows a geometric progression. Thus, if the population were to increase, then the increase in population will not be sustained by the food produced. This will eventually lead to famine and pestilence and a reduction of world population.

Marx presents a different aspect of subsistence wages in his labor theory of value. Marx writes that workers are paid a wage that allows them to sustain themselves and their family. However, a worker ends up producing more output than the amount they were paid for. This, he calls surplus value and the creation of surplus value forms the central argument of this theory. Marx presents the surplus value as a source of potential problems as the employer finds an opportunity to exploit the workers in order to extract surplus value from them. The exploitation of workers continues as long as there exists a large quantity of excess labor, that Marx calls the reserve army of labor. The conflict between the worker and owner then results in a crisis within the economy.

Marx, however, allows for an evolving definition of subsistence wages. Thus, subsistence wage can increase over the years as the social and cultural definition of what is required for subsistence changes in a society.

In the 20th century, Lewis renewed the focus on issues of subsistence wage with his two-sector growth model. This pioneering work laid the foundation for the vast literature on development economics. The theory provides a framework for a developing economy to increase economic growth using the existing resources within the nation. The Lewis model assumes that the economy is divided into two sectors, a rural agricultural sector and an urban industrial sector. The rural sector is characterized by high level of unemployment and workers earning a subsistence wage rate. The workers in this sector have very low marginal productivity. The urban sector is modern and more productive. Due to the low productivity of workers in the rural sector, labor will migrate to the urban regions in search of better wages. This will result in an increase in the output produced and an increase in the level of employment in the nation. This process of migration from the subsistence sector to the urban areas will continue until all the excess labor is exhausted.

Lewis argues that his process of urbanization of the economy will transform this economy from an agrarian rural economy to an industrial urban economy. This model aptly describes the path of economic development of the Western economies. However, it is not appropriate in describing the growth pattern for the developing economies: The process of migration is not guaranteed, the existence of large quantity of surplus labor is not true, and the capacity for the urban sector to absorb labor is neither automatic nor unlimited.

Subsistence theory has been part of the economic discourse for many centuries, it continues to intrigue economists and it provides a fertile ground for further discussion in areas such as economic development.

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Suez Canal

ONE OF THE LONGEST and most heavily used artificial waterways in the world, the Suez Canal significantly shortens the naval route from Europe to southern Asia and eastern Africa by connecting the Red Sea and Gulf of Suez with the Mediterranean Sea. It is 101 miles (163 kilometers) long, at least 197 feet (65 meters) wide, and around 60 feet (16 meters) deep at low tide.

The Suez Canal (in Arabic, Qanât as-suways) does not take the shortest route across the Isthmus of Suez, which would make the Canal around 75 miles long, but rather makes use of four natural lakes: Lake Manzala, Lake Timsah, Great Bitter Lake, and Little Bitter Lake. The Canal has no locks since the Mediterranean Sea and Gulf of Suez have approximately the same water level. Ships transit the Suez Canal in convoys and along most of the way there is only one lane for traffic with many passing bays.

Since it is the fastest way from the northern Atlantic Ocean to the Indian Ocean, the Suez Canal has an enormous regional and global strategic importance. The canal has been extensively used and the taxes paid by the vessels represent an important source of income for the Egyptian government, which nationalized it in 1956.

The earliest initiative to create a canal connecting the Mediterranean to the Red Sea dates back to the Pharaonic age at around the 18th century B.C.E. The ancient canals, which were poorly maintained and often fell into disrepair, were mainly used for irrigation and were only passable at flood periods. Unlike the modern canal, the earliest canals linked the Red Sea to the Nile forcing the ships to sail along the river. The Persians, the Greeks, and the Romans re-excavated the canal, the latter naming it after the Emperor Trajan. The early Arabs also re-dug and extended the canal that was infrequently operational until the 8th century C.E. when it was completely abandoned and filled-up. The Venetians in the 15th century unsuccessfully tried to revive the idea of a shorter trade route to India. Napoleon Bonaparte, in the early 19th century, abandoned the re-excavation plans when the French engineers miscalculated that the Red Sea level was 10 meters above the Mediterranean Sea.

After extensive studies that disproved earlier erroneous measurements, in 1854 the former French consul in Cairo, an engineer, and canal digger Ferdinand Marie de Lesseps signed the concession with the Egyptian viceroy Said Pasha to construct a canal. The SUEZ COMPANY was formed in 1858 with authority to cut a canal and to operate it for 99 years, after which EGYPT would assume ownership. The digging started in April 1859. The extensive construction utilized modern technologies but still resembled slave-labor conditions of centuries past. More than two million workers were involved in the construction, of which around 100,000 lost their lives. The canal was opened for navigation 10 years later in 1869 with a spectacular ceremony that was attended by dignitaries from around the world. The opera *Aida* was commissioned for the occasion of inauguration.

Initially, the French and Egyptian governments jointly owned the Suez Company. Financial troubles enabled the British government to become, in 1875, a partial owner of the canal after purchasing Egypt's shares. In 1888, the Convention of Constantinople secured freedom of navigation through the Suez Canal and opened it for unrestricted international access during times of both peace and war.

Egypt's president Gamal Abdel Nasser nationalized the canal in 1956, 13 years before the original concession was due to expire, partially because the Western powers refused to finance the Aswan Dam, because of Egypt's friendly relationship with the Soviet Union. The nationalization precipitated the first modern closure of the Suez Canal, which took place 1956–57, following the Israeli attack on Egypt and the French and British occupation of the canal and surrounding area. Soon after the end of conflict and reopening of the Canal under the mandate of the United Nations, the Egyptian government paid off all the original shareholders and assumed complete control of the Suez Canal.

The second shut-down occurred from 1967–75 following the Six-Day Arab-Israeli War when Israel occupied the Sinai Peninsula and used the canal as a buffer zone. The standoff was eventually resolved in 1979 when a peace treaty was signed between Egypt and Israel allowing all ships, even the Israelis, to gain unrestricted access to the canal.

The Suez Canal continues to be modernized and enlarged. By 2010, the Egyptian government plans to reduce transit times from around 15 to 11 hours and to enable the biggest ships (like ultra-large crude carriers, ULCC, that can carry more than 300,000 tons) to pass through the Suez Canal.

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Suez Company

LOCATED AT THE crossroads of Asia, Europe, and Africa, the SUEZ CANAL in EGYPT is one of the world's most important waterways and is operated by the Suez Company, ranked as the 99th largest corporation in the world by *Fortune* magazine in 2002.

The original concession to construct and operate the canal was given to Ferdinand de Lesseps in 1888 by the viceroy of Egypt. The canal was a French conception and financial gamble, though Great Britain had an interest in the canal as the shortest route to its domains in India and the East. In the 1880s, due to a revolt in Egypt, Britain was asked to station troops along the canal for protection. This temporary protection lasted 74 years.

After WORLD WAR II, Egypt was caught between the rivalry in the Middle East between the UNITED STATES and the SOVIET UNION. In an attempt to force Egypt to politically align against the Soviet Union, the United States placed conditions on the request for aid to build the Aswan Dam along the upper Nile River. Once Egypt's president, Gamal Abdel Nasser, refused the conditions, Britain became very nervous about the possibility of Soviet control over the canal. On July 26, 1956, Nasser announced that Egypt was nationalizing the Suez Canal.

While the American government attempted to resolve this problem, Great Britain, FRANCE, and ISRAEL decided on a plan to invade Egypt and take control of the canal back from Nasser's government. Historians cite that the European governments believed once the invasion occurred, the United States would go along with it. On October 29, 1956, the invasion occurred but the United States did not go along. Instead, Americans worked through the UNITED NATIONS to end the crisis with a cease-fire.

However, by the following decade, during the Arab-Israeli Six-Day War in 1967, ships were sunk by Egypt to block the waterway, and it remained closed for eight years. Today, with annual revenues of about $38 billion, the company has widened and improved the canal, handling an average of 60 vessels a day.

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Sumitomo Corporation

A HIGH-PERFORMANCE global financial company, JAPAN-based Sumitomo Corporation conducts commodity transactions in all industries utilizing worldwide networks. It also provides related customers with financing, serves as an organizer and coordinator for various high-dollar projects, and invests in various businesses from the information industry to retailing. As its website states, "Sumitomo Corporation thus shows great diversification as an Integrated Business Enterprise."

Sumitomo's basic principles and the values it professes are summed up in nine characteristics, including: integrity and sound management; integrated corporate strength; vision; change and innovation; commitment; enthusiasm; speed; human development; and professionalism.

Such values have attracted such major stockholders as the Bank of Tokyo-Mitsubishi Ltd., NEC CORPORATION, the Japan Trustee Services Bank Ltd. and the DAI-ICHI MUTUAL LIFE INSURANCE COMPANY.

In early 2001, Sumitomo launched its new "Step Up Plan," which is based on an earlier reform package, but takes cost-cutting and redundancy-slashing a step further. Its most important themes are, one, to expand the earning base and, two, to strategically reallocate management resources to foster higher levels of production.

Facing a slow economy both domestically and internationally, Sumitomo reported revenues of more than $77 billion in 2002, making it the 23rd largest company in the world.

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Summit of the Americas

PROVIDING THE UNITED STATES and its hemispheric partners a valuable mechanism, the Summit of the Americas addresses common political, economic, and social issues. By early 2003, there had been three summits of the 34 democratically elected leaders of the western hemisphere who operate with capitalistic, free-market economies, conduct multilateral international negotiations, and who reach decisions by consensus.

The basis of these summits is the shared values of democracy, human rights, and open markets, and the shared responsibility to be proactive in their defense. Before these summits were institutionalized, there had been two presidential summits. The first was in July 1956, in

Panama and brought 19 countries together under auspices of the Organization of American States. The second summit was held in Uruguay in April 1967. It was not until 27 years later that the Summit of the Americas was held in Miami in 1994. One of the major agreements that emerged from this meeting was the creation of a Free Trade Area of the Americas (FTAA). A second Summit of the Americas was held in CHILE in 1998, and the third in CANADA in 2001.

Non-governmental organizations (NGOs), including businesses and non-profit groups, are an integral part of the Summit process. There are nine ongoing negotiating groups that work and meet regularly to produce draft texts to be considered at future summits. These groups deal with such areas as market access, agricultural issues, intellectual property rights, competition policy, and investment.

Since the first summit in 1994, participants have accomplished such goals as improving anti-corruption efforts, leading to changes in civil and criminal codes in the countries that have ratified and signed the agreements. In addition, ethics rules have been implemented for public officials. There has also been an increase in counter-narcotics efforts, coordination to fight terrorism, funding of micro-enterprise initiatives, and an increase in awareness of environmental issues affecting the Americas.

In addition, progress has been made in developing common standards for telecommunication service and access. The summit process has attempted to reorganize inter-American relations by adapting debates and procedures to the new political, economic, and social conditions of the world that have come about due to the end of the Cold War. The institutionalization of a summit process in the western hemisphere has led to a modernization of the various institutions of the inter-American system, including the Organization of American States.

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Sumner, William Graham (1840–1910)

THE SON OF AN English immigrant to the United States, Sumner was, for almost 40 years, one of the most controversial and popular professors at Yale University, thanks to his lectures on economics, political theory, and history, sociology, and anthropology. Though he later became a key thinker in the area of Social Darwinism and a supporter of LAISSER-FAIRE capitalism, arguing for minimal state intervention in economic matters, Sumner's academic beginning was linked to theological studies. After graduating from Yale, he studied theology and biblical interpretation in Britain and Germany. From 1869–72, Sumner was an active member of the American Broad Church Episcopalianism. Yet, he was soon bored with ministry, a profession with which he could not reconcile his interest in science and modernity.

His shift to secularism was accomplished when Sumner returned to Yale in 1872 as chair in political and social science. In his social and economic theory, Sunmer tried to combine Social Darwinism, derived from his reading of Herbert SPENCER, with a liberalism focused on the economically acquisitive individual. Social Darwinism was an application of Darwin's ideas of natural selection and biological evolution to human society. To its theorists, the controversial social conditions of the period were natural and could not be changed. The rapid growth of an impoverished working class, the huge gap between rich and poor, the spread of urban slums were factors that highlighted how society was functioning.

Social Darwinists such as Sumner claimed that social existence was a competitive struggle among individuals possessing different natural capacities and traits. Those with better traits, the fittest, succeeded, becoming wealthy and powerful, while those who were unfit were condemned to POVERTY. Social Darwinists believed government intervention in economic and social matters must be minimal. Improving the condition of the poor would only be useful to preserve bad traits: To Sumner, the only alternative to the survival of the fittest was the survival of the unfittest. Sumner denied any sense of moral obligation to the poor, as he argued "it is not the function of the State to make men happy." Giving protection to the poorer classes meant using the state to steal from "the rich, comfortable, prosperous, virtuous, respectable, educated, and healthy" in order to give to "classes of people who have not been able to satisfy their own desires . . . [and who] do not take their achievements as a fair measure of their [property] rights."

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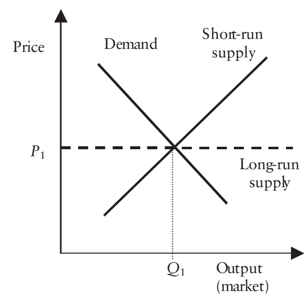
supply

ONE OF THE MOST fundamental concepts of economics, supply, in MICROECONOMIC theory, refers to the production (or output) side of markets and is understood to be a function of prices and costs of production. In macroeconomics, aggregate supply refers to the production (or output) side of economies and is, depending on the MACROECONOMIC theory, understood to depend on factors such as household savings, capital stock, labor force, and technology. Since goods and services are—with the exception of the case of household production—supplied by businesses, the "supply side" is often treated as synonymous with the business sector.

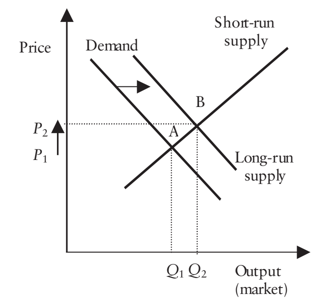
Microeconomic analysis. One of the pillars of microeconomic price theory (as developed by Alfred MARSHALL) is the law of supply: all things being equal, the quantity of a good supplied rises as the market price rises, and falls as the price falls. A supply curve of a firm is therefore positively sloped. In standard models of supply (and all other things not being equal), the dependent variable (i.e., the amount supplied) is typically a function of a number of independent variables: the good's own price; the prices of inputs used in its production; the technology of production; taxes and subsidies; and expectations of future prices and costs. If PRICE changes, the quantity supplied will change along the supply curve; if, however, one of the other determinants changes, the supply curve shifts.

The shape of the supply curve, or the price-elasticity of supply (ε_S), reflects TIME in the production process. Over the very short time, output cannot change, the supply curve is vertical, and supply is perfectly price-inelastic: $\varepsilon_S = 0$. In the short run, over which producers can increase variable inputs such as materials and LABOR, supply is price-inelastic: $\varepsilon_S < 1$, and in the long run, over which producers can increase plant and equipment, supply is price-elastic: $\varepsilon_S > 1$. In the long run, firms can enter and exit a market, all of these firms facing the same costs. As a result, the long-run market supply curve will be more elastic than in the short run, and ultimately will be horizontal at the minimum of average total cost. This means that, when DEMAND for a good increases, the long-run result will be an increase in the number of firms and in the total quantity supplied rather than an increase in price. Empirical findings confirm that many supply curves are flat—showing great elasticity—over considerable ranges of output.

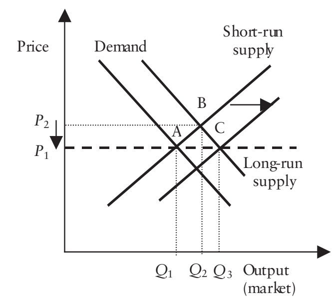
In the long run, firms earn zero profit, so price equals the minimum of average total cost. This defines the condition for market EQUILIBRIUM (Case a). If demand increases, market equilibrium shifts from point A to point B, which leads both to a higher price and a larger quantity produced (Case b). In this short-run equilibrium, price now exceeds average total cost, and firms make a profit. Over time, this profit encourages market entry, and the short-run supply curve shifts to the right, causing price to fall back to the level where it equals average total cost and profits are zero (Case c). Thus, the market reaches a new long-run equilibrium (point C), at a higher level of total output (Q_3).



Case (a): Initial condition (very short run)



Case (b): Short-run response



Case (c): Long-run response

Macroeconomic analysis. Aggregate supply relates the economy's price level, measured by the GROSS DOMESTIC PRODUCT (GDP) price deflator, and aggregate domestic production, measured by real GDP. The aggregate supply relation is generally separated into long-run aggregate supply, in which all prices and wages are flexible and all markets are in equilibrium, and short-run aggregate supply, in which some prices and wages are not flexible and some markets are not in equilibrium. Different from individual or industry supply curves, the aggregate supply curve shows the amount that will be supplied by all firms in the economy at every price level.

In the past decades, there has been considerable dispute between economists in the classical tradition and Keynesians about what determines the level of aggregate supply and about the exact shape of the aggregate supply curve. Keynesians argue that the level of aggregate demand determines supply, while classical economists propose that aggregate supply is determined by supply-side factors.

Classical economists, supply-siders and monetarists hold that the shape of the curve differs between the short run and the long run. Short-run aggregate supply (SRAS) is the total real production of final goods and services available at a range of price levels, during a period of time in which some prices, especially wages, are rigid, inflexible, or otherwise in the process of adjusting. The SRAS curve therefore has a positive slope, reflecting the direct relation between the price level and aggregate real production. A higher price level is related to more real production and a lower price level is related to less real production. The general reason is similar to that of market supply curves: the opportunity cost of production.

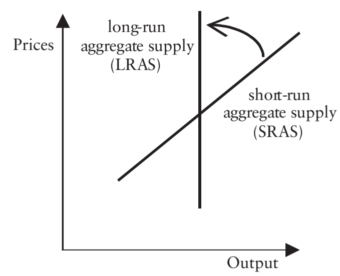
Three specific reasons have been proposed:

1. A lower price level causes misperceptions about relative prices, and these misperceptions induce suppliers to respond to the lower price level by decreasing the quantity of goods and services supplied
2. Because wages do not adjust immediately to the price level, a lower price level makes employment and production less profitable, which induces firms to reduce the quantity of goods and services supplied
3. Because not all prices adjust instantly to changing conditions, an unexpected fall in the price level leaves some firms with higher-than-desired prices, and these depress sales and induce firms to reduce the quantity of goods and services supplied.

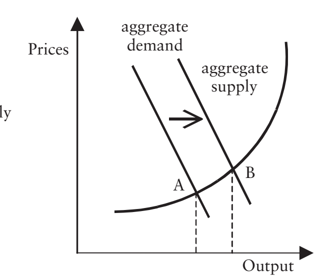
Overall, these explanations share the concept that output deviates from its natural rate when the price level deviates from the level that people expected.

Long-run aggregate supply (LRAS) is the total real production of final goods and services available at a range of price levels, during a period of time in which all prices, especially wages, are flexible, and have achieved their equilibrium levels. In the long run, an economy's supply of goods and services depends on its supplies of capital and labor and on the available production technology. The LRAS curve is therefore vertical, reflecting the classical view that the quantity of output (a real variable) does not depend on the level of prices (a nominal variable), or that money is neutral. In the classical view, the aggregate market automatically adjusts from short-run equilibrium, in which some prices are rigid, to long-run equilibrium. Self-correction results through shifts of the short-run aggregate supply curve caused by changes in wages and other resource prices.

Keynesians, on the other hand, do not distinguish between the short run and the long run. John Maynard KEYNES, in fact, criticized classical economics because of its alleged limitation to explaining only the long-run effects of policies. In the Keynesian model, the aggregate supply curve contains two or three segments. In the strict sense, it consists of two segments, a vertical classical range and a horizontal Keynesian range, meeting at a right angle and forming a reverse L-shape. At low levels of output, with excess capacity, firms are expected to be able to increase output without requiring price increases. An alternative version replaces the right angle intersection with a gradual transition between the two segments that is positively sloped (i.e., between points A and B in the Keynesian model below) and usually termed the intermediate range. At intermediate levels of output, firms find that to produce more output they must hire new workers, pay current workers overtime, increase wages, and use older and less efficient machinery. Consequently, they will increase output only if price increases to cover higher costs per unit. At some very high level of output, firms can no longer increase output because they have reached the physical limit of their capacity. At this point, the aggregate supply curve becomes vertical (as classical economists had predicted, though for quite different reasons).



The classical model



The Keynesian model

Economic policy. The classical school believed that supply creates its own demand, a claim known as SAY'S LAW. The rationale behind it is that production of a billion dollars of output creates exactly a billion dollars of income payments that end up, in the shorter or longer run, financing a billion dollars of spending. This causes aggregate demand automatically to match aggregate supply. An increase in saving, in income not spent, causes aggregate demand to fall short of aggregate supply. But it also increases supply in the market for investment funds, which lowers the interest rate, such that ultimately extra investment offsets deficient aggregate demand. The empirical validation of Say's Law is questionable, since many economists do not regard its formulation as precise enough to allow for satisfactory testing. Its policy implication is that of free markets without government intervention.

Keynes neither believed in Say's Law nor in the automatic supply-side adjustment of markets. He objected that a fall in the interest rate causes people to increase the amount of cash they wish to hold so that not all of an increase in saving will prompt higher investment. Since it is quite possible that aggregate demand falls short of aggregate supply and any supply-side adjustment, through increased investment, will not suffice to achieve equilibrium again, monetary or fiscal policy should boost aggregate demand. In Keynes' model, the three segments of the aggregate supply curve give rise to three different reactions to fiscal policy such as government spending. When the curve is flat, the economy reacts primarily by increasing output; in the intermediary range, both output and prices increase; and when the curve is vertical, only price increases follow expansionary fiscal policy. The lesson Keynes wanted to draw is clear: Expansionary policy, such as counter-cyclical government spending, is appropriate when the economy is in a recession, but is inappropriate in a boom.

Supply-side economics reaffirmed confidence in Say's Law. This body of thought emphasizes that the principal determinant of the rate of growth of national output in both the short and long run is the allocation and efficient use of labor and capital in an economy. Consequently, it espouses economic policy measures that attempt to stimulate growth through providing incentives to work, save, and invest. In the UNITED STATES, supply-side economics emerged in the 1970s as an alternative to Keynesian demand-management policies and reached its maximum impact in the 1980s, during the presidency of Ronald REAGAN (Reaganomics). By emphasizing relative price changes rather than income changes, fiscal policy is again seen as the pivot for achieving economic growth. At the core of supply-side economics lies the conviction that by lowering the marginal tax rate, government can provide consumers with incentives to substitute work for leisure, since the substitution effect would dominate the income effect.

Contrary to Keynes' assumption that tax reductions would boost aggregate demand and fan inflation, the theory expects these incentives to shift the aggregate supply curve. Supply-side economists assume that marginal tax rates enter directly into the costs of capital and thus influence investment decisions. Excessive rates (and government regulation) not only crowd out investment, they also lead to decreasing fiscal revenue. This expectation relies on the LAFFER CURVE model, which predicts that the relationship between the marginal tax rate and fiscal revenue has the shape of an inverted U: Increasing the rate produces more revenue only up to a certain optimal threshold beyond which any further increase will actually decrease revenue, as avoidance and evasion will start to predominate. The best policy is therefore to keep taxes at rates that are low enough for households to work and save more and for businesses to invest more. Fiscal revenue should thus be created from an expanding output at lower rates rather than from a contracting output at higher rates. This was not a new idea. Already Calvin COOLIDGE expressed it in 1924: "I am convinced that the larger incomes of the country would actually yield more revenue to the government if the basis of taxation were scientifically revised downward."

Today, supply-side economists typically argue for the elimination of provisions in the tax system that distort economic choice, such as the double taxation of investment income, the estate tax, and the "marriage penalty." They often also advocate flat tax rates set at or below the optimal rate that would maximize fiscal revenue, as a more efficient system than any based on progressive taxation. It would provide growth incentives and, through lower collection and control costs, achieve higher tax revenue. More generally, supply-side economists also espouse PRIVATIZATION and propose the elimination of regulation impeding investment, production, and trade so as to facilitate expansion of output.

What has collectively been called the new classical school of economics places the supply side in the center of their analysis, as it views BUSINESS CYCLES as largely caused by real, supply-side shocks to the economy. To a first approximation, the resulting variations in aggregate variables can be viewed as an efficient response to these shocks. According to this view, the observed relationship between money and the business cycle reflects causation going from real activity to monetary conditions, and not the other way around. These views are encapsulated in the so-called real business cycle theory, which is the most recent variant of supply-side economics. This body of thought emphasizes that real (as opposed to nominal) changes such as technology shocks, new products, new government regulations on environmental standards, changes in consumer preferences, natural resource discoveries, tax rate changes and other supply-side factors are primarily responsible for fluctuations in economic activity. Demand-side factors play a secondary and very transitory role in affecting business cycles.

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surplus

A MARKET SITUATION where at a given price, the amount producers (i.e., firms) are willing to supply exceeds the amount consumers (i.e., individuals and households) are willing to DEMAND is termed a surplus. However, in a particular market for some good or service, there is only a surplus, or excess supply, when the current price is above the EQUILIBRIUM (or market-clearing) price.

Market forces. The law of demand states that as the price of a good or service increases (decreases), the quantity demanded of that good decreases (increases), holding all other factors constant. On the other hand, the law of supply states that as the price of a good or service increases (decreases), the quantity supplied of that good increases (decreases), holding all other factors constant. Therefore, at the market-clearing price, the quantity supplied equals the quantity demanded. That is, the market will clear.

When the price of the particular good is above the equilibrium price, producers will supply more while consumers will demand less. This phenomenon creates a surplus. However, due to market forces, the surplus will not last indefinitely. An adjustment process will take place. While the adjustment process may be slow or sticky, the market will eventually adjust to eliminate the surplus, unless there is some other force restricting the adjustment process. If there is no restriction on the adjustment process, the surplus will put pressure on the market to lower the price. As the price falls, the quantity supplied decreases and the quantity demanded increases, thus eliminating the excess supply or surplus. Price will continue to fall until it reaches the equilibrium price. If for some reason the price is below the market-clearing price, then there will be a shortage (the opposite of a surplus). When there is a shortage (or excess demand), consumers demand more than what producers are willing to supply at the given price. As a result of the shortage, there is an upward pressure on price to rise to the market-clearing price. At this market-clearing price, there is no market force pushing the price to deviate from this equilibrium and there is no shortage or surplus.

However, there is often market failure as a result of some intervention restricting the adjustment process. This intervention causes an undesirable market outcome such as a shortage or surplus. For example, the government puts PRICE restrictions in place when it believes that the market price is too high or too low. The government can impose such price restrictions as price ceilings and price floors, which cause shortages and surpluses, respectively. Effective price floors, the minimum legal price, creates a surplus and forces the market to adjust in different ways besides price. Two such examples of price floors are minimum wages and agricultural price supports.

Labor markets. The minimum wage in the UNITED STATES is a frequent topic of debate, especially among economists and policymakers. Dating back to 1938, the U.S. Congress passed the Fair Labor Standards Act to ensure workers would receive an adequate standard of living. In effect, they forced a wage restriction (i.e., minimum wage), where the government sets a minimum legal wage for what employers can pay their workers, regardless of whether employees are willing to work for less. While states are allowed to further raise the minimum wage in their respective state, and some have done so, they cannot lower the wage below the national minimum wage rate. Those who advocate policy to raise the minimum wage at the national or state level do so as a way to raise the income of the poor. Many economists oppose hikes in the minimum wage and argue that it is not a way to help the working poor or improve their standard of living. Economists and others that oppose minimum wage claim that unemployment will result from this type of policy. In addition, they argue that teenagers and low-skilled workers will be adversely affected, which is the exact group for whom advocates argue minimum wage supports.

In order to examine the effects of minimum wage, we must consider the market for labor. In the LABOR market, the price of labor is the wage rate. Firms demand labor (i.e., workers) while individuals supply the labor. As the wage rate increase (decreases), the demand for labor decreases (increases) and the supply of labor increases (decreases), holding all other factors constant. When there is no government intervention, the wage rate will adjust until the supply of labor equals the demand for labor (i.e., equilibrium in the labor market). If minimum wage is set below the equilibrium wage rate, then the particular labor market will be unaffected by the wage restriction. This is the case for many workers with substantial experience or training that are making wages well above the minimum wage. However, if the minimum wage is set above the equilibrium wage rate for a particular labor market, then the supply of labor exceeds the demand for labor. This results in a surplus of labor or unemployment.

Unemployment from minimum wage has its greatest impact on the labor market for teenagers and low-skilled workers. The wages for teenagers are usually the lowest since they lack experience and training. As a result, increases in the minimum wage will cause additional teenagers to look for jobs (at the higher wage) than might otherwise. A number of studies have shown that teenagers will drop out of school and take a job due to the hike in minimum wage. Many of these teenagers who drop out due to the increase in the minimum wage end up replacing the teenagers who had dropped out of school earlier. Consequently, some of those teenagers are unemployed, and thus, the argument goes, the minimum wage law tends to hurt the workers that it was designed to help in the first place. Of course, those workers who had jobs and managed to keep them have benefited from the increase in the minimum wage since it raised their income and standard of living.

Besides minimum wage, wage subsidies could be used to help those in need. Wage subsidies are designed to raise the standard of living by offering an earned income tax credit. This earned income tax credit is a government program that supplements the incomes of low-wage workers. While wage subsidies may be more effective than minimum wage, they have problems as well. For example, wage subsidies cost the government money. As a result, the government may raise taxes to support this program. Other programs used to eliminate this surplus of labor or unemployment provide subsidies to the particular firms that hire teenagers or low-skilled workers, or to programs that train workers to become more productive.

Agricultural markets. Agricultural price supports are another example of government intervention that results in a surplus. Farmers supply a variety of agricultural products, and since consumers have some demand for these agricultural products, a market is created. However, farmers often portray that the price of their products are too low and not enough to cover their production costs. Since farmers have substantial political power and influence, they advocate to policymakers the need for price supports. That is, a minimum price level for their agricultural products. In many cases, the government will impose a price restriction that limits the price from falling below some specified level (i.e., price floor).

A surplus of shipped goods that exceeds demand should, in an unrestricted market, lower the price of such goods.

These price supports result in a surplus of agricultural products because farmers will produce more as a result of the higher price while households will demand less. Often, the government will purchase or store the surplus even though the cost to support such a program is enormous. In an effort to minimize the additional problems from the price supports, the U.S. government has developed a variety of programs to eliminate the surplus. One such program is to impose production limits or QUOTAs on farmers. However, quotas in the agricultural sector create more problems. Farmers are forced to produce their quota, which further limits their ability to rotate crops. This inability to rotate crops has an adverse affect on the soil, and thus, ultimately affects agricultural production. These problems associated with surpluses are known to policymakers, but due to the intense political pressure brought on by farmers, price restrictions on agricultural products continue to be imposed.

While government interventions in the form of price restrictions can be inefficient and result in undesirable market outcomes, this is not to say that governments should avoid any kind of policy that minimizes the changes in prices or wages. However, policymakers should be cautioned in conducting policy in response to these price changes (or changes in wages). More often than not, these changes in price (or wages) are a direct result of the market adjusting to supply and demand factors. Therefore, policy to restrict price within the market may be ineffective, if not harmful. In particular, binding price floors such as minimum wages and agricultural price supports lead to surpluses. Some of the programs used to eliminate these surpluses are costly. Alternative policies must take into account the laws of supply and demand and not hinder the market forces at work. If the government can develop such policies, they will be more effective in reaching the desired effect than price restrictions.

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sustainable development

THE TERM, SUSTAINABLE development, was first mentioned in the World Conservation Strategy (1980), but the most famous definition stems from the report of the World Commission for Environment and Development, *Our Common Future* (1987) referring to development that "meets the needs of the present without compromising the ability of future generations to meet their own needs."

This definition can be considered as probably the best since it emphasizes all encompassing notions of the term or concept, the long-term perspective necessarily linked to it, as well as the aspect of inter-generational equity. It is further commonly understood that sustainable development aims to treat economic, social, and environmental concerns equally, while traditionally and still today, economic policies prevail without taking environmental and social aspects sufficiently into account.

Other important aspects of sustainable development include technological developments, respect for human rights, peace endeavors or transparent and democratic decision-making processes. Finally, a sustainable development policy approach relates to an integrated and holistic approach, considering all policy fields and all stakeholders (also called the multi-stakeholder approach) with a view to give equal weight to all policies and stakeholders involved.

History and content. The World Conservation Strategy highlights three goals of sustainable development: the conservation of important ecological processes and ecological systems, as well as the conservation of biodiversity, and the necessity to use species and ecosystems in a sustainable way. Ecological economics has been declared "the science and management of sustainability." Theories, models and principles of sustainable development including the precautionary principle, the polluter-pays principle, and factor four have been constantly developed further.

In 1992, for the first time, a world summit dealt with sustainable development issues, at the United Nations Conference for Environment and Development (UNCED) in Rio de Janeiro, Brazil. Three documents were adopted by more than 178 governments: *Agenda 21*, the *Rio Declaration on Environment and Development*, and the *Statement of Principles for Sustainable Management of Forests*.

Agenda 21 represents a comprehensive action plan for sustainable development to be adopted globally, nationally, and locally by organizations of the United Nations system, governments, and major groups. The 40 chapters of *Agenda 21* reflect an all-encompassing approach organized in four main areas, the social and economic dimensions, the conservation and management of resources for development, strengthening the role of major groups, and means of implementation. Two other important documents were agreed to in Rio, the *United Nations Framework Convention on Climate Change* and the *Biodiversity Convention* aimed at responding to increasing global environmental threats.

Ten years later, in 2002, the World Summit on Sustainable Development in Johannesburg, South Africa, took stock of the achieved goals established in *Agenda 21* and concluded that the process of implementation was slower than expected. Nevertheless, governments strongly reaffirmed their commitment to the full implementation of *Agenda 21* and "confirmed that a significant progress has been made toward a global consensus and partnership among all people of our planet." The Johannesburg Declaration on Sustainable Development further states:

> Poverty eradication, changing consumption and production patterns, and protecting and managing the natural resource base for economic and social development are overarching objectives of, and essential requirements for sustainable development. . . . The ever-increasing gap between the developed and developing worlds pose a major threat to global prosperity, security and instability. The global environment continues to suffer. . . . globalization has added a new dimension to these challenges. The rapid integration of markets, mobility of capital and significant increases in investment flows around the world have opened new challenges and opportunities for sustainable development. But the benefits and the costs of globalization are unevenly distributed, with developing countries facing special difficulties in meeting this challenge.

A Johannesburg Action Plan has been launched mainly focusing on the reduction of "biodiversity loss by 2004, to restore fisheries to their maximum sustainable yields by 2015, to establish a representative network of marine protected areas by 2012, and to improve developing countries' access to environmentally sound alternatives to ozone-depleting chemicals by 2010."

Main unsustainable trends and challenges. Probably one of the most unsustainable trends represents the current production and consumption patterns of capitalistic, industrialized countries. Just to highlight the urgency of the problem: If Western production and consumption patterns were applied to the whole world, we would need two or three planets earth. In other words, the carrying capacity of the earth has limits and therefore has to be taken into account in welfare models and in global policy making. Another key factor for unsustainable development can be seen in the lack of internalization of external cost. The fact that ecological and social externalities are not reflected accordingly, neither at macroeconomic nor at microeconomic level, entails wrong market signals. The GDP as an indicator of wealth and welfare appears to show misleading results unless ecological and social issues are taken into account. Relevant studies show a distortion of GDP of up to 8 percent. Today capitalist economies are more conscious of negative environmental and social externalities, partly because demographic and economic growth and technology have made them worse. Tackling externalities is an essential function of government, ignored in communist countries and an essential means in achieving sustainable development.

A third major challenge to be mentioned consists in the proper management of urban growth in developing countries. Global unsustainable trends include climate change, biodiversity loss, soil degradation, availability of clean drinking water and diminishing fish and other natural resources, or also unstable international financial markets, growing social riots and war; sector-specific unsustainable trends can be observed in energy, transport, health, agricultural and urban or land use policies, forest management, chemical use, and food safety.

In a wider sense it can be argued that market access restrictions, in particular for disadvantaged partners could be considered as hindering factors to sustainable development. This is why the success of the negotiations in the WORLD TRADE ORGANIZATION (WTO) would represent a crucial contribution to sustainable development. It has been further observed that development, and thus sustainable development, strongly depends on certain framework conditions such as a healthy macroeconomic environment, democracy, the establishment of the rule of law, and the respect of human rights. It is also argued that a certain philosophical culture, such as proposed by Sir Karl Popper, would be advantageous for fostering development and thus sustainable development.

Policy responses. Whereas up to 10 years ago sustainable development was mainly linked to the protection of the environment, and the main global threats seemed to be environmental ones, today a more holistic approach is applied. In 1992, the United Nations established the Commission on Sustainable Development to ensure effective follow-up of UNCED and thus to deepen the process towards sustainable development. UN sub-bodies as well as the European Commission have been increasingly stressing the need for sustainable development. As a commitment to the process, sustainability strategies were elaborated at regional, national and local level (Local Agenda). Some anchored the principles of sustainable development in their treaties (EUROPEAN UNION) or national constitutions (SWITZERLAND).

In order to achieve sustainable development in the business sector, the World Business Council for Development has been launched, including more than 130 members.

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Sweden

THROUGH ITS MIX of industrial and agricultural output, Sweden continues to demonstrate an ongoing trend of manufacturing and farming produce superiority, evident at a glance in its economic statistics. It continues to be one of the world's wealthiest countries. Transportation, modern internal and external communications, and world trade also contribute heavily to the country's economic staying power. The nation's timber and hydropower industries reach worldwide, as does its production of iron, copper, zinc, lead, and pyrite. Mines, such as those located in Kiruna and Gallivare, deliver enough abundance to make Sweden one of the globe's leading ore exporters.

Although agriculture remains a constant source of national income (roughly 3 percent throughout the 1990s), the manufacturing and engineering sectors have been the main focal points of the economic landscape, both steadily growing since the advent of WORLD WAR II. Today, they contribute some 20 percent of income.

From small but efficient mechanized farms comes a diverse export of dairy products, grain, beets, and potatoes, as well as livestock. Simultaneously, manufacturing plants generate a wide range of universal products. Iron and steel, precision equipment, processed foodstuff, and motor vehicles dominate. Natural commodities include an array of forest products, refined petroleum, and chemicals.

One-third of Sweden's GROSS NATIONAL PRODUCT (GNP)—chiefly, timber, machinery, chemicals, iron, and steel—is exported to other parts of the sphere. Foreign trade is continuous with a number of countries in Europe and the Americas. DENMARK, FINLAND, FRANCE, GERMANY, NORWAY, the UNITED KINGDOM, and the UNITED STATES follow a principal-trade partnership with Sweden.

As Sweden has pursued a political doctrine of neutrality for the second half of the 20th century, output of its GNP has been mostly constant and enduring in the face of downswings in the world economy and other upheavals affecting the marketplace, internally and externally. Development faltered in the latter half of the 1970s, due to rising costs of petroleum and oil, and again in the early 1980s because of volatile changes in government. Over a period of several years, the krona currency suffered devaluation, as much as 16 percent. Before a return to normalcy, a recession struck the country in 1990, resulting in an industry downturn, job loss, and eroding competition that caused a 6 percent decline in the GNP. But, since that time, reform has boosted manufacturing and, as a result, exports have grown significantly.

The Swedish government has taken a vital role in reestablishing the success of its economy and reinvigorating its high standard of living. More than 90 percent of industry is privately owned, and conservative business tactics have created a unique mixture of capitalism and social welfare benefits. With a population of 8.8 million (2002), Sweden is a member of the EUROPEAN UNION (EU) with economic parity to its western European partners, but waived participation in the euro currency as of early 2003.

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Switzerland

THE SWISS ECONOMY is one of the most prosperous and aggressive economies on the globe, ranking among the top 20 states in the world family of nations. Its per capita purchasing power parity ($31,700 in 2002) is among the highest and matched by its high wage scale, the envy of many in the working world. A highly successful market-based economy founded on international trade and banking, its standard of living, worker productivity, quality of education, and health care serve as models for other nations. Inflation is low and unemployment exists at moderate and low levels. Switzerland remains a safe haven for investors, because it has maintained a degree of bank secrecy and has kept up the Swiss franc's long-term external value.

Switzerland has liberal trade and investment policies and a conservative fiscal policy. Its legal system is judiciously developed, commercial law is exact, and the Swiss franc represents one of the soundest currencies in world finance. Switzerland has brought its economic practices largely into conformity with the EUROPEAN UNION (EU) to enhance international competitiveness. Although the Swiss have not pursued full EU membership in the early 2000s, they have signed agreements to further liberalize trade ties.

Switzerland had slow or even no-growth periods in the 1990s, and suffered higher levels of unemployment. However, between February 1997 and January 2002, unemployment dropped from 5.7 percent to 1.6 percent. At the time, a commercial counselor representing Switzerland in the U.S. Department of Commerce wrote, "Reaching the level of near full employment constitutes a windfall for the overall spending and consumption. A full-fledged revival in consumer or corporate spending is hence on the horizon. . . . The Swiss economy is approaching growth levels encountered in markets of competitors."

The *Confoederatio Helvetica* describes the economic structure of the country: "About two-thirds of Switzerland is covered with forests, lakes and mountains. Since Switzerland has no mineral resources, it must import, process and resell them as products. Services are the most important part of the economy." While farming is regarded as an important commodity to the overall welfare, it does not satisfy the needs of all the people, thus the country's reliance on imported GOODS.

Those employed in the agricultural industry account for only about 10 percent of the labor force, and are divided between cattle and dairy farming, about the only two agricultural offerings of any importance found within the country's limited farming region. Mineral resources are not plentiful; most raw materials and many food products are imported. Tourism, a significant addition to the economy, helps balance the national trade deficit.

The total economy of Switzerland, then, is divided into three principal sectors: agriculture, industry, and services. The United States is the second-largest importer of Swiss goods, just behind GERMANY, and is the largest foreign investor in Switzerland, and conversely, the primary destination of Swiss foreign investment. Some 200,000 American jobs depend on Swiss trade.

About 40 percent of the population is employed in industry, trade, and handicraft. This includes the machine and metal industry, watch industry, and the textile industry. Chemicals and pharmaceuticals are a strong component of this industry sector. From Basel, Switzerland's industrial city, more than 30,000 chemical and pharmaceutical products are shipped every year for export. Switzerland boasts highly qualified and well-trained workers. In general, Swiss manufacturers follow what they call a niche strategy, concentrating on perfecting a small range of top-quality products instead of a large range of mediocre ones. "As a result, even some small enterprises have been able to corner the world market in their own specialty," explains Switzerland on Sight, a Swiss information resource.

The remainder of the population (about 50 percent) is in the service sector of the economy. Comprising the majority of this sector are banking, insurance, and tourism. Swiss trading companies have demonstrated a marketing savvy throughout the major cities of the world in Europe, the Far East, Africa, and the Middle East.

Switzerland's population of 7.3 million people had a GROSS DOMESTIC PRODUCT (GDP) of $231 billion in 2002.

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Syria

THE ECONOMY OF THE Syrian Arab Republic is based on agriculture (27 percent), industry (23 percent), and services (50 percent). It remains a middle-income developing country with modest rates of growth. The country has been plagued by bouts of severe drought affecting its agricultural productivity, and it has one of the highest unemployment rates in the Arab world (24 percent). Despite some national reforms to correct slow-moving enterprises and non-productive businesses, the national economy drags—hampered by poorly performing public sector firms, low investment levels, and markedly low industrial and agricultural output. To date, the planners in Damascus, its capital, have been unable to fuel the tortoise into a hare.

Adding to its troubles, Syria's population growth soars and its once vast water supply has begun, over the last decade, to become polluted. Private investment is crucial to the modernization of the country—but it is slow in coming.

Structural deficiencies in the economy addressed by the government have focused on its lack of a modern financial sector. To its credit, the government legalized private banking in late 2001 and there is now hope that commercial financial institutions may soon emerge.

Syria's import and export trade is not without merit, however. The bulk of imports consists of raw materials essential for industry, agriculture, equipment, and machinery from trade partners ITALY, GERMANY, FRANCE, Lebanon, CHINA, South KOREA, TURKEY, and the UNITED STATES. Major exports are crude oil, refined products, raw cotton, textiles, fruit and grains, shipped to GERMANY, Italy, France, Turkey, and throughout SAUDI ARABIA.

Agriculturally, Syria has 72,000 square miles of arable soil that produces wheat, barley, cotton, olives, chickpeas, and sugar beets. Most farms are privately owned and, during periods of rainfall, reap ample harvests. The marketing and shipping of all produce are both controlled by the government.

Oil—a light-grade, low-sulphur variety—has been a main fuel for the country for the last quarter century. Before the 1980s, the country manufactured a heavy-grade blend, but the discovery of light-grade has since resulted in larger exportation. According to 2002 figures, about 530,000 barrels are produced daily.

But, this production is rather modest. Damascus continues to reform and work out problems suffered by its country's economy. It realizes that its outmoded technological base, shaky infrastructure, and weak educational system make it vulnerable for future economic setbacks. Syria's GROSS DOMESTIC PRODUCT (GDP) in 2001 was $54.2 billion, with a per capita purchasing power parity of $3,200.

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T

Taft, William Howard (1857–1930)

THE 27TH PRESIDENT of the UNITED STATES and one of three early 20th-century progressive presidents, William Howard Taft was born into a well-known Ohio family. He graduated from Yale Law School, served as a state judge, solicitor general and a federal circuit judge. In 1900, President William MCKINLEY appointed Taft chairman of the Philippine Commission with the responsibility of developing a civil government for the territory acquired in the SPANISH-AMERICAN WAR. Subsequently, Taft took on the difficult task of managing the colony as the Philippines' first governor general.

In 1904, President Theodore ROOSEVELT appointed Taft secretary of war, a position he held until the Republican Party nominated him for president in 1908, his first bid for elective office. Taft was Roosevelt's chosen successor once the president decided not to seek a third term. Roosevelt felt that as a close associate, Taft would continue his own eight-year reform course. Taft's personality, however, was almost the opposite of Roosevelt's; he disliked politics, preferring to work behind the scenes. Taft's reputation in Washington, D.C., was as an effective, if not hard-working, manager. He enjoyed golf, bridge, naps, and well-prepared meals. The heaviest president, Taft weighted more than 300 pounds. Although his own ambition lay in the U.S. Supreme Court, his wife wanted him to be president. Eventually Taft realized his ambition, becoming the only former president to serve on the court, sitting as chief justice from 1921 until his death in 1930.

The Taft administration (1909–13) was torn by two factions within the Republican Party, the conservatives who relied on business for support and policy direction and former president Roosevelt's reform faction, or progressives who wanted business regulation and greater government involvement in society. Despite Roosevelt's influence, once in office Taft most often sided with the conservatives and earned the progressives' criticism for deserting Roosevelt's policies.

TARIFFS were a central issue dividing the Republicans. Conservatives wanted high tariffs to protect American manufacturers and assure necessary funds for the federal government. Reformers wanted lower tariffs to ease heavy taxation on consumption and pushed for alternative taxes. In 1909, with Taft's support, Congress passed the Payne-Aldrich Act which raised tariffs on most imports while lowering tariffs on insignificant items. With this signal of Taft's support for the conservatives, progressives attacked the act as a product of big-business special interests. Progressives started to talk about bringing back Roosevelt as president. Also in 1909, progressives persuaded Congress to pass the 16th Amendment to the Constitution, authorizing an income tax. This amendment became law in 1913, at the end of the Taft administration.

Another issue that divided conservatives and progressives was conservation. Taft's secretary of the interior proposed selling a million acres of public land. Progressives attacked the sale, pointing out that a previous sale in Alaska benefited a coal syndicate that included J.P. MORGAN. Progressives again attacked the Taft administration, calling his policies a betrayal of Roosevelt.

In 1910, Taft suffered an embarrassing defeat in off-year elections as Democrats captured control of both houses of Congress. He worked with the new Congress to enact progressive legislation including the Mann-Elkins Act that allowed the Interstate Commerce Commission (ICC) to set rates for railroads and placed telephone and telegraph companies under the ICC. Taft crafted a compromise between conservatives and progressive over the bill, but when he tried to enforce party loyalty among progressive Republicans, the progressives strengthened their anti-Taft movement.

In 1912, the Republicans re-nominated Taft for a second term with the progressive wing of the party deserting to support former President Roosevelt, the nominee of the Progressive Party. The Democratic nominee for president, Woodrow WILSON, defeated both Taft and Roosevelt.

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Taiwan

THE LARGEST ISLAND off the Chinese coast, Taiwan, in prehistoric times was connected with the mainland. It became an island as a result of geological movements, and is flanked by the Pacific Ocean on its east and the Taiwan Strait on the west. The average width of the Strait between the island and CHINA's Fujian Province on the mainland is about 110 miles. Taiwan is some 250 miles long and has a width ranging from 9.5 to 90 miles, with a total area of 13,875 square miles. About two-thirds of the island is mountainous while the rest is flat. Next to Taiwan are smaller islands, including the Penghu Islands (Pescadores). The population on Taiwan is over 22 million (2000) with about 97 percent Han Chinese and the rest aboriginal.

Historical records of Taiwan can be found in Chinese history books written around 200 B.C.E. In 230 C.E., Sun Quan, a Chinese general, sent 10,000 troops to Taiwan. From then on, people from the mainland migrated to the island. In the southern Song dynasty (1127–1279), China's emperor established an administrative post in the Penghu Islands.

In 1624 and 1626, Holland and Spain invaded Taiwan, and the Dutch soon drove the Spaniards away. In 1661, Zheng Chenggong (known as Koxinga in the West), a Chinese general, defeated the Dutch troops and recovered Chinese sovereignty over Taiwan. In 1887, Taiwan was upgraded from a prefecture in Fujian Province to a province. In 1895, after having militarily defeated China and Korea in war, Japan forced China to sign away Taiwan, the Penghu Islands and occupied-Korea as Japanese colonies. When Japan was defeated at the end of WORLD WAR II, it returned Taiwan and the Penghu Islands to China and gave Korea independence according to the Cairo Declaration of 1943 and Potsdam Proclamation of 1945. The government of the Republic of China sent General Chen Yi to Taiwan as the chief officer.

In the Chinese Civil War between 1946–49, the forces led by the Chinese Communist Party (CCP) defeated the government forces led by Chiang Kai-shek. Chiang and his followers retreated from the mainland to Taiwan. In October 1949, the CCP declared the founding of the People's Republic of China (PRC). But the UNITED STATES and some of its allies continued to regard Chiang's Guomindang (GMD) government on Taiwan as the legitimate Chinese government. The outbreak of the Korean War in 1950 forced the CCP to shelf its plan to attack Taiwan. In 1954, the United States signed a Mutual Defense Treaty with Chiang's regime. The treaty allowed stationing of American troops on the island and placed Taiwan under American military protection.

On October 25, 1971, the United Nations General Assembly approved, with an absolute majority, Resolution 2758. The resolution "decides to restore all its rights to the People's Republic of China and to recognize the representatives of its government as the only legitimate representatives of China to the United Nations, and to expel forthwith the representatives of Chiang Kai-shek from . . . the United Nations."

In 1972, President Richard NIXON visited China. In the Shanghai Communiqué that resulted from the visit, the United States said that it did not challenge the position that "there is but one China and that Taiwan is a part of China." In 1979, the United States repealed the Mutual Defense Treaty, withdrew its troops, ended its official relations with Taiwan, and established diplomatic relations with the PRC on the basis that the government in Beijing was the sole legal government of China. By 2002, more than 160 countries had established official relations with Beijing on the basis that there is only one China, that the government of the PRC is the sole legal government, and that Taiwan is a part of China.

The GMD government in Taiwan carried out land reform between 1949–53. The reform reduced tenant rents, set a legal limit on the amount of land each farmer could own, required all owners to sell to the government what was beyond the limit, and sold government land to farmers with little land. With the help of American economic aid, the government had restored Taiwan's economy by mid-1950s. At the end of the decade, it began to promote export-oriented industries, while the United States and Japan helped by importing from Taiwan labor-intensive products such as clothing and plastic articles. Between 1963–72, Taiwan's GROSS DOMESTIC PRODUCT (GDP) grew at an average annual rate of 10.9 percent, making it known as one of the Four Dragons, four fast- growing economies, in Asia. In 2001, its GDP was about $273 billion. Since the late 1980s, Taiwan businesses have invested billions of U.S. dollars on the Chinese mainland.

Politically, between 1949–87, the government ruled in Taiwan with martial laws that prohibited public assembly, outlawed political criticism, and used military courts to punish actions deemed dangerous to public order. In 1987, the government started to allow its people to visit their families on the mainland. Since 1989, Taiwan has witnessed multiparty elections. The GMD is now one of the political parties competing for power.

The Chinese government has proposed a "one country, two systems" formula for unification of Taiwan with the mainland. But the government on Taiwan, which still uses the official name of the Republic of China in its current constitution, has not given it positive reaction. Family visits, tourists, and business investments connect Taiwan with the mainland.

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Target Corporation

GEORGE DAYTON FOUNDED Target in 1902 in Minneapolis, Minnesota, and 100 years later Target runs 1,476 stores in 47 states. Mainly a general retail sales company, Target also manages Mervyn's, Marshall Field's, target.direct, Target Financial Services, Associated Merchandising Corporation, and Dayton's Commercial Interiors, and employs approximately 192,000 people nationwide.

Mervyn's is a "premier, promotional, middle-market, neighborhood department store," with 264 stores in 14 states, according to the company. Acquired by Target in 1978 and employing 28,000 people, Mervyn's number one geographic market is Los Angeles, California, where it has 48 stores.

Marshall Field's is a retail store chain with 32,000 employees and 64 stores in eight states. The company's major market is Chicago, where Marshall Field's has 16 stores.

The most profitable division of Target Corporation is surely Target stores, which generated 82 percent of the corporation's total revenue in 2001 from a diverse retail infrastructure ranging from normal stores to SuperTarget stores. In 2000, Target Corporation launched "target.direct," an e-commerce application that allows consumers to order directly from the Target warehouses. An e-commerce partnering agreement in 2001 with Amazon.com boosted both sales and stock prices significantly, shown partly by a 9.7 percent increase in total revenue between 2000 and 2001. For fiscal 2001, Target Corporation's total revenue was $40 billion, ranking it as the 89th largest company in the world.

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tariff

A TARIFF IS A TAX that a country imposes on traded goods, usually on imports but sometimes on exports. In past centuries, a tariff was most often set at a nominal fee per unit of weight or volume, such as 10 cents per pound of coffee, and this was called a specific tariff. Today, the typical tariff is an *ad valorem* tariff, calculated as a percentage of the declared value of the good. This protects government revenues if prices rise, since tariff revenues also rise.

Revenue from import tariffs was long a crucial source of government income, favored because it was easy to collect as goods entered at a port or border. Some countries also imposed export tariffs, particularly on minerals like gold, silver, or copper, because exporters could pass on most of the cost of the tariff to foreign buyers, and because mining companies, unlike manufacturing firms, could not relocate to other countries to avoid the tariff.

Import tariffs raise the price of imported goods relative to local products, and so have two effects: 1) consumers buy more local goods, and 2) the price of local goods rises. Both help local producers thrive, especially if their factories have economies of scale. For instance, in auto plants, producing a larger number of cars allows the cost of expensive machinery to be spread out over total output so each car can be sold at lower cost.

Most trade economists emphasize the parts of FREE TRADE theory that say, under certain assumptions, if a small country imposes a tariff it reduces the well-being of its population. Consumers lose by paying higher prices; producers gain by selling at higher prices; and the government gains tariff revenue. However, under certain assumptions it can be proven that the gains by producers and the government are not enough to fully offset consumers' losses. And if a country is large, so that imposing a tariff drives down world demand for the good and lowers its price, then that country can gain by imposing a tariff on imports, unless other countries retaliate with protectionist measures of their own.

Governments may impose tariffs not only to raise revenue or to nurture local industry, but to attract tariff-jumping investment. If GENERAL MOTORS (GM) wants to sell cars to Brazilians, it can either export cars to BRAZIL or set up a plant in Brazil producing for the local market. But if Brazil slaps a large tariff on imported cars, GM will more likely choose to establish an auto plant inside Brazil to avoid the tariff.

Like some other countries, the United States has tariff laws that encourage its own firms to set up assembly plants abroad using inputs made in the United States. The tariff code provision HTS 9802, also known as the production-sharing law, allows a firm that sends components out of the United States, has them assembled abroad, and then re-imports the finished good to pay a tariff only on the value added abroad. Suppose Levi's sends $15 worth of fabric, zippers and thread from the UNITED STATES to MEXICO and pays workers to make them into jeans, which it re-imports for $20. Then under HTS 9802, Levi's pays tariff only on the $5 of value added in Mexico, not on the $15 of U.S. components. Identical imported jeans made from non-U.S. components would be charged a tariff on their whole $20 value upon entering the United States. This offers U.S.-based firms an edge over other firms, of which clothing makers, electronic equipment producers, and automakers have all taken great advantage, especially in Mexico and the Caribbean Basin where the cost of transporting the components and the finished goods is low.

A few reasons for raising tariffs temporarily are recognized in existing agreements. For example, the WORLD TRADE ORGANIZATION (WTO) agreement contains provisions that prohibit one country from dumping goods in another by selling them at an unfairly low price. The country in which goods are dumped may impose a countervailing duty, a compensating tariff, on the offending country or countries. In 2002, for example, President George W. BUSH imposed a countervailing duty on steel imported into the United States from a number of countries.

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taxes

U.S. SUPREME COURT Justice Oliver Wendell Holmes, Jr. once described taxes as "what we pay for a civilized society." A more objective definition would describe taxes as the compulsory payments we make to governments, to cover those governments' expenditures on structures, services, and support payments.

There are two ways governments can raise revenues: through taxes and through fees. Fees are practical only when the beneficiaries of governmental services can be identified, and excluded from the service unless they pay the fee. For example, defense and police services cannot be financed through fees, because it would be impractical to try to limit those services only to the fee payers. In contrast, state and national parks can be fee-financed, because non-payers can easily be kept out.

Taxes are also needed to finance programs designed to assist target population groups, since charging them a fee for the service would effectively cancel out the assistance provided them. Social programs, agriculture support programs, and education programs are all examples of assistance programs for which fees make no sense. Note, however, that since the recipients of Social Security must pay into the system prior to their retirement, those earlier payroll taxes could in part be interpreted as fees for the future retirement benefits.

Nevertheless, with the possible exception of social security, the overwhelming majority of government services must necessarily be tax financed. If we want these services, and the civilized society they provide us, we must have taxes.

Types of taxes. Taxes are generally levied on any one of three behaviors: earning income, spending that income, and holding wealth. The one principal exception is a head tax, which is levied on all persons who meet the tax's qualifications (e.g., all men 18 years old or older). Taxes on earning income include the personal income tax, the corporate income tax (which, in effect, taxes the investment income of the corporation's shareholders), and payroll taxes such as the FICA (Federal Insurance Contributions Act or social security) tax. Taxes on consumption (or spending) include sales taxes, excise taxes, and tariffs on imported goods; the value added tax (VAT) could be, in effect, either an income tax or a sales tax, depending on how it treats the purchase of capital equipment. Taxes on holding wealth include wealth taxes, property taxes, and estate taxes.

Since income is either spent on consumption goods or saved, the distinction between income taxes and consumption taxes lies in their different treatments of savings. An income tax taxes the money you save when it is earned, and taxes any interest, dividend, or other returns to saving when those are earned. A consumption tax taxes savings only when they are spent. Since most people eventually spend the majority of the money they save, the difference is primarily timing: an income tax taxes that money early on, when it is earned, while a consumption tax takes that money at the end, when it is spent.

Since, however, it is always advantageous to pay taxes tomorrow rather than today—you earn interest in the meantime—a consumption tax imposes a lower effective tax rate on saved income than an income tax. Indeed, a consumption tax effectively leaves savings income untaxed. As a result, a consumption tax turns out to be exactly equivalent to a labor income tax; i.e., an income tax that exempts savings income, such as a payroll tax.

Since there are many features in the U.S. personal income tax that allow saved earnings to remain untaxed until they are spent (pensions, IRAs, 401K plans), savings income to be deferred or to remain untaxed until it is cashed in (accelerated depreciation, capital gains), and savings income to be tax-exempt (Educational and Roth IRAs), the U.S. personal income tax is in reality a hybrid between an income tax and a consumption tax. A tax that is levied on individuals like the personal income tax, but that exempts all saved income until it is spent, like a pure consumption tax, is often called a personal expenditure tax.

Consumption taxes can be either narrowly or broadly based. Excise taxes are narrowly based—they apply to a relatively limited number of consumer purchases. Excise taxes are usually not major revenue raisers, but are instead used either to discourage socially undesirable behaviors (cigarette and alcohol taxes), or to approximate user fees (gasoline taxes). Luxury taxes are similarly applied to a relatively narrow range of goods, usually to indirectly tax the wealthy. Tariffs on imports originated as essentially luxury taxes, since only the well-off could afford imported products, but are now used primarily to protect domestic producers from foreign competition.

Sales taxes and value added taxes are broadly based, although exemptions on food, housing, medical care, and other essentials are common. Many sales taxes also exempt a wide range of services. A sales tax is collected from the purchaser, added on to the purchase price at the time of sale, whereas a VAT is collected from the producer of the good and the producer's suppliers, and then incorporated into the sale price.

Since most taxes are imposed on economic transactions (the purchase/sale of consumer goods or labor/capital services), the tax could ultimately fall on either the purchaser or seller. Excise and luxury taxes, tariffs, and the VAT, which are collected from the producer/sellers of consumer goods, may be passed forward in part or full to consumers.

Similarly, sales taxes, which are collected from the consumer, may be partly or fully passed back to the producer/seller. The division of the tax depends on the elasticities of SUPPLY and DEMAND: the less-price-elastic side of the tax bears the greater portion of the tax. Since gasoline and tobacco consumers are very unresponsive to prices, most of those taxes fall on consumers as higher prices. In contrast, the demands for many luxury goods are very elastic, so the producers are, in many cases, likely to absorb most of a luxury tax.

Income taxes may likewise be divided between the suppliers of labor/capital or their employers. In fact, however, since labor supply is in the aggregate extremely price inelastic, all labor income taxes (including the employer's portion of payroll taxes) are approximately fully borne by the worker. It is less clear what the elasticity of savings supply is, but it is safe to say that the major portions of capital income taxes are borne by the saver/investor.

Fair taxation. Ideally, taxes are both efficient, in the sense of collecting the desired amount of revenue with as little impact on behavior as possible, and are fairly distributed. Broad-based taxes are more efficient than narrow taxes, since they are harder to escape: a tax on all consumption can be avoided only by saving or not earning, while a tax on jewelry can be avoided by shifting to other untaxed items. Special provisions in the tax code—the exemption of housing from sales taxes, the exemption of employer-provided insurance from income taxes, accelerated depreciation of some investments, low tax rates on dividends or capital gains—all lead to changes in behavior that are likely to be inefficient, unless the goal of the special provision was to encourage a specific behavior (e.g., educational tax credits). In general, however, the most efficient tax system will treat all forms of income, or all forms of consumption, identically.

What constitutes fair taxation depends on one's sense of fairness. At one extreme, a head tax could be considered fair—everyone enjoys equal rights and protections from government, so everyone should pay equally for government. Alternatively, if the benefits people receive from government differ, they could be taxed in proportion to their benefits—an argument that would favor the widespread use of fees. Most commonly, however, a fair tax system is defined as one where one's taxes are a function of one's ability to pay taxes.

A person's ability to pay taxes is usually measured by that person's income, although wealth or consumption could also be used. A proportionate tax collects a constant fraction of income (or consumption): a 5 percent sales tax on all purchases would be a proportionate tax relative to consumption. A 20 percent flat tax with no deductions or exemptions would be a proportionate income tax.

A tax that collects a smaller fraction of income/consumption from the rich than from the poor is a regressive tax. A head tax that collects the same amount from rich and poor alike would be extremely regressive. Most modern societies prefer progressive taxes, which collect a larger fraction of income/consumption from the rich than from the poor. The personal income tax, with its series of the tax brackets that rise with income, is clearly progressive, although a flat tax with a personal exemption would also be mildly progressive. A personal expenditure tax could be designed to be as progressive as the personal income tax.

In most societies, the majority opinion is that the ability to pay taxes rises disproportionately with income, since lower levels of income are used to satisfy more basic wants and needs than higher income levels. Therefore, in those societies where progressive taxation is preferred, the optimal tax system would be based on either corporate and personal income taxes, or personal expenditure taxes and corporate cash flows taxes (that immediately depreciate capital purchases, but allow no deduction for interest payments). Property taxes might be used to finance local government, since most local government services primarily benefit property. Estate taxes would add additional progressivity to the system, while taxing income that had previously escaped taxation (inheritances, tax shelter income, savings under a consumption tax) but which provided consumption-like benefits to the estate's owner (e.g., status, security).

Those societies which have the ability to pay taxes rising exactly proportional to income would prefer a proportional tax system. Their optimal choice would be a VAT rather than a sales tax, since the former is harder to elude, more consistently deals with the distinction between intermediate goods and final goods, and is generally applied more comprehensively. If an income-tax-like VAT is desired, capital asset purchases should receive no special treatment. A consumption-tax-like VAT would allow firms to deduct capital purchases in calculating their value added.

Only countries with poorly developed economies and limited abilities to measure and monitor production and income should rely heavily on tariffs, excise, and luxury taxes. Since these taxes only require the monitoring of specific products and national borders, they are easy to administer, and have long been favored in less developed nations (e.g., the United States, prior to the Civil War). They are, however, ultimately very inefficient taxes that create substantial behavioral shifts from taxed to untaxed goods.

Finally, a note on how high tax rates should be. It is reasonable to expect that the optimal average tax rate—i.e., the percent of GROSS DOMESTIC PRODUCT (GDP) devoted to government spending—should be higher in rich countries than in poor ones. Richer societies can afford more luxuries. Within government, that would mean not just highways, police, and national defense but social insurance programs such as Social Security and national health insurance. Nevertheless, the extreme disparity in average tax rates that we actually observe makes it difficult to determine what level may be optimal. For example, among the world's wealthiest nations, average tax rates range from around 53 percent and 45 percent in SWEDEN and FRANCE, to 38 percent in the UNITED KINGDOM, 29 percent in the UNITED STATES, and 25 percent in JAPAN. Ultimately, what is the "best" average tax rate is a political decision, and clearly the political outcomes do differ widely.

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Taylor, Zachary (1784–1850)

HERO OF THE MEXICAN-AMERICAN WAR (1846–48) and 12th president of the United States, Zachory Taylor was an enigmatic figure during one of the nation's most tumultuous eras. As a military and political leader, Taylor was instrumental in the addition of the southwest to American holdings, an event that greatly enhanced the nation's wealth but spawned bitter sectional conflict over the expansion of slavery.

Born to an aristocratic Virginia family, Taylor acquired plantations in Louisiana and Mississippi, as well as more than 100 slaves. But it was in his long and illustrious military career that Taylor achieved his greatest successes. Nicknamed "Old Rough and Ready," he served with distinction in the War of 1812 (1812–15), the Black Hawk War (1832), and the Seminole War (1835–38) before commanding an army in the conflict with Mexico, which began in April 1846, when President James POLK, in deliberate provocation, ordered

Taylor's army from the Nueces River, the border between Texas and Mexico recognized by Mexico, to the Rio Grande, which the United States deemed the legitimate boundary line. From there, Taylor launched a successful invasion of northern Mexico, culminating in his celebrated victory over the much reviled Santa Anna, conqueror of the Alamo, at Buena Vista in February, 1847. The war ended the following year with the Treaty of Guadalupe-Hidalgo, which ceded Mexico's northern provinces.

These victories made Taylor a national hero and catapulted him into political office. In 1848, the contentious question of slavery's expansion into the Mexican Cession divided both Democrats and Whigs. While Democrats nominated Lewis Cass on the ambiguous platform of "popular sovereignty," Whigs tried to ignore the issue altogether and nominated the politically mysterious Taylor, who had never even voted in a national election. Taylor won handily by trading on his military status and avoiding any clear position on the slavery issue.

As president, he could not be so vague. In 1849, after gold-diggers flooded into the territory, California applied for statehood as a free state, a development that sparked a massive controversy over the political balance between North and South and the constitutionality of slavery's restriction from the West. The slave-holding Taylor shocked the nation when he actively encouraged the immediate admission of California and New Mexico as free-soil states. Viewing the situation pragmatically, he disliked the social and political chaos that reigned in the two territories while debate over their admission raged, and he saw no harm to Southern slavery in the banning of the institution in areas geographically ill-suited to its existence. He vigorously opposed the Omnibus Bill offered as a compromise by his fellow Whig, Henry Clay, because it attached to the two territories' admission extraneous measures designed to mollify Southerners.

Taylor prepared to force an intense confrontation over the bill when he died suddenly on July 9, 1850 from a brief stomach illness. His departure cleared the way for the passage of Clay's bill. The Compromise of 1850, as it came to be known, delayed, but did not prevent, the AMERICAN CIVIL WAR.

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technology

ALTHOUGH THE WORD technology refers to knowledge about techniques, modern parlance has stretched the definition to include embodiments of technology, either in the form of material artifacts or in the practices of collections of individuals who, together with the necessary materials and production equipment, carry out a specific process.

In both of these cases, technology refers to things or systems whose performance demonstrates knowledge about a specific technique. From either of these definitions it is easy to realize that technology is an exceedingly important part of human knowledge from the viewpoint of economic activity. For any society or civilization in history, their technology is defined at least in notional terms as their members' ability to transform resources (energy, materials, information, and so on) for the satisfaction of individual and collective goals. From the latter's perspective, it can be argued that the most important thing about technology is that it changes.

Though the process of technological change has occurred and influenced the lives of individuals throughout the history of humankind, its pace and cumulativeness during the history of what we call capitalist economies is unprecedented. Even Karl MARX, the critic of capitalism *par excellence*, was ready to concede in the *Communist Manifesto* (1848) that capitalistic society's dominant class, the bourgeoisie, "has accomplished wonders far surpassing Egyptian pyramids, Roman aqueducts, and Gothic cathedrals. . . . The bourgeoisie, during its rule of scarce 100 years, has created more massive and more colossal productive forces than have all preceding generations together."

The insights of the classical economists about the impact of technological change on the living standards of the industrializing economies have found an important quantitative validation since the middle of the 20th century. A number of pioneering studies by economists Robert SOLOW and Moses Abramovitz investigated the factors contributing to the growth of American income per capita since the late 19th century and concluded that a variety of phenomena, broadly representative of technological change, accounted for around 90 percent of that growth. These early findings have been refined over time and have prompted a number of economists to focus their research efforts on understanding the process whereby technological change occurs and affects the economy and society.

The effects of technological change are not always, or even typically, beneficial for every individual or group in society. At the very least, individuals whose work skills are rendered less valuable by specific improvements in technology are made worse off by them. The opposition to technological change arising from these considerations was a core factor behind the Luddite disturbances caused by British textile workers in 1811–13.

Along the same lines, a loud chorus of criticism has accompanied forms of technological change aimed at the mechanization and automation of work processes that have been charged with reducing the economic value of workers' skills to the advantage of their capitalist employers. While this de-skilling hypothesis underscores the economic impact of technological change, other commentators on technological change have focused on its effects on the nature of work and raised important concerns about the alienating nature of the work tasks associated with technological developments such as the introduction of the assembly line, or automated machinery.

Interestingly, early concerns about this matter were raised by that champion of the division of labor, Adam SMITH, who argued in *Wealth of Nations* that the workers' limited intellectual exertion under the division of labor would make them as "stupid and ignorant as it is possible for a human creature to become."

Smith did not draw from this fact the implication that technological change and the division of labor be arrested. Rather, he argued that the government ought to temper the adverse consequences of the division of labor by providing the common people (the workers) with the "most essential parts of education."

Together with Smith, many others perceive technological change to be a critical factor in promoting better living conditions. Yet, the persistence of poverty in many parts of the world at the beginning of the 21st century makes it clear that technological change under capitalism, no matter how impressive and unprecedented, is not a panacea. Many individuals pin their hopes for fixing pressing problems of hunger and malnutrition, diseases and epidemics on technological factors. Critics of this attitude point out that the solution, or work toward resolving many of these problems, need not await any technological fix. These arguments do not necessarily dispute the proposition that technology can help, as much as they emphasize the undisputable fact that factors other than technology crucially influence who will have access to the benefits of technology.

Attention should also be called to problems confronting modern societies that are the outcome of specific aspects of technological change. For example, the international debate over the proliferation of nuclear weapons addresses a problem created by the development of technology for nuclear-power generation. And many aspects of environmental degradation can also be traced to the consequences, perhaps unintended, of adopting new technologies on a large scale.

The burden of these few remarks is to make the point that the process of technological change is pervasive and shapes our collective destiny. Understanding its basic features provides tremendously valuable insights on the history of capitalist economies and perhaps sheds a glimmer of light on their future.

The development of technology and long waves. This necessarily brief overview of the historical record of technological change takes the viewpoint that there have been multiple technological revolutions during the last quarter of a millennium, coinciding with what scholars in the field have labeled long waves of technical change. These waves are occasioned by clusters of technological innovations that lead to temporary accelerations in the rate of economic growth. Depending on the characteristics of the technologies at the core of the revolution, these accelerations reflect increased investment activity stimulated by the availability of new methods of production, by the growth of markets for new consumer products, and the reverberations across industrial sectors. As the diffusion of the new technologies progresses, the period of faster growth draws to a close. Normal conditions set in, until a new technological revolution triggers the next wave. Most accounts identify five long waves in technological change, beginning with the one associated with the industrial revolution that swept across Great Britain at the end of the 18th century.

Among the most celebrated inventions of the INDUSTRIAL REVOLUTION is James Watt's steam engine. However, the core of the first technological revolution was represented by the variety of machines that fueled the tremendous expansion of the British cotton industry, as well as the advent of factory-based production methods. In fact, the development of innovative machinery provided an essential stimulus to the concentration of production activities in factories. The latter had to be located close to streams that could be used to generate the water power necessary for the mills to operate.

Although invented in 1769, the steam engine's economic effects were limited until the 1840s, when it became a core technology of the second technological revolution. The steam engines of the late 18th century had low fuel efficiency and required considerable amounts of coal for their operation. A bulky natural resource, coal was costly to transport, crucially reducing steam power's appeal for potential users. It is not a coincidence that the economic impact of steam engines grew at the same time that the costs of transportation fell dramatically as a result of a revolutionary transportation technology, the railroads, whose coming of age, in turn, depended on the refinement of moving steam engines! The second long wave was fueled by the broadening applications of steam power to a variety of industrial sectors, growing investment in the development of a railroad infrastructure.

Changes in the dominant sources of power generation are also the hallmark of the third wave of innovation that began in the 1880s and ended with the Great DEPRESSION of the 1930s. The core technologies of this period concerned the generation, transmission, and application of electric power. Importantly, the advent of electrical power had a dramatic impact on the design and layout of factories. As machines were progressively modified for operation by unit electric drives, factory equipment no longer needed to link with belt-and-pulley arrangements to overhead shafts whose rotary motion was regulated by a single large steam engine.

Since the late 19th century, large-scale production methods became increasingly common among the manufacturing industries producing small consumer durables and production equipment. Such developments reflected the diffusion of manufacturing by interchangeable parts (pioneered in firearms production) and of the production equipment (machine tools) needed to support such methods. Although industries such as the sewing machine, bicycle, or the typewriter preceded it in the adoption of large-scale manufacturing, the automobile industry is the manufacturing sector whose evolution is most closely associated with the rise of mass production. This fact has a great deal to do with the successful strategy adopted by Henry FORD around 1908, when he decided to bet the future of his company, the Ford Motor Co., on the decision to mass produce a single economical version of automobile. An expensive and elitist good until then, the automobile was brought to a much larger consumer market by Ford's Model T. The success of Ford's gamble propelled the automobile industry through years of tremendous growth.

The adoption and refinement of the assembly-line manufacturing method and innovations in the production equipment that automated significant portions of the manufacturing process contributed to defining the Fordist techniques of mass production that are the core of the fourth technological revolution or wave of innovation that began in the 1940s. As mass-production methods diffused widely across industries and nations, a period of sustained economic growth followed the end of World War II, coming to an end in the late 1960s. The industrialized economies entered a period of stagnation or modest growth that lasted about 20 years. Although a dominant concern for economic analysts during the 1980s was to identify the causes of the productivity slowdown, a set of technologies centered around the application of computers and telecommunications was rapidly improving and became the core of what is commonly perceived as a new, the fifth, long wave of technological innovation.

A couple of important features of the long-waves pattern of technological change should be noted. First, the pattern is typically accounted for by two kinds of phenomena, namely the bunching together of technological innovations or the extraordinarily broad impact of a relatively small set of technologies. In fact, the two phenomena occur together when, for example, innovation in a technology with a wide range of applications stimulates further innovations among firms in the application sectors. Examples of these so-called general-purpose technologies include the steam engine, the electrical motor, the microcomputer, and several others. Accordingly, the development of microcomputers triggered a series of innovations in industries producing products whose design could benefit from the new microcomputer designs. To mention but a few: the pocket calculator, the personal computer, computer numerical controls for manufacturing, robotics, automobile injection systems.

The computer and digital media are the "fifth long wave" of technological innovation.

A second feature worthy of attention is that the approximate date marking the beginning of the long wave is typically later than the date when the core technology for the wave was invented and first demonstrated. It was noted earlier that the steam engine was a driving force for the second long wave beginning in the 1840s, while its invention dates back to 1769. Likewise, the mass-production techniques pioneered in the automobile industry as early as the 1910s led the fourth long wave in the 1940s. And the computer was invented almost half a century before the beginning of the fifth long wave in the 1990s. In fact, toward the end of the productivity slowdown period, in the late 1980s, a Nobel-Prize winning economist Robert SOLOW famously quipped that computers could be seen everywhere except in the productivity statistics. A few years later, computer technology together with telecommunications has been credited as the major factor promoting the upswing of the fifth long wave.

The pattern just highlighted is not at all unusual, for what has been said of the core technologies of the long waves is an accurate account of a pattern that applies more widely. Early studies in the economics of technical change estimated the average lag between the dates of invention and commercialization for a sample of important inventions to be around 15 years. Moreover, the economic impact of a new technology depends on its diffusion among users, a process that is far from instantaneous. Any reasonable interpretation of the lags between the appearance of a broadly defined innovative technology and the realization of its economic benefits has to bear in mind that the technology itself has almost certainly undergone important changes. As Nathan Rosenberg, an economic historian, points out, ". . . new technologies typically come into the world in a very primitive condition. Their eventual uses turn upon an extended improvement process that vastly expands their practical application."

Furthermore, the identity of these applications and the speed at which they become available is highly uncertain *ex ante*. More broadly, a question of fundamental interest in the study of technological change has been what factors account for the pace of technical change in different technologies and in different time periods? And, relatedly, what factors account for the qualitative pattern of improvements across the spectrum of different technologies within a certain time period?

The rate and direction of technical change. Although technical advances may be triggered by the unintended consequences of research and tinkering conducted with other purposes in mind, technical change occurs typically as a result of intentional efforts by either individuals or organizations that expend valuable resources in order to pursue specific improvements. These efforts take a variety of forms, depending on the time period and the technology area of interest. Consider Adam Smith's description of how innovative methods of production may be devised by the individuals who engage in production:

> A great part of the machines made use of in those manufactures in which labor is most subdivided, were originally the inventions of common workmen, who, being each of them employed in some very simple operation, naturally turned their thoughts toward finding out easier and readier methods of performing it.

This paragraph provides an early statement of the phenomenon of learning-by-doing, a source of technological advance that can only too easily be underrated even in modern times. However, the intensity of innovative effort in any economy or industrial sector is typically associated with the size of its investment in RESEARCH AND DEVELOPMENT (R&D) activities in relation to the overall level of economic or industrial activity. Thus, countries' (or sectors') commitment to innovation is often gauged by their R&D intensity, the ratio between national (or sectoral) R&D spending and output, or sales. It is common to observe differences in the resulting measures of R&D intensity both across countries and across industrial sectors, and these provide the empirical basis for the widely used classification of certain sectors of the economy as high-tech sectors.

To the extent that technical advance is the result of intentional efforts, a proximate cause of the rate and direction of technological change is the allocation of R&D expenditures across fields of technology. However, this argument only pushes the questions one step back. Two factors are presumed to play an important role in shaping the allocation of R&D expenditures, referred to as: demand and appropriability conditions; and technological opportunity.

The bulk of innovative activity is pursued under the expectation of a financial reward. Such expectation is normally grounded in the belief that there is a—possibly latent—demand for the innovation, and that the innovator will be able to recover his or her investment and earn a return from selling, using, or otherwise disposing of the innovation. With respect to the first issue, suffice to say that the technology has to meet a specific present or future need of the potential users, and it has to do so better than alternative technologies. It will not be inappropriate to emphasize the role of uncertainty in this matter. Not only can the innovator's judgments of latent demand for a new technology turn out to have been mistaken, but also unexpected developments of competing technologies can divert the users' demand away from his or her products.

Meeting users' needs is not sufficient to ensure that the innovator will earn a return on the investment of his or her resources. Whether or not this will be the case depends on the appropriability conditions, namely, conditions that influence the innovator's ability to appropriate part of the innovative technology's value to the users. These conditions depend on the speed at which competitors can imitate the innovative technology or reduce its market value by introducing innovations of their own.

While obtaining a PATENT is customarily considered the primary means for innovators to protect their innovative technology from imitation, patenting is not the only, nor the most important means for appropriating the returns from R&D. Empirical studies of innovation indicate that patent protection is a crucial element of appropriability conditions only in the pharmaceutical industry. Innovators in other technology areas find that their ability to appropriate returns from R&D is enhanced either by keeping secret critical aspects of the innovation's underlying knowledge; or by learning or other first-mover advantages accruing to the firms that bring a new technology to market ahead of the competitors; or even by defending their market position with complementary investments in sales and customers' assistance. Most importantly, these studies indicate that the appropriability conditions differ considerably according to the area of technology, and whether the innovation is a product for sale to other firms or consumers, or a process intended for use by the innovators themselves in the production of other goods.

The appropriability conditions in an area of technology determine the extent to which the net benefits of an innovation accrue to the innovator or the users. Generally, innovators appropriate only part of the net overall benefits of a new technology. Therefore, the social rate of return on R&D investment exceeds the innovator's private rate of return. And when appropriability conditions are weak, private investment in R&D may not be forthcoming even if the social rate of return from such investment would warrant the commitment of R&D dollars to the pursuit of the new technology.

The divergence between private and social returns from innovation has been invoked as a justification for government interventions aimed at either subsidizing private R&D investment or funding R&D activities carried out at public research institutions or non-profit centers such as universities. Prominent among these activities is the kind of scientific and technological research referred to as basic research. This is defined by the U.S. National Science Foundation as research directed toward increases in knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific application toward processes or products in mind. Private investment in basic research is limited by the fact that its returns are highly unpredictable and rather long-term in nature.

On the other hand, the development of scientific knowledge is presumed to be valuable for society at large and therefore, worth the commitment of public resources. For example, the U.S. federal government provides funding currently for about half of all domestic basic research, down from a share as high as 70 percent in the late 1960s.

While basic research activities do not create new technologies directly, they do so indirectly by contributing to the pool of scientific knowledge. The latter is a fundamental aspect of the conditions of technological opportunity that, together with appropriability, influence the direction and rate of innovative activity. In a nutshell, the conditions of technological opportunity influence the productivity of R&D investment in a particular area of innovative activity. Thus, areas of technology characterized by high technological opportunities are those where a given amount of R&D investment is more likely to be met with technical success, and vice versa. If the conditions of technological opportunity are conceptualized as a pool of knowledge and techniques supporting innovative activity, then their influence on historical patterns in the direction and rate of technical advance hinges on how that pool changes over time and why it differs in different areas of technology. From this perspective, three sources of new technological opportunity can be identified.

The first is the advance of scientific understanding, which provides knowledge about phenomena that can be relevant to the development of new technology. For example, the development of biotechnologies in the 1970s, such as the techniques for cloning and replicating genes, rested on a body of scientific knowledge to which the discovery of DNA in 1953 made a critical contribution. Likewise, the development of telecommunication technologies based on optical fibers was enabled by, among other things, the discovery of the laser effect in 1960.

Second, technological opportunities in a specific area can benefit from technological advances originating from other sectors or originally intended for other purposes. Thus, the invention of the transistor in 1947 at Bell Laboratories while working on problems of telephone equipment, created opportunities for innovation in a variety of fields including portable radios, computers, semiconductors, and television sets.

Finally, technological opportunities are enhanced as a result of feedback from prior innovations in the same area. This feedback is particularly apparent in the trajectories of improvement typical of products characterized as technical systems, whose design consists of an assembly of inter-related components. For these products, advances in one component technology frequently hold the promise of product performance improvements that can only be achieved as other components are improved. An important example of these bottlenecks comes from the development of metal-cutting machine tools. At the turn of the 19th century, the introduction of electric motors in place of steam power made it possible to turn tools, such as a drill bit, at higher speeds. While this created the possibility of increasing the speed of metal removal in machining operations, such opportunity could not be exploited until new steel alloys were developed that could withstand higher friction.

Conditions of appropriability and of technological opportunity are considered by modern economic analysis to be key factors influencing the rate and direction of technical change. While the framework articulated by these two concepts is very useful for interpreting the past and commenting intelligently about the present, it should be realized that predictions about the future direction and pace of technical change are of a highly tentative nature. The historical record of studies of innovation suggests that the reason for this fact is only in part related to the difficulty of predicting what technical problems will be resolved in the near future. "The most intriguing part of the story . . . has been the inability to anticipate the future impact of successful innovations, even after their technical feasibility has been established," Rosenberg states.

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Thailand

A SOUTHEAST ASIAN nation, Thailand was known for extremely high levels of economic growth in the 1980s and 1990s before weakness in its financial system contributed to the ASIAN FINANCIAL CRISIS of 1997.

Thailand, formerly known as Siam, first entered the European capitalist system through modest trade concessions to the British in the1826 Burney Treaty. King Rama IV (r. 1851–68), seeking modern military and industrial technology to defend his country from Western colonialism in neighboring Vietnam and Burma, negotiated the 1855 Treaty of Commerce and Friendship granting Britain free trade and extraterritorial privileges. King Rama V continued his father's pro-Western policies. His government completed a railroad between Bangkok and Ayutthaya in 1897, and abolished slavery and corvée labor in 1905. In the 1930s and 1940s, the nationalist Phibun regime changed the country's name to Thailand and was forced to cooperate with the Japanese in WORLD WAR II.

After 1945, Thailand struggled to maintain political stability and adopted a more interventionist approach to economic policy. In 1955, the government levied an export tax on rice that decreased overseas demand. The government then bought surplus rice and redistributed it at artificially low prices, as a subsidy to urban workers. The coup of 1957 brought Field Marshal Sarit Thanarat to power. Sarit's regime established close relations with outside agencies such as the WORLD BANK and U.S. aid agencies. The government also underscored its dedication to free-market capitalism by reducing the role of state-owned enterprises in the economy, and founding developmental institutions in 1959 and 1960 including the Budget Bureau, National Economic Development Board, and the Board of Investment.

Through the 1960s, the government promoted the substitution of Thai manufactures for imported goods in the domestic market. The Board of Investment promoted targeted industries in the following ways:

1. government guarantees that certain firms would not be nationalized
2. permits to hire foreign professionals
3. reduced duties for imported equipment
4. tax breaks for up to 8 years
5. protective tariffs on competing goods.

Between 1960 and 1970, Thailand's average annual economic growth rate was 8.4 percent, but much of this growth may have been the result of American expenditures during the VIETNAM WAR rather than economic policy.

With the American military withdrawal from southeast Asia in the early 1970s and the Thai economy reaching the limits of import substitution, the Thai government shifted its policy focus to export promotion. Consequently, the GROSS DOMESTIC PRODUCT (GDP) growth rate declined somewhat, but was maintained at an average of 7.2 percent in the 1970s.

Between 1985 and 1995, Thailand's average growth rate climbed to 9 percent, the highest in the world. Speculative pressure undermined the country's financial and monetary system and triggered the Asian Financial Crisis of 1997. The baht, Thailand's currency, was forced to float and depreciated from 25 to 56 baht per US$1 in January 1998. The Thai economy contracted 10.2 percent in 1998, but resumed modest growth of around 4 percent per year in 1999 and 2000.

In 2001, Thailand had a population of 62.35 million people. GDP was $410 billion consisting of agriculture 11 percent, manufacturing 40 percent, and services 49 percent. Thailand's main industries today are tourism, textiles, agricultural processing, beverages, tobacco, cement, jewelry, electrical appliances, and electronics. It is the world's second-largest tungsten and third-largest tin producer.

Exports totaled $65.3 billion worth of goods including computers, transistors, seafood, and clothing. Thailand's major export markets are the UNITED STATES at 23 percent, JAPAN 14 percent, and SINGAPORE 8 percent. Imports of capital goods, intermediate manufactures, raw materials, consumer goods, fuels, and other goods totaled $62.3 billion and came from Japan at 24 percent, United States 11 percent, and Singapore 10 percent.

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Thatcher, Margaret (1925–)

GREAT BRITAIN'S FIRST female prime minister, Margaret Thatcher served longer than any other British prime minister in the 20th century. In office, she initiated what became known as the Thatcher Revolution, a series of social and economic changes that dismantled many aspects of Britain's post-war welfare state.

Margaret Hilda Roberts was born the daughter of a Grantham shopkeeper. She was educated on scholarship, working her way to Oxford University, taking two degrees in chemistry and law. Her fascination with politics led her into Parliament as a Conservative in 1959 at age 34, when she argued her way into one of the best Tory seats in the country, Finchley in north London. Her quick mind led her up through the Tory ranks. She held junior ministerial posts (1961–64) before settling into a place as secretary of state for education and science in Edward Heath's cabinet.

As a woman, this could very well have been the peak of her political career. But in 1975, Thatcher boldly challenged Heath for the Tory leadership simply because the candidate of the party's right wing abandoned the contest at the last minute. The Tories were fed up with Heath and "the Ratchet Effect"—the way in which each statist advance was accepted by the Conservatives and then became a platform for a further statist advance. After two defeats in general elections, the Conservative party elected Thatcher its first woman leader in 1975.

After leading the Conservatives to an electoral victory in 1979, Thatcher became prime minister. Among her first fights: a struggle against Britain's headstrong trade unions, that had been blamed for the ruin of three governments in succession. Thatcher turned the nation's anti-union feeling into a handsome parliamentary majority and a mandate to restrict union privileges by a series of laws that effectively ended Britain's trade-union "problem" for a long time to come.

Thatcher quickly discovered that every area of the economy was open to judicious reform. Her economic policy rested on the introduction of broad changes along free-market lines. She attacked inflation by controlling the money supply and sharply reduced government spending and taxes for higher-income individuals. By the mid-1980s, PRIVATIZATION was a new term in world government, and Thatcher set about privatizing Britain's nationalized industries, which had hitherto been sacrosanct. By the end of the decade, more than 50 countries, on almost every continent, had set in motion privatization programs, floating loss-making public companies on the stock markets, and in many cases transforming them into successful private-enterprise firms. Even left-oriented countries that scorned the notion of privatization began to reduce their public sector on the sly. Governments sent administrative and legal teams to Britain to study how it was done. Some enthusiasts have suggested the Thatcher Revolution was perhaps Britain's biggest contribution to practical economics since J.M. KEYNES invented "Keynesianism," or even Adam SMITH published *The Wealth of Nations*.

Although unemployment in England during this time continued to rise to post-war highs, the declining economic output had been reversed. In 1982, when Argentina invaded the Falkland Islands, a British colony, Britain's successful prosecution of the subsequent war under Thatcher's leadership contributed to the Conservatives' win at the polls in 1983.

In foreign affairs, Thatcher was a close ally of President Ronald REAGAN, one of her earliest admirers, who achieved power 18 months after she did. He, too, began to reverse the Ratchet Effect in the United States by effective deregulation, tax-cutting, and opening-up wider market opportunities for free enterprise. Thatcher shared Reagan's antipathy to communism. She allowed the United States to station nuclear cruise missiles in Britain in 1980 and to use its air bases to bomb Libya in 1986. In 1985, she forged a historic accord with Ireland, giving it a consulting role in governing Northern Ireland.

With Reagan and Thatcher in power, the application of increased pressure on the Soviet state to force it to reform or abolish itself, or to implode, became an admissible policy. Thatcher warmly encouraged Reagan to re-arm and thereby bring RUSSIA to the negotiating table. She shared his view that Moscow ruled an "evil empire," and the sooner it was dismantled the better. Together with Reagan she pushed Soviet leader Mikhail GORBACHEV to pursue his *perestroika* liberalization policy to its limits, and so fatally to undermine the self-confidence of the Soviet elite.

In 1987, Thatcher led the Conservatives to a third consecutive electoral victory, although with a reduced majority. She proposed free-market changes to the national health and education systems and introduced a controversial per-capita poll tax to pay for local government, which fueled criticisms that she had no compassion for the poor. Disputes over the poll tax, which took effect in 1990, and over European integration led to a leadership challenge from within her party. Consequently, Thatcher resigned as prime minister, and John Major emerged as her successor.

In the years following her resignation as prime minister, Thatcher busied herself with worldwide lecture tours and writing two volumes of memoirs, *The Downing Street Years* and *The Path to Power*. In 1991, she announced she would stand down as a member of Parliament at the next general election. She was elevated to the Peerage in 1992 and took her seat in the House of Lords as Baroness Thatcher of Kesteven. She remained active in political life and lectured widely on behalf of the Thatcher Foundation until March 2002. At that time, it was announced that Lady Thatcher would never speak in public again after having suffered a number of minor strokes. However, her spokesman made clear that this did not mean Thatcher was retiring, but would continue to write articles and make her views on current issues known.

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Third World Internationalism

THIRD WORLD INTERNATIONALISM is an overarching ideology of the people of Asia, Africa, and Latin America to enunciate a universal conception of life, society, government, peace, progress, and human development that is rooted in their common conception of a need for consolidating the independence and freedom of third world countries, on the one hand, and for universalization of human rights and democratization of the world order, on the other.

Primarily derived from combined humanistic experiences, needs, and values of third world peoples and expressed in terms of their mutual solidarity, Third World Internationalism is an ideological framework—a statement of moral and ethical principles—that gives meaning, shape, and coherence to the third world as the "trade union" of the poor nations in its attempt to fashion new development styles and strategies, identify new areas of collective self-reliance, and connect the three circles of identity (national, regional, and international) with each other.

This ideology has provided a common cause, solidarity, moral and diplomatic support, strategic depth, and a flexible-value orientation to the newly independent nations. This solidarity-building has occurred through a number of themes and sub-themes, including revolution (of multiple kinds), decolonization, SOCIALISM, non-capitalist paths to development, planned progress, NON-ALIGNMENT, universal disarmament, North-South relations, East-West relations, and elimination of racism from all parts of the world. Its primary motivations include attempts to reject the idea of big powers dividing the world into spheres of influence, view things from a non-military point of view, and to build societies in which freedom is both real and essential. This ideological framework also includes opposition to superimposition of governments over other governments, and it self-consciously promotes negotiations among the aligned nations to avoid war and build international peace and stability.

However, the third world (and consequently Third World Internationalism) cannot be conceptualized in sheer geographical terms. Theorizing it as a socio-economic and not a geographical category, African-American civil rights leader Malcolm X and others have argued that ethnicized poverty in the midst of Western affluence is proof of the existence of a third world in Europe and the UNITED STATES. As a mode of consciousness, Third World Internationalism deals with the issue of poverty all over the globe. It was this mode of consciousness that gave Third World Internationalism its authenticity and uniqueness.

Third Worldism and Third World Internationalism. While Third Worldism refers to a political approach premised on the (perceived) revolutionary potential of countries in Asia, Africa, and Latin America, Third World Internationalism is characterized by a loosely coordinated set of ideas and values pertaining to independence, change, and prosperity based on a non-aligned model of progress and development.

Third Worldism was premised on two main factors: conditions leading to infuriating poverty and the capacity of the revolutionary regimes to terminate the exploitation of their countries by European and other colonizers. Crystallized by the competition between the capitalist and socialist camps, on the one hand, and between RUSSIA and the Peoples' Republic of CHINA, on the other, this Third Worldism was seen manifested in a tricontinental revolutionary movement personified, in the eyes of many, by communist revolutionaries.

In comparison, Third World Internationalism was equated with the awakening of Asia, Africa, and Latin America and directed toward ending Western monopoly over power and knowledge, and using the newly gained freedom for building democratic and just societies working for mass literacy, citizen efficacy, cultural empowerment, social ennoblement, and mobilizing the intellectual, moral, and spiritual resources of the society to build life-enhancing solidarities. This mode of history making was generally associated with leaders as diverse as CUBA's Fidel Castro and SOUTH AFRICA's Nelson Mandela.

The loosening of the bipolar world system influenced by Yugoslavia defecting from the Soviet camp, FRANCE asserting its independence from the United States, and a long-term rivalry emerging between INDIA and China, introduced a conceptual complexity and pragmatic flexibility into the formulations and operations of both Third Worldism and the Third World Internationalism. By the mid-1960s, there was a quasi-consensus that all Third World countries should commit themselves to certain basic principles, but beyond that each country should have freedom and flexibility to develop its "own genius," define its own destiny, charter its own path, invent its own solutions, and create its own *modus operandi* to pursue its national interests.

Three levels of articulation. The Third World internationalist ideology was articulated at three levels, political philosophy, aesthetics, and institutional codification. Its political philosophy is loosely organized around writings of Jawaharlal Nehru, Gamal Abdel Nasser, Kwame Nkrumah, Ahmad Sukarno, Fidel Castro, Ho Chi Minh, Martin Luther King, Jr., Malcolm X, and Nelson Mandela. But one must also acknowledge the indirect yet considerable influence of M. K. Gandhi, Mao Zedong, and Zhou Enlai on the evolution of this idea system.

Its aesthetics have been articulated by an impressive array of poets, novelists, playwrights, artists, and theorists including Pablo Neruda, Rabindernath Tagore, Faiz Ahmed Faiz, Leopold Senghor, Nazim Hikmat, Nagib Mehfouz, Gabriel Garcia Marquez, C.L.R. James, Amilcar Cabral, Mehmud Darwish, Frantz Fanon, and Edward Said, to name only a few.

At the institutional level, though the international non-aligned movement has been the primary source for the enunciation, elaboration, and application of the Third World Internationalist ideology. The efficacy of this ideology has been sustained and, paradoxically, limited by regional alliances such Organization of African Unity (OAU); Economic Community of West African States (ECOWAS); Southern African American Development Coordination Council (SAADCC); South Asian Association for Regional Cooperation (SAARC); Association of Southeast Asian Nations (ASEAN); Arab League (AL); Organization of Islamic Countries (OIC); some members of the Commonwealth of Independent States (CIS); Latin American Free Trade Association (LAFTA); and even the ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES (OPEC).

While the political thinkers and philosophers were focused on the establishment of a new world order, the poets, writers, and cultural theorists honed-in on the birth of a new human being; and the institutional energies were directed toward new skills, techniques, and systems of knowledge. To put it another way, the political thinkers were concerned with ideology, the aesthetes with (collective) identity, and institutional leaders with policies. The sum total of these three constitutes the corpus of Third World internationalism, an enterprise pursued through a combination of political, economic, and cultural strategies.

Political strategies: searching for nonviolent solutions. Political-strategy building by Third World Internationalists has been historically focused in four main areas: expanding opposition to colonial, neocolonial, militaristic, and hegemonic forces; choosing a mode of struggle appropriate for the context (whether armed, nonviolent or combined); calibrating partnership with socialist countries and parties; and seeking fusion of agendas and intellectual energies through greater interaction with feminist, environmentalist, and Western nuclear nonproliferation and peace movements.

The generic political strategies included: building broad-based coalitions in support of wars of independence; building collective moral, diplomatic, economic (sanctions, boycott, etc.) pressure against colonialism; exposing neocolonial schemes and structure; empowering international institutions; and strengthening the United Nations (UN) General Assembly vis-à-vis the U.N. Security Council. Such efforts to socialize support for freedom, equality, and human dignity, South Africa and PALESTINE being the prime examples, were carried out at national, regional, and international levels.

Armed struggle has been one contested component of the third world political strategy. Many of its exponents from Ho Chi Minh to Mandela have recognized and emphasized the necessity for armed struggle. "In view of the situation I have described," wrote Mandela, "the ANC was ready to depart from its 50-year-old policy to the extent that it would no longer disapprove of properly controlled violence." But at the same time, Mandela recognized that a "successful armed struggle proceeds to out-administer the adversary and not outfight him. And that the task of out-administration was the task of out-legitimizing the enemy."

But even at the peak popularity of armed struggles, the nonviolent ideologies of Gandhi, Abul Kalam Azad, Jawaharlal Nehru, Abdul Ghaffar Khan, Martin Luther

King, Jr., and Cesar Chavez had continued to echo in the movement and served as a moral critique of the choices of "ends and means" by various national movements and their leaders.

In the last quarter of the 20th century, Third World Internationalism became increasingly more engaged with and influenced by other consciousness-raising movements such as feminism, environmentalism, and nuclear non-proliferation and disarmament campaigns. During this period, the political agenda of the Third World Internationalism has evolved into mature and critical formulations that question and seek to transform networks of power relations built around the nodal points of race, gender, and class. These more sophisticated formulations have been directed at self-criticism, creative combinations of reform and resistance, and carefully nuanced and calibrated north-south relations. Today, the movement seeks to inculcate critical sensibilities and capacities in the processes of collective identity-formation and decision-making but without suppressing internal dissent, individual choice, and unconventional thought processes.

Third World internationalism and capitalism. Poverty, redistribution of wealth, knowledge and technology transfer, health care, education, infra-structural development, debt rescheduling, and debt write-off were among the major issues that various economic strategies were supposed to address and remedy. Though the post-Cold War economic strategies of most third world countries are by and large based on capitalist models, in the past the assortment had included a patterned focus on land reform, public-sectorism, industrialization, modernization, urbanization, import-substitution, and greater control over local resources. These steps were designed to bridge the gap between the haves and have-nots within and among the nation-states.

Some of its guiding principles were power to the people, self-reliance and autonomy, and social justice. These values can be summed in terms of the following four categories:

1. Social justice based on freedom from exploitation, with human relations of egalitarianism, cooperation and respect for work
2. Economic welfare for all in a society of abundance, with special attention to raising the living standard of marginalized groups (such as women and national minorities) and regions that have been resource-poor or historically oppressed
3. Fuller participation in economic decision-making pertaining to global distribution of resources
4. Improve the bargaining power of third world countries vis-à-vis multinational corporations.

Culturally, Third World Internationalist intelligentsia has remained focused on modernization without Westernization; promoting a vaguely defined non-European approach to development and progress; and avoiding, in Franz Fanon's words, creating the "third Europe."

Fanon has argued: "A national culture under colonial domination is a contested culture whose destruction is sought in systematic fashion." The colonizers see any attachment to the disallowed cultural attributes (dress, food, songs, flag, symbols, icons, literature, values, articles of religious faith, and music, etc.) as a form of sabotage and a refusal to submit. As a related strategy, Third World Internationalism seeks to restore the public character of contested cultures by connecting them with a number of regional and interregional cultural categories and processes.

The main goals under such conditions are to protect one's culture, resist its suppression, recover its suppressed parts at the earliest opportunity, and mobilize various cultural aspects (like Gandhi's *swadeshi,* home-grown clothing movement) to reconstitute national identity and to bring about the ideological, moral, and intellectual liberation of the colonized society ahead of its political and military liberation. One of the key cultural strategies, however, has been to use larger, usually regional, culture as means to socialize the struggle and to bring depth and density to the movement.

For example, during his meeting with Castro in New York in 1960, Nasser urged him to construct a regional cultural frame like Arab nationalism to garner greater "moral and political depth of the Cuban revolution." Interestingly, Castro echoed the same ideas in an important speech from a platform he was sharing with Mandela, during Mandela's visit to Cuba in July 1991. He told his audience that Latin Americans had no choice but to unite. Otherwise, despite their greater numbers they will add up to very little because "Balkanized Latin America" cannot compete with "a very powerful and increasingly protectionist European economic community."

Perceptions and interaction with the socialist and capitalist camps. By the 1950s, it was recognized that the third world exists in both socialist and capitalist countries. China, for example, was clearly a third world country. Similarly, ghettoized racial minorities in the West were seen as third world in the bosom of the First World. And both camps recognized the advantages of creating carefully crafted common cause with the third world. China's Mao Zedong, believed that there are "three forces: one is the force of socialism; one is the force of the national independence movement; one is the force of imperialism. These forces do battle [with each other]; and the second force, the national independence movement of Nasser, and others, can cooperate with us on various problems, on the problem of peace, on the problem of imperialism; the degree [of collaboration] is not [always] the same but [they] can cooperate with us."

Likewise, American Senator Adlai Stevenson had told Nehru during a television interview on November 12, 1961, that the United States joins the third world in opposing colonialism and supporting peoples' right to self-determination and that this should be "the objective of all peoples everywhere."

While socialism was supposed to bring about a redistribution of economic resources in favor of the dispossessed, LIBERALISM was expected to bring about a wider distribution of political power in favor of the marginalized. But this ethical dualism of the two superpowers was not of much help. In reality, the Soviet Union did not favor redistribution of economic resources at the global level, and the United States did not support redistribution of political power for the marginalized.

Though this three-way relation has remained less than satisfactory and the third world intelligentsia continues to feel betrayed by both sides, in the post-Cold War situation, it is generally recognized by a number of third world leaders and intellectuals that even the implicitly coordinated competition between the superpowers did provide breathing space to various third world nations and movements.

Conclusion. One of the major contributions of Third World Internationalism has been a low-key but reasonably sustained effort to democratize the international system. While the First World has focused on democracy within nation-states, the Third World Internationalists have emphasized democracy among the nation-states.

On the other hand, most of the third world countries have been beleaguered by ethnic and religious conflicts, territorial disputes, underdevelopment, illiteracy, disease, high infant mortality rate, and brain drain. So far, it has failed in its efforts to create a synthesis of socialism and capitalism, or the liberal state and the welfare state. And, now, it faces a monumental challenge of maintaining its unity of purpose and multicultural identity during the processes of globalization. Next to the need for a moral and intellectual renaissance, this remains its biggest challenge.

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Thirty Years' War

A DISASTROUS SERIES of declared and undeclared wars, the Thirty Years' War began as a dispute within the German territories of the Holy Roman Empire and eventually drew all major European powers into participation, most of which were ended by the Peace of Westphalia (1648).

Conventional explanations emphasize that the war began because of constitutional problems in the Holy Roman Empire relating to the balance between Catholics and Protestants in the ranks of those who elected the Emperor (traditionally a member of the Habsburg family), and by the revolt of the Bohemians against the persecution of Lutherans by the Austrian crown. Their refusal to accept the decrees of imperial ambassadors led them to throw the ambassadors out of the window of the Hradcany palace (the "defenestration of Prague") in 1618 and elect the Protestant Elector Palatine as King of Bohemia.

These actions provoked a broad revolt in Bohemia and Austria against the Habsburgs and a strong military response; the imperial forces suppressed the rebellion at the Battle of White Mountain (1621). After the Palatine Elector retreated to salvage his German territories, the French, English, and Dutch formed a league led by Christian IV of Denmark to challenge Habsburg power (1624–27). The imperial generals, Wallenstein and Tilly, drove Christians back and the victorious empire issued an Edict of Restitution (1629) restoring all Protestant lands to Catholicism that had been Catholic in 1552. Subsidized by the French and hoping to bolster Protestantism, Swedish forces under King Gustavus Adolphus invaded Germany beginning in 1630.

Although initially successful, the Swedish forces were routed at Nördlingen in 1634 and Adolphus lost his gains. At this point, most Protestants made peace with the Habsburgs, but France pursued war with Spain, eventually weakening the Empire and allowing the Swedes to advance again. By 1648, most parties were suing for peace (though the French continued the war against Spain until 1659) and deliberated for a treaty at Münster and Osnabrück (the Catholics in one city, the Protestants in the other).

Marxist historians such as Josef Polisensky have stressed the economic causes of the war, particularly in Bohemia, arguing that the Habsburgs were traditional feudal monarchs who were challenged by the growing economic power of Protestant burgher and peasant communities there. The Habsburgs could not afford to lose control of Bohemia since it provided a crucial part of their tax base and masses of soldiers to fight the Turks. In his view, the Thirty Years' War was a military response caused by a political crisis that resulted from economic changes taking place during the transition from feudalism to capitalism.

The war was disastrous for Germany by any account. Estimates of population loss due to famine, battle, plundering, and disease range from 20–40 percent of the German population. Flourishing communities became ghost towns, the profitable Baltic and Central European grain trade was disrupted, local industry was destroyed, and tax collection was lamed. German manufactured goods disappeared from European markets. Though suppliers of military goods and shipbuilders did increase their production, such increases were sporadic and always subject to challenge in the quickly changing landscape of the war. Urban communities were forced to pay tribute in order to avoid being plundered, which heavily limited their activities. The larger picture suggests that the settlement of the Peace of Westphalia, with its failure to eliminate the Holy Roman Empire completely as a political unit (the problems of which had provoked the war in the first place) or to provide centralized authority for the Holy Roman Emperor, seriously hampered German economic and political development over the next century.

As a result of the war, the Empire was dissolved into a mass of over 200 individual territories, each with its own currency, taxes, and customs barriers. Not only did this structure destroy the beginnings of MERCANTILISM, it worked as an obstacle to trade. These barriers were not removed until the 19th century, as a consequence of the Napoleonic invasion, and the push toward German unification that created the development of numerous partial bodies and later (1867) a full *Zollverein*, which dropped the customs barriers.

Numerous contemporary accounts refer to the hordes of small merchants, peddlers, and prostitutes that followed in the wake of the different armies, seeking to draw a little profit from the situation. Bertolt Brecht's popular musical drama, *Mother Courage and Her Children* (1941) dramatized this situation by using the character of a camp follower and barkeeper during the Thirty Years' War to ruminate on the connections between war and capitalism in the WORLD WAR II era.

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time

THE NOTION OF TIME is something that we take for granted. The uninterrupted marking of chronology by our watches, clocks, and increasingly our Palm Pilots, is that which merely provides a backdrop to our daily lives. The concept of time, however, much less the ways of perceiving and apprehending it, is far from constant. Different parts of the world in different historical periods have had a wide variation in their conceptualization of time.

According to Indian cosmology, time is divided into the four great cyclical ages or *yugas*, the shortest lasting for 1,000 years and the longest for 4,000. Depicted as a circle or wheel, time for the Mayans was an endlessly recurring sequence of 13-year periods or *katuns*. Even the famous Strasbourg clock of 16th-century Europe was not equivocal in its temporal rendition. Alongside its modern, mechanical devices it depicted traditional emblems and paintings, which proclaimed a different order of sequencing from those of Renaissance science.

The existence of different modes of marking time, geographically as well as historically, was at tandem with the means to do so. Nature and its accessories were the most consistent time-keepers of pre-modernity. The passing of seasons, the crowing of the rooster at dawn, the cycles of agricultural production, all faithfully served as dependable tokens of the passage of time. In most cases, however, the measurement of time according to natural markers was directly related to human experience. The familiar processes in the cycle of work and domestic chores determined temporal sequencing thus relating the rhythms of human labor to the measurement and recording of human history.

Besides experiential temporality there also existed the time of the gods. Simultaneously with the measurement of time as related to the world of material practices, there existed in most pre-modern societies, an equally important system of ritual time. It was comprehended diversely as the twinkling of the eyes of a god (India), the passage from Creation, Flood, Exile, and the birth of Christ (Judeo-Christian), or simply as the reckoning of the events of the past, either real or imaginary, relating to a larger scheme of cosmological patterns.

In this schema, time was most often an eternal and continuous chain that connected the mundane to the divine and peopled by gods, kings, and events alike. Actual historical occurrences (battles, natural disasters) merged with epics and mythologies in an unbroken design relating all pasts to all futures.

How did we arrive from this heterogeneous structure of time reckoning to our modern universe of organizing time? The heterogeneity of measuring time, each related to its own structure of social production and historical consciousness, is the most prominent difference between the world of the past and that of the modern. Modern time measurement is marked by its universal homogeneity, where differences exist only as anomalies. It is now commonly assumed that this process began in the years between 1300–1650 in Europe. The significance of this development lay in the method of calibrating hours in a metric independent of tangible occurrences with units that were uniform and interchangeable across seasons.

It is not coincidental that this development in the world of time-measurement is concurrent with the development of capitalism and urban WAGE labor in the towns of Europe. Time from this period onward is constituted irrevocably within registers of economic and monetary value. The enlargement of the monetary sphere of circulation and the organization of commercial networks over space, forced an increasingly predictable and stable measurement of time.

Municipal authorities in the early 14th century began to set up mechanical clocks in public towers. Urban employers who paid their wage workers by the day wanted not only to mark the start and end of work shifts in a public, official fashion but also to establish a standard work shift independent of the natural seasons. Workdays of uniform duration gave employers a yardstick by which they could accurately gauge changes in the productivity of labor. Historians have argued that cities that led in the textile trade, the first branch of capitalist manufacture for export, also led in the installation of clock towers.

The actual relationship between capitalism as an economic system and time as an adjunct to its mode of production can be seen in three distinct ways.

First, GOODS in a capitalist economy are produced for exchange; they must, then, have an exchange value in addition to whatever use value they may have for their owners. The measure of relative exchange value is the socially necessary (average) labor time embodied in these commodities and that same embodied labor time is also the substance of value. Labor power, or the capacity of human beings to work, becomes like all other commodities under capitalism—something the value of which is measured by the time required to produce it. Time as the measure of the exchange value of labor power renders its varied expressions homogenous and comparable from the point of view of the market.

Second, time and its prudent use are also the origin of profit. The value of the worker's labor power, under capitalism, is dependant on the amount of labor needed to reproduce it. This is usually less than the amount of labor the worker actually puts in any given workday. The difference in hours, according to Karl MARX, is the SURPLUS value that forms the source of rent, interest, and profit. It is no surprise then that from the 14th-century engravings had begun portraying time as a deadly spirit against which people fought to render an accounting of themselves.

Third, the very process of a modern mechanized workplace under capitalism, the presence at its core of labor-saving technology, creates such a homogenization of skills that the passing of moments to the clock's rhythm is the only way to measure the relative activity of different labor powers. Not only is time the measure of the exchange value of labor-power, but labor-power, too, has been made so uniform that its various forms are only distinguishable from one another by the purely quantitative yardstick of hours spent.

Time under capitalism, thus, is money. The time needed to produce goods together with the time of circulation of exchange compose the "turnover time" of capital. The faster the capital launched into circulation is recuperated the greater is the amount of profit. Thus,

"Time is money" was never truer than under capitalism's measurement of labor productivity.

every second counts and hence the need to count every second. Since the inception of capitalism, the most contested arena of struggle between the worker and the employer has thus been over time, or the length of the workday. Just as every minute and second is counted by modern day clocks and watches, every minute and second is also accounted for. Time no longer *passes* for the global economy, it is *spent*.

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Tinbergen, Jan (1903–94)

WITH RAGNAR FRISCH, Jan Tinbergen won the first Nobel Prize in Economics in 1969. The award cites their contribution to the quantification of economics via mathematical modeling and the development and application of statistical techniques for empirical testing of theory. The award credits them with providing a "rational foundation for economic policy and planning."

Tinbergen's career reflects his broad contributions. He received his doctorate from Leiden University in 1929. With Ragnar FRISCH, he founded the Econometric Society in the Netherlands in 1930. He worked in the following capacities: the Netherlands Central Bureau of Statistics (1929–45); director of the Central Planning Bureau of the Netherlands (1945–55); professor of Development Planning, Netherlands School of Economics (1955–73); chairman of the United Nations (UN) Committee for Development Planning (1966–75). During the latter periods, he also worked as an advisor for many developing countries, the Dutch development agency, and several UN agencies. In 1973, he was appointed professor of International Cooperation at the University of Leiden.

Tinbergen's earliest work concerned dynamic theory. He constructed a "cobweb" model, incorporating time-lagged responses of suppliers to prices, to explain fluctuation in agricultural prices. From 1929–45, he developed basic techniques of econometrics, being among the first to apply regression analysis to time series data, and went on to apply statistical analysis to the study of BUSINESS CYCLES. Unlike his predecessors, Tinbergen regarded the business cycle as a single dynamic phenomenon, explainable and measurable through modeling. Building on cobweb dynamics, he incorporated lagged responses to excess supply or demand into a system of equations in order to model business cycles and ultimately national economies.

In 1936, Tinbergen became the first to model an entire economy. Using regression equations to estimate parameters, he constructed a 24-equation model of the Dutch economy. He then prepared two volumes on business cycles, which empirically test investment hypotheses and statistically analyze business cycles in the United States. His Nobel award mentions these volumes as a pioneering achievement. In 1951, he developed a similar model of the UNITED KINGDOM economy. These models established the foundations for much subsequent macroeconomic forecasting. Lawrence KLEIN, well known for his forecasting models, was a student of Tinbergen's.

While at the Planning Bureau, Tinbergen applied econometric models to short-term macroeconomic policy analysis. The first to develop a unified concept of achieving multiple policy goals, he argued that nations need three policy instruments (e.g., monetary policy, fiscal policy, and one other) to achieve three fundamental policy goals: full employment, price stability, and balance-of-payments EQUILIBRIUM. His work served as a foundation for the Netherlands macroeconomic policy, for the period, and informed European policy.

After 1954, Tinbergen constructed long-term development planning models, combining macroeconomic models with disaggregated input-output models. He stressed the importance of investment in critical infrastructure and international competitiveness. Finally, beginning in the 1970s, Tinbergen turned his attention to the distribution of income, which he regarded as determined by a race between education, an equalizing force, and technological change, which usually rewards the already highly skilled. He recommended increasing education, encouraging varieties of technological change that employ the less skilled, and using tax policy to reduce income inequality.

Overall, Tinbergen contributed to development of capitalism by devising conceptual tools—dynamic modeling, econometrics, and macroeconomic modeling—and by creatively applying them to policy analysis. His work contributed to short-term macroeconomic policies used in Europe during 1950s and 1960s and to development policies of the period. While much of Tinbergen's early policy work may now be considered dated, he laid foundations for modeling, estimation, forecasting and policy analysis that endure into the current period.

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tobacco

IT HAS BEEN ESTIMATED that tobacco is the number one cause of preventable death in the United States, responsible for 400,000 deaths per year. It is the primary cause of lung cancer, bronchitis, and emphysema, and a major cause of heart disease and stroke. It has also been estimated that the total cost of smoking in the United States, which includes direct medical costs and indirect costs associated with lost earnings due to morbidity and mortality, total over $100 billion per year in 2000 dollars.

The vast majority of tobacco is consumed in the form of cigarettes, with the remainder consumed as chewing tobacco or in pipes. The smoking of tobacco imposes negative externalities on others. Chronic inhalation of second-hand smoke can cause lung cancer and heart disease in nonsmokers. Second-hand smoke has also been identified as the cause of health impairments and, most severely, Sudden Infant Death Syndrome in the children of smokers. There may also be certain positive externalities for society associated with smoking; for example, smokers tend to die younger than nonsmokers and therefore do not collect as many SOCIAL SECURITY benefits. It has been estimated that, on net, the negative EXTERNALITIES associated with smoking equaled 16 cents per pack in 1986 dollars.

Government intervention in markets has the potential to increase social welfare when consumers are not rationally making decisions. One does not judge whether an individual is rational based on whether one agrees with consumers' decisions, but by whether the individual is capable of maximizing his or her own UTILITY. Consumption of cigarettes involves three obstacles to perfect rationality: addiction, youthful irrationality, and imperfect information.

Nicotine, a chemical present in cigarettes, is addictive; the current marginal utility of consumption depends on past consumption. As a smoker develops greater tolerance for nicotine, she must smoke a greater number of cigarettes to receive the same increment of utility. If consumers are myopic—if they do not fully take into account the future consequences of their actions—then they may not realize the danger of becoming addicted when they experiment with smoking, and may benefit from policies that deter them from initiating smoking, or that reduce their consumption.

The second obstacle to perfect rationality in the market for tobacco is youthful irrationality. It is widely accepted that children are unable to take into account the future consequences of their actions. While society may trust adults to accurately assess the internal costs of smoking, it may wish to intervene for paternalistic reasons to influence the decisions of children. The inability of adolescents to accurately weigh the future health costs of smoking is relevant because the vast majority of people who ever smoke initiate the smoking when they are adolescents. For this reason, the UNITED STATES, CANADA, and many other developed countries have outlawed tobacco sales to minors and regulate advertising of tobacco to prevent it from being directed at minors.

The third obstacle to perfect rationality in the market for tobacco is imperfect information. To improve the information available to consumers, governments of developed countries have sought to disseminate information about the health harms of smoking through public health campaigns. A landmark event in tobacco markets was the publication of the U.S. Surgeon General's report on the health impact of smoking in 1964; several studies find that cigarette consumption fell significantly in response. Many developed countries now require warning labels on tobacco, stating the health risks associated with consumption.

Public health officials tend to have a different perspective on smoking than economists. Public health officials point to evidence that smoking worsens health as proof that no one should smoke. In contrast, economists believe that individuals seek to maximize their utility, not simply their health, and accept that some individuals may rationally decide to trade length of life for the pleasure derived from smoking.

A large literature in economics has been devoted to estimating the price elasticity of demand for cigarettes among different groups. Most estimates of the price elasticity of demand for cigarettes among adults fall in the range of –0.3 to –0.5, which implies that raising the price of cigarettes by 10 percent will reduce the quantity of cigarettes demanded by 3-5 percent. In contrast, recent estimates of the price elasticity of demand for cigarettes among adolescents indicate that demand is almost entirely price inelastic; the quantity of cigarettes demanded by adolescents is simply not sensitive to the price of cigarettes. It has been hypothesized that this is due either to adolescents stealing their cigarettes from their parents, "bumming" them from others, or that their demand for cigarettes is a derived demand, specifically, derived from the demand for peer acceptance.

Economists recognize two reasons for taxing tobacco. First, in order to raise tax revenue while imposing the smallest possible deadweight loss on society, one should tax the goods for which demand is most price-inelastic. Addictive goods like tobacco generally have price elasticities of demand that are relatively low. Second, to the extent that there exist externalities to society from cigarette smoking, or if there exist failures of rationality by consumers, taxes can be used to reduce smoking to socially optimal levels.

Policymakers have also sought to discourage smoking through other means of raising the "total" cost of smoking, such as clean indoor air laws that ban smoking in public places and force smokers to step outside to smoke, and laws that limit the placement of cigarette vending machines, which raise the search time associated with acquiring cigarettes.

The cigarette industry is highly concentrated; just two firms (ALTRIA/PHILIP MORRIS and R.J. Reynolds) produce roughly three-quarters of the cigarettes sold in the United States. Moreover, in the United States there are barriers to entry into farming tobacco; the federal government licenses which farmers may grow the crop and how many acres they may plant. The United States also guarantees minimum prices for tobacco to farmers. As a result of the government-enforced barriers to entry and price supports, the price of tobacco is kept above its free-market price, which, in turn, raises the price of cigarettes and lowers the quantity of cigarettes demanded.

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Tobin, James (1918–2002)

ONE OF THE MAJOR figures in the neoclassical synthesis, James Tobin's life work drew together classical economic theory with Keynesian insights about macro fluctuations. Tobin was awarded the 1981 Nobel Prize in Economics for "his analysis of financial markets and their relations to expenditure decisions, employment, production, and prices," according to the Nobel Committee.

Tobin explained in his Nobel autobiography what led him to economics: "The miserable failures of capitalist economies in the Great DEPRESSION were root causes of worldwide social and political disasters. The Depression also spelled crisis for an economic orthodoxy unable either to explain events or prescribe remedies. The crisis triggered a fertile period of scientific ferment and revolution in economic theory." Tobin was not just a theorist. As a member of President John KENNEDY's COUNCIL OF ECONOMIC ADVISORS, he subjected his theories to the cruel testing of policymaking. The 1962 *Economic Report*, which he co-authored, marks the zenith of Keynesian macro policy.

Tobin modestly summarized his own portfolio selection theories ("Liquidity Preference as Behavior Towards Risk") as simply "don't put all your eggs in one basket," but the basic separation theorem, established for many different risky assets, underlies models of finance. The Tobin Regression ("Estimation of Relationships for Limited Dependent Variables") takes account of the fact that, in explaining household purchasing decisions of expensive items, a model must explain the (unobserved) decisions to buy a zero quantity.

The Tobin Tax on international finance, from a lecture in 1972, advocated charging a modest tax on foreign investment, which would penalize short-term investors but be inconsequential to investment with a long-term horizon.

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Tokyo Electric Power Company

TOKYO ELECTRIC Power Company (or TEPCO) is one of the world's largest electric utilities. It supplies power to 27 millions customers in Tokyo, Yokohama, and the rest of the huge Kanto region in JAPAN. So vast and so important is TEPCO's presence that (it is said) if TEPCO would ever suddenly extinguish its power the entire business structure of Japan would grind to a halt. Less theoretically, TEPCO possesses a generating capacity of 58,000 MW, produced by fossil fuel (56 percent), nuclear (29 percent), and hydroelectric (15 percent) power sources.

Having recently bought interest in telecommunications businesses within the region, TEPCO now offers telephone and internet services to its customer base. As well, it provides electrical construction services, owns international power generation resources, and operates an international consulting service. This consulting covers a large subject matter, from uses of renewable power to network transmission systems to systems planning and operation.

Most of TEPCO's customers regard their relationship as a "one-stop shopping" partnership, for they often look to TEPCO consultants to help them firm up areas of quality and business improvement. TEPCO's services include power quality improvement, cost reduction, environment awareness, facility management, efficiency and automation, human resource development, and safety procedures.

Though a tough competitive season, TEPCO garnered revenues of $42 billion for the period ending March 31, 2002, and ranked number 80 on *Fortune* magazine's Global 500 list of the largest companies in the world.

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Toshiba Corporation

ITS NAME A WORLDWIDE presence, Toshiba's high technology and diverse electronic products are sold in Japan, North and South America, Europe, the Middle East, Africa, Asia, and Australia. Toshiba is a manufacturer and marketer of advanced products that span the sphere of information and communications through its array of products and systems, internet-based solutions and services, components, power systems, social infrastructure systems, and household appliances.

Calling itself "innovation-driven," Toshiba's umbrella objective of customer satisfaction has generated a growth quite remarkable in an industry hammered by technology companies vying for the consumer market. Its current business plan, for that matter, aims for (to quote Toshiba) "enhanced recognition as an excellent global corporation." With an eye on a technology-hungry market, Toshiba continuously monitors consumer needs for new possibilities, as shown by the company's present attention to mobile communications and networking.

Toshiba's history in communications is rich and its experience in the ever-widening market undeniable. It began in 1875 as Tanaka Seizo-sho (Tanaka Engineering Works), Japan's first manufacturer of telegraphic equipment. Evolving through various owners, name changes, and increased technology demands, it eventually became the Tokyo Electric Company, thence the Tokyo Shibaura Company in 1939. Abbreviated as "Toshiba," it officially adopted that name in 1978.

Toshiba was ranked as the 77th largest company in the world by *Fortune* magazine in July 2002, with revenues of $43 billion.

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TotalFinaElf

THE LARGEST COMPANY (as ranked by revenues) headquartered in France and one of the five largest companies in Europe, TotalFinaElf was formed in 1999 by a $46 billion hostile takeover of Elf Aquitaine, a giant French petroleum and chemical conglomerate, by Total, France's other major oil company. Combined with a merger earlier in 1999 with Petrofina, the major Belgian oil company, the new company created one of the five largest petroleum firms in the world with 2001 revenues of nearly $100 billion.

Total began in 1924 as the Compagnie Française des Pétroles (CFP), a joint venture between private investors and the French government. CFP engaged in all stages of oil production from exploration and drilling to refining and to retail distribution. CFP's major oil fields eventually included discoveries in Iraq, Algeria, Indonesia, the United Arab Emirates, and the North Sea. The brand name, Total, was used for its retail gasoline station network.

Petrofina was formed in 1920 by private investors in Belgium. Initially slated to produce and refine petroleum in Romania, discoveries in Mexico, the North Sea, Canada, and Egypt led to worldwide growth. Petrofina marketed gasoline at retail level under the name Fina and Purfina.

The ancestors of Elf-Aquitaine were three French governmental companies formed between 1939–45 to explore for oil in France and its territories. Following major oil and natural gas discoveries, refining and marketing branches were added. The different companies were merged into a single holding company in 1965 and renamed Elf in 1967. From the 1970s through the 1990s, spurred in part by the loss of its oil reserves in ALGERIA due to NATIONALIZATION, the company diversified into chemicals, health and beauty products and pharmaceuticals. PRIVATIZATION of the firm began in 1994.

Fortune magazine ranked TotalFinaElf as the 15th largest company in the world in 2002.

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tourism

THE ACT OF TRAVELING from one place to another, either domestically or internationally, tourism includes recreation, visiting, or any other activity that does not include paid work; it has an implication, therefore, of pleasure in traveling, often for its own sake. An anthropological approach to the subject might, in addition to this, also include a description of the tourist as representative of the "other," that is, an outsider with respect to whom local people might define themselves. The tourist dresses differently, does not speak the same language, and moves around and behaves differently than the local people.

Tourism is a very old phenomenon; there are records of citizens of the Roman Empire enjoying cultural tourism around the empire. One powerful motivation for tourism has been to complete some kind of religious pilgrimage and this continues with, for example, the Muslim tradition of the Hajj (pilgrimage to the holy city of Mecca) involving more than two million travelers per year. Pilgrimages differ from the usual idea of tourism in that they mostly involve some degree of physical hardship.

In the 18th and 19th centuries, an important means of finishing one's education for the elite of North America and Western Europe was to complete the grand tour—a lengthy process that involved visiting the cultural centers of the Mediterranean and perhaps the Near East. Other individuals might also be involved in travel for their own edification and might include visits to colonies of the home country. Such tourism was generally expensive, time-consuming, and difficult to accomplish, owing to problems in crossing borders and the great changes in climatic conditions for which people could be only ill-prepared. It was not until the middle of the 19th century that Thomas Cook arranged the first genuine tourist trips, with excursion trains in the English midlands and international journeys to the Paris Exposition of 1855. Subsequently, the necessary travel infrastructure of traveler's checks developed in conjunction with transportation technology to make travel more convenient.

Tourism of the masses. Nevertheless, tourism remained something of a preserve of the rich until the advent of cheap mass transportation, and the rise in personal disposable incomes in the decades following WORLD WAR II. The supply of short-term tourists fed the supply of related services in, for example, SPAIN for British and German tourists, and the number of people involved in what developed into a full-scale service industry has continued to increase. Tourism has moved from an individual pursuit into essentially a group activity, through what has been termed as "massification."

Massification continued into the 21st century as transportation costs continued to diminish and millions more people became able to travel as their incomes increased and travel restrictions were eased. Despite industry downturns due to terrorist attacks, disease, and war, 2002 figures indicate there were 693 million international tourist arrivals. The most popular destinations were in Europe (50 percent), the Americas (26 percent) and the Asia Pacific region (18 percent), with only 6 percent of arrivals shared by Africa, the Middle East and South Asia (World Tourism Organization, 2003). Travel is mostly between developed countries, to developed countries, or from developed countries to less-developed countries; however, more recently, people from less-developed countries have become more able to travel regionally and also to developed countries, often with a view to visiting migrant family members.

Tourism industry. The tourism industry is multidimensional, and includes such activities as providing temporary accommodation, organizing tourist activities and trips, providing transportation (by air, sea, rail, and road), and supplementary activities such as catering, retailing, and provision of cultural institutions and services. The tourism trade occurs when goods or services are sold to people from a different country or region both in their home markets, and when visiting the tourist destination. It is, therefore, an important source of export earnings. The growth of the importance of economies of scale in the tourism industry, and of the importance of vertical integration, in which firms control accommodation resorts and travel facilities, has led to the growth of mass tourism and low-cost package deals. More airports with more runways have been built, planes are larger and fly more frequently, and infrastructure within countries allows for more rapid transit of tourists.

The significance of the industry is demonstrated by the amount of money that it generates and the proportion of overall activities within an economy that are concerned with tourism. For example, more than 38 percent of all employment in the British Virgin Isles was related to tourism in 2003 and other Caribbean and island states had similarly large proportions; European states such as Malta (21 percent), Cyprus (19 percent), and Croatia (14 percent) also have very large tourism employment sectors. Large economies, too, had important tourist-related sectors: FRANCE had 5.5 percent of total employment related to tourism, ITALY 4.9 percent, the UNITED STATES 4.8 percent, and JAPAN 4.2 percent.

More than $1 billion was estimated to have been spent by the tourists of the United States and Japan in 2003, and the global total for economic activities produced by tourism was nearly $200 billion. Such an important trade has stimulated the creation of a plethora of large and small travel- and tourism-related concerns that can often be established for low cost. This has led, in some instances, to intense competition among firms. Package deals are offered for no profit or at a loss; the company seeking to recoup its costs through commissioning deals with shops and facilities specializing in tourist mementoes and goods that tourists are obliged to visit (also known as tourist traps).

Tourism can be a volatile industry since the increase in cheap air transportation, in particular, makes it more possible for people to switch destinations. The threat of terrorism, war, and disease have all had significant impacts upon the choice of destination for international visitors; with substitution of venue becoming more important than substitution of activity. The importance of the industry makes it more urgent for governments to present the "best views" of their countries and support tourism authorities to encourage inward visitors.

Tourism policy. Since tourism has become such an important industrial sector, governments have sought to establish means both to promote tourism within their own countries, and improve the ability of their people and companies to provide high-quality tourism services. This generally entails establishing a national tourism bureau or authority with a budget to promote the country and its tourism services through an international network of offices. Such agencies often work closely with established networks including national air carriers and embassies.

Upgrading skills to provide appropriate tourism services is also of considerable importance. While many tourism-related jobs are in low-wage service sectors, they can still represent attractive opportunities in many less-developed countries. However, to provide the international level of services that is often now expected, even quite junior staff needs basic training in a language such as English and some cultural sensitivity. While this level of staff development is quite feasible in developed countries, it is less likely to be possible in less-developed countries and so requires the intervention of international organizations that, while they can certainly provide the necessary inputs, are likely to retain the benefits and competencies for their own use. Developing countries need, therefore, to devote resources to developing the skills necessary for an indigenous tourism industry that will bring benefit to the host nation.

Problematic issues. Tourism has had a number of important positive impacts. These include not just the boost to employment and economic activities but, perhaps equally significantly, the exposure of people to foreign cultures and peoples has helped many people broaden their understanding of, and tolerance for, people of other cultures—although this is not universally the case. The quality of life of many people has been improved by adopting innovations and cultural practices that might not otherwise have been known apart from tourism. Similarly, recognition of the value of ethnic, and particularly minority ethnic, to the tourist industry has helped, in some cases, to preserve and to promote a sense of national and civic pride. However, not all impacts are positive. Some serious problems have arisen in the following areas:

1. *Environmental degradation.* The growth in cheap air travel has led to air and noise pollution, and the growth of airports and infrastructure to support them. The process of tourism also leads to considerable waste, especially of water resources, and also to the inappropriate discharge of waste.
2. *Enclaves.* In some cases, tourist operations can exist in isolation from local communities in tourist resorts that operate as enclaves. In these cases, tourists rarely encounter local people in a natural environment and their expenditure provides little benefit to them. The development of Dubai as a shopping and sporting destination in the United Arab Emirates, for example, provides tourists with very little interaction with nationals but a great deal of interaction with migrant workers.
3. *Tourist crime.* The presence of large numbers of comparatively rich people transplanted for a limited period of time into what might be an area of lower economic opportunities can provide a definite incentive for crimes of theft and worse. In some cases, as in EGYPT and more recently in Bali, tourists have become the victims of terrorism.
4. *Sex, drugs, and bush meat tourism.* Tourists occasionally demand goods and services they cannot have legally, or refrain from demanding at home.

Tourist locations have incentives to provide these goods and services, despite any additional cost to social cohesion or other public costs.

With a view to dealing with these issues, initiatives have been launched. One is the European Sustainable Urban Tourism Initiative, which has goals of monitoring physical heritage and environment, providing maximum access to infrastructure to both visitors and residents with a view to economic viability, while strengthening social and cultural cohesion, and minimizing adverse ecological impacts. These goals are necessary but will be more difficult to achieve away from the urban areas of developed countries. In other cases, an enforceable code of ethics, such as that proposed by the World Tourism Organization, will be helpful.

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Toyoda, Kiichiro (1894–1952)

CONSIDERED THE FATHER of JAPAN's auto industry, Kiichiro Toyoda was instrumental in the establishment of TOYOTA Motor Company, Ltd. in 1935 and served as its president from 1941–50.

In 1921, after graduating from the University of Tokyo, Toyoda joined his father's firm, where he helped develop the automatic loom. In 1929, the rights to the loom were sold and provided the capital for the company's expansion into automobile manufacturing.

Inspired by the example of Henry FORD, Toyoda dreamed of mass-producing affordable passenger cars, but his plans were postponed when in 1937, the Japanese government began buying the company's vehicles for military purposes.

In difficult straits after WORLD WAR II, Toyoda sold trucks and cars to the Allied Occupational Forces. In 1947, he introduced the Model SA car, but could not return the company to profitability. By 1950, the company was virtually bankrupt and its workers in revolt. Toyoda resigned, but after the outbreak of the Korean War and large sales to the U.S. military, the company's fortunes revived. In 1952, a month after agreeing to return to lead Toyota's effort to mass-produce passenger cars, Toyoda was felled by a stroke and died.

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Toyota Motor Corporation

TOYOTA IS CURRENTLY the world's third largest auto manufacturer, producing a full line of models—from sedans to mini-vehicles to large trucks. Churning out products at a rate of more than 5.5 million vehicles annually (one every six seconds), Toyota sells its products in 160 countries and regions at a pace that places Toyota number 10 on *Fortune* magazine's list of Global 500, the world's largest companies in 2002.

Besides having a dozen plants located throughout its native JAPAN, Toyota claims some 55 manufacturing affiliates spread across 30 countries—several in Europe, Russia, the West Indies, Asia, Australia, Canada and the United States, including a recently announced huge production plant in San Antonio, Texas, slated for initial roll-out in 2005.

Overall, the company employs 250,000 people globally. Not only does it manufacture vehicles under its own familiar brand name, but the Lexus brand, as well.

Long a supporter of the "people community," Toyota's "Global Vision 2010" is its commitment to help create a more prosperous society. This four-point program sets the stage for a decade-long emphasis on environmental technologies, automotive safety, transportation appeal, and awareness of Toyota as a company of respect. Revenues as of 2002 totaled nearly $121 billion.

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trade

THE HISTORY OF TRADE can be traced to the beginning of recorded history. Archaeologists have documented trade between Egypt and Babylon as far back as 2500 B.C.E. In the beginning, trade usually involved a simple barter system with one individual or group trading one product or service for another; but as civilization progressed, so did the process by which goods were traded. In the early days of civilization, large empires generally used slave labor to produce essential goods and generated revenue by taxing conquered nations; therefore, it was unnecessary to engage in trade outside their own territories. As foreign trade developed, it was often risky because lone ships were easy prey for pirates; and some ships were attacked more than once as they transported goods. The INDUSTRIAL REVOLUTION ushered in improved methods of communication and transportation, which broadened the number of possible trading partners and expanded the kinds of goods that could be exported or imported.

British trade. As the dominant force in early industrialization, Great Britain was determined to protect its trading interests. In 1651, in response to the increase in Dutch shipping, Great Britain passed the first Navigation Act, guaranteeing that all British imports were transported on British ships. This action led to the outbreak of war with Holland in 1652. Before the English Civil War (1642-1651), the Crown received revenues from British trade and had the authority to place restrictions on trading practices. After the war, trade became more open and competition increased.

Other Navigation Acts were passed to protect British interests in trade between the colonies and the mother country. The Navigation Acts stipulated that all British colonies were subordinate to the British Parliament. In the 1770s, England continued the imperialist practice of raising revenue by taxing the American colonies. The resulting outcry of "taxation without representation" was a direct cause of the AMERICAN REVOLUTION. Ironically, the United States followed liberation from England by establishing the institution of slavery to provide labor to the Southern agricultural sector. Great Britain also placed a number of restrictions on domestic trade. For example, in 1721, Britain prohibited the importation of calico to stimulate the demand for British cotton. The same tactic was used in 1722 when cotton buttons were banned in order to boost the silk and mohair industries. By the 1860s, conflicts over free trade were often resolved through commercial treaties that provided reciprocal protection from barriers to free trade. Throughout the 20th century, Adam SMITH's work continued to influence British economic policies, particularly among the Conservative party. Margaret THATCHER's (1925-) economic advisors were known to be advocates of Smith's laissez-faire form of government. However, Great Britain pulled away from conservative politics with the election of Tony Blair (1957-) of the Labour party in 1997.

British trade theory. From the end of the Middle Ages to the late 18th century, MERCANTILISM was the dominant school of economic thought in Great Britain. The mercantilists were straightforward in their goals. They simply wanted to accumulate as much wealth as possible. To achieve these goals, mercantilists used political clout to pressure the British government to place trade restrictions wherever they were needed to promote their pursuit of wealth. The mercantilists believed that the purpose of foreign trade was to procure precious metals from other lands and bring them to Great Britain and were particularly interested in the accumulation of gold and silver.

David Hume (1711-1776) was one of the first British writers to openly criticize mercantilist policies. Hume believed that nations following mercantilist policies worked against their own self-interests. He argued that international trade benefited all nations and furthered the accumulation of wealth. The influence of Hume and his friend Smith turned the dominant school of economic thought in Britain toward classical liberalism and away from mercantilism. Classical liberalism endorsed the laissez-faire form of government promoted by the French PHYSIOCRATS who supported free trade and frowned on government interference in the economy. The role of government, as Hume and Smith saw it, was simply to maintain a stable economy by promoting free trade and punishing corruption that interfered with free competition. The publication of Smith's *The Wealth of Nations* in 1776 cemented the role of classical liberalism and its emphasis on freedom from government interference, and Smith became the strongest voice in the argument for free trade. However, Smith was a realist and understood that governments might be called upon to interfere from time to time in the interests of natural security or in response to the actions of other government's trade policies.

David RICARDO (1772-1823) expanded Smith's theories, promoting the idea of specialization among countries. Ricardo argued that "comparative advantage" dictated that countries benefited from specialization even if they could make certain goods cheaper than their trading partners. Since capital and labor were not easily transported from one nation to another, it was important to use each to the best advantage wherever it was located. Free trade, according to Ricardo, generated higher wages for both countries because each received more return for their labor costs. Contrarily, high tariffs led to a rise in prices and a loss of efficiency. Ricardo was particularly opposed to Britain's Corn Laws, which he saw as a major obstruction to free trade. John Stuart MILL (1806-1873) built on classical liberal theories, arguing that the market provided spontaneous opportunities if free from government interference. Most classical liberals accepted the need for government to help new industries with some sort of protection because older, more established industries were likely to shut them out without governmental attention. They believed that in this case the government was promoting free competition.

American trade theory. Before the American Revolution, the colonies were engaged in trade with the mother country. Abundance of natural resources provided new avenues of trade even though most of the profits were routed to England. After the Revolution, the United States became a developing nation, and conservative American writers began to promote the idea of free trade. Writer, economist, political scientist, and sociologist William Graham Sumner (1840-1910) maintained that government regulations interfered with free competition. Sumner argued that high taxation was both wasteful and inefficient. Because his focus was on the agrarian economy prevalent in the South, Thomas JEFFERSON's (1743-1826) natural instinct was to keep government interference to a minimum. As president, however, Jefferson reversed his opinion and became an active participant in government interference. As industrialization progressed in the United States, arguments over trade policies tended to break down along party lines. Republicans tended to demand protective tariffs for Northern industries, while Democrats promoted free trade to balance the interest of its Northern industrial faction against its Southern agricultural faction.

U.S. trade. Until World War I, the United States continued to develop as an industrial nation and was dependent on foreign investment to a large extent. As war began in Europe, however, the United States was placed in a unique position to provide goods to the embattled Allies. After 1918, the United States was a creditor nation and had outstripped the rest of the world in industrial output. At this point, restrictions on trade worked against American self-interest because other countries had little money to repay war debts without reciprocal trade. Trade was fairly unrestricted in the United States until 1929 with the beginning of the Great DEPRESSION. In response to Franklin ROOSEVELT's (1882-1945) NEW DEAL and the rise of the liberal economic theories of John Maynard KEYNES (1883-1946), the social welfare state signaled a move toward government regulation in most aspects of American life.

War again broke out in Europe in 1939, and the American wartime economy boomed. The United States entered the war in December 1941 after the attack on Pearl Harbor, but protected by vast oceans, American industry was in sharp contrast to the devastation suffered by Europe. In 1944, the United States hosted the BRETTON WOODS conference, which established the INTERNATIONAL MONEY FUND (IMF) and the WORLD BANK. In 1947, the United States joined other nations in creating the GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT), which was aimed at abolishing restrictions on free trade on a global basis. Between 1948 and 1952, the United States provided $13 billion under the MARSHALL PLAN to aid in post-war recovery in Europe.

In the 1960s in the United States, the CHICAGO SCHOOL of economics under the leadership of Milton FRIEDMAN (1912-) attempted to overturn the Keynesian revolution and establish a return to laissez-faire economic policies. The monetarist polices of the Chicago School advocated free trade through government at the lowest level possible and placed an emphasis on controlling inflation as opposed to reducing unemployment. After the economic slump of 1987, the Chicago revolution was thwarted to some extent. Specialization continues to play a role in both domestic and foreign trade.

Global and regional trade agreements. In 1994, nations of the world came together in Morocco to establish a permanent organization to replace GATT as the promoter of free trade. The goal of what became known as the Uruguay Round was to abolish most forms of protectionism such as tariffs and entry barriers in favor of free and unrestricted trade. Specifically, the Uruguay Round extended the free trade elements of GATT, targeted the elimination of trade barriers, reduced tariffs by one-third, and opened avenues for open communication among member nations. In January 1995, the WORLD TRADE ORGANIZATION (WTO) became the instrument for implementing new global economic policies with the authority to settle trade disputes among member nations. In addition to global organizations that promote free trade, a number of regional alliances have also been formed. For example, The North Atlantic Trade Agreement (NAFTA) was formed in 1993 to promote free trade among the UNITED STATES, CANADA, and MEXICO. European countries have united under the EUROPEAN UNION (EU), and countries in Southeast Asia have created the Association of Southeast Asia Nations (ASEAN).

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trade barrier

ANYTHING THAT INCREASES the cost of international trade, imports or exports, can be called a trade barrier. At a general level, natural and cultural obstacles to trade, such as distance or differences in language, can be considered barriers to trade, but in practice trade barriers are often regarded as only the artificially government-created costs of trade.

The most usually adopted type of trade barrier is import tariffs. They can be either *ad valorem*, when specified as a proportion of the imported value, or specific, when specified as a fixed amount per product. The practical effect of an import TARIFF is to drive a wedge between the domestic and the world price of a good, increasing the price faced by domestic consumers and producers. The implication is that a tariff reduces demand while increasing supply in the country; lower imports follow. Naturally, a tariff also generates revenues for the government.

Because tariffs are more visible and easier to monitor than other trade barriers, the WORLD TRADE ORGANIZATION (WTO) has required all countries to transform all non-tariff barriers (NTBs) into their tariff equivalents. In spite of that restriction, NTBs remain widely used.

The most prominent kind of NTB is import quotas. The effects of a quota are similar to those of a tariff, but they operate differently. Instead of introducing a wedge into prices and letting market forces adjust the import volume, as a tariff does, a quota restricts the import volume directly, then letting the market adjust the wedge between domestic and world prices. In addition to the mechanism to restrict imports, the other difference between a tariff and a quota is that the former generates tariff revenue, while the latter creates quota rents. Although the two volumes are identical, the quota rents accrue to the holders of the quota licenses. The beneficiaries are chosen by the government, which can keep the licenses and the rents for itself as it does with tariff revenues, or else distribute them to either residents or to foreigners.

Import quotas can be either global or selective. Under the former, a limit is imposed on the quantity of a good that can be imported in a given period regardless of the source of the imports. By contrast, under the latter a restriction is imposed on the quantity of the good imported from individual countries.

A type of quota that has gained popularity in recent years is the voluntary export restraints, or VERs, where the exporting country decides to "voluntarily" restrict its exports. The first and most visible case where a VER had been implemented was on the U.S. imports of automobiles from JAPAN in the 1980s. A VER is equivalent to an import quota whose rents are given to the exporting government by the importing government. One may wonder why a government may want to give away those rents, but as the U.S.-Japan case makes clear, the motivation behind a VER is the fear of triggering retaliation from the exporting country. With a VER, the importing country gives up the rents but keeps the sector protected without suffering retaliation, whereas the exporting country faces a restriction on its imports but at least obtains some rents in return.

Note that a VER, although apparently looking like a restriction imposed by a country on its exports, is in fact a restriction imposed by the importing country on its imports, albeit one that is negotiated with the exporting country. A government may nevertheless choose to restrict its own exports. In such a case, the standard instrument used is an export tax, but it is not nearly observed as often as restrictions to imports.

Many other ways to restrict imports exist, such as domestic content requirements, government procurement, and barriers often disguised as health, environment, or labor standards, such as anti-dumping measures or as administrative ("red-tape") customs difficulties. Their effects are all similar to those of import tariffs and quotas.

Trade barriers can, in principle, reflect governments' attempts to promote national welfare. This can be theoretically justifiable if the country is large enough in world markets to affect its terms of trade. It can be justifiable when there are "market failures," such as externalities or imperfect competition, as well. In practice, however, efficiency and national interest are rarely the motivation for trade barriers. Instead, the main force behind these restrictive policies is often politics—governments' desire to benefit the most influential groups in the political arena, such as organized lobbying groups, at the expense of the politically weak groups, often consumers.

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Truman, Harry S (1884–1972)

THE 33RD PRESIDENT of the UNITED STATES, Harry S Truman championed capitalism in the mid-20th century Cold War struggle against communism. His administration strove to revive the WORLD WAR II-shattered economic and political structures of Europe to ensure they remained noncommunist.

Although capitalism's champion, Truman did not always champion free-market capitalists. In the U.S. Senate (1935–45), he authored legislation increasing federal regulation in transportation and aviation and identified corruption and inefficiency in war production industries. As president, Truman vetoed the Taft-Hartley Act for unfairly weakening union bargaining power. Yet, Truman had difficult relations with labor leaders, and threatened to draft striking railroad workers into the army.

Truman, son of John Anderson Truman and Martha Ellen Young, was born in Lamar, Missouri. His middle name "S" could have stood for either grandfather, Solomon Young or Anderson Shipp Truman, but in fact stood for neither (hence, no period after the S).

In 1890, the Truman family moved to Independence, Missouri. There he met Elizabeth (Bess) Wallace at the First Presbyterian Church Sunday School, whom he would wed almost 30 years later. Unlike many contemporary Missouri farm boys, Truman completed high school, graduating in 1901.

After graduation, Truman worked at several clerical jobs in Kansas City. In 1905, he joined the Missouri National Guard. In 1906, his father's Kansas City business failed. Truman returned with his family to his grandparents farm in Grandview. Truman worked the family farm for a decade.

In August 1916, Truman, then 32, volunteered for the army. He was sworn in as a member of the 129th Field Artillery regiment. In April 1917, the United States declared war on GERMANY. In 1918, Truman served in France, was promoted to captain and given command over Battery D, 129th Field Artillery Regiment, 35th Division. Truman proved an able and beloved leader, inspiring lifelong devotion from his men. In May 1919, Truman was discharged from the army and, in June, he married Bess Wallace.

The Trumans moved in with Bess's mother in Independence. Truman opened a haberdashery in Kansas City with army friend, Edward Jacobson. Truman & Jacobson experienced a short-lived success, and failed in 1922. Fifteen years later Truman's share of the store debt was fully repaid.

In 1922, Truman was elected eastern judge of the Jackson County Court, an administrative body, not a court of law, with support from Kansas City democratic political machine boss, Thomas J. Pendergast. In 1923, Truman lost re-election. Between 1923–26 he attended (without completing) Kansas City School of Law and sold memberships to Kansas City Automobile Club.

In 1926, Truman was elected presiding judge of the administrative Jackson County Court. He served two terms, from 1927–34. He brought roads, hospital, sewers, and a new courthouse to Jackson County. Despite his association with Pendergast, no evidence of corruption marred his service.

In 1934, Truman ran for the U.S. Senate with Pendergast's support. He served as Senator from Missouri for a decade. Although initially scorned by the press and other senate members as "Pendergast's errand boy," Truman's diligence and well-informed participation would change that perception. While on the Interstate Commerce Committee, Truman championed two major pieces of legislation. The 1938 Civil Aeronautics Act established federal regulation of the aeronautics industry, and the 1940 Wheeler-Truman Act provided federal supervision of the railroads.

In 1941, Truman initiated and chaired a Senate Special Committee to Investigate the National Defense Program (the Truman Committee). The Truman Committee was estimated to have saved $15 billion and to have rid the country's war production effort of corruption, fraud, and inefficiency.

In 1944, Truman was elected vice president. He served for 82 days, meeting with President Franklin ROOSEVELT merely twice. In April 1945, Roosevelt died, and Truman said he felt "like the moon, the stars, and all the planets had fallen on me."

Although war continued in Europe and the Pacific, Roosevelt had not informed Truman of Allied agreements reached at Yalta, nor about the Manhattan Project. On May 7, 1945 Germany surrendered, ending the war in Europe. That summer, Truman met with Allied leaders Winston Churchill and Josef Stalin in Pottsdam, Germany. Truman's initial response to Stalin was positive. However, he quickly lost faith in Stalin's intentions as the SOVIET UNION failed to meet its promises, and opportunistically sought to take advantage of postwar chaos in Europe.

While in Pottsdam, word arrived that the atom bomb had been successfully tested. Truman decided that the use of the bomb would secure a Japanese surrender. He succeeded, although at the cost of 135,000 Japanese civilian casualties in Hiroshima and 65,00 in Nagasaki. Despite this decision, the Truman administration sought lasting peace. Among his first acts as president was creation of the United Nations.

Domestic issues were also emergent. 1946 was the most strike-torn year in American history. Truman intervened in two major strikes, coal and railroad, threatening to draft striking railway workers as they effectively shut down the U.S. economy. Congress vigorously responded with the union-limiting Taft-Hartley Act. Truman vetoed the act, but was overridden. Truman, however, chose to circumvent Taft-Harley. He ordered the government to seize the steel mills and to negotiate with steel workers during the Korean War. The U.S. Supreme Court declared the seizure illegal, given

Taft-Hartley's power to order strikers back to work for a 90-day cooling-off period.

Truman's administration was shadowed by atom and hydrogen bombs, and the experiences of two world wars. Communist leaders, Stalin in particular, were identified as aggressors likely to obtain their own nuclear arms and initiate a third world war. Thus, in 1947, communist threats to GREECE and TURKEY led to financial and military support established as the Truman Doctrine, promising U.S. support and protection to communist-threatened nations.

The Truman Doctrine was followed by the 1947 MARSHALL PLAN, a U.S.-financed, self-determined recovery in Europe. About $13 billion were provided to seven countries to resuscitate their economies and stabilize their political structures. The Soviet Union, POLAND, and Czechoslovakia walked out of initial meetings, claiming that the Marshall Plan was a thinly veiled exercise in U.S. imperialism. The concept of the Marshall Plan was extended to developing countries in Truman's second inaugural address, Point IV Plan.

In 1950, communist North KOREA, supported by CHINA and RUSSIA, crossed the 38th parallel, invading South KOREA. Truman, through the first UN military action, determined to restore the 38th parallel boundary. However, after General Douglas MACARTHUR's stunningly successful surprise attack at Inchon, the goal expanded to a communist-free Korean peninsula. Truman did not support MacArthur's vision of expanding the war, and the general was relieved of his command. The war eventually ended with a cease-fire at the 38th parallel. However, the significance of the Korean War was that it remained a Korean, not a world war.

As Truman left office, he predicted that the eventual collapse of communism would end the Cold War. He returned to Independence where he died December 26, 1972.

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Turgot, Baron Anne Robert Jacques (1727–81)

A CIVIL SERVANT, Jacques Turgot was a leading 18th-century French economic theorist. Especially notable is his early contribution to CAPITAL theory.

Turgot's success as general administrator of the city of Limoges led to appointments as minister of navy, and then as minister of finance and commerce and commissioner of public works from 1774–76. Only a few decades away from the Revolution, the French monarchy at this time was insolvent. Turgot's attempt to repair the economy involved a number of measures that would have effectively dismantled the French system of protectionism and regressive taxes (called "Colbertism" after Jean Baptiste COLBERT, 1619–83), as well as removing the medieval craft guilds and internal obstacles to trade that stifled free enterprise in France. Turgot's attempted reforms were so unpopular that he was removed from office. This could be viewed as one of the earliest attempts at economic liberalization, much later followed by Ronald REAGAN in the United States and Margaret THATCHER in Great Britain.

The term "capital" originated in Medieval Latin. It referred to the principle of a loan, as distinct from the interest. To a businessperson, it is not so important whether a yield is coming from a money loan, a piece of property, a retail outlet, or from a manufacturing operation. Hence the term further evolved to include any of these. The use of the concept of capital as an integral part of economic theory is relatively modern and roughly coeval with economics as a self-consciously separate discipline. Intellectual credit for the theoretical use of capital should probably go to the PHYSIOCRATS. But more significantly, in his *Reflections on the Formation and Distribution of Riches,* Turgot presented what economists have called the first modern discussion of capital. Turgot's discussion features a definition of the concept, a description of capital's role in the economy, and an explanation of interest.

Turgot defined capital as "moveable accumulated values" (as distinct from LAND). Capitals are accumulated by the decision to reserve a part of what is received each year. The economic function of capital is to provide advances that sustain workers in the interval between the application of labor and the sale of the resulting product. Advances are necessary in agriculture because it is "necessary to sow before reaping" in industry because workers must have tools with which to work and materials upon which to work, as well as means of subsistence while waiting for the sale of produced goods.

Turgot discussed five ways that capital can be employed. These are:

1. The purchase of land expected to yield revenue
2. Investment in agricultural undertaking, i.e., providing seed, subsistence for labor, and paying rent to landowners in hope of profit
3. Investment in an industrial undertaking

4. Investment in a commercial undertaking (buying with the intention of reselling)
5. Lending money at interest.

Turgot regarded lending at interest to be a voluntary agreement. Interest is simply the price of the use of money. Being a price, the interest rate is determined by buyers (borrowers) and sellers (lenders). It will depend on the profitability of opportunities for using the money that are available to borrowers, as well as to lenders. Economist Joseph SCHUMPETER called Turgot's theory "by far the greatest performance in the field of interest theory the 18th century produced."

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Turkey

WHILE FACING ITS SHARE of economic problems, Turkey has, over recent years, been enjoying notable economic growth in its trade and commerce, with a keen focus on modernizing its industrial output and nurturing the private sector. A free-market economy, Turkey leans toward trade with the Western markets, particularly with the UNITED STATES. Turkey's import/export ratios have shown that as its world trade expands or at least (by many indicators) remains level, its industry and services markets are strengthening. Agriculture, long a boon to the republic, remains steady—accounting for 40 percent of employment.

Into the 21st century, there have been noticeable signs that Turkey is becoming what the U.S. Commerce Department has declared one of the top 10 "big emerging markets." Being a lucrative market for U.S. exports, and also continuing to be a reliable prospective partner for joint projects and investments within Third World countries, Turkey has been included as a candidate (in 2003) for full membership in the EUROPEAN UNION (EU), the first Muslim nation to be considered. Turkey's secular government has been making long strides in reworking its legislation and industry toward moving the country in step with world demand and markets.

According to the Turkish Embassy, "Turkey remains committed to further expanding and diversifying the scope and content of its economic and commercial relations." As an example, the Turkish government is in the process of restructuring its strategy to both strengthen the ongoing stabilization of its economy and support international agreements. The country's national assembly approved a number of legislative acts that "pave the way toward broader integration of the Turkish economy with the global economy," explains the embassy.

Since the late 1980s, the private sector in business has been steadily taking a firmer hand in economic reform, but efforts are somewhat marred by haunting inflation. The government, which still oversees the basic industries of banking, transportation, and communication, continues to battle erratic spending and inflationary setbacks, beginning in the late 1990s and largely generated by deficits in the public sector. High prices have pushed consumer price inflation to 79 percent annually, since 1988. Wholesale price inflation averages 75 percent.

In response, the government continues to regulate some prices to control inflation's impact on poorer households. Certain commodities such as bread, sugar and tea are regulated, as are public utilities, including energy affiliates. Yet, the GROSS NATIONAL PRODUCT (GNP) growth rate manages to fluctuate around 6 percent.

Turkey has been promoting itself to investors and traders. Despite the weight of inflation, Turkey's economy is fast developing, evident in its growth rate. Its domestic market—a population of 67 million consumers (2002)—lures investors. Geographically, the country serves as a natural crossroad between Europe and Asia, between Eastern and Western cultures. With a strong investment record, and a highly skilled workforce, Turkey's firm cultural and historic relationships with neighboring countries puts it at an advantage in brokering East-West business and political relationships.

Turkey produces seafood, assorted vegetables, dried fruits, edible nuts, and livestock. Of services, its construction, transportation, and communications sectors are quickly rising. The manufacturing sector, too, progresses steadily ahead, its products respected for quality. The two major outputs, textiles and clothing, are almost entirely privately owned. Other products include chemicals, furniture, assorted machinery, and automotive goods. Mining generates both metallic and industrial minerals.

In 2002, Turkey had a GROSS DOMESTIC PRODUCT (GDP) of $468 billion, yielding a per capita GDP (purchasing power) of $7,000.

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Tyler, John (1790–1862)

NICKNAMED "His Accidency," Tyler became the 10th president of the UNITED STATES in 1841, when William Henry HARRISON died just one month after assuming office. Born in Virginia, Tyler was well educated, politically experienced, and, at age 51, the youngest man to date ever to occupy the office of the presidency. His administration coincided with the opening salvos of American territorial expansion and sectional controversy over the issue of slavery.

Though he had been elected to the vice-presidency on a Whig ticket, in truth, Tyler's affiliation with the party stemmed mainly from his animosity for Andrew JACKSON in the 1830s, when Tyler served in the U.S. Senate. He shared neither the Whigs' commitment to federal direction of economic growth nor their discomfort with westward expansion. As president, he proved to be his party's worst enemy, repeatedly vetoing choice pieces of the Whig legislative agenda. Though the venerable leader of the Whig party, Henry Clay, managed to steer through Congress much of his "American System," a program of internal improvements, protective tariffs, and currency and credit reform, Tyler rejected virtually every bill Congress submitted. The only two bills Tyler signed into law were a voluntary bankruptcy law in 1841 and a new protective tariff the following year. His veto of three separate bank bills, designed to reconstruct the national bank dismantled by Andrew Jackson, led his party to expel him formally and his cabinet to resign in its entirety.

Tyler's opposition to the National Bank specifically and the American System generally emanated from his belief in state sovereignty and curtailed federal powers. He particularly disliked the proposed bank's powers to coerce a state to allow branches of the national bank to reside within its borders, and to issue loans at lower interest rates than state banks could afford. In this aversion to federal power, Tyler had more in common with the Democratic Party of his old nemesis Jackson. Finding himself politically homeless after his expulsion from the Whig folds, he began looking for inroads into the Democratic Party and positioned himself for a bid for the party's nomination in 1844.

He mounted his transition from Whig to Democrat upon an issue already dear to his heart, one that steadily gained in popularity within the Democratic Party and with the general public: westward expansion. By the 1840s the nation had been seized by "Oregon Fever," as a thousand settlers a year set out for that territory. The west as a whole soon became a symbol for economic opportunity and nationalistic pride. The Democratic Party already had a history of championing territorial expansion and stood poised to capitalize politically on the frenzy. Tyler's own claim to the expansionist mantle began in early 1844, when he initiated secret annexation negotiations with the government of the Republic of Texas, which had won independence from Mexico in 1836.

Tyler's secretary of state, the ardently pro-slavery South Carolinian, John Calhoun, introduced an annexation treaty in the Senate in April 1844. Because Calhoun explicitly linked the annexation of Texas as a slave state with the expansion of slavery, Northern opposition defeated the treaty. But Tyler maneuvered a second treaty's passage just three days before he left office in March 1845, after his failure to win the Democratic nomination for the 1844 election.

Although the annexation of Texas was the hallmark of Tyler's administration, it is also credited with settling a territorial dispute with Canada and articulating American trade interests in the Pacific with the Tyler Doctrine, a foreshadowing of the Open Door Notes of 1900. The entrance of Texas, through Tyler's efforts, into the Union inaugurated a chain of territorial acquisitions that fed the American hunger for land and fueled massive economic growth. But such progress came at the heavy price of war with MEXICO, the blood of Native American peoples, environmental destruction and political polarization between North and South over the spread of slavery.

In that conflict, Tyler eventually supported secession; he died in 1862 in Richmond, Virginia while serving in the Confederate House of Representatives.

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UBS

FROM OFFICES LOCATED primarily in Europe and North America, UBS (headquartered in Zurich, SWITZERLAND) provides financial services through a number of segments. While its Swiss branch performs retail/consumer and corporate banking in Switzerland—as well as offshore private banking services—a number of other units conduct a series of related endeavors. Through these particular units, UBS provides individual and institutional asset management, brokerage duties and investment-banking, corporate finance, fixed-income services and more. Within the investment-banking and securities business, in fact, it is one of the global leaders.

Founded in June 1998, after the merger of Union Bank of Switzerland and the Swiss Bank Corporation, UBS has quickly evolved, and in 2002 employed 69,000 people across the globe. Much of the company's impressive rise has to do with its keen eye on a value-added approach to its customers who recognize its brand expertise in all corners of the world's financial industry. Having traditionally implemented its services through affiliates Warburg and Paine Webber, UBS is melding them under a "one firm" architecture, creating a single-brand UBS feel.

Among the multiple services are electronic banking (e-banking), which makes it easy for customers to carry out their banking and stock market transactions around the clock and from any geographic point. UBS's investment-funding program offers individual and comprehensive solutions throughout 20 countries. The popular Bank for Bankers service gives financial institutions unique alternatives to dealing with the complex issues surrounding the industry while maximizing their funds, focused on management and value.

UBS reported revenues of $48.5 billion in 2002 and ranked as the 59th largest company in the world.

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Ukraine

UKRAINE IS SITUATED in eastern Europe, consists of 603,700 square kilometers (an area slightly smaller than the state of Texas), and as of 2001, had a population of about 48 million. Ukrainians make up 73 percent of the population, with Russians as the largest minority at 22 percent. The official language is Ukrainian, but Russian is widely spoken along with Romanian, Polish, and Hungarian. Ukrainian Orthodox is the main religion.

Bordered by Belarus, HUNGARY, Moldova, POLAND, Romania, RUSSIA, and Slovakia, Ukraine's capital and largest city is Kiev. In addition to agriculture, the country's main industries include coal, electric power, ferrous and nonferrous metals, machinery and transport equipment, chemicals, and food processing. The industrial production growth rate was estimated at 12.9 percent for the year 2000.

Ukraine operates under a republic form of government, consisting of three branches: the executive, legislative, and judicial. The legislative branch consists of 450 members who serve four-year terms. One half of the members are elected by popular vote, with the remaining seats allocated on a proportional basis to those political parties that gain 4 percent or more of the national electoral vote. The head of state is the president, who is elected by popular vote to serve a five-year term. The president, with approval of the legislative branch, appoints a prime minister and deputy prime ministers.

Ukraine gained its independence from the former SOVIET UNION on August 24, 1991. The republic was the most important economic component of the former Soviet Union, and upon gaining independence, Ukraine embarked on the process of privatization and a free market economy.

Ukraine is a relatively poor country. The GROSS DOMESTIC PRODUCT (GDP) for the year 2000 is estimated at $189.4 billion. The real growth rate at that time was estimated at 6 percent. The per capita GDP was $3,850. Approximately one half of its population is below the poverty line. Inflation poses another problem. In 2000, the estimated consumer price index exceeded 25 percent. The official unemployment rate was listed at 4.3 percent as of December 1999. However this number is a bit misleading. There are a large number of unregistered and under-employed workers.

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underground economy

THE UNDERGROUND ECONOMY refers to all those aspects of economic or business activities that take place informally or illegally—in any case, beyond the knowledge and reach of the legitimate authorities. A wide range of activities fit this description, from tax evasion to moonlighting to sweatshops to dealing in illegal drugs. While the underground economy is related to the BLACK MARKET and explicitly illegal activities, it is not identical to it. However, those indulging in the underground economy will constantly be at risk both of committing and suffering from a crime which will be difficult to report.

Most people's lives are touched by the underground economy in one or more ways, and since it provides access to cheaper goods and services than would otherwise be available, there will always be a powerful incentive to use it. It is, therefore, very difficult to obtain an accurate picture of the size and importance of the underground economy; while estimates of the importance of the underground economy range from approximately 5–15 percent in Western countries, it is of considerably greater scope in many less-developed countries (LDCs). This is because many millions of people in LDCs occupy a sector that consists of "Informal units comprising small enterprises with hired workers, household enterprises using mostly family labor, and the self-employed. Production processes involve relatively high levels of working capital as against fixed capital, which in turn reflects the relatively low level of technology and skills involved," explains the International Labor Office.

In populous countries with weak governmental systems, the informal sector dominates economic activities. For example, it has been estimated to represent more than 90 percent of India's overall economy, and to involve more than 500 million people worldwide. In more developed countries as well as LDCs, the underground economy may be used to depress wages. Many restaurants, hairdressing shops, taxi-driving services, and similar industries require workers to rely on tips and gratuities to supplement their income and to keep prices low. Tips are routinely provided in cash and not always reported fully to tax authorities.

The underground economy is by no means a new phenomenon, of course. For perhaps the majority of history, the willingness of governments to try to regulate and tax international trade, for example, has stimulated smuggling which in some cases represented a majority of all trade conducted. Popular history is full of tales of local heroes who, generally with the support of local communities, conducted their business without the interference of interventionist or even unjust rulers and their agents: examples include the economic redistribution of Robin Hood and the American gangster Pretty Boy Floyd who is said to have destroyed mortgage papers as part of his bank robbery activities.

Such actions continue to be important in many parts of the world but attitudes towards them differ depending on the viewpoint of the observer: when a country is placed under sanctions, for example, those individuals who secretly supply embargoed goods might be regarded as criminals by one side and national heroes by the other. In any case, membership of the underground economy is understood to be necessitated by either the greater recompense available from avoiding the official sector, or the inability of individuals to gain access to or participate in the formal sector.

Varieties of underground economy activities. The range of activities encompassed by the underground economy includes: moonlighting, under-reporting or non-reporting of income from a second or part-time job with a view to avoiding tax and other payments; understating profit, companies deliberately mislead responsible authorities so as to reduce the amount of tax they are required to pay; understating income or assets for the purpose of obtaining social welfare; over-reporting expenditure to minimize tax payments—companies may be able to reduce their tax payments by claiming deductions for what are considered to be legitimate expenses; under-reporting or non-reporting of income earned, performed by individuals or organizations which aim to reduce liability to meet tax payments and other social costs; barter or avoiding the use of cash for the exchange of goods and services with a view to avoiding official records and hence tax payments.

Clearly, individuals and organizations can be involved in the underground economy. Estimates suggest that the activities of organizations in this respect far outweigh in monetary terms those of individuals, yet in recent years the tide of popular opinion has turned against individuals possibly involved, and greater efforts have been made to attempt to prosecute them. Some of the more insidious and important activities internationally in connection with the underground economy are illegal drug-dealing, trafficking of women and children, and counterfeiting of goods and services. While these are very vivid examples, consumers in developed countries are perhaps more likely to come into contact with the underground economy at a more mundane level: e.g., from allowing a service worker to repair an item as an informal activity without declaration, or obtaining borrowed or pirated goods without intention to profit from them. Recent cases involving peer-to-peer swapping of music files copied to computer disks demonstrates how pervasive this practice is at a comparatively low level.

Further, the popularity of the practice demonstrates openly what a cavalier attitude people are willing to take with a disputed set of laws that seem out of step with current sentiments. This is in contrast with the response articulated by very many people when confronted by corporate misdoing of a similar nature, albeit at a different scale. This is a form of double-dealing understandable by reference to the Tragedy of the Commons, in which the crucial distinction between actions is whether it destroys—or seems to destroy—resources for other people.

As a result, many forms of underground economy receive at least tacit support from members of the community in which it occurs, at least as long as they do not perceive themselves to be disadvantaged as a result. Many women in developed countries, for example, wish to balance a career with having a family and yet cannot afford the costs of official childcare and so resort to a mixture of friends and family and other sources of informal labor. In other cases, such as ITALY for example, distrust of central authorities has produced such widespread support for the underground economy that it has become endemic in society. For underground industries, such as gambling or secondary betting markets on national lotteries, a great deal of informal sector employment can be provided, often for people with a disability since selling tickets (as an example) can be managed without much physical exertion.

Social aspects of the underground economy. As described, people's attitudes to the underground economy vary depending on their proximity to it, and the ways in which they wish to use it. Frequently, those who suffer from its actions are those who are most vulnerable in any case. Many work in, or are forced to work in, factory conditions which are sweatshops; that is, according to the U.S. General Accounting Office, "an employer that violates more than one federal or state labor, industrial homework, occupational safety and health, workers' compensation, or industry registration law." Workers in such conditions may be subject to "extreme exploitation, including the absence of a living wage or benefits, poor working conditions, such as health and safety hazards, and arbitrary discipline."

If workers have crossed an international border for work, they will be subject to deportation and possible legal proceedings in the event of a dispute. This makes them subject to blackmail. Female Thai migrant workers, for example, have reported cases in which they have been subject to various types of physical and mental pressure, and little or no recourse to the law. In countries such as THAILAND and the PHILIPPINES and those of south Asia, where temporary international migration for work, and the remittances this produces, are an important source of overseas earnings, it is possible for home government agencies to collude with local employer representatives.

Most forms of child labor have now been effectively consigned to the underground economy as it is now considered an unacceptable practice in developed countries, although child labor still plays a significant role in supporting families in many countries, especially those reliant upon industries such as agriculture and small-scale retailing. The International Labor Organization has, since 1919, instituted a program of policies to which most countries adhere, ensuring that child labor is only permitted in certain, regulated situations that do not deny the child appropriate education or pose risks to health.

Economic aspects of the underground economy. Reasons why individuals might choose to participate in the underground economy, apart from sheer opportunism, include the impact of inflation or other negative economic impacts; the perception that friends and family are already involved and the legitimacy this lends to the proposition; the impact of government regulations which may appear burdensome to some; the perception of the government which might, in some cases, appear to be an inappropriate recipient of the individual's resources; and the perception of freedom or excitement in flouting regulations. Perhaps more important, particularly in the case of those living in less well-developed countries, is the inability to pay for desired goods and services at full prices and being coerced into participating in the underground economy one way or another.

The economic arguments against the underground economy are that it discriminates against those who do not participate in it and, more importantly, it reduces the amount of resources liable for use by governments through taxation and other forms of redistribution. Consequently, the underground economy generally is considered by economists to represent an inefficient allocation of resources, and to provide opportunities for rent-seeking activities that unfairly benefit some individuals to the detriment of others. Since tax evasion is held by economists to devolve to a rational choice decision featuring risk versus expected gain, it is held to be a universal phenomenon and one in which the larger the number of decisions that are made (for example if the economy is atomized, i.e., divided into a large number of small firms or individuals), the more tax evasion there will be.

Since economics holds tax evasion to be a bad thing, its conclusions are generally to increase the level of risk inherent in the decision to commit evasion by tightening tax controls or, in some cases, reducing tax levels. A similar form of analysis is brought to bear on those thought to be committing welfare fraud: since this is sub-optimal and dependent upon expectations of risk, more effort should be expended on preventing it by tightening regulations and/or decreasing the levels of benefits available, thereby making the decision less attractive.

While economics is good at providing theories, it is less able to account for the impact of cultural and historical factors on economic activities. Consequently, it cannot fully account for the persistence and importance of various kinds of underground banking, which is an important international industry linked to the troublesome practice of international money-laundering, because industry players are linked through relationships of trust, sometimes dating back centuries, but without formal institutional support to regulate transactions.

Making the informal sector formal. The informal sector is a reality of life for many millions of people worldwide. Without official recognition or regulation, they are unable to plan confidently for the future and any sudden disaster that can remove what assets they have. Further, without appropriate training and supervision in health and safety areas, they may risk injury or death to themselves and their co-workers. One of the ideas of the Nobel Prize-winner Amartya SEN is that poverty of this nature prevents people from attaining freedom and the choices that people in developed countries have come to believe are within their rights. Finding ways to bring such people within the scope of the formal sector would clearly be to the benefit of all. Achieving this goal requires policy and planning at the lower levels of society, where the micro-enterprises and individuals constituting the underground economy exist. Part of the solution can lie in the provision of credit at the micro level by suitably organized and capitalized banks, as was pioneered by the Grameen Bank in Bangladesh, and has now spread in various forms to many of the LDCs of the world.

In theses cases, the borrower—more frequently women than men—takes a small loan for the purpose of acquiring a productive asset (a cow, for example, or a sewing machine), which is then used to obtain profits to repay the loan and leave a surplus. By borrowing from a recognized bank, the assets are secured officially, and the borrower has some access to the expertise of bank staff and to guarantees of the continuing value of the asset. Other important approaches include the provision of business development services and the restructuring of social welfare systems.

Under the banner of "Decent Work for All," the International Labor Organization has sought to demonstrate the dangers inherent in people being forced to take part in the underground economy. Since many people have been forced into the informal sector as a result of economic crisis or the effects of globalization, it seems likely that the number of cases will continue to increase. Nevertheless, sustained international action, possibly supported by campaigns by concerned consumers, might be effective in bringing many people into the comparative safety of official work.

Future prospects. There seems to be little prospect of much of the underground economy emerging above ground in the future. Indeed, some forces seem to indicate that it will expand rather than decrease: globalization, urbanization, portfolio employment, and technology.

Globalization, the spread of goods and services internationally means more competitive markets, which will, in turn, force people out of traditional industries with uncompetitive practices. These people may, in many cases, lack the skills and education necessary to secure alternative official employment and may instead enter the informal sector.

Urbanization, the spread of agricultural products globally combined with increased productivity of agriculture means fewer people are required in that sector. The displaced people tend to move toward cities either permanently, or temporarily, to look for work. The work that is available is mostly in the informal sector and this will intensify as the supply of labor depresses wages, and therefore further necessitates additional income.

Portfolio employment, the reduction of labor protection laws in many countries, in combination with the increasing tendency of companies to employ temporary supply management (like the just-in-time idea) means that more people will be required to look for portfolio employment of short-term contracts, part-time work, and freelance activities to make up their income rather than one single occupation. This will complicate personal accounts and make individual transactions of less overall importance; hence, more activities are likely to go unreported.

TECHNOLOGY, the spread of information technology (IT) in particular, makes it much more convenient for people to conduct business activities internationally without intermediaries. Assignments may be contracted via email and transmitted the same way, and payment made electronically without any reference to official bodies. Similarly, IT will increasingly allow people to exchange pirated forms of intellectual property, whether for profit or not.

The underground economy is unlikely to disappear in the foreseeable future.

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unemployment

DEFINED AS AN ECONOMIC CONDITION marked by the fact that some resources (LABOR, LAND, CAPITAL) are not being used, commonly understood unemployment addresses a situation where individuals actively seeking jobs remain unhired.

A WORKER who is employed is someone who holds a full-time or part-time job. A recent economics graduate who cannot find a job as an economist and is working part-time in a fast-food restaurant is still considered employed, albeit under-employed. An unemployed individual is anyone not currently employed and who is either actively looking for a job, or temporarily laid off waiting recall, or waiting to start a new job within 30 days. When unemployed and employed are added up, we have the civilian labor force. In the United States, the Bureau of Labor Statistics is responsible for the classification of individuals between unemployed and employed. This is done through surveys conducted by the Census Bureau. Anyone who did any work at all for profit or pay (whether full-time, part-time, or temporary work) during the survey week is considered employed. If a person has a job during the survey week but did not work because of sickness, weather, labor disputes, personal reasons, or vacation, he or she is still considered employed. Persons who are considered unemployed are those who did make specific efforts to find a job in the four weeks prior to the survey and who are available for work at the time of the survey.

The measure and costs of unemployment. How is unemployment measured? First the working age population is computed; it consists of all non-institutionalized (i.e., not in jails or mental hospitals) individuals above 16 years of age. The civilian labor force along with the number of employed and unemployed can then be derived, by excluding those individuals who are working but not employed (such as homemakers), discouraged workers (i.e., those who do not have jobs, would like to work but have stopped seeking employment), people in the military, etc. Statisticians and economists are then in a position to compute such important statistics as the labor force participation rate and the unemployment rate. The labor force participation rate is computed by dividing the labor force by the working age population, while the unemployment rate is the ratio of the unemployed by the labor force.

Economists, stockbrokers, and financial analysts closely watch the release of the unemployment and employment data each month. When the data show a fall in the unemployment rate, a sense of relief can be felt across the financial community. But when the data shows a rise in the unemployment rate, anxiety is felt, which often leads to adverse impacts on the major indices of the stock market. This is because unemployment is an indicator of future economic performance; it is thus an indicator of the future economic health of a country.

The measure of unemployment described above is not without problems. First, there are borderlines cases where ambiguities inevitably arise. For example, people falling on the borderline between employment and unemployment include, among others, under-employed and people working short hours involuntarily. Those falling between unemployment and economic inactivity include the discouraged workers and long-term unemployed workers no longer receiving unemployment benefits.

Second, people less than 16 years old, people in the underground economy, and homemakers are not considered employed though they may be working. Lastly, unemployment measures tend to measure only the total lack of employment in a given economy. Other aspects of unemployment such as the availability of unemployment benefits are not accounted for. This might explain why some developing countries have been found to have lower unemployment rates than developed ones: People in developing countries cannot afford to be unemployed since unemployment benefits are almost negligible. Therefore, they engage in any type of work, however insignificant or inadequate it may be. Since they are working they are not considered unemployed.

Costs of unemployment are varied. The obvious one is the lost income suffered by the unemployed. In the United States and most developed nations, this lost income is partially offset by unemployment compensation and food stamps. Another cost is the deterioration in human capital, since the unemployed is not using much of his or her human capital. A third cost is more psychic in nature: Unemployment tends to bring a loss in self-confidence and self-esteem. It is usually associated with depression.

There are different types of unemployment. The first one, frictional unemployment, arises from normal labor market turnovers. For example, when a recent college graduate comes to the job market for the first time, he or she is said to be frictionally unemployed. Another example deals with people in the process of changing jobs. Economists believe that there will always be frictional unemployment at any given point in time.

The second type of unemployment is called structural unemployment, due to deep (structural) changes occurring in some sectors of an economy. It typically translates into the elimination of one kind of job and the creation of jobs the unemployed do not have the skills for. Most of the time, structural unemployment is due to changes in technology or international competition. For example, all the workers who were employed in the steel industry in Pittsburgh, and were laid off when the industry was facing tough competition from Asia, were structurally unemployed.

The last type of unemployment is called cyclical unemployment. It occurs when there are contractions of the GROSS DOMESTIC PRODUCT (GDP). Indeed, when economic growth and income slow down, firms are making negative profit and have to lay off some workers; these workers are said to be cyclically unemployed.

As should be clear from the definitions above, structural unemployment has to do with some sectors of the economy, while cyclical unemployment is related to the economy as a whole. When there is no cyclical unemployment, the economy is said to be at full employment, a situation where the number of people looking for work exactly matches the number of jobs available. It is clear that full employment does not mean that everyone in an economy is working since there still are structurally and/or frictionally unemployed individuals in the economy. The natural rate of unemployment is the unemployment rate that prevails at full employment.

How unemployment affects the economy. In most countries unemployment data comes from either one of the two following sources: The registration data or the labor survey data. Both sources have in common a target population. Registration data is a procedure of counting a target population registered at employment exchanges; double counting of people receiving unemployment insurance benefits is avoided. Labor force surveys are surveys of the households, in which the target population is asked about his or her labor status. That is, the representative of the household is asked whether she is employed and, if not, about her recent job searches. Once the surveys are collected, appropriate statistical procedures are then used to derive an estimate of the number of people in the working age population who are employed or unemployed.

The statistics computed as a result of using the labor force survey data is called "unemployment statistics" and the one derived while using registration data is called "statistics on insurance claimants." The unemployment and employment statistics obtained from the two sources described above are almost always different. This is due to the fact that the two methods of counting the unemployed are based on different target populations and make use of different processing procedures. A large gap can be found in some countries between the number of unemployed based on registration data and the one based on survey data. Most of the time the former yields substantially lower unemployment estimates. This can be explained by many factors including:

1. The presence of individuals working in an industry not covered by the state unemployment insurance law or the presence of individuals who have just entered the labor force for the first time. These individuals are surveyed by the labor force survey but are not obviously included in the administrative records.
2. The presence of people looking for work through networks such as relatives or friends, who will not be counted when the registration data are collected but will be counted as unemployed using the labor survey data.

An important issue to be addressed is the source of unemployment. Why do we observe unemployment in an economy? Economists have proposed three main sources of unemployment: job search, job rationing, and sticky wages.

Job search is, simply put, the process of individuals looking for work. These individuals include new entrants and re-entrants to the civilian labor force. They also include people who leave their job to search for another one. When search times are prolonged, unemployment is high. For instance, when an economy is experiencing a deep contraction (recession or depression), search times tend to be prolonged and unemployment tends to increase drastically.

Job rationing is a situation where firms pay a relatively high wage (compared to the equilibrium wage rate which represents what they should pay). This "high" wage creates a surplus of labor since at that wage many people would like to work but firms would like to hire only a few of them. This surplus of workers represents the number of unemployed.

There are many reasons why firms would like to ration jobs. Two of them will be discussed here: First, firms might be "forced" to ration. For example, government laws require firms to pay any worker a wage greater than the minimum wage. To the extent that the minimum wage is set above the equilibrium real wage rate (i.e., what firms would have liked to pay), firms would hire fewer workers than normal, creating unemployment. Second, firms deliberately set wage above equilibrium wage to attract the best talent. By doing so, the firm believes that the additional cost incurred by setting wages too "high" will be outweighed by the productivity gains brought by the talented individuals. This is the foundation of the efficiency wage theory. Evidently a wage above equilibrium induces firms to hire less people, creating unemployment in an economy.

Sticky wages theory assumes that wages do not change as quickly as prices do. If there is an unexpected fall in labor demand by the firm and wages are flexible, labor will be fully absorbed but at a lower wage rate. However, if real wages are sticky in the short run, a situation where labor demanded is less than labor supplied develops and unemployment arises.

Unemployment is a fascinating topic that is no more regarded as a phenomenon largely affecting developing countries; developed countries are also affected by unemployment rates and their financial sectors pay close attention to any development in the monthly unemployment figure.

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Unilever

UNILEVER WAS FORMED in 1930 from a merger between the Lever Brothers (UNITED KINGDOM) and Margarine Unie (NETHERLANDS), the latter itself formed in 1927 from a merger between two Dutch rival margarine firms, Jurgens and Van den Bergh. In the early 2000s, Unilever had two parent companies, Unilever NV (based in Rotterdam) and Unilever PLC (based in London), but the firms operated as close to a single entity as possible, for example using the same board of directors.

Although Unilever started as a soap/detergent and margarine manufacturer, it soon began to diversify its product range, mainly via acquisition.

Today, Unilever manages worldwide brands such as Bertolli (olive oil), Hellmann's (mayonnaise), Lipton (tea), Dove (soap), and Vaseline, as well as prestige fragrances such as Calvin Klein, and some exceptionally strong local brands such as Persil detergent (UK). Unilever is the world's leader in margarine and olive oil.

In 2001, Unilever's worldwide sales were $47 billion, with operations in almost 100 countries employing 265,000 people.

In terms of regional distribution of sales, Europe accounted for 39.1 percent, North America for 26.7 percent, Africa and the Middle East for 6.2 percent, Asia and the Pacific for 15.2 percent, and Latin America for 12.8 percent. In 2001, Unilever invested about $1 billion in RESEARCH AND DEVELOPMENT (R&D) (2.5 percent of total sales), and $5 billion in marketing (14 percent of sales), and earned a net profit of $1.3 billion.

After several years of less than stellar performance, Unilever announced its five-year "Path to Growth" strategy in 2000. The aim was to restructure their product range by divesting under-performing brands, and focusing on increasing innovation and advertising of key leading brands to ensure strong growth, as well as making new acquisitions.

For example, by March 2001, Unilever had acquired Ben & Jerry's and SlimFast, and had divested 27 businesses, including Elizabeth Arden. Finally, Unilever restructured the company into two global divisions: foods, and home and personal care.

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Union of Soviet Socialist Republics (Soviet Union)

A COMMUNIST- AND Russian-controlled multinational empire, the Soviet Union existed for 69 years. The successor to the Imperial Russian Empire of the tsars, the Soviet Union (also known as the USSR) was created in 1922 and was dissolved by Mikhail GORBACHEV in December 1991. In terms of territory, it was the largest state on earth—three times the size of the UNITED STATES, located in both Europe and Asia, and covering 11 time zones from the Pacific Ocean to Eastern Europe.

After the collapse of the tsarist regime in the February 1917 Revolution, a variety of parties and movements vied for political control of the Russian Empire. Eventually the Bolsheviks, led by their leader Vladimir LENIN, seized power in the Russian city of Petrograd, carrying out the October 1917 Revolution. The Bolsheviks were the most radical group of Russian Communists who had been trying to carry out revolution. As Marxists, the Bolsheviks believed that SOCIALISM would inevitably be instituted in RUSSIA through revolution, but unlike their more moderate counterparts the Mensheviks, the Bolsheviks sought to speed up this process.

They did not want to wait perhaps decades for a capitalist, bourgeois system to dominate Russia, a country that still had a tiny middle class and had only started to industrialize on a capitalist basis. Many Marxists thought such a development was a pre-condition to introducing socialism. Instead, the Bolsheviks used a small, centrally organized, well-trained party of revolutionaries to take power in what has come to be known as the October Revolution. In 1918, they created the Russian Soviet Federated Socialist Republic (RSFSR), with a constitution that granted rights only to those who could be interpreted as serving the interests of the working class. The state they would eventually establish, the USSR, was the first communist country in history.

Lenin had seized power in the name of the soviets, or councils. These institutions had first been created during the 1905 Russian revolution, when factories and other organizations convened soviets to maintain order and security and to procure food and supplies for the people they represented. Approximately 1,000 such soviets were again established between the February and October revolutions of 1917, a chaotic period of governmental and transportation breakdown, high inflation, and food and fuel shortages. At the time, the soviets were viewed as democratic organizations designed to carry out the will of their members. Although the Bolsheviks stressed this popular institution as they built their new state, it was the Communist Party, not the soviets, that would actually run the government.

These two institutions—a government that, with some exceptions, owned or administered all institutions and enterprises, and a party that had no legal opposition—defined the organization and nature of the Soviet Union until its collapse in 1991.

The 1924 Soviet Constitution set forth the federal structure of the USSR, which, along with the RSFSR, contained 14 other socialist republics and other autonomous regions. Most authority was invested in the federal government. This new Soviet regime gave the semblance of autonomy and self-determination to the national minorities but maintained Russian control by means of Marxist ideology, which claimed to transcend issues of nationalism; after all, many Marxists simply did not consider national consciousness to be an important or lasting phenomenon in history. To its credit, the Soviet Union, through planning and coordination, built up the backward economy polity to such a degree that it claimed the mantle of superpower alongside the United States.

In 1989, no one predicted the imminent downfall of the Soviet Union, which since World War II had been, along with the United States, one of the world's two superpowers. Nevertheless, the fall of the Berlin Wall on November 9, 1989, marked a symbolic turning point in the process that eventually brought about the disintegration of the USSR. The Soviet Union's final leader, Gorbachev, sought to institute a policy of *glasnost,* or openness by allowing a freer exchange of ideas. Public criticism of the Communist Party and the government, instead of bringing about a reinvigoration of the Soviet system as Gorbachev had hoped, actually helped erode its very foundations, including the leading role that the Party was supposed to play in Soviet life. With the fall of the Berlin Wall, the USSR lost control of the Eastern European countries that had served as Communist buffer states with the capitalist, democratic West.

Meanwhile, the non-Russian soviet republics sought independence, whether slavic (Belarus, Moldova, and UKRAINE), Baltic (ESTONIA, LATVIA, and LITHUANIA), Caucasian (GEORGIA, Armenia, and Azerbaijan), or Central Asian (Kazakhstan, Kirghizstan, Tadjikistan, Turkmenistan, and Uzbekistan).

These independence movements sparked the most dramatic event of the Soviet Union's last days—the failed August 1991 coup by Communist Party hardliners to depose Gorbachev, who intended to sign a new treaty of Union members that would eliminate federal controls over the republics. A key figure in these events was Boris Yeltsin, who had been elected president of the Russian Republic and, along with his supporters, personally faced the threat of Soviet tanks that the coup plotters intended to use against their opponents. Yeltsin ended his membership in the Party and, after August, used his newfound authority and popularity to dictate his anti-Soviet agenda to Gorbachev and those who sought to maintain the Union in some form.

On December 8, 1991, Russia, Belarus, and Ukraine agreed to form the Commonwealth of Independent States, a loose confederation of almost all of the former soviet republics. The CIS made the Soviet Union obsolete, and on December 25, 1991, Gorbachev resigned his position and dissolved the USSR.

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unions

IN THE 19TH CENTURY, labor unions formed in western Europe and the UNITED STATES in capitalistic markets to protect each individual's right to work for wages in exchange for his or her time and effort. Rather than bargain individually with those who owned the means of production—giving employees little power to negotiate—workers realized that they could gain from organizing into a collective force.

Throughout history, the relationship between laborers and owners has generally been troubled. In the midst of contention, neither side wants to give power to the opposition. When workers gained strength through organizing efforts, both employers and the state fought their attempts at reform. Confrontations between labor and management often turned violent. As a result, the history of unions is marked with brutality and bloodshed.

Economic, political, and social forces greatly influence labor unions and organization efforts. In the United States, for example, the world wars changed the nature of unionization efforts by bringing opposing sides together for a common cause. The federal government encouraged union membership in exchange for labor's support of the war efforts.

Early labor organization. As a result of war, the black plague, and famine, Europe suffered a century-long depression that began in the middle of the 14th century. Despite the harsh conditions—confronting a shortage in labor and weakened demand for merchandise—commercial institutions and labor moved closer to modern capitalism.

The shortage in labor caused manufacturing prices to rise. At the local level, artisan associations or guilds united skilled craftsmen, their apprentices, and other journeymen. Most manufacturing took place in small shops run by the artisan. Collectively, the guilds regulated output and wages, and enforced strict rules about hiring workers.

Many manufacturers reacted to the rules by moving their shops out of the cities and into the countryside where such rules were not enforced. They began hiring semi-skilled and unskilled laborers who were outside the apprentice system. These workers faced a lifetime of employment and had little chance to own their own shop or move into the artisan class. In England, the wool industry grew when industrialists built mills in rural areas and encouraged peasants to spin and weave in their homes.

After the world emerged from its long period of economic woes, industry and agriculture rebounded due to a rise in population and new technological innovations. During the reign of Elizabeth I (1558–1603), England expanded its budding textile industry, as well as shipbuilding and coal mining.

To further facilitate industrial growth, the government attempted to mobilize labor. The Statute of Artificers of 1563 ordered all able-bodied men (except scholars, gentlemen, and landowners) to learn a trade or work in agriculture. The law set apprenticeships at seven years and decreed the justices of the peace set the maximum pay rate in any given district. An employer who paid workers in excess of the rate faced punishment. The statute remained in place through the early 19th century.

Rise of modern manufacturing. As economic expansion took hold across Europe, its great mass of workers and peasants did not gain in proportion. Wage increases were not consistent with prices, which hindered purchasing power and, as a result, the standard of living dropped. In addition, technological innovation (particularly in agriculture) did not keep pace with the growing populations, which kept most European workers at the poverty line. Manufacturing in industries such as textiles and metal advanced, but workers were not the recipients of great rewards as a result.

In England, Richard Arkwright invented the first practical cotton-spinning machine, and in many respects, was the first modern manufacturer. The size of Arkwright's spinning machine required waterpower, so in 1771 he set up a large five-story factory in the tiny hamlet of Cromford. Many scholars consider this the start of the INDUSTRIAL REVOLUTION.

Arkwright had several challenges to overcome right away, primarily the lack of workers in small towns. The inventor build cottages near the factory as an enticement to workers from across Derbyshire. He advertised for weavers with large families. The houses had a weaving shed on the top floor, where the male weavers wove cotton. The women and children worked in the mill.

Like later mass production innovators, Arkwright simplified the spinning process to the point that unskilled laborers could operate the machinery. Employees at the factory worked 13-hour days from six in the morning to seven at night. Scholars have estimated that children numbered as many as two-thirds of Arkwright's 1,900 workers. Arkwright, like other factory owners, did not employ people over 40 years old.

Arkwright's primary management development was orchestrating the fixed shift system, which put laborers to work in an organized manner. However, Arkwright was also a benevolent leader. He founded a school for the children of his staff, built churches and chapels and gave workers Sundays off and helped the local community with construction projects. Arkwright supported farmers, who in turn provided fresh vegetables. He even loaned money for farmers wishing to purchase livestock.

Later, Arkwright established mills in Derbyshire, Yorkshire, Worcestershire, and Manchester. Then, he opened a mill in Scotland after a visit there revealed the abundance of waterpower. Between 1751 and 1861, Britain's total cotton export increased more than 1,000 percent, due in great part to the industry Arkwright built. By 1782, Arkwright employed more than 5,000 people in his mills.

As European economies shifted from agriculture to industry, the cities became the focal point of new social classes, with ideas and attitudes different from previous generations. At the beginning of the 19th century, workers developed a newfound class consciousness. They began asserting themselves to gain a more equitable distribution of income. By the middle of the century, workers rioted and staged strikes. When they organized into trade unions, they faced fierce resistance from their employers and governments.

Birth of unions. The working class found its first spokesman in Robert Owen (1771–1858), a former cotton mill manager and owner. Owen attempted to convince European aristocrats that providing high wages and decent living and working conditions would result in higher profits. Several unions formed after the repeal of the Combination Acts in 1824 and Owen organized them into one large union in 1834, dubbed the Grand National Consolidated Trades Union, with half-a-million members.

The new union planned a general strike to secure an eight-hour workday, but the organization suffered from internal dissension. Owen and his followers initiated a series of aggressive strikes, but rather than gain wider support, the moves instead brought the government's antipathy. In March 1834, six Dorchester laborers were sentenced to seven-years' exile in the Australian penal colony for organizing a branch of the union. Seven months later the Grand National disbanded.

Two years later, in 1836, workers turned to political means to achieve their aims. The London Working Men's Association sought parliamentary reform. In 1837, the Birmingham Political Union formed. Together the two and other groups (called Chartists) petitioned Parliament with the People's Charter, calling for various reforms, including universal male suffrage, and the secret ballot. Parliament defeated motions for the Charter in 1839 and 1842.

Riots and strikes broke out after each defeat. The government responded with repression. In 1840, after a riot in Wales where 20 activists were killed by constables, 500 Chartist leaders were jailed and several were given life imprisonment. The organization crumbled in the face of such stern measures.

Labor took less aggressive steps to exert influence after the government proved it would not accept confrontational acts. In 1845, the National Association of the United Traders for the Protection of Labor formed to mediate in disputes between workers and management. The group downplayed strikes in favor of arbitration and conciliation. In the following decades, other groups in Britain formed non-threatening cooperatives to pool resources, but without inciting those who controlled the political and social order. Groups such as the Amalgamated Society of Engineers were part of the New Model union movement, organizing skilled workers by profession. They worked to improve wages and working conditions for their own members, but did not engage in politics and rarely struck.

By the latter stages of the 19th century, many Western nations had increased industrialization efforts and challenged Britain's domination. FRANCE, GERMANY, BELGIUM, and the United States used technological innovation and natural resources to fuel their growth. Political repression, however, kept workers unorganized.

Labor efforts on the European continent were mixed. In France, unions made slow progress, primarily due to their close link to socialism. Southern European and Latin American groups were influenced by the French model and remained individualistic and fragmented. German labor unions were more cohesive and centralized than those in France. Switzerland and Austro-Hungary were like the Germans, though ethnic and political squabbles kept them from becoming true national movements. In Russia and Eastern Europe, trade unions were illegal.

In the United States, most early trade efforts took place among skilled workers. However, unskilled and semi-skilled laborers soon organized. In 1827, the Mechanics' Union of Trade Associations in Philadelphia became the first union in America to permit members from various trades. Like European employers, their American counterparts fought labor union's attempts by firing and blacklisting organizers. Unionization efforts grew until a depression in the 1830s and 1840s that undercut the movement.

In the 1850s, unions gained new life in the United States. Industrialization required great numbers of immigrant workers who streamed into the country. Skilled workers intensified their efforts. After the AMERICAN CIVIL WAR, the first truly national labor union formed, the National Labor Union (NLU), focusing on the eight-hour day and the right to organize. The NLU folded in the early 1870s, but was replaced by a new national organization, the Knights of Labor (KOL).

KOL membership peaked at 730,000 in 1886, but dropped by two-thirds over the next four years as employers and the police fought union growth and violently broke strikes. They linked organizing efforts with SOCIALISM and used the resulting "red scare" as a reason to persecute labor organizers.

Labor power ebbs and flows. In the 1890s and the early 20th century, labor rebounded and gained a solid foothold in Western nations. In Europe, union groups allied with political parties to achieve their goals. In Germany, unions were linked to the Social Democratic Party. Various labor groups in England formed the foundation of the Labor Party.

After the decline of the KOL, Samuel Gompers organized the American Federation of Labor (AFL) in 1886, supporting the aims of skilled workers. Rather than resort to aggressive tactics, AFL unions attempted to work with employers, primarily to avert the repressive tactics that had marked earlier unionization efforts. The AFL did urge union members to strike when necessary and 7,500 took place between 1890–94.

The use of new technology by big businesses focused on making the workplace more efficient, which also disrupted the lives of workers. Glass, chemicals, steel, and coal workers were forced to change processes to maximize production, regardless of how the pace affected workers. The influx of immigrant labor ensured that those who could not keep up would be replaced. Between 1897 and 1903, AFL membership jumped from 400,000 to nearly 3 million.

While the AFL mainly advocated negotiation over action, other unions affiliated with the organization were more antagonistic. The United Mine Workers of America (UMWA) used its power to win a national agreement for coal production in 1898. Other union successes, however, created anti-labor sentiment among the nation's employers. Manufacturers countered with an open-shop movement that thwarted union growth.

Many activists were frustrated by the AFL's direction and lack of action. Rather than work to change the AFL from within, they formed their own unions. In 1905 a group of 200 radical labor leaders met in Chicago, forming the Industrial Workers of the World (IWW), nicknamed the "Wobblies." Moving away from the craftsman tradition of the AFL, the IWW advocated empowering all workers, particularly the unskilled laborers excluded from the AFL. Believing that the nation's most exploited and poorest workers deserved a voice, the Wobblies called for "One Big Union" that would challenge the capitalist system, first in the United States, then later worldwide.

The Wobblies rise is best viewed as a product of the watershed events taking place in the United States in the early 20th century. The millions of immigrants moving into the nation transformed business, but also made poverty a way of life for many workers. The IWW hoped that the overthrow of capitalism would make life better for the working poor. Gompers and other AFL leaders immediately feared and despised the IWW. The Wobblies rocked the status quo and wanted immediate change, unlike the AFL's advocacy of gradual improvement. However, the Wobbly message appealed to miners, timber workers, and migratory agriculture workers, who had no place in Gompers' structure.

World War I derailed the plans of the IWW and gave the government an opportunity to link the radical union with America's overseas enemies. President Woodrow WILSON authorized a raid on IWW headquarters around the nation to capture Wobbly leaders. More than 200 were arrested on sedition and espionage charges. In 1918, 101 IWW activists went on trial and all were found guilty, with 15 sentenced to 20 years in prison.

During the WORLD WAR I era, governments rewarded unions that supported the war efforts. Wilson endorsed AFL unionization and collective bargaining in exchange for labor's aid in the conflict. With government support, the AFL organized workers in shipbuilding, steel, and meatpacking, while doubling membership between 1915 and 1919. In Britain, labor shortages during the war gave unions an unprecedented opportunity to negotiate. British unions grew to 8 million members by 1920, nearly half the non-farming workforce. In Germany and SWEDEN, union membership tripled, while it doubled in CANADA, the NETHERLANDS, and NORWAY.

After World War I, declining wages and horrible working conditions incensed European workers. They reacted to slow reform efforts by staging strikes at an alarming rate. In France, 2.5 million workers went on strike in 1919–20, while in Germany the number topped 13 million. These figures were 10–20 times the pre-war rate.

The gains were short-lived, however, as governments and industry combined to stop unionization. A postwar economic slump and high unemployment rates enabled businesses to purge labor activists and cajole unions into a less aggressive stance. In the United States, unions were driven from the major industries, including steel, automobiles, and consumer electronics. Between 1920–24, union membership decreased by 33 percent, while employers and the state combined efforts to weaken labor.

The Great DEPRESSION debilitated business worldwide, but re-energized labor. A series of strikes erupted in France in 1936, gradually moving across the nation. At the Renault factory, 35,000 workers walked out after management sped up the assembly lines in an attempt to increase efficiency. The workers occupied the factory and barricaded against police action. The Renault strike led to a series of social reform laws, giving workers a 40-hour workweek and holidays with pay. In 1937, union membership numbered 4.5 million.

In the United States, labor leaders viewed Franklin D. ROOSEVELT's victory in the 1932 presidential election as a positive sign. When the National Industrial Recovery Act (NIRA) passed, a wave of unionizing took place in the mass production industries. Although unions still faced stiff corporate opposition, the president signed the Wagner Act in 1935, which ensured union recognition. As a result, mining leader John L. Lewis formed the Committee for Industrial Organization (CIO). The CIO welcomed unskilled workers. Lewis and his allies took on both GENERAL MOTORS and U.S. STEEL by staging sit-down strikes at GM plants in Flint, Michigan, while secretly negotiating with the steel giant.

The CIO rivaled the AFL and both grew after war broke out in Europe, marking the beginning of WORLD WAR II. During the war, American unions worked with the federal government in a kind of wartime détente. Roosevelt created a National War Labor Board (NWLB), which regulated relations between workers and industry. As more men went off to fight, women and African-Americans took their places on assembly lines and in factories, which opened union ranks to these groups.

Success and failure in the postwar world. After World War II, unions in the United States staged the biggest strikes in American history. Maintaining the status quo established during the war, employers and the unions negotiated, rather than turning to violent confrontations. Collective bargaining gave workers higher wages and additional benefits, but ceded their power to management.

Technological innovations in manufacturing and competition from overseas combined to hurt organizing efforts, even though America's economy boomed after World War II. Even the merger of the AFL and CIO in 1955 could not stop the decline of labor's influence. Unions in America had given up too much power during the global conflict and the move toward collective bargaining removed the only real tool the unions had to force action.

European union ranks swelled during and after the war, which coincided with a general political shift to the left. In the UNITED KINGDOM, the Labor Party swept to power in 1945. It nationalized the railroads, mining, and the Bank of England and established a national HEALTH care service. Similar programs sprouted up across Europe, including France.

Although union membership dropped in many European nations with the onset of the Cold War, union presence was still stronger than it had been prior to World War II. In nations where manufacturers regained equal footing, there were violent episodes as the two sides clashed. In other nations, such as Germany and AUSTRIA, where communists had influence, unions combined forces with the federal government. These relationships enabled labor leaders to gain favorable contracts for their rank and file.

The Vietnam era of the 1960s and early 1970s had different effects in Europe and the United States. The European unions showed significant gains during the time of social unrest. As a result, membership briefly jumped to over 50 percent of the labor force in both Italy and the United Kingdom. In the United States, the VIETNAM WAR deeply divided labor. The AFL-CIO supported the war, while popular leaders, such as United Autoworkers' Walter Reuther challenged that backing. The generational rift caused dissension.

The move away from industrialization in the 1970s, 1980s, and 1990s accelerated labor's decline in the United States. A series of strike losses in the 1980s and the dominance of the Republican Party in government created a negative impression of unions among many people. By the mid-1990s, union membership slipped to less than 15 percent of the non-agricultural workforce. On a positive note, however, unions have played a greater role in the service and public sectors. Teachers, police officers, and government workers have benefited from strong unions. An added gain is that women comprise about 40 percent of this membership.

Although the American labor movement has shown promise in the late 1990s and early 2000s, no nation has seen its union efforts falter like the United States. In comparison, unions in Europe and Canada still thrive, although admittedly slightly smaller than several decades ago.

The difficult relationship between labor, the state, and employers is at the heart of attempts to organize workers. Governments and businesses have traditionally been unwilling to recognize the need for unions. Furthermore, they have successfully tainted the image of unions by linking them with undemocratic and anti-capitalistic organizations and philosophies. In this centuries-old battle, unions simply cannot withstand the combined force and have had their influence chipped away.

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United Kingdom

AS THE "FIRST INDUSTRIAL NATION," the United Kingdom (UK) was until comparatively recently considered a model for emulation by developing countries. Since the 1960s, as the hapless victim of the "British disease" whose principal symptoms included low productivity, "stop-go" macroeconomic policy, and trade union militancy, it has more often been seen as an example of what to avoid.

Each of these characterizations is lacking in perspective. Happenstance rather than design played a large part in giving Britain a 50-year head start in developing a modern industrial economy; and the difficulties experienced by the United Kingdom since 1945 have been shared, to a greater or lesser degree, by many others. Rather than viewing Britain's record as unique, therefore, it should be regarded as in many ways typical of a medium-sized, Western country, albeit one that through historical accident came to occupy an especially prominent position.

After WORLD WAR II, as newly independent Third World countries confronted the challenge of developing modern economies, a great deal of effort was made to identify the conditions that had enabled Great Britain to industrialize two centuries earlier. Some commentators argued that 18th-century Britain contained a larger pool of un-invested CAPITAL than any other European country. Others pointed to social structure, noting that an unusually high proportion of the UK population, approximately a third, lived in urban centers and thus provided a large reservoir of unattached non-agricultural LABOR. Other historians again highlighted the political environment, noting that the UK government interfered less in entrepreneurial activity, and created a more favorable climate for trade than was the case elsewhere. Some academics even suggested that religion was the key factor, and that the nonconformist Protestants who made up a disproportionately large number of Britain's first generation of industrialists were inspired by their belief in individualism and hard work.

Britain's growth into industrialization. More recently, however, historians have been less preoccupied by the factors that made for Britain's launch into industrial growth, and more conscious of the incremental and often accidental character of that growth. It is now accepted that the technological advances described in numerous self-congratulatory accounts of Britain's industrial development played a relatively small part, if only because so few examples of the new machinery found their way into the manufacturing economy. On the other hand, the roots of the most important industries are acknowledged to extend much further back in time than conventional accounts once indicated. By the middle of the 17th century, coal mining was already so established that London suffered from the worst air pollution in Europe, while the use of railways (albeit horse-drawn rather than steam-driven) in manufacturing is of even earlier vintage.

The INDUSTRIAL REVOLUTION was thus an exceedingly gradual affair: between 1750 and 1850, the average annual rate of GROSS NATIONAL PRODUCT (GNP) growth in Britain was less than 2 percent. Moreover, neither the pace nor the distribution of industrial change was by any means uniform. In certain textile trades, most notably cotton, the adoption of new technology was fairly rapid. But many others, like the wool industry, lagged behind; and overall, the introduction of mechanization proceeded very unevenly. It has been estimated that as late as 1830 more than 50 percent of the industrial labor force did not work in factories, and by that date no single industry—not even cotton—had been fully mechanized.

Even during its 19th-century heyday, therefore, the picture of British industrialization was a most uneven one, with highly developed islands such as Lancashire, London, and South Wales found in areas untouched by modern technology, and in which traditional rural patterns continued well into the 20th century.

There is, however, no question that the rise of industrial society proceeded more rapidly and thoroughly

The Houses of Parliament in London have presided over centuries of economic growth in the United Kingdom.

in Britain than anywhere else in Europe. Although a heated debate continues to rage over whether industrialization improved or worsened the condition of the new urban proletariat—a controversy that in large measure is overshadowed by its protagonists' views concerning the capitalist system—the social impact of industrialization was clearly visible by the middle of the 19th century. The factory system with its unique workplace rhythms and practices had become firmly established throughout the country, a development that was accelerated by the widespread use of child labor.

Industrial social patterns. The flow of displaced agricultural workers into the burgeoning factory towns likewise brought about a revolution in traditional patterns of life. The social problems associated with early industrialization (hazardous workplaces, low wages, insecure employment, familial disruption, and above all overcrowded and unsanitary housing) are too well known to require extensive rehearsal; nevertheless, a few statistics suffice to convey much of the grim reality. In Manchester in 1842, for example, the average age of death for members of the mechanical and laboring class was a mere 17 years; while in Liverpool 20 years later the population density had reached the appalling figure of 66,000 per square mile. Nevertheless, if the growth of the British metropolitan infrastructure was outpaced—and sometimes overwhelmed—by the influx of new workers, industrialization did at least give Britain its modern character as the most urbanized large country in the world.

By 1851, the year of the Great Exhibition in London, a majority of the British population had come to live in urban environments, a stage not reached by GERMANY until 1891 and by FRANCE not until 1931. The Great Exhibition is conventionally regarded as marking the zenith of the United Kingdom's Industrial Revolution and commercial dominance over the rest of the world. Thenceforward, the country's share of global production started a steady decline that, after more than a century, had still not been arrested. This does not, in itself, mean that as early as the 1850s the British economy had begun to lose the race against its competitors. Its pre-eminence in the mid-19th century had in large measure been accidental, the result of an industrial head start of 50 years. It was inevitable, and indeed from the United Kingdom's own perspective desirable, that as other countries began to develop their own industrial sectors, Britain's hegemony should diminish in proportion. Nor did the British economy cease to grow at a healthy pace: Between 1850–70, for example, the value of exports from the United Kingdom nearly quadrupled.

Industrial under-performance. Nonetheless, there is no doubt that in the second half of the 19th century, British industrialists and manufacturers did begin to lose an excessive amount of ground to their counterparts, especially in the UNITED STATES and Germany. The reasons for this underperformance have been the subject of much debate. It is argued, most notably by Martin Wiener, that successful British businessmen were more likely than others to try to raise their social status by buying land and dissociating themselves from their plebeian trade roots. There are, however, more tangible explanations.

The disadvantage of being the first country to industrialize is that plant and machinery are also the first to become obsolete. British entrepreneurs were often slow to invest in more modern equipment, and spending on RESEARCH AND DEVELOPMENT was also low in comparison to levels in other industrial countries. Technical and managerial education were badly neglected in British schools and universities; the dominant craft tradition in manufacturing meant that most skilled workers learned their trades through lengthy apprenticeships, and thus had a vested interest in resisting new methods that might render their skills obsolete. A disproportionately high percentage of British capital was exported overseas, rather than being invested in new processes at home. British companies were also too small (only a fifth were publicly quoted in 1914) making it impossible to take full advantage of economies of scale. The cumulative result of these factors was that by the end of the 19th century, British industries that had once led the way were seriously lagging behind their foreign counterparts.

British steel output was surpassed by that of the United States in 1886 and Germany in 1893, and fell to a mere 10 percent of world production by WORLD WAR I. More ominously, the new, high-value-added technologies coming to the fore at this time—electrical goods, petrochemicals, internal combustion engines—whose advent has sometimes been described as signifying a second Industrial Revolution, failed to gain a foothold in the United Kingdom on anything like the same scale as in other major industrial nations, leaving a manufacturing sector that was already facing a growing productivity crisis over-dependent on trades that yielded low and declining rates of profit.

At the beginning of the 20th century, Britain's growing competitive disadvantage—the effects of which, to be sure, were more than compensated for by very large invisible earnings from financial services, shipping, and overseas investments—gave rise to a spirited debate on the wisdom of persisting with the country's long-established free-trade policy. Germany, France and the United States all maintained high tariff barriers against British exports; and even within the British Empire, as it industrialized, began discriminating against goods from the mother country. The advocates of protectionism, however, failed to make a compelling case on either economic or political grounds, and the United Kingdom entered WORLD WAR I as the world's last, and most faithful, devotee of 19th-century liberal orthodoxy.

The world wars. The significance of the war for Britain lay less in its unprecedented cost than in the fact that it greatly accelerated pre-existing economic trends. This is not to understate the financial stresses imposed by the world's first total war, which were on a scale neither previously seen nor imagined. Five years before the conflict began, a constitutional crisis had erupted over a proposal to raise an additional £15 million in new taxation. By 1917, the United Kingdom was spending a like sum on the war every two days. The lasting consequences of wartime mobilization, however, were only perceived after the Armistice.

Trade union membership doubled between 1914–18; thenceforward, the power of organized labor could not be overlooked in any aspect of economic and political life. The penetration of women into the paid workforce and the rise of a "pink-collar" sector, already visible by the end of the 19th century, likewise became an irreversible tide. Most important of all, perhaps, the extension of state control into every area of economic life marked a definite and permanent breach with the prewar tradition of LAISSEZ-FAIRE.

The very failure of attempts in the 1920s to restore normality by abolishing wartime controls, reverting to a currency based on gold, and resuming free trade served as confirmation that a historical watershed had been reached. In the 1930s, as a new war loomed, the United Kingdom had already adopted a system of imperial preference, abandoned fixed exchange rates, and was operating a species of primitive Keynesianism in the form of public works and rearmament projects.

If WORLD WAR I made the interventionist state indispensable, WORLD WAR II made it respectable. Despite the loss of an additional quarter of the national wealth that effectively drove the United Kingdom into nominal bankruptcy, the success of the wartime government in ensuring "fair shares" through rationing and controls over the whole of the country's economic resources was taken by its postwar successors as a sign that effective management of supply and demand had become both a political and a moral imperative. Such perceptions provided the basis for nationalization of the "commanding heights" of the economy by the Labor Party government of 1945–51. This was a somewhat ironic outcome, as hardly any businesses had been taken into public ownership during the war itself, and considering the pursuit of an undeclared quasi-corporatist strategy by successive Conservative and Labor administrations from the 1950s until the mid-1970s.

Stop-go cycles and the European community. Unhappily, increasing ambition was not always matched by increasing competence in manipulating the levers of macroeconomic policy. In the third quarter of the 20th century, a pronounced stop-go cycle, the alternation of deflationary and reflationary measures, adopted in response to rising balance of payments deficits on the one hand and rising unemployment on the other, became the most conspicuous feature of the UK economy. The impact of this oscillation, coupled with unaddressed structural deficiencies in British manufacturing, was most apparent in comparison with the record of other major European countries during the same period. Between 1951–73, the United Kingdom experienced an average annual growth rate of 2.3 percent, less than half that of its major continental competitors. Nevertheless, Britain's good fortune in escaping the devastation suffered by much of western Europe during the war meant that growth, even on so modest a scale, was sufficient to produce a degree of prosperity, a period in which Prime Minister Harold Macmillan famously observed the majority of Britons had "never had it so good." Unfortunately, it was also to produce a national complacency about the United Kingdom's economic performance that was ultimately to cost the country dearly.

After World War II, the United Kingdom consciously, and, as most outside observers now concur, shortsightedly, cold-shouldered the steps being taken by other European countries toward greater economic and political integration. This stance owed less to a sober assessment of the costs and benefits of European unity than to the powerful reinforcement given to British particularist tendencies by the experience of the war. The United Kingdom thus brusquely rejected invitations to participate in the European Coal and Steel Community, and sent only a mid-level civil servant with the status of observer to the Messina Conference that drew up plans for the European Economic Community (EEC), the forerunner to the EUROPEAN UNION (EU).

Instead, Labor and Conservative governments alike clung to the notion of the British Commonwealth as a "natural" trading community in which a symbiotic relationship existed between the industrial metropole and the primary-producing hinterland. Such a stance, however, proved unsustainable over the long term. Not only did it rest, as contemporary observers such as R.W.G. Mackay pointed out, on an outdated mercantilist philosophy, but it proceeded on the optimistic assumption that the Commonwealth countries would altruistically forgo the benefits of industrialization to provide a permanent captive market for British manufactured goods. The United Kingdom's attempt to create a rival to the EEC, in the form of a European Free Trade Area encompassing a haphazard collection of Scandinavian and Alpine countries, similarly represented the triumph of national self-regard over economic self-interest, and failed either to compete with or substitute for the Common Market. Bowing to the inevitable, Britain applied for EEC membership in 1961, only to be vetoed by a suspicious Charles DE GAULLE. Not until 1973 did the United Kingdom finally secure entry, on significantly worse terms than would have been available to the country 16 years earlier.

Even accession to the EEC, however, made little impact on the combination of underinvestment, managerial inefficiency, low productivity, persistent balance of payment crises and poisonous industrial relations that was known by the unflattering shorthand term "the British disease." By 1975, inflation was running at 24 percent and the British government was forced to take the humiliating step the following year of applying to the INTERNATIONAL MONETARY FUND (IMF) for a loan to stabilize the currency. Not all the United Kingdom's troubles at this time were of its own making—the OIL crisis of 1973 had a particularly unfortunate effect, arising as it did before Britain's own substantial North Sea oil deposits had begun to come on stream—but the second half of the 1970s saw all the structural problems of the British economy come home to roost. Several underperforming companies were taken into public ownership solely to prevent the rise in unemployment that would have followed their collapse; sterling fluctuated uncontrollably; and the government's unrealistic attempt to fix a nationwide wage norm resulted in a Winter of Discontent in 1978–79, in which workers in transport, the public services and, famously, the Liverpool gravediggers went on strike.

In March 1979, the Labor administration of James Callaghan became the first sitting government since 1924 to be voted out of office. In retrospect, Britain's economic record under Callaghan appears in a more favorable light than it seemed to contemporary observers. A balance of payments surplus was achieved in 1978; inflation had fallen to 7 percent in the same year; and pressure on the currency, aided by earnings from North Sea oil, had eased to such an extent that it proved unnecessary to take up the whole of the IMF loan. With memories of the Winter of Discontent fresh in people's minds, however, little notice was taken of these positive indications. The perception of an economy in permanent crisis was what mattered.

Like the lone guard at the Tower of London, the UK economy often stands apart from the European community.

The coming of Thatcherism. In the general election of May, 1979, the Conservative administration, now led by Margaret THATCHER, was returned to office, having promised to restore British prosperity by reining back public spending, shifting from direct to indirect taxation, and, in general, applying market-based rather than Keynesian solutions to the nation's problems.

The Thatcher government's macroeconomic policy was based on the monetarist prescriptions of the Chicago economist Milton FRIEDMAN, although even the economist was subsequently to deny that he had ever advocated so doctrinaire an application of his principles. The results of this all-out monetarist attack on inflation were far from what had been expected. Despite the most determined efforts, the broad-money indicator (M3) selected by the government as its target continued to grow. So too did inflation, which nearly doubled during the first 12 months of the Thatcher administration. Intensified attempts to meet monetarist targets in 1980 and 1981 by raising interest rates had a disastrous impact upon the manufacturing sector, coupled as they were with an overvalued pound and a worldwide RECESSION. By the end of 1981, more than 20 percent of British manufacturing firms had gone out of business; economic growth moved into the negative column; and the number of unemployed rose to three million—a level not seen since the Great Depression of the 1930s. Despite a variety of efforts to massage this disturbing figure downward by changing the formula by which the number of jobless was calculated, unemployment remained at approximately the same level for another five years.

The "sado-monetarist" experiment of the early 1980s was neither disavowed nor repeated. Instead, in its second and third terms of office the Thatcher government quietly abandoned its monetary targets and set about an unannounced reflation of the economy. In the best tradition of stop-go economics, credit controls were released, interest rates lowered, and public spending increased. The budgetary and balance of payments deficits that ordinarily might evolve from such a policy were held in check by North Sea oil earnings, and by windfall receipts from the sale, at deeply discounted prices, of public utilities.

Wage inflation eased, though not eliminated, by lowered expectations on the part of workers, the result in part of stringent trade union legislation but much more importantly the existence of mass unemployment. Despite this, there was clear evidence in the latter part of the 1980s that the economy was beginning to overheat. These indications were ignored; and in the budgets of 1987 and 1988 large tax cuts injected additional purchasing power into an economy that was already in the midst of a credit-led consumer boom. The results were predictable. Inflation rose again to double digits; the jobless figures, which had abated to about half their previous level, once again approached the three million barrier; and interest rates were increased twelve consecutive times, reaching 15 percent by October 1989.

The record of Thatcher's stewardship of the economy, therefore, failed to lend credence to her oft-quoted boast to have "put the 'Great' back into Britain." Fortunately for her historical reputation, neither did that of her immediate successor. The administration of Thatcher's chosen heir, John Major, never recovered from the United Kingdom's forced withdrawal, in September, 1992, from the Exchange Rate Mechanism (ERM) of the European Monetary System, after almost exhausting the country's foreign currency reserves in a hopeless attempt to shore up the pound. If the ERM fiasco was to some extent inherited from its predecessor, most of the Major government's other wounds were self-inflicted. A badly bungled PRIVATIZATION of the railways, persistent intra-party in-fighting over relations with the EU, and a series of corruption scandals earned Major and his ministers an unshakable, though not entirely justified, reputation for incompetence, and made their electoral defeat a virtual certainty.

Britain's third way. In 1997, the United Kingdom elected a Labor administration led by Tony Blair. Preaching a Third Way between capitalism and socialism, Labor has, in practice, forsworn ideology and taken a cautious, pragmatic approach—albeit one marked by a distinct preference for free market principles—in its management of the British economy. It has been the beneficiary of a de facto devaluation of the currency following the defection from the ERM, which has improved the outlook for exports; a steady decline in unemployment, which by December 2002, had fallen to 885,000; and a low-inflation environment. It has also successfully evaded the issue of whether or not to participate in the European single currency, mindful of both the scars left by the ERM episode and the deep divisions existing within British society over European issues generally. In consequence, the United Kingdom currently finds itself in the unaccustomed position of being regarded as one of the most successful economies of the contemporary world, and the "British disease" is considered, whether by good luck or good judgment, to have been cured.

Such a verdict may be premature. While the United Kingdom's condition certainly appears healthier than in the past, persistent systemic problems remain. Many of the new jobs created since the early 1990s are part-time, short-term, and poorly paid, leading to suggestions that Britain is resigning itself to becoming the principal low-wage economy of western Europe. The education system continues to leave many—especially males, whose unemployment rate is three times that of females—inadequately prepared for work, raising concerns that a permanent urban underclass is in the process of being created. Manufacturing has barely recovered from the trauma of the 1979–81 shock, and as in the past suffers from underinvestment and low productivity.

And the question of membership of the EURO zone will sooner or later have to be faced, especially as diminishing revenues from North Sea oil removes an important crutch from the British economy. It is likely, therefore, that the growing pressures of globalization will compel the United Kingdom and its leaders to confront in the 21st century many of the hard choices that they were able to defer in the 20th.

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United Parcel Service (UPS)

UPS MARKS ITS 100-YEAR anniversary in 2007. Founded in Seattle, by 19-year-old Jim Casey, UPS has grown to become one of the global leaders in transportation. What started as a bicycle messenger service (originally named the American Messenger Company) with Casey's initial investment of $100, has grown into a company handling over 13 million shipments per day, and using an extensive fleet of aircraft and ground transportation vehicles.

UPS acquired its first car in 1913, enabling it to remain competitive as technology advanced. With the advent of automobiles and the telephone, the demand for messenger services declined. However, the United States Parcel Post system did not yet exist and as such, demand remained high for transferring packages. By 1920, UPS had adopted its present name and had expanded beyond Seattle into California, and then to the East Coast by the early 1930s. Much of UPS's success stems from Casey's early focus on competitive rates and high-quality service.

As the economy changed after WORLD WAR II, UPS moved into the common carrier business, delivering packages between both private and commercial customers. It encountered legal battles since it was in direct competition with the United States Postal Service, a violation of regulations of the Interstate Commerce Commission (ICC) regulations. UPS restarted air service in 1953, which it had briefly originated in 1923, and 25 years later the air service was available in every state in the United States. In 1975, the ICC finally granted UPS permission to serve all 48 contiguous states, utilizing cargo space on existing airlines to carry its packages.

With the onset of airline deregulation in the 1980s, UPS began to acquire its own aircraft fleet enabling expansion to next-day air service by 1985 within the United States as well as to six countries in Europe. The FAA granted UPS the authorization to fly its own planes in 1988, making UPS its own airline. UPS became the fastest growing airline and has become one of the largest 10 airlines in the United States.

The 1990s and early 2000s have seen the embrace of technology and innovation at UPS. With a rapidly changing global economy, UPS has become a leader in supply-chain management as well as logistics and distribution. As such, the UPS Logistics Group was formed in 1995, and the company introduced UPS Capital in 1998, a financial products company.

The success of UPS over the century led the company to its initial public offering on the NEW YORK STOCK EXCHANGE on November 10, 1999. UPS now holds nine companies, including Mail Boxes, Etc. From 1995 through 2001, UPS has seen total revenue increase from $21 to $30 billion, with operating profit increasing from $1.7 to $3.9 billion. In addition, basic earnings per share increased from $0.93 to $2.13.

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United States

AT THE DAWN OF THE 21st century, the United States of America had the most powerful economy and military in the world, and was the world's only real superpower. This wealth and power was grounded in extraordinary cultural and geographic diversity and a tradition of democracy and free speech. Democratic decision-making and the freedom to think and speak ideas that ran counter to the norm created a context for new innovation. The path to this state was not an easy one.

The United States was born of a violent revolution against colonial rule in 1776. It was not, however, a revolution by indigenous peoples against a conquering colonial power. Instead, the AMERICAN REVOLUTION was carried out by British subjects, the settlers of the colonies, against their nation of origin. The American colonists rebelled against the domination of their British government, which often adopted economic and political policies that ran against their interests. The new nation of the United States of America was formally recognized by the Treaty of Paris signed in 1783.

The Revolutionary War was a classic insurgency, succeeding only because of strong grassroots support from the colonial subject population. Farmers, artisans, merchants, and others joined in either direct action or indirect support of the revolutionaries. The extraordinary need for strategic planning and cooperation between colonial merchants, who supplied needed material for the war effort, and the revolutionary army helped to establish the foundation for postwar economic policies.

Many of the merchants who worked with the revolutionary army rose to prominence in the postwar economy of the new nation. Furthermore, led by the efforts of treasury secretary Alexander Hamilton, the government played an activist role in promoting a pro-growth business climate that favored these entrepreneurs. Hamilton was also a critical figure in developing the American strategy for industrialization.

An important precondition for economic growth in the new nation was to destroy the economic power of the loyalist aristocracy, wealthy landowners who had supported the continuation of British rule, and to redistribute resources to supporters of the new government. The post-revolutionary state governments, under the encouragement of the Continental Congress, confiscated the properties of loyalists and used revenues raised from the sale of such properties to supplement other sources of state funding. Some of the land confiscated from loyalists was redistributed to former soldiers returning from the war. This land redistribution, coupled with laws voiding obligations of farmers to pay feudal rents to the loyalist aristocracy, helped the expansion of family farming in the states. The expansion of family farming contributed to the growth of the domestic market in the United States, providing the basis for the growth in manufacturing.

Decentralized federalism. The postwar political leadership recognized the contradictions between building a nation founded on principles of democracy, and yet also grounded in the maintenance of slavery. In many ways, the early course of American politics was shaped by this contradiction. In particular, the country was epitomized by relatively decentralized governance. This decentralization provided a solution, albeit a temporary one, to the radically different governance requirements of the states dependent on free labor compared to those dependent upon slave labor. It provided systemic flexibility.

Decentralized federalism recognized that slavery, even if considered abhorrent by many citizens of the new nation, was a critically important source of value available for investment in the U.S. economy. There were, therefore, a number of compromises. Slavery was not abolished, but the slave trade was abolished by a number of states. The New England states, New York, and Pennsylvania committed themselves to the gradual abolition of slavery. The Southern states, dependent as they were on slave-based production, went in exactly the opposite direction, reinforcing laws that guaranteed the continuation of slavery and protected the rights of the slave masters over their human chattel. Only in an environment of political decentralization could such a sharp contradiction be maintained as long as it was in the United States.

This tension is reflected quite dramatically in agriculture. The early republic was largely agrarian. Most agricultural direct producers were either self-employed farmers or slaves. This presents a difficult environment for formulating national public policies. Policies supportive of free labor might interfere with the objectives of slave masters dependent on un-free labor. Thomas JEFFERSON tried to resolve this tension by advocating a decentralized federalism that would maximize the flexibility of each state to make its own laws. The Jeffersonian tradition is associated with an agrarian democracy of self-employed farmers, but ironically Jefferson's own agrarian experience was that of a slave master. Nevertheless, Jefferson's conception had a certain resonance in a society that had overturned a loyalist aristocracy with strong feudal traditions.

Capitalism took root in manufacturing, encouraged by the hand of government, in the form of tariff protections against foreign competition and a wide range of subsidies and special privileges. It was the textile manufacturers who saw the greatest early successes, fueled by relatively cheap slave-produced cotton. Another early success story was firearms manufacturing. The rapid expansion in firearms manufacturing was, to a significant extent, the product of governmental policy and procurement. It is not difficult to understand how the government of a new nation formed of a violent revolution would find it important to build armaments. Indeed, the government subsidized early manufacturers, partly by means of "bounties." Funds collected from foreign firms via high protective tariffs were gifted to domestic manufacturers of the same goods that had been taxed. This was part of an overall strategy of import substitution industrialization that would prove critical to the growth of capitalism in the new nation.

The basic tension between the Hamiltonian form of federalism and the decentralized federalism of Jefferson was resolved in favor of the latter with Jefferson's election. Jefferson's core constituency, the slave aristocracy of the South, deeply distrusted the federal government, which represented a potential rival to their own extraordinary power over life on their plantations, and influence over the politics of their state governments. Nonetheless, the basic tensions between the interventionist (Hamiltonian) approach and Jeffersonian LAISSEZ-FAIRE approach would come to epitomize political struggles throughout the history of the United States, extending well beyond the period of the AMERICAN CIVIL WAR when slavery ceased to be an important factor in the economy.

Self-employment and American culture. Throughout the antebellum period, agriculture remained the primary source of income for most Americans. Capitalist industrialism was a relatively less visible part of the American economic landscape, particularly outside of the largest cities. And even in the largest cities, such as New York

City, Philadelphia, Boston, and Baltimore self-employment and small scale merchants (mom-and-pop stores) remained prevalent over their larger-scale rivals for many years. In the Southern states, whose political economy was dominated by large-scale slave production, thousands of self-employed farmers and artisans and small-scale merchants played critical roles in the day-to-day economic life of most citizens. Thus, America was, in its early history, not so much a land of capitalism and slavery, but a land of the industrious, self-employed farmer and artisan. This became an important force in shaping the American character and much that has been mythologized about American culture.

The very expanse of American territory and the successful military campaign against the indigenous population served to promote self-employment, as thousands of American citizens took advantage of the frontier to migrate west, and to make their living as independent producers, either on the land, in their own workshops, or from small-scale shops. It was, therefore, difficult to develop a capitalist labor market when the potential pool of laborers could so easily pull up their roots, so to speak, and move elsewhere. The concept of the frontier, and of the freedom associated with the frontier, was another factor shaping the character of the American citizenry in complex ways.

The rapid growth of small businesses in the United States and the expansion of free enterprise to the frontier areas was supported by a highly decentralized banking system. Relatively small and autonomous state banks provided the financing for many family farms, as well as for the slave plantation system of the southern states. Bigger banks in the urban areas helped to finance industrialization but were relatively less powerful influences on economic activity in the hinterland, where most Americans lived and worked. Today the banking system in the United States remains among the most decentralized in the world.

While family farming remained relatively healthy throughout the United States in the antebellum period, expansion in slave-based production displaced many self-employed farmers from the most fertile land in the Southern states. This was more than compensated for, in the nation as a whole, by the rapid growth of family farming during the westward migration of Americans.

Export-led growth. The relatively rapid growth in population and the positive income effects of a decentralized economy were among the many factors driving development of the domestic market for agricultural and industrial goods. Another important factor in generating growth in income and domestic demand for goods and services was the export sector. Export-led growth created business opportunities and generated more revenues for existing businesses. Export-led growth was coupled with the import substitution industrialization strategy to generate rapid, even if uneven, growth in both manufacturing and agriculture during the antebellum period.

The slave plantations, in particular, focused on the production of exportable cash crops, such as cotton and tobacco. The invention and innovation of the Eli WHITNEY's cotton gin was a key technological catalyst for the growth in low-cost, slave-based cotton production that allowed U.S. planters to dramatically expand their markets, both domestic and foreign. Indeed, when one considers intra-regional export, in addition to export to foreign markets, it seems likely that most of the crops generated from the slave plantations were destined for markets outside of the region of origin. This generated sizable cash flow for the slave masters, but tended not to have quite as dramatic an impact on income growth in the region because of the sharp income inequality associated with slave-based production.

On the other hand, rapid growth in exports from family farms, whether international exports or production for the growing urban areas, generated income growth that was more egalitarian and had a more dramatic immediate impact in creating domestic demand for manufactured consumer goods.

The frontier, the railroads, and uneven regional development. The United States expanded territorially by force of arms. The indigenous populations were pushed off their lands by a combination of military force and settler violence. The expansion of the RAILROADS was an important technological component in this territorial conquest. And U.S. territory was further expanded by military aggression against MEXICO, which added California and the southwestern states to the new country.

Cattle ranchers, miners, self-employed farmers, and others moved with the railroad further and further west. As the railroads and telegraph were expanded, ports improved, and other infrastructure projects completed, it became possible to consolidate control over conquered territory and/or pursue the next stage of the expansion. The frontier mentality became an important aspect of American culture.

The expansion of the railroads was partly a consequence of the more activist (Hamiltonian) government policies of the period following the 1839–43 DEPRESSION. Among the activist measures taken was the 1850 passage of the Land Grant Act. The Act provided a grant of LAND to any corporation that agreed to lay track in the westward extension of the U.S. railroad system. The government gave away nearly four million acres of land to private corporations during this period, achieving the expected result. The railroad system was dramatically expanded which helped to create a more cohesive domestic market, to open up new territory in the west for migration, agriculture, and animal husbandry, and allowing for the sale of goods produced in the factories of the east.

The government further guaranteed the success of the new railroads by contracting with them to carry federal cargo, including mail deliveries and gold shipments. This guaranteed market for freight helped to lower the risk of investing in the railroads, making it easier to raise capital, and pushing projects into development that might otherwise have languished.

The expansion of the nation's transportation backbone provided the basis for a dramatic upward surge in agricultural production and income, as family farms were able to find markets for their output, often markets that were quite a distance from the family farm. The increased agricultural incomes were critical to expanding the domestic market in the United States, which created demand for industrial goods. The increased demand for the output from factories, and the increased quantity and lower cost of agricultural raw materials, especially slave-produced cotton, and food helped to spur the boom in manufacturing. As manufacturing expanded, this also had a positive income effect, creating further demand for both agricultural and industrial output.

Uneven regional development was reinforced during this period of economic growth. The Northern states led the way in manufacturing, while the Southern states were locked into a slave plantation-based economy. The short-term income gains to the plantations from a rise in export sales, and in sales of cotton to the textile mills of the Northeast created the illusion of prosperity. In the long term, the Southern states would significantly lag behind the Northern states in income-producing potential and in the development of infrastructure. The existence of slavery essentially retarded the industrialization of the South, hampered the building of critical infrastructure, and cost the southern states precious developmental time. The transformation of the southern economic base would have to wait until after the AMERICAN CIVIL WAR and, even then, move forward at a much slower pace than development in the North and West as the plantation system, forced to replace slavery with a form of feudalism, remained in place.

Hamiltonianism and the ascendancy of capitalism. After the Civil War, the federal government continued to play an activist role in shaping the American economy. The federal government supported the expansion of self-employed farmers and ranchers with the Homestead Act of 1862, continued to subsidize the railroads and other large business enterprises with the Timber Culture Act in 1873, the Desert Land Act in 1877, and the Timber Stone Act of 1878.

Government spending, both during and after the Civil War, stimulated growth in manufacturing industries such as coal, iron, and steel, gradually shifting the U.S. economy from an agrarian base to a more industrial one. The steel industry was particularly important during this period. Steel was a key input in both the construction of the railroads and other infrastructure, and in the development of the machine-goods industry. The innovation of new steel-making techniques helped to lower the tonnage cost of steel and had effects throughout the manufacturing economy.

The U.S. economy was not only being transformed from an agrarian one but was also shifting away from self-employment and small-scale enterprises toward corporate capitalism. Government spending and subsidies aided the rapid growth in the railroads and in manufacturing, which were organized as capitalist corporations. The corporate form of business organization, which limits the liability of owners, provided an important mechanism for raising extraordinary amounts of capital investment. The capitalist organization of work meant that it was possible to employ thousands of wage laborers within a single corporation. The legal benefits of the corporate form and the productive efficiency that came with wage labor-based production combined with the government subsidies, lower cost inputs, and expanded markets generated huge revenues for American corporations.

As corporate revenues grew it became easier to raise such funds for further business expansion. A handful of financial and industrial empires were built around this growth, led by legendary business leaders, such as Jay GOULD, James FISK, Cornelius VANDERBILT, and John D. ROCKEFELLER, who were able to marshal capital investment for their own businesses, and often used aggressive strategies for eliminating potential competitors. These early capitalist leaders have been called the robber barons because of their tactics and perceived ruthlessness.

Capitalism brought a transformation in the types of jobs available to Americans. A new middle class of white-collar workers grew up around the bureaucratic work required in large-scale corporations. The large wage-labor forces employed in manufacturing enterprises resulted in the creation of new management jobs. The growing demand for wage-labor to work in the sweatshops of New York and slaughterhouses of Chicago attracted rural people, many of whom had been self-employed, to migrate to the cities for these new jobs.

This rural-urban migration created urban metropolises where laborers and their families lived in tenement residences, often dilapidated and unhealthy places. In this case, decentralized policy making meant that the rules that determined "safe" housing were highly localized and greatly variable. Ghettos developed in the urban cities where laborers came for jobs and affordable shelter.

Industrialized wage labor was increasingly specialized to the extent that a worker might never see the final product of his labor but only a small part of it. This meant that workers who had worked for themselves, or otherwise participated in the entire production process, lost their skills over time. The resulting dissatisfaction that came with this new situation, and unsatisfactory work conditions that were often deadly in the iron and steel industries and rarely sufficient to support families, led to a push for unionization among many, though not all workers. The UNION movement, therefore, arose out of and remains an important aspect of capitalism.

U.S. capitalism, in its early history, was epitomized both by strong efforts to unionize and by severe resistance from corporate boards and managers to such efforts, including enlisting the support of the government in the suppression of unionization campaigns and strikes. In some cases, state governments sent national guard troops to assist corporate management in putting down strikes or other work actions, sometimes resulting in bloodshed.

The so-called Gilded Age from 1873–97 was an ambivalent time economically, beset by RECESSIONs and depression. It was a period of corporate takeovers and the rise of firms with monopolistic and oligopolistic market power. It was a particularly difficult time for smaller firms, self-employed farmers, and others who neither wielded much MARKET POWER nor had much influence within the halls of government. The development of these massive industrial empires had a significant impact on the character of American society. A new industrial and financial aristocracy came to prominence and celebrities, of a sort, rose in American society. These aristocrats also adopted the same political philosophy, the Jeffersonian ideal of decentralized federalism, as their political creed, although many of them continued to benefit from government policies and subsidies, including tax breaks targeted specifically at large-scale corporate enterprises and not available to smaller businesses or individuals.

The backlash against the growth of big corporate capitalist firms with extraordinary market power came in the form of government ANTITRUST legislation, including the Sherman Act, which declared monopolistic behavior illegal. The passage of the Interstate Commerce Act of 1887 formed the first regulatory agency in the federal government, the Interstate Commerce Commission, which was charged with the responsibility of regulating railroad rates.

A steady growth in the demand for cheap labor followed the advance of capitalism. Technological advances in transportation made it easier for immigrants to come to America, and the new corporate aristocracy supported relatively liberal immigration laws. Immigrant workers contributed to not only the quantity of labor for the growing economy, but also to the creativity that went into the production of new industrial machines and new methods of organization and also into the culture of American society.

The severe decline in influence of the Southern aristocracy after the Civil War left the capitalist aristocracy without any powerful rivals in setting national economic policy. Small businesses, with the possible exception of self-employed farmers, generally had little influence on national policies. Consequently, capitalism grew quickly during the years from the close of the Civil War to WORLD WAR I. It was, in many ways, a turning point for American society, in economic, political, and cultural terms. Capitalism was dominant and would continue to be dominant, setting the course of economic life in post-Civil War U.S. society.

The New Deal. Following World War I, the United States had unprecedented economic power in the world. Government was pro-business, technological changes had lessened the domestic workload in many households, and increasing productivity meant more lax work schedules for those outside of the house. Furthermore, scientific advances led to better health and a higher average life expectancy, and children were going to school and staying for more years than they had ever been able to before, relieved from some of the pressure to join the labor force as soon as possible and help support the family.

For all of these reasons and others, there was a considerable amount of optimism about the economy. Nevertheless, in agriculture, where a significant fraction of the population still earned a living, economic conditions for the self-employed farmer continued to deteriorate. Many self-employed farmers lost their farms, unable to compete in a period of falling farm prices and mechanization of agriculture. Some of these formerly independent farmers became migrant laborers, further reflecting the continual drift away from self-employment and toward capitalism.

The optimism that had followed the end of World War I was shattered by the sharp decline in the stock market in 1929 marking the end of a speculative bubble in equity prices. The STOCK MARKET decline was followed by a decline in the output and employment in the "real economy." In this new economic landscape, the correct plan of behavior was not at all clear. Previously, the large-scale industrial and financial corporations had encouraged the government to play a limited role in the economy. President Herbert HOOVER maintained this policy in the mistaken belief that the economy would fix itself, but economic recession turned into a deep economic depression. Millions were unemployed. Without a social safety net, high levels of unemployment quickly turned into homelessness and starvation for many

Americans. The nation was in crisis and Hoover's unwavering faith in the markets did nothing to alleviate the growing despair. Franklin Delano ROOSEVELT (FDR), promising a more activist approach to solving the economic woes of America and with strong support from labor unions, was elected in a landslide in 1932.

The Roosevelt administration inaugurated a new chapter in American culture. Activist government came to be associated, perhaps for the first time, with policies designed to benefit capitalist wage-laborers. In the past, the Hamiltonian brand of activism had been designed to foster the growth of capitalist industrial and financial firms. Roosevelt's policies were called the NEW DEAL. FDR's New Deal began with legislation establishing federal institutions to regulate the banks, the stock exchange, and utilities. The hope was that such legislation would restore confidence in America's financial institutions. The New Deal continued with the passage of the National Industrial Recovery Act (NIRA), which stipulated a federal minimum wage, banned most child labor, and gave the federal government tools for combating the unemployment problem. The Wagner act of 1935 was designed to protect the rights of capitalist wage-laborers to unionize. Social Security was passed, despite strong opposition from the Republican Party. It would be a mistake to assume that New Deal legislation was simply a pro-labor set of policies.

The New Deal had its Hamiltonian overtones, as well. There was, for example, legislation to grant businesses the right to set prices for their industries. The New Deal also included the Tennessee Valley Authority (TVA) funding to develop a system that could provide cheap electricity to the nation's rural landscape. And under the Agricultural Adjustment Act, the New Deal paid farmers to control prices of their crops by limiting productions and initially destroying excess crops and livestock, driving up prices and helping both small and large farmers to generate higher revenues.

None of these policies were sufficient to pull the U.S. economy out of its most serious economic decline. As long as the directors and top managers of capitalist firms did not expect revenues and profits to grow, they were unwilling to approve new investment. The pessimism of these top leaders in business was only exacerbated by the perception of the Roosevelt administration as leaning too far in favor of labor unions, which were seen as promoting higher-cost wage-labor. In the early years of his administration, FDR made matters worse by following Hoover's example and trying to balance the federal budget in a time of declining tax revenues.

The FDR administration did eventually see the light and raised government spending in an effort to boost aggregate demand, but it was still not enough to restore business confidence. It was, in fact, WORLD WAR II that would push government spending to the point that the Depression was ended. Unemployment fell, business revenues rose, and confidence was restored during the war.

Post–World War II boom. The United States came out of World War II even more powerful than it had been after World War I. The result was another long period of optimism. Wartime rationing had suppressed consumer spending for several years, and with the growth in optimism and a booming economy, consumer spending compensated for the fall in military spending. Furthermore, the new Harry TRUMAN government would use federal funding for infrastructure improvement and spending on education, health care, and welfare including Medicare, Medicaid, and the GI bill, which provided loans to veterans to start their own businesses or continue their education. Soon, even the military was increasing its spending again. Thus, government became an increasingly important, and relatively predictable, component of aggregate demand, which reduced the degree of business uncertainty about future revenues.

The 1950s was an important period of transformation in American society. The McCarthy period served as a sort of cultural revolution against the radical politics that had grown during the Roosevelt years. Americans associated with the Communist Party of the USA were particularly targeted. In Hollywood, many writers, directors, and other screen artists were blacklisted, meaning they could not find work with the studios or financing for independent projects. The Korean War represented a hot version of the growing Cold War between the United States and its allies and the Soviet Union, CHINA, and their respective allies. These conflicts only reinforced the effects of the McCarthy era, even after McCarthy was discredited. America was also being physically transformed. Urbanization continued, but the Dwight EISENHOWER administration also funded, through the Interstate Highway Act of 1956, a dramatic increase in the highway system connecting cities and towns. The building of highways spawned the suburbanization of the nation, and helped to boost revenues for the automobile companies as car sales surged.

The John KENNEDY and Lyndon JOHNSON administrations continued the postwar transformation of America, both in terms of activist foreign policy and innovative domestic policies. The Cold War heated up again with the U.S. military intervention in the VIETNAM WAR. The Johnson administration adopted the supply-side tax cuts that Kennedy had drafted and attempted, under a barrage of criticism, to pass in order to increase consumption and stimulate the economy. Johnson's government became even more involved in the economy by passing legislation such as the Economic Opportunity Act of 1964, which included the Job Corps, and the Head Start Program for children, and increased government spending by almost $10 billion. These programs helped decrease the income gap in the United States and specifically decreased the number of Americans living in poverty. The Johnson administration was probably the most activist government since Roosevelt, and continued in the FDR tradition of using this activism to support both pro-labor and pro-business objectives.

The rise of inflation. One unfortunate result of the extended boom in the economy experienced after World War II was a rise in price INFLATION throughout the 1950s, 1960s, and 1970s, peaking in the early 1980s. Perhaps the most difficult period occurred in the 1970s when the nation experienced STAGFLATION, an economic slowdown and rise in the general level of prices caused, in part, by a sudden rise in oil prices. The VIETNAM WAR effort was also considered to be responsible for some of the economic problems of this period.

Inflation was a serious concern throughout the Eisenhower, Kennedy, and Johnson administrations but not a major political issue until Richard NIXON's presidency. Nixon attempted to stall inflation by implementing a series of PRICE CONTROLS on GOODS, WAGES, and rents. The subsequent inflation surge, when controls were lifted, discredited price controls as a tool for the federal government. During the Gerald FORD administration and every administration since, inflation has become the province of the American central bank, the FEDERAL RESERVE (Fed). The Fed used monetary policies to battle inflation, a less aggressive and often more successful tool than price controls.

Nevertheless, the Fed had only limited success. Inflation fell somewhat but the most dramatic effect was on unemployment. The problems of trying to moderate inflation, without throwing the economy into recession, became a major problem for the Fed and a key political issue. This became even more problematic with the growing power of the ORGANIZATION OF OIL EXPORTING COUNTRIES (OPEC) and the Arab oil boycott of the United States. The Jimmy CARTER administration faced stagflation, and later a crisis in IRAN after the fall of the American-supported regime of the Shah.

A superpower rises again. The Iran Hostage Crisis had a transformative effect on American politics, helping to elect Ronald REAGAN to the presidency in 1980. The Reagan presidency was marked by aggressive foreign policy actions and rhetoric. In many ways, the Reagan presidency represented a return to the "big stick" policies that have epitomized American foreign policy since the earliest days. The invasion of the tiny island of Grenada, although not significant in military terms, demonstrated that the United States had emerged from the Carter malaise that had followed the lost war in Vietnam. The Grenada invasion, interventions in Central America, and a general perception that the Reagan administration was willing to use force in order to achieve its objectives played a key symbolic role in the resurrection of American superpower clout.

The administrations of George H.W. BUSH, William CLINTON, and George W. BUSH continued this approach, employing U.S. troops in Panama, the Persian Gulf, Kosovo, and other venues. George W. Bush took this a step beyond what his predecessors had done when he used U.S. troops to invade the strategically important Persian Gulf nation of IRAQ in 2003. The Iraq invasion was strongly opposed by many nations and, most significantly, by other permanent members of the United Nations Security Council. Thus, the Iraq invasion marked a clear move away from multilateralism in a conflict beyond the Western Hemisphere. In many ways, the George W. Bush approach represented a return to the frontier mentality of the 19th century, when the U.S. government was unlikely to stop pursuing its understanding of its national interests, regardless of world opinion.

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United States Postal Service

THE UNITED STATES POSTAL SERVICE (USPS) has been an anomaly. In an economy dominated by COMPETITION it has enjoyed a MONOPOLY position. In an economy based on private enterprise, it is government-owned. It has played a significant role in American economic history, but has always faced detractors critical of its monopoly and practices.

The USPS traces its roots back to England's Royal Post, established for official correspondence in 1516, and was granted a monopoly when Charles I forbade private postal services in 1635.There was no regular postal service in the American colonies until, in 1692 a court favorite, Thomas Neale, was granted an exclusive license and began rudimentary service through his agent Governor Andrew Hamilton of New Jersey. In 1707, this patent was absorbed into the British Post Office.

Benjamin FRANKLIN served as deputy postmaster general for all the colonies from 1753 to 1774, expanding post roads from Maine to Florida. He was the Continental Congress's choice to head the new nation's postal system. During the Revolutionary War, the postal system deteriorated and when President George WASHINGTON appointed Samuel Osgood as the first postmaster general under the Constitution, there were only 76 post offices.

The Post Office Act of 1792 has been called one of the most important single pieces of legislation to have been enacted by Congress in the early republic. It established a system of post offices and post roads, using extremely high prices for the delivery of letters to subsidize the delivery of newspapers and the establishment of additional post offices and routes in rural areas. The Post Office soon became the largest enterprise in America and employed about three-quarters of all federal government civilian workers by 1830. One historian concludes that "it would hardly be an exaggeration to suggest that for the vast majority of Americans the postal system was the central government." Its speed impressed many Americans, as did its innovative hub-and-spoke delivery system. Subsidies that it provided to rural correspondence and especially coach lines are credited with helping to push America westward and to develop its democratic culture. The postmaster general became an influential position, joining the president's cabinet in 1829.

However, Post Office critics increasingly complained that it was inefficient and wracked by patronage problems. Many postmasters obtained their positions to benefit from the franking privilege, which allowed them to send mail for free. They were paid on a commission basis, when addressees picked up their mail, but provided no local delivery and pick-up services and often earned money by attracting traffic to their other businesses. In large cities, postmasters made substantial incomes by renting out post boxes, which freed patrons from standing in long lines to receive mail. In 1850, for example, all of Manhattan was served by one post office with 15 pick-up windows. The arrival of RAILROADS and steamboats brought considerable competition to the Post Office in the 1830s. Entrepreneurs began offering to carry private mail between cities and by 1845 carried about two-thirds of the mail. Other businesses sprang up to offer delivery of mail within cities, providing innovations including home delivery, street corner letterboxes, and postage stamps. Some argued that the system was redundant. Speaker of the House John Bell (1834–35) urged that it be privatized. The political clout of postal employees and transportation contractors, and the desire of politicians to reward supporters with postal positions saved the Post Office, however. Congress responded in 1845 by cutting postage rates by 79 percent and by granting the Post Office a monopoly on the carriage of intercity mail, forbidding private competition. The Post Office funded the early development of the telegraph and attempted to take control of the national telegraph system, but was thwarted in this effort.

Strengthened by its intercity monopoly, the Post Office continued to expand, cutting rates again in 1855 and 1863, establishing free delivery in large cities in 1863 and inaugurating money orders in 1864. The system enhanced its efficiency by eliminating needless bookkeeping rules, which had required each piece of mail to be logged, and in 1864 switched employee payment from piece-rate to salary. In 1872, the Post Office further secured its monopoly position with legislation banning delivery of mail within cities by competitors. In 1896, it charged that railroads were transporting their own mail illegally, and in 1916, it attempted to push its monopoly position to the delivery of mail within office buildings, but these moves failed.

Expansion of services between the AMERICAN CIVIL WAR and WORLD WAR II included special delivery—speedier service at a higher price—in 1885; delivery of mail to rural mail boxes (rural free delivery) beginning in a few locations in 1896; parcel post and collect-on-delivery (COD) in 1913; and metered postage in 1920. Under the Comstock Act of 1873, material deemed obscene was banned from the mails. Postal officials were often zealous in enforcing this law, banning a wide range of items including works of literature by authors such as D.H. Lawrence and Theodore Dreiser.

The Post Office began experimenting with airmail delivery in 1918 and its subsidies played an important role in the development of the commercial aviation industry. In addition, following the Panic of 1907, the Post Office was given the responsibility of running the Postal Savings System. Established in 1910, the system was designed as a safe place for low-income savers to deposit their money. It was required by law to offer a fairly low interest rate and did not lend money, but redeposited funds in commercial banks. The Postal Savings System had an unremarkable career, attracting only about $150 million in deposits, until the Great DEPRESSION hit. During the Depression, deposits soared to over $1.2 billion as wary depositors removed their funds from banks, especially small mutual banks called building-and-loans. While these depositors were saved, the competition from risk-free postal banks crippled a key component of the banking industry, helped cause the supply, of home loans to dry up, decreased the money supply and deepened the Depression. The Postal Savings System was eliminated in 1960, largely because deposit insurance dampened its appeal.

The postal system continued to grow after World War II. The Post Office added certified mail in 1955 and implemented the use of ZIP codes in 1963. In March 1970, after the House Post Office Committee reported a compromise measure to restructure the system, the country was rocked by the first-ever nationwide strike of federal employees, as 152,000 postal workers walked out in over 600 locations, preventing mail delivery. The strike was ended when President Richard NIXON threatened to use the military to deliver the mail, negotiations resumed that granted workers substantial raises, and Congress finalized the reorganization of the system, removing the Postmaster General from the Cabinet and creating the United States Postal Service as an independent agency of the federal government.

The late 20th century brought renewed competition to the USPS. In 1979, its monopoly on express mail was lifted and private businesses, such as UPS and FedEx entered the market, easily outperforming the USPS. Simultaneously faxes and email developed as substitutes to traditional mail, which was derided as "snail mail." Between 1970 and 2002 the price of a first-class stamp soared from six cents to 37 cents, a 616 percent increase, considerably higher than the overall price increase of 467 percent.

Critics complained of slow delivery, lost mail, needless advertising and surly postal workers in an economy that increasingly stresses customer service. They argued that the USPS's inefficiencies stemmed from its slow pace of reorganizing and adopting new technology, and from a union contract that overpaid workers by 30–40 percent and gave them few incentives to work hard. In 1988, the President's Commission on Privatization recommended repealing the USPS's remaining monopoly. Other nations, led by New Zealand and including Sweden, Finland, and Great Britain, privatized with great success, but the prospect of confronting over 800,000 postal workers again dampened the fervor for privatization in Congress.

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U.S. Steel (USX)

IN 1901, THE UNITED STATES Steel Corporation was the largest business enterprise ever launched and, after more than 100 years, it remains the largest integrated steel producer in the UNITED STATES.

Some of America's most legendary businessmen, including Andrew CARNEGIE, J.P. MORGAN, and Charles Schwab were instrumental in the formation of the U.S. Steel Corporation. Carnegie's Steel Company and the Federal Steel Company joined and formed the nucleus of U.S. Steel. Some observed that the birth of U.S. Steel was the formation of the "trust to end all trusts."

One of the most famous ANTITRUST cases decided in 1920 involved the U.S. Steel company. Like the oil and tobacco monopolies, U.S. Steel was formed by combining a large number of independent companies into a giant that held 67 percent of the nation's iron and steel market share in its first year of operation. The Supreme Court did not find the company in violation of the Sherman Antitrust Act based on mere size. The court examined the company's conduct based on evidence of monopolization by price fixing, price discrimination, or other anti-competitive behavior and didn't find any evidence of misconducts.

The company has undergone a significant diversification and restructuring since the 1980s. In 1982, the corporation became involved in the energy industry with its acquisition of Marathon Oil Company. In early 1986, it expanded its energy business when it acquired Texas Oil & Gas Corporation. In addition, the corporation entered into several steel joint-ventures with both domestic and foreign partners.

In late 1986, recognizing the fact that it had become a vastly different corporation, U.S. Steel Corporation changed its name to USX Corporation, with principal operating units involved in energy and steel. At the same time, many of the units among the corporation's diversified businesses were sold or combined into joint venture enterprises. These included chemicals and agrichemicals businesses, an oil field supply business, domestic transportation subsidiaries, and raw materials properties worldwide.

The company is preparing to expand its presence in Europe by investing in Poland at the time when the Western European steel industry is robust and Poland is preparing to join the EUROPEAN UNION in 2004.

Since early 1960s, mini-mills made a dramatic change in the market position of the steel giants. Overall, mini-mills account now for more than 25 percent of the domestic steel market. Consequently, more than 450 antiquated steel-making facilities, some dating back to the 19th century, were closed and production capacity was cut by more than 25 percent. According to the Federal Trade Commission, the industry's production costs declined by 28 percent, and labor productivity increased by 60 percent.

As a result of major structural changes in the integrated steel sector, USX has less than 11 percent of the market share, followed by Bethlehem and four companies with smaller shares that comprise the "Big Six." The stable steel OLIGOPOLY, dominated by the U.S. Steel that persisted into the early 1980s has undergone dramatic changes.

The company continued to go under structural changes in 2003. On January 30, it reaffirmed its interest in acquiring the assets of National Steel Corporation. However, implementation of its plan will depend on the approval of the Federal Trade Commission and the Untied States Department of Justice under the Hart-Scott-Rodino Antitrust Improvement Act.

Some observers believe that the recent tariff exemptions for steel would lead to inefficiencies in the steel industry. In December 2001, the U.S. International Trade Commission (USITC) recommended to President George W. BUSH to provide import relief for the U.S. steel industry. In October, they ruled that a surge of imports in 12 steel products had hurt the U.S. industry. Based on this determination, the commissioners proposed additional *ad valorem* duties ranging from 8–40 percent, quotas, and tariff-based quotas up to 20 percent. Earlier in December, USX-U.S. Steel Corporation, the largest steel company and Bethlehem Steel Corporation, the third-largest had proposed a merger and invited several of their domestic competitors to create a single steel company. The steel tariffs have already been challenged by 25 countries at the WORLD TRADE ORGANIZATION.

Recently, Professors S.W. Comanor and F.M. Scherer, from the Kennedy School of Government, have investigated the effect of government allowing U.S. Steel to maintain its large market share in the industry. They found that decentralization may have permitted more rapid technological innovation and formation of companies that could compete forcefully in world markets.

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The American steel industry has increasingly moved from giant mills to more efficient mini-mills to forge steel.

utilitarianism

AN ETHICAL THEORY, utilitarianism states moral virtue consists of choosing to produce the greatest happiness (net of unhappiness) for society. Thus, it instructs that individual actions, as well as social policy and institutions, should all be designed to maximize society's happiness, a tenet usually called the greatest happiness principle. In his classic treatise on the subject, John Stuart MILL described the theory thus:

> The creed which accepts as the foundation of morals, Utility, or the Greatest Happiness Principle, holds that actions are right in proportion as they tend to promote happiness, wrong as they tend to produce the reverse of happiness.

While its classical advocates all denied that the theory of utilitarianism could, strictly speaking, ever be proven, their formulations of the theory all derived from a few, commonly held ideas. In particular, all of the classical Utilitarians (usually identified as Jeremy BENTHAM, Mill, and Henry Sidgwick) ascribed to the hedonistic theory of value, and all held distinctly egalitarian views of human worth. The combination of these two ideas explains their support for the greatest happiness principle.

According to the hedonistic theory of value, the only things valuable in themselves are pleasure and pain. Thus, actions have value only indirectly as means to pleasure or as means to avoid pain, and the worth of an action proceeds from the extent to which it results in a positive balance of pleasure over pain. So, the Utilitarians reasoned, if the only thing of value is the experience of pleasure or avoidance of pain, and the location of this experience (whether in person A or in person B) is unimportant, then the measure of an action's value will be the amount of pleasure that flows from it. Furthermore, the best course of action must be the one that maximizes the general happiness, understood as the simple sum of happiness of all individuals.

The hedonistic theory of value, upon which utilitarianism is based, can be traced all the way back to the Epicureans of ancient Greece. Moreover, in English philosophy, the ideas promoted by the Utilitarians first appear in Richard Cumberland's classic response to Hobbes: *De Legibus Naturae* (1672). Despite this, political philosopher and legal theorist Bentham is usually given credit for first developing the theory. Indeed, at the time, utilitarian philosophy was frequently referred to as Benthamism. Bentham presented his version of utilitarianism in the treatise, *An Introduction to the Principles of Morals and Legislation*, and used it as a basis to argue for a wide array of social and legal reforms. Later, together with his close friend James Mill, he began publishing the *Westminster Review* as a vehicle for disseminating utilitarian ideas.

In spite of Bentham's energetic efforts on behalf of the utilitarian doctrine, his formulation of the theory was a bit too crude to gain wide acceptance. John Stuart Mill's *Utilitarianism*, usually regarded as the classic statement of the doctrine, was designed in part to make Bentham's ideas more palatable. Mill had been educated by Bentham and his father. However, he rejected Bentham's view that pleasures only differed quantitatively (e.g., in intensity and duration). In addition, he insisted, pleasures can differ in quality. So, for instance, intellectual pleasures are of a higher quality than physical pleasures, and, thus, are not directly comparable to them.

Thirteen years after Mill published *Utilitarianism*, Henry Sidgwick provided the most systematic development of classical utilitarianism in his *Methods of Ethics*.

It has been pointed out by many authors that classical utilitarianism suffers from the undesirable property of obliging, under the right circumstances, behavior that most would consider morally questionable. Consider, for example, how it treats lying. While many consider lying to be unethical, classical utilitarianism asserts that it is actually the morally correct course of action provided that the happiness that results from it (or, on some interpretations, the happiness that could foreseeably result from it) outweighs its (foreseeable) adverse consequences. If, for instance, the pain I avoid by not disclosing the true reason for my absence from work exceeds the expected value of my loss of credibility and the possible general loss of confidence in the spoken word, then the classical theory says that I am morally obligated to lie.

Among others, R.F. HARROD has observed that this prescription not only runs counter to common moral intuition, but if applied in this way may actually violate the spirit of the greatest happiness principle by reducing overall happiness. The paradox arises from the fact that the damage inflicted when, for instance, one million people lie will probably be more than one million times the damage caused by one person lying, since, as lying becomes widespread the reliability of communication itself is diminished. Thus, the net effect of any single lie could be to increase overall happiness, while the net effect of lying in general is to reduce happiness. To correct this problem, Harrod suggested that the appropriate test of morality should not be whether particular acts contribute to the greatest good, but whether rules of behavior, if followed, contribute to the general good.

Accordingly, contemporary philosophers distinguish between act-utilitarianism and rule-utilitarianism. Unlike act-utilitarianism, rule-utilitarianism asserts that an action is morally good if it conforms to a rule of behavior that, if followed by all, promotes the greatest happiness. This version of the doctrine is able to sidestep the aggregation problem identified by Harrod and tends to make prescriptions more in tune with common moral intuition. While most agree that the classical utilitarians advocated a version of act-utilitarianism, modern proponents tend to be rule-utilitarians.

Among all the sciences, economics has almost surely been influenced most by the theory of utilitarianism. Even today, welfare economics, the field of economics concerned with the social desirability of alternative economic outcomes, employs the methodology of the classical utilitarians. So, for example, welfare economics confronts questions like whether a tax should be imposed or whether competitive markets are better than monopolistic ones, and in keeping with the ideas of Bentham and Mill, it attempts to answer these questions on the basis of which outcome provides the greatest happiness.

As evidence of the continuing influence of utilitarianism in economics consider the ubiquitous use economists make of Vilfredo Pareto's efficiency criterion, developed for the study of welfare economics. By definition, an outcome is said to be Pareto efficient if and only of there is no modification of the outcome that could make someone better off without making someone else worse off. Generally, economists will claim that a Pareto-efficient outcome is superior to one that is not Pareto-efficient. Of course, this follows immediately if one subscribes to the utilitarian definition of goodness, that which maximizes the sum of happiness. If, however, the social good depends upon, say, the degree to which income is evenly distributed, then it is no longer clear that Pareto efficiency is necessarily a property of socially desirable outcomes.

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utility

THE DEGREE OF SATISFACTION of wants and needs obtained from the use or consumption of (scarce) goods and services is generally known as utility. Early social scientists regarded utility in a literal sense, as a measure of someone's happiness or well-being from the consumption of goods such as food, clothing, or shelter. It seemed that in order to understand how individuals make economic choices, one must know how much utility someone derives from a given choice.

This concept of utility is sometimes referred to as cardinal utility, meaning that it can be measured on an absolute scale like physical characteristics such as height or weight. Thus, a sentence like "I am twice as happy as you" has meaning when happiness is referred to in terms of cardinal utility. Not only did it remain unclear how cardinal utility should be measured in human beings, but the very existence of such a satisfaction measure is scientifically doubtful. These difficulties associated with the concept of cardinal utility have subsequently led to an alternative, and now prevailing, view of ordinal utility, within the preference-based approach to consumer choice theory.

The consumer's choice problem in MICROECONOMICS is to choose the "best" of several alternative bundles of consumption goods. The preference-based approach to this choice problem presumes that consumers can rank all these alternatives in order, from most preferred to least preferred. An ordinal utility function is then an assignment of numbers (utilities) to consumption bundles such that bundle *A* has higher utility than bundle *B* if and only if the consumer prefers *A* to *B*. If the consumer is indifferent between two bundles, they must have the same utility. An ordinal utility function is a mathematically convenient way to represent a person's objectives and tastes on an ordinal scale: It orders, as its name implies, different consumption choices by their desirability, without attaching significance to the magnitude of utility itself.

Thus, only statements of the form "Consuming *A* makes me happier than consuming *B*" are permissible when ordinal utility is referred to, meaning "I prefer *A* to *B*." Ordinal utility still allows for a meaningful description of consumer choice: Persons are assumed to choose their most preferred alternative, which is equivalent to finding the maximum of a utility function.

The preference-based concept of ordinal utility is most often used in the microeconomic analysis of consumer choice and demand. Sometimes, intensity of preferences (and not just their order) needs to be taken into account, however. For example, redistributive taxes typically result in a utility loss for rich persons, and in a utility gain for poor persons. A government designing and implementing such taxes must make some judgment as to how individuals' utilities should be weighed. Put differently, it must assume that individual gains and losses can be measured in utility units. This necessitates that some cardinal properties of utility must be assumed sometimes, even within the preference-based framework.

Utility functions and preference orders permit simple graphical representations as well. Consider a person who must choose among bundles that contain some amount of food and some amount of clothing, a utility function can be drawn just like contour lines on a topographical map: Similar to connecting all points on a map of the same altitude, we can connect all choices in a consumption space diagram that have the same utility. The resulting lines are called indifference curves.

The gain in utility induced by the consumption of an additional small amount of a certain good is defined as marginal utility. The concept of marginal utility is indispensable for the analysis of choice and demand in a world characterized by scarcity: It indicates what each additional unit of a good is worth to a consumer, in terms of the utility obtained from another good that could be obtained instead. Hence, marginal utility can quantify the trade-off between the consumption of one good against the consumption of another good. In particular, a person chooses optimally if the marginal utility of a dollar spent on one good equals the marginal utility of a dollar spent on another good that is also consumed.

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utility maximization

THE METHOD WITH WHICH consumers choose their optimal level and distribution of consumption, given their budget constraints, is called utility maximization. In economic theory, each consumer values different choices of goods according to their UTILITY, which reflects their personal preferences. The individual's utility function gives a ranking of each choice. This relative measure of the possible combinations of goods and services is then compared to the individual's budget to determine which of the affordable choices is optimal.

Utility maximization involves two components: what the consumer prefers (utility), and what the consumer can afford (budget). Since utility functions with more than one good become complicated, three-dimensional shapes, the utility function is represented in two-dimensional space as an indifference curve. Indifference curves draw a line through those combinations of goods and services between which the consumer is exactly indifferent (i.e., neither preferring one nor the other). Each indifference curve represents a different level of utility, so utility maximization can be seen as the consumer choosing the highest indifference curve that fits their budget.

The slope of the indifference is called the Marginal Rate of Substitution (MRS), and reflects the amount of one good that would be sacrificed to obtain another unit of the other good. [Δgood 2/(-Δgood 1), or in words the gain in good 2 per loss of good 1].

The MRS is also identical to the ratio of the marginal utility (MU, the additional utility for a 1 unit increase) of each good. A one unit loss of good 1 yields a utility loss of MU_1. To stay on the indifference curve, the consumer must add enough units of good 2 to make up that utility. Since each unit of good 2 adds MU_2, MRS = Δgood 2/(-Δgood 1)=MU_1/MU_2.

The budget constraint confines one's choices to those combinations of goods and services that are affordable. Consumers are usually assumed to prefer more of a good to less, so that without a budget constraint consumers would just keep moving to higher and higher levels of consumption. The budget constraint puts a limit on consumption, and this limit is determined by the individual's income (M) and the prices of the available goods and services (P_1 and P_2 in this example). If the consumer spent all her money on good 1, she could afford M/P_1 units. If the consumer spent all her money on good 2, she could afford M/P_2 units. It is normally assumed that unless the goods are identical (perfect substitutes) then a consumer would be on a higher indifference curve by consuming a combination of goods and services.

All the combinations of the two goods in our example that are affordable fit the budget constraint:

$$P_1(\text{good 1}) + P_2(\text{good 2}) \leq M$$

Since we assumed before that consumers prefer more than less, we can quickly rule out all those combinations of goods and services which do not spend the consumers entire income (you can't take it with you) and only consider those combination that satisfy the equality:

$$P_1(\text{good 1}) + P_2(\text{good 2}) = M$$

This gives the equation of a line with a slope of P_1/P_2. Of those points on the edge of the affordable set, the consumer has the highest utility at the point where the MRS of the indifference curve equals the slope of the budget constraint. This means that the budget constraint is just tangent to the highest indifference curve that it reaches, making it the optimal level of consumption. Therefore at this point:

$$MU_1/MU_2 = P_1/P_2$$

or

$$MU_1/P_1 = MU_2/P_2$$

The second formulation may be more intuitive since it states that per dollar, a consumer should get the same marginal utility from each good.

To verify this solution, consider the case where marginal utility per dollar is not equal. For example, our consumer (let's call him Mike) is a student choosing books at a bookstore and is spending a \$500 allotment from his parents between textbooks and novels. Textbooks are expensive (P_T = \$100) and novels are cheaper (P_N = \$20), so Mike chooses three textbooks and 10 novels. Mike has five classes, so his marginal utility of a fourth textbook is high ($MU_T = 15$), and while marginal utility of novels is somewhat lower ($MU_N = 2$). Is Mike spending optimally?

To answer this, we have our two criteria:

1. The entire budget must be spent

2. MRS = P_1/P_2.

First, we see that Mike did spend all his parents money as is optimal for his utility maximization [\$100(3) + \$20(10) = \$500].

On the second criterion, however, Mike did not do so well. MRS = 15/2 = 7.5 while P_T/P_N= 100/20 = 5. Since marginal utility for texts is so high, even given the higher price, Mike would have a higher total utility by giving up novels and switching to texts. To get one more text, Mike would have to give up 5 novels, losing 10 units of utility. The marginal utility of the text, though, is 15, giving Mike a net increase of 5 units of utility.

At the optimum, where the per-dollar value of marginal utility is equated, this improvement would no longer be possible. This result from utility maximization is analogous to capital budgeting decisions where investments are made where they yield the highest marginal product per dollar.

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V

value of leisure

HOUSEHOLDS HAVE A limited amount of time available to them in which to work, not work, consume, play, sleep, enjoy time off, and so on. For instance, in any one particular day there are only 24 hours available to a person or household in which to participate in these activities. Thus, households face a time constraint in which they must make decisions regarding how they will allocate their time among various and competing activities.

Leisure is that time in which a household (or person) is not involved in labor market activity. Thus, leisure is time spent in non-labor market activity. The amount of utility or satisfaction that is derived from non-labor market activity is the value of leisure. In particular, economists often try to quantify the value of leisure in dollar terms. One way in which to place a dollar value on a person's leisure is to consider the opportunity cost of their time. Opportunity cost is simply the value of the person's next best alternative or the value of what must be given up in order to do or have something. Thus, opportunity cost involves sacrifice and clearly one must sacrifice something in order to spend some time in leisure. Often, we describe the time that someone spends in non-labor market activity as if he or she were consuming leisure.

In this sense, the value of one hour's worth of leisure is the opportunity cost of that hour. If, for example, one has the opportunity to work for some hourly wage but chooses to spend that hour in leisure, then that person has given up the opportunity to earn income. The opportunity cost of consuming the hour of leisure is simply the dollar value of income that could have been earned. Presumably, the income that was given up, or foregone, could have been used to purchase goods and services. Consequently, the opportunity cost of leisure in this case is also equal to what this person could have otherwise consumed.

As another example, consider someone who may choose to spend time acquiring education, an activity in which a person is not typically paid but which is likely

The value of leisure, for example hiking, is equal to the opportunity cost of work not done while hiking.

to increase a person's future income earning potential. In this case, a person who chooses to acquire education instead of consuming leisure may be thought of as placing a lower value on leisure than an otherwise similar person who chooses not to go to school and instead spends time in non-labor market activities.

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value theory

FOR OVER TWO CENTURIES economists have argued about value theory, debating the source of "value" and the difference between relative prices of goods and services. Two major views have emerged: the labor theory of value and the utility theory of value. Though the controversy is mostly forgotten in contemporary economics textbooks, each approach continues to develop models and analyses consistent with its view.

We think of value as synonymous with price, but this was not always the case. Early political economists (e.g., Adam SMITH, David RICARDO, and Karl MARX) recognized several categories of value. They analyzed exchange value, use value, and value in contexts that suggested each term was distinct. In contemporary terms, exchange value is equivalent to price, use value describes utility (or usefulness), and value is the common property goods and services share that enables them to be exchanged in market transactions. The nature of this common property is the source of the controversy. One perspective contends that because all commodities are products of human labor, labor is the source of value. The other approach observes that all commodities are useful; therefore, usefulness must be the source of value. We consider each perspective in more detail.

The labor approach. Smith provided an early foundation for the labor approach, although he used at least three different theories of value in his *Wealth of Nations*—a labor-quantity theory, a labor-disutility theory, and a cost theory. Smith rejected the utility approach because of what has been called the "paradox of value." In his words: "Nothing is more useful than water: but it will purchase scarce any thing; scarce any thing can be had in exchange for it. A diamond, on the contrary, has scarce any value in use; but a very great quantity of other goods may frequently be had in exchange for it."

Ricardo built his analysis on Smith's labor-quantity approach, contending that the quantity of labor embodied in a product determined its value. Although Ricardo recognized that machinery contributed to production, he viewed this as "past labor" (labor performed in an earlier time period.)

The labor theory of value received its most extensive treatment in the work of Marx, who expanded on Ricardo's analysis, giving it a specific historical context (i.e., the labor theory of value applies to capitalism) and distinguishing between labor (work performed) and labor power (the capacity to work). Marx linked the labor theory of value to his theory of exploitation and class conflict. If labor is the source of value, then all non-labor income (e.g., profits) is parasitic and comes at labor's expense.

The utility approach. The utility theory also has roots that reach far back in history. Aristotle viewed use value and exchange value as closely linked, and numerous theorists including Jeremy BENTHAM and Jean Baptiste Say adopted the utility approach around the time of Smith and Ricardo. Nevertheless, the utility approach didn't receive widespread recognition until William Stanley JEVONS, Carl MENGER, and Leon WALRAS each independently developed the concept of marginal utility in the 1870s. Marginal utility resolves Smith's paradox of value. Since marginal utility refers to the utility received from the last unit, it's clear that the first diamond has greater marginal utility than the umpteenth glass of water.

Initially, economists subscribed to a cardinal notion of utility, believing that utility could be quantified and measured in a precise fashion. Early in the 20th century cardinal utility was replaced with ordinal utility, or the idea that commodities can be ranked in order of preference. Today's version of the utility theory rests on this ordinal approach.

Implications. Why does value theory matter? Perhaps the most important reason is because value theory provides the foundation for other levels of economic analysis. While the labor approach emphasizes the sphere of production and the human relationships in the production process, the utility approach emphasizes market exchange, a realm where everyone enters voluntarily and no one leaves worse off than they started. As one author has noted, the labor theory of value ". . . is in essence an expression of the idea that the fundamental relationships into which men enter with one another in the field of production ultimately determine the relationships into which they enter in the field of exchange."

One need only contrast the images of a sweatshop with a farmers' market to recognize that the different emphases matter. For example, the labor theory of value inevitably leads to an exploitive theory of profits, while the neoclassical utility theory of value complements the claim that factors of production (e.g., land, labor, capital) receive income shares equal to the value of their contributions to the finished product.

The two theories of value contribute to distinct paradigms that build different models, ask different questions, and reach different conclusions about capitalism. Understanding the value theory debate provides an important tool for critically evaluating these differences and assessing the merits of each paradigm's conclusions and policy recommendations.

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Van Buren, Martin (1782–1862)

THE EIGHTH PRESIDENT of the UNITED STATES, Martin Van Buren was born in Kinderhook, New York, the son of an old-stock Dutch farmer. A lawyer by trade, he was elected to the U.S. Senate in 1821, to the New York governorship in 1828, before becoming Andrew JACKSON's secretary of state and eventually vice president. Van Buren's mastery of the new democratic politics of the Jacksonian period was second only to the era's namesake; his ability to reach consensus with opponents through behind-the-scene maneuvers led observers to label him a "sly fox" and a "little magician." Like Jackson, he also championed limited government and LAISSEZ-FAIRE political economy, and his policies facilitated the rampant, often chaotic economic growth of the antebellum period.

Van Buren was indispensable to the Democratic Party from its birth. He largely engineered Jackson's victory in New York during the presidential campaign of 1828. As Jackson's secretary of state, Van Buren secured a major foreign policy achievement by negotiating the re-opening of U.S. trade with the British West Indies in 1830. Leading up to the 1832 election, Van Buren shrewdly outmaneuvered his chief rival in the administration, John Calhoun, to win the vice presidency. Van Buren's political skill and insight, and his personal and political loyalty to the president early on, made him Jackson's choice for his successor in 1836.

Van Buren's loyalty would persist even into his own administration, and even when the negative results of his predecessor's policies fell on Van Buren's shoulders. Van Buren assumed office under the gathering storm of economic DEPRESSION; the Panic of 1837 would cloud his entire administration and be the major cause of his defeat in 1840. Thousands of businesses, banks and farms were lost, as the economy collapsed under a deluge of over-extended credit, runaway inflation, and bad currency.

Van Buren's Whig opponents quickly blamed the crisis on Jackson's destruction of the Bank of the United States, which had been the economy's controlling center. Van Buren faced enormous pressure to repeal part of Jackson's program, especially the Specie Circular of 1836, which mandated that the purchase of public lands be made in hard currency. Though Jackson intended the measure to curb rampant land speculation, it had actually increased the power of the land speculator, since the average land buyer, void of hard currency, no longer had the option of buying from the government. By 1837, even many Democrats demanded the repeal of the law, yet Van Buren stood by Jackson's policy.

Instead, he called Congress into special session for the fall of 1837 and introduced a series of bills designed to alleviate the nation's economic calamities. The capstone of his program was the Independent Treasury System (also called the Sub-Treasury), which sought the complete divorce of the federal government from private business and banking. The bill proposed the removal of federal specie from "pet" state banks, where they had been placed upon the Bank of the United States' destruction, and their placement in government-owned depositories. Though Whigs opposed the bill because they claimed it shirked the federal government's responsibility to provide a sound currency, Van Buren's strict interpretation of the Constitution recognized no such responsibility. In his mind, the Sub-Treasury system would keep the federal government entirely out of the private sector while securing federal funds. After suffering initial defeat in Congress, the bill finally passed both houses in June 1840. Even more than the policies of Jackson, Van Buren's Independent Treasury plan embodied the Jacksonian commitment to laissez-faire government.

In 1840, Van Buren, still plagued by the economic crisis, suffered defeat to his Whig opponent, William Henry HARRISON. After leaving office, he would find new prominence as an anti-slavery supporter in the mounting sectional conflict leading up to the AMERICAN CIVIL WAR. In 1848, Van Buren left the Democratic Party and ran for president on the Free Soil Party's ticket. He won 10 percent of the popular vote and carried his home state of New York.

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Vanderbilt, Cornelius (1794–1877)

CORNELIUS VANDERBILT lived an American tale of rags to riches. Born into poverty, Vanderbilt became a shipping magnate, railroad tycoon, and founder of an American dynasty. By age 11, Vanderbilt had quit school to help his father farm and ferry produce from Staten Island to New York City. Shortly before Vanderbilt's 16th birthday, he borrowed $100 from his mother and bought a sailboat to operate a ferry service between New York City and Staten Island.

Vanderbilt soon offered lower prices and greater reliability than his competitors. During the WAR OF 1812, Vanderbilt's ferries ran British blockades to deliver supplies to the U.S. Army and American civilians. His profits from these wartime activities allowed Vanderbilt to expand into the shipping business. Feeling economically secure, he married his first cousin Sophia Johnson in 1813, and subsequently fathered a dozen children.

In 1817, faced with increasing competition from steamboats, Vanderbilt sold his sailboats and took a job as captain of the *Bellona*, a New Jersey-based steamboat owned by Thomas Gibbons, a wealthy lawyer. Vanderbilt used the federally licensed *Bellona* to ferry passengers from New York City to New Brunswick, New Jersey, where his wife Sophia ran a tavern at the ferry station. In 1819, however, a New York court ordered Vanderbilt to stop serving New York City. The court found that the state legislature, in 1807, had granted a MONOPOLY over steamboat traffic serving New York ports to Robert Fulton and Robert Livingston, and that Vanderbilt's activities infringed on that monopoly. In *Gibbons v. Ogden* (1824), the United States Supreme Court sided with Vanderbilt, broke the Fulton-Livingston interstate shipping monopoly, and established the supremacy of the U.S. Congress over state legislatures in regulating interstate commerce.

In 1829, Vanderbilt left Gibbons to start his own steamboat business. He began a line from New York to Philadelphia, undercutting prices to the point that his competitors paid him to stop running it. He repeated these tactics on the Hudson River, and again, his competitors paid him to leave the market. Finally, Vanderbilt settled his business on the Long Island Sound, where by the 1840s he was operating over 100 steamboats.

During the California Gold Rush (1849–50), Commodore Vanderbilt, as he was now called, saw another money-making opportunity. At this time, there were two time-consuming transit routes to California from the east: a sea route around the tip of South America, or an overland stagecoach route across the country. Vanderbilt saw a short cut through Nicaragua.

In 1851, Vanderbilt paid the Nicaraguan government $10,000 for a charter to cross their country and formed the Accessory Transit Company. He established a route to California that was shorter and less expensive than the alternatives. While vacationing in Europe, Vanderbilt lost contact with his subordinates in charge of the Nicaraguan route. They betrayed him to William Walker, a "filibuster" (a soldier of fortune who sought to incorporate Nicaragua into the MANIFEST DESTINY expansion of U.S. territory) who gained control of the Accessory Transit Company. Vanderbilt eventually regained control of his company, at which time his rivals paid him not to run his route.

In 1855, Vanderbilt successfully began running large steamships across the Atlantic. He later profited from the Union government's use and purchase of his ships during the AMERICAN CIVIL WAR.

In 1857, Vanderbilt began investing in the New York and Harlem railroad (NY&H), and soon became one of its directors. He championed a plan to extend the NY&H railroad line to run the full length of Manhattan island. In 1862, however, Vanderbilt's longtime rival Daniel Drew conspired to drive down the price of NY&H stock by convincing state legislators to block Vanderbilt's planned extension of the line. Vanderbilt foiled Drew's plan by purchasing all the NY&H stock on the market, thereby cornering the market and reinforcing the price of the stock. The legislature later reversed its decision and permitted extension of the line. Drew tried to repeat this scheme in 1864, but Vanderbilt again succeeded in cornering the market for NY&H stock, thwarting Drew and financially ruining numerous New York legislators.

In 1863, Vanderbilt intervened when a similar scheme was launched against the Hudson River Railroad (HRRR), which ran along the east side of the river to Albany, New York. Vanderbilt cornered the market in HRRR stock, and took control of the railroad. By 1865, he was the railroad's president. He constructed a railroad bridge across the Hudson so that both the NY&H and the HRRR entered Albany. In 1867, Vanderbilt extended his New York railroad empire by acquiring the New York Central Railroad (NYCRR), and merging it into the HRRR.

Vanderbilt next sought to extend his railroad empire beyond the state of New York by taking over the Erie Railroad, one of the two existing railroad lines that then connected the East Coast with Chicago. To do so, Vanderbilt initiated the "Erie wars" of 1868–69, in which Vanderbilt sought to buy a controlling share of Erie's outstanding stock, while Vanderbilt's old antagonist Drew, an Erie director, printed more Erie stock and dumped it on the market. In the end, Vanderbilt paid Drew about $1.5 million and failed to acquire control of the Erie railroad. Together, Vanderbilt and Drew left Drew's partners Jay GOULD and Jim FISK with the practically worthless Erie stock, and substantial legal liability for stock fraud.

Despite failing to gain control of the Erie, Vanderbilt did gain control of the Lake Shore and the Michigan Southern and Northern Indiana railroads. These acquisitions completed a consolidated railway from New York City to Chicago.

In his late years, Vanderbilt married a young southern cousin, Frankie Crawford. Despite Vanderbilt's lack of interest in philanthropy, Frankie convinced him to make a $1 million gift to found and endow Vanderbilt University in Tennessee. When Vanderbilt died on January 4, 1877, he was the richest man in America. He left the bulk of his $105 million estate to his son William Henry, who had been instrumental in achieving Vanderbilt's railroad successes.

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Vatican Bank

LITTLE PUBLIC INFORMATION is available about the organization and finances of the Vatican Bank. This is due, in a broad, way to the dual nature of the Vatican, which, as the home of the Papacy, is the spiritual center of the Roman Catholic Church, yet is also a temporal institution. The Vatican City, located in Rome, ITALY, is a sovereign state with its own government, legal system (based on canon law), bureaucracy (known as the Roman Curia), citizenry, currency, flag, diplomatic corps, media, and Papal bodyguard (the Swiss Guard).

The Vatican is governed by the Pope of Rome, with the advice of the College of Cardinals. The Vatican Bank functions in both of these spheres, as a temporal bank for Vatican financial assets, as well as an institution created to serve the spiritual works of the Catholic Church worldwide.

The Vatican Bank's official title is the Institute for Works of Religion. It was originally established in 1887 by Pope Leo XIII as part of the Vatican's efforts to re-organize and manage the church's affairs after the Papal States and Rome were annexed by the unified Kingdom of Italy. The bank serves the officials and citizens of Vatican City and Roman Catholic institutions worldwide. In response to scandals and suspicions about the bank's activities, the bank was given a more transparent and organized governing apparatus—a lay director appointed by a supervisory council of five banking experts who were selected by five cardinals, all of whom are commissioned by the Pope to oversee the bank's activities.

These reforms resulted from a variety of allegations about the bank. As an institution with both secular and spiritual aspects, and that is tied to Vatican City yet also international in nature, it has been in a position for abuse and corruption. The most well-publicized scandal involved its relations in the 1970s and 1980s with the Banco Ambrosiano, that collapsed financially in 1982. Other allegations include money laundering, bribery, and the concealment of assets seized from concentration camp victims in WORLD WAR II. The Vatican's unique institutional reach across national boundaries enhances the bank's notoriety, at the same time that it remains a valuable institution for maintaining Catholic religious orders, charities, and other organizations around the world.

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Veblen, Thorstein (1857–1929)

AN ECCENTRIC, A NONCONFORMIST, a master of satire, frequently described as a very strange man, Thorstein Veblen brought a new approach to economic analysis, founded a school of thought known as Institutionalism, and is now accepted as one of the great economists (though he was not much appreciated during his own lifetime.) He earned a doctorate in philosophy at Yale University, received a postdoctoral fellowship at Cornell University, and was appointed as an instructor of economics at the University of Chicago, but never attained tenure at a major university. The two reasons often cited for his lack of professional success are his unconventional ideas and his personality.

According to Joseph Dorfman, Veblen viewed the economy as one from another planet might, largely because he was raised by Norwegian immigrant parents on an isolated farm. Robert Heilbroner calls Veblen's alienation from society the keynote to his life. Stephen Edgell offers a different interpretation, suggesting that Veblen's multicultural life made him quite cosmopolitan and a global thinker with no disciplinary boundaries.

Whether due to his own alienation or a sincere belief that existing economic theory had it all wrong, Veblen strove in his writings to offer a new way of thinking. He believed that a key assumption underlying economic thinking from Adam SMITH through Alfred MARSHALL is that there is harmony in the system. Smith's emphasis on the invisible hand and Marshall's emphasis on market equilibrium imply the existence of natural laws that can be identified using economic analysis. Veblen argued that economic and social behavior evolve in response to existing institutions, defined as our ways of thinking. Rather than assuming institutions as given, he intended to examine and explain the particular institutions of a culture in order to see clearly the economic forces they created.

Veblen published his most widely read book, *The Theory of the Leisure Class*, in 1899 after rewriting much of it to satisfy editorial demands. He set out to discover why and how the leisure class had evolved and why members of this class garner such respect and admiration from other members of society. Classical economists had not bothered with such trivial questions, accepting it as obvious that in the competitive struggle of economic life, some succeeded and, when they did, they naturally took advantage of the opportunity to spend their time as pleasantly as possible, far from the onerous burden of having to work for a living. Veblen questioned the basic assumption that leisure is inherently more enjoyable than work.

Based on extensive reading about other cultures, Veblen considered the possibility that productive activities are as pleasant a way to pass the time as leisure activities. He saw that in some cultures, pride of workmanship drove men to try and outdo each other and that leisure, if tolerated, was certainly not admired. The next stage of evolution came as a predatory class developed, with members who used force and cunning to take rather than produce. Warriors, who were admired for their skills though they produced nothing useful for society, were the members of the first leisure class. Whereas society had not been able to afford a nonproductive class in its early stages, economic progress eventually allowed it and the aggressive nature of people fostered it. Heilbroner observes that "the irksomeness of work, which the classical economists thought to be inherent in the nature of man himself, Veblen saw as the degradation of a once honored way of life under the impact of a predatory spirit." Moving on to modern life, and keeping in mind that the society under his gaze was marked by robber barons and captains of industry, Veblen gave us a way of interpreting our own behavior that is both enlightening and repellant. Cindy Lin makes the compelling argument that F. Scott Fitzgerald was inspired by Veblen's description of the leisure class when he wrote *The Great Gatsby*. The message that both Veblen and Fitzgerald convey is that there is nothing particularly rewarding about a life of leisure, that, in fact, such a life can be sad, bitter, and destructive.

Veblen introduced and used the terms conspicuous consumption, conspicuous leisure, conspicuous waste, and pecuniary emulation to describe why people did what they did in the modern society he sought to understand. Just as warriors and tribal leaders had been honored in earlier cultures, those with the predatory powers to accumulate wealth were held in high esteem in the culture of Veblen's time. Unfortunately, financial success cannot bring respect and admiration until it is seen and recognized by the other members of society. Thus, it was imperative that those who had achieved success find a way to let others see it.

Enjoying a good meal provides a certain amount of utility and a consumer will naturally pay a price consistent with this utility. To a classical economist, then, the price someone will pay for a meal can be explained by the amount of utility derived from its consumption. Veblen argued that, while this might be true in many cases, there were also examples of conspicuous consumption to be found in something as basic as the human need for sustenance. Dining in public view in a very expensive restaurant can provide an opportunity to advertise one's success, that, in turn, gives the consumer what he is really after: admiration and respect, not just dinner.

Veblen provides numerous examples of conspicuous consumption, many of them humorous and entertaining. The homes we live in, the cars we drive, and the clothes we wear all provide a clear indication of our success. Since in Veblen's time it was almost exclusively the male of the household involved in building financial success, it fell to the female of the household to properly display and advertise this success. The ideal according to Veblen was to have a wife who dressed well and never engaged in any sort of work. In fact, he saw the number of servants employed in a household as an important indicator of that household's success.

The Theory of the Business Enterprise was published in 1904, but was not embraced by the intellectual community as *The Theory of the Leisure Class* had been. In his new book, Veblen put forth the argument that there exists a fundamental conflict between making money and making goods, and that the businessman, far from being the driving force behind production, is actually intent on sabotaging the entire system. He provides numerous examples to support his contention, examples in which the quality of products or services is an unimportant part of the business leader's plan to dominate an industry, and his use of elaborate financial schemes to create money from nothing. Veblen would have been wonderfully fascinated with the fate of Enron and other corporations that followed almost exactly the pattern of behavior he laid out nearly a century ago.

Veblen developed an extensive framework to explain the behavior of professors, deans, and university presidents in *Higher Learning in America* (1918). His views that university presidents and boards are more interested in buildings, grounds, and real estate than in educational programs and policies, and that resources are wasted on athletic programs and ceremonies that are not of use to society, did not endear him to the academic community. However, he was offered the presidency of the American Economic Association a few years later, in belated recognition of his contributions. He turned down this opportunity on the grounds that it had not come when he needed it.

Veblen's institutional approach emphasizes the need for economic analysis to be dynamic and for economists to understand that human behavior evolves over time as social mores and habits of thought change. He would not advocate that modern economists simply devote themselves to finding new examples of conspicuous consumption or corporate misdeeds, but rather that they identify the next stage of evolution and explain what is happening and why.

Probably the most important legacy of Veblen is our current emphasis on empirical research. Whether we realize it or not, we are responding to Veblen's demand that we take a more open-minded approach, even if it is largely due to the enormous increase in computing power and data availability.

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Venezuela

LOCATED BY THE Caribbean Sea in the northern part of South America, Venezuela's economy in the 20th century was dominated by the development of its oil industry. Its heavy dependence on the oil industry stifled economic diversification and added to its political corruption and resistance to democratization.

Venezuela has progressed from colonization to independence. During his third voyage to the New World, Christopher Columbus landed on the location of present-day Venezuela on the northern coast of the South American continent in 1498. Although Columbus issued reports of great natural wealth in the region, its lack of gold or silver meant that the Spanish Crown lacked serious rivals for dominance in the region throughout the 16th century. Some development by the Spanish took place after 1556, but the region remained sparsely settled by Europeans over the next three centuries.

At the time that Venezuela declared independence, along with its neighboring colonies, from SPAIN in 1810, its economy remained primarily agricultural with some cattle ranches and a few trading posts. After a period as a member of the Gran Colombia coalition, Venezuela formally declared independence in 1830. Political unrest plagued the country, most notably during the Federal War (1859–63). After a series of repressive dictatorships, the democratically elected administration of Romulo Gallegos was overthrown by military coup in 1948 after less than a year in office, and it was not until 1958 that democracy firmly took hold in Venezuela. In the half century since then, Venezuela has remained one of the most stable nations in South America, although the military remained a potent threat to civilian rule.

The discovery of oil in Venezuela in the early 20th century transformed the economy of the country. Through major investments by international oil companies, Venezuela was exporting oil by 1918, and by 1928, was the largest oil exporter in Latin America. Through the 1930s, Venezuela was the third-largest oil producer in the world, after the UNITED STATES and the SOVIET UNION. A founding member of the ORGANIZATION OF PE-

TROLEUM EXPORTING COUNTRIES (OPEC) cartel in 1960, Venezuela's economy became firmly yoked to the volatile oil market in the 1970s and 1980s. Compounding the problems brought on by its oil dependency and lack of economic diversification, the country's political leaders kept the country mired in corruption, inefficiency, and a bloated civil service. The country also suffered instability as a trans-shipment point for the illegal drug trade originating in COLOMBIA.

Austerity measures induced by decades of overspending and a sudden drop in oil prices in the late 1980s brought civil unrest and an attempted military coup in 1992. The leader of that coup, Hugo Chávez Frias, was democratically elected as a civilian leader in 1998, and again in 2000, on a pledge to stem corruption and spread economic development to rural areas. Oil revenues remained the source of about 80 percent of the country's export earnings and a third of its GROSS DOMESTIC PRODUCT (GDP).

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venture capital

MODERN VENTURE CAPITAL came into existence in the United States in the 1950s. In the late 1990s, the business practice of venture capitalism predominated in the Silicon Valley area of California, but into the 21st century, it is no longer an exclusive investment concept experienced by the American business community. Several European and east Asian countries have developed individual derivations of venture capital industries. Therefore, they have taken on a markedly different conception from those in the United States, and the meaning of venture capitalism has become broadly defined on a global scale.

The venture capital business. Jean Witter first used "venture capital" as a term in a public forum during a presidential address to the 1939 Investment Bankers Association of America convention. Witter highlighted the need for new forms of venture capital to spur economic growth and revitalization. The effect of the onset of venture capitalism has produced a specialized form of finance. The risky investment of capital goes to support small, privately owned firms judged to have the potential for fast growth.

Venture capital invests in funding, or is available for investments. These investments are, by nature, funneled into enterprises that offer the probability of profit with accompanying high risks of no return. Indeed, venture capital was once known also as risk capital. Venture capitalists downplay the immense risks associated with this type of investing. Instead, they may operate very similarly to a gambler with a grandiose belief of always having all success and no failure in the market. No one can know with absolute certainty the effects of what Adam SMITH described as "the invisible hand on the market," nevertheless many venture investors focus on the assurance of a substantial profit. Venture capitalists can be falsely self-assured in the investor's knowledge and business sense.

A venture capital firm is an investment company with a calculated means to invest its shareholders' money in startups and other risky, but potentially very profitable ventures. Many venture-capital success stories have become household names. For example, Cisco, Amazon, Lotus, eBay, Intel, Netscape, Sun Microsystems, and Yahoo!, all received venture capital funding. All venture capital has not been exclusively in the technology industry (information technology, internet, telecoms, wireless communications, and computer software); firms such as Starbucks (coffee retailer) and Staples (office products) were also fueled by venture capital investment.

The investments made by venture capital firms may be categorized by the stage at which financing is provided. The first three may be referred to as early-stage financing and the remaining three as later-stage financing: seed financing usually involves a small amount of capital provided to an inventor, or entrepreneur to prove a concept; start-up financing provides funds to companies for use in product development and initial marketing; expansion financing includes working capital for the initial expansion of a company, or for major growth expansion, and financing for a company expecting to go public within six months to a year; leverage-buyout financing includes funds to acquire a product line, or business from either a public, or private company, utilizing a significant amount of debt and little, or no equity; acquisition financing provides financing to obtain control, possession, or ownership of a private portfolio company.

Venture capitalists were instrumental in the enormous expansion of the number of "dot-com" start-ups in the late 1990s. Because the internet was a new and untried business venue with enormous potential, many analysts with hindsight state that standard businesses rules were too frequently suspended in what was a very optimistic market. Internet-based enterprises were expected to enjoy an unprecedented measure of success; many venture capitalists were said to have encouraged dot-coms to focus on scaling upward, rather than on realizing early profits.

As the dot-com bubble of optimism burst, the venture-capital investment decision-making process has reverted to its initial discipline that requires an extensive and arduous analysis to examine management capabilities, financial health, market trends, and its own investment strategy; sometimes a venture capital firm must be adaptable to choice and structuring of investment.

Although venture capital investment is relatively small in relation to GROSS DOMESTIC PRODUCT (GDP), it is a major source of funding for new technology-based firms. Firms using venture capital are given financial support at a crucial moment to create radical innovations for the market place.

The U.S. venture capital industry. One of the most important challenges to new entrepreneurs in the innovation process is acquiring start-up capital, yet most start-up companies, characteristically, may not have access to public, or credit-oriented institutional funding.

Venture capitalists purchase equity securities and assist in the development of new products and/or services. They add value to the company through active participation. Venture capital investments are high risk with expected high rewards. Frequently, these high-risk investments are made from the long-term perspective. Venture capital, thus, can aid the growth of promising small firms. In supporting vulnerable companies, venture capital can facilitate the introduction of new products and technologies.

When considering an investment, venture capitalists cautiously screen the technical and business merits of the proposed firm. Most often, venture capitalists only invest a small stake in the business they appraise, employing and utilizing long-term financial analysis. Going forward, they actively work as a management partner with the firm. Typically, an experienced investment corporation provides more than just cash, but also offers the start-up company a wealth of experience and expertise from past endeavors.

Venture capitalists mitigate the risk of venture investing by developing a portfolio of young companies in a single-venture fund. The practice has expanded to include co-investing with other professional venture capital firms to defray potential risk and losses. In addition, many venture partnerships will manage multiple funds simultaneously. For decades, venture capitalists have nurtured the growth of America's high technology and entrepreneurial communities. The remarkable results of this business venture, when successful, are significant job creation, economic growth, and international competitiveness.

Venture capitalists strongly favored particular regions in the United States. Venture capitalist activity in California, Massachusetts, and New York together account for nearly 65 percent of the nation's venture investment, while together the top 10 states account for over 95 percent. Thus, regions with large venture capital investments develop agglomerate economies.

The pool of funds managed by venture capital firms rose considerably during the 1980s. It was during this era that venture capitalism emerged as a truly important source of financing for small innovative firms. These entrepreneurial backers differ from one another by reputation, years of operation, previous experience, acquired knowledge of the general partners, preference for lead, or follow-on investment, and the invested company's track record.

When compared to the 1980s, the early 1990s experienced a RECESSION, as investor interest waned and the amount of venture capital disbursed to companies declined. Soon after, during 1992, investors regained the confidence they needed to fund upstart entities and disbursements began to rise again. Both investor and venture capital disbursements reached record levels by the late 1990s, but by 2001 the data shows total managed venture-capital entities declined again.

In the United States (and in Europe), almost all venture funds are institutionally backed limited partnerships—wealthy individuals, pension funds, and corporate investors. Though in America the largest contributions for venture capital spending come from large institutional investors, outside the United States, banks tend to be the industry's largest funding sources. It should not be assumed that all investor funds originate in the native country of the venture capital firm itself. In fact, there are substantial and increasingly important cross-border flows of raising funds. In an increasingly global economy, both inflows and outflows are not exclusive to one nation.

The leading recipients of venture capital in the United States continue to be computer-technology businesses, those engaged in hardware or software production, including computer-related services such as computer training and support. Further, along with telecommunications venues, medical/health-care-related firms have also attracted large amounts of venture capital.

The vitality of venture capital. There are at least five institutional forces that affect the vitality and dynamics of the venture capital industry: financial market structure, human resources availability, source of opportunities, supporting institutions, and the government policy of the venture organization.

The financial market structure includes the presence of a liquid initial public offering (IPO), which provides venture capitalists with exit mechanisms to gather their successful investments. Typically, an IPO is the most profitable exiting opportunity for venture capitalists.

The human resources availability is important because venture capital can only flourish with an adequate supply of entrepreneurs and skilled capitalists. Therefore, the country's entrepreneurial tradition, and the social recognition of the entrepreneur, the flexibility of the human resources system, and the security of the jobs in large firms are central issues in the development of the industry. Source of opportunities means the availability of opportunities related to the RESEARCH AND DEVELOPMENT (R&D) environment, access to expert consultation, and the R&D outcome.

Supporting institutions involves establishing a network among a rich array of firms and professionals. This team of consultants specialize in tasks that benefit entrepreneurs, subcontractors, executive recruiters, lawyers, financial executives, and so on—the creation and self-reinforcement of these specialized institutions are a vital issue in the dynamics of venture capital development. Additionally, the role of geographical proximity in the diffusion of information and the construction of social networks is particularly important to understand types of regional development.

Government policies can influence the size and structure of the venture capital industry. Governments can take promotional measures; make use of taxes to regulate venture investments directly, or adopt laws that stimulate more supporting institutions. Governing bodies also can provide legislation to support markets (i.e., financial, labor, etc.). In addition, governments can promote venture-capital investments by adopting specific policies leading to the development of some key industries (biotechnology, pharmaceuticals, high-tech, etc.).

Venture capital funds. In the early days of venture capital, the perception was of high net-worth individuals interested in providing the capital required for developing an idea, discovery, or invention. Individuals with insufficient credit to market their idea, or discovery, often are red-flagged by banks. Banks act conservatively and categorize venture capital as an unacceptable risk to support. Formalized partnerships, or venture capital funds, were created between and among venture capitalist operations. Over the years, the more generic term "private equity investing" was coined to include a wide range of transactions involved in investing in corporations that generate high return opportunities.

Venture capital investments are generally staged, so venture capital firms typically raise their capital not on a continual basis, but rather through multiple rounds. Limited partners pay venture capitalists annual management fees between 1 percent and 3 percent of their investment. Once a fund is terminated, usually within 10 years, the general partner receives an interest of around 20 percent.

Venture capital entities can have many structures. Venture capital firms can be independent, run by teams of private individuals (commonly termed "angels" and "angel clubs"), or can be captive, a subsidiary of a financial institution, such as a bank or insurance company, or other corporate entities making investments on behalf of the parent group, its clients, as well as outside investors. Sources of revenue can vary with venture capitalism. Independent venture capital firms raise capital from various external sources, normally institutional sources, on a competitive basis. As a consequence, the financial inflows might be more dependent upon their success, making it essential for independent venture capital firms to obtain superior investment returns to signal their competence. Therefore, revenue from external sources could affect a venture capitalist's investment strategy. The investing strategy for venture capitalists desiring a large profit margin, while still retaining a sense of security, is to invest in later-stage firms in order to avoid making too many high-risk technology investments, and to have an acceptable risk diversification. High-tech investments are particularly unattractive to risk-averse investors (even if they can offer high-return with a long-term horizon), instead more safe non-technology intensive investments are considered to yield better profits in a short-term horizon.

Agency theory is the most common framework adopted to analyze the relationship between venture capitalists and entrepreneurs. Insiders in the firms in which venture capitalists invest have tacit, confidential knowledge of their opportunities that is rarely shared with outsiders of the organization. Information asymmetries make venture capital investing very labor intensive. The process of raising money and then channeling funds into the venture requires lengthy periods of time, noted to be significantly prevalent in recent fiscal years. Venture companies were able to raise funds during bullish markets, and in bearish markets when few sound investment opportunities are worth pursuing.

The globalization of venture capital industry. Venture capital is not equally available to entrepreneurs in all countries. In the 1980s and late 1990s, European entrepreneurs and financiers watched across the Atlantic with skepticism as America's high-tech growth market powered the U.S. economy. The European business community attributed the American exponential growth to the flourishing venture capital foundations. This conclusion did not bolster their confidence in their own venture capital firms to fuel their own economies. The European stock markets clung firmly to the belief that only a company with a track record of profit should be admitted to a stock market. It was decidedly a bad-business practice to fund such significantly risky ventures, despite the increasing economic integration in the EUROPEAN UNION and a sustained period of low interest rates across Europe.

The U.S. venture capital pool remains the largest in the world by either absolute size, or relative comparison to other economic data. In 2001, 62 percent of global private equity was invested in North America, 21 percent was invested in western Europe, 12 percent in Asia Pacific, 2 percent in Middle East and Africa. Private equity includes venture capital, buyout funds, mezzanine debt funds, and special situation funds. Venture capital is a substantial component of private equity. (In 2001, in the United States, the $59.7-billion pool of private equity included $41.9 billion of venture capital.) Over the years, private equity and venture capital markets have been subject to strong cyclical fluctuations.

William Bygrave and Jeffrey Timmons (1992) describe several cycles that have marked the U.S. venture capital experience. A very slow beginning in the 1940s eventually led to a boom in the 1960s. A short but quick downturn at the start of the 1990s was followed by another boom. The experience outside the United States has been marked by analogous ups and downs, over a shorter period of time beginning in the 1970s. Over time, IPOs are the most important force behind the cyclical swings in the venture capital industry. Also, early- and later-stage venture capital investments are affected quite differently by the determinants of venture capital activity. In addition, over time, IPOs explain less of the year-to-year fluctuations in early stage rather than in later-stage investments.

There still appears to be a very strong nationalistic or home bias in the venture capital industry in general. This is expressed in two ways. First, venture capitalists tend to invest in their home country. The costs of monitoring distant companies can at least partly explain why the home bias might affect investments. Second, venture capitalists also seek to exit their investments from their home country. This can again be partly explained by the time and effort it takes to sell a business. An IPO in a foreign country involves more cost and effort than an IPO in the home country.

Across countries, some segments of the venture capital market behave quite differently from others. The need for a more differentiated approach to venture capital is especially important, in that they concern two areas. These are early-stage investing, and government involvement. Several studies have tried to analyze the globalization of the venture capital industry. These studies also address the question of what are the peculiar elements of a global market for emerging venture capital. William L. Megginson (2003) found that at least superficial convergence is occurring among North America and Western countries in funding levels, investment patterns, and realized returns. Surprisingly, the author concludes that no integrated global venture capital market is emerging, nor is one likely to emerge in the near future. Even vastly larger public-capital markets can remain effectively segmented from each other, despite massive cross-border capital flows. National public equity markets are much more segmented from each other than are national-debt markets; it only stands to reason that national private-equity markets like venture capital will be even less globally integrated. Finally, huge differences remain in the relative national importance of stock and bond markets.

These differences in markets are the end result of differences in legal systems and regulatory environment. In the same order of ideas, Colin Mayer (2002) concluded that, contrary to the United States, European countries opted for high levels of investor protection and low levels of diversity of investments. To stimulate high technology sectors within the European market it would be judicious to change the substance of the European approach to investing.

In the incidence of this new era, promoting employment and innovation has been a primary objective of national economic policy. Because of rapid advancements in technology, nations are becoming globalized, and venture capital has been a vital source of risk finance for companies in the United States and in Europe. These experiences over the past quarter-century show that the successful stimulation of entrepreneurs requires an integrated system of positive legislation, liberalization, and tax incentives. A process of economic vitality that cannot be underestimated is the importance of trading in the stock markets. Public trading of shares is a vital force behind growth in companies. National rivalries have slowed the integration of Europe's stock markets, but the pressure of competition has put the process underway (e.g., the creation of a pan-European stock market named "Euronext" was a major step in this process).

Most studies indicate that the successful diffusion of venture capital depends on the business opportunities that permit large capital gains. Venture-capital backed companies can provide high returns. However, despite success stories a lot of the deals fail. It is said that only one out of 10 emerging companies succeeds. There have been frequent criticisms of venture capitalists. These assertions state that capital venture companies harbor disloyalties to an organization and destabilize growth within an entity. Unity within members of a young company is tenuous as high turnover/departure of upper-level managers and even entire research teams from existing firms derail product development teams.

While research in the venture capital field progressed over the last few years, many unsolved, or unanswered questions remain, such as: what is the true correlation between risk and returns, the means of the internationalization of venture capital (e.g., is it because of global fund raising, or nationalistic public policies?) namely in banking-oriented economies such as GERMANY or JAPAN. Another inquiry refers to the relationship between venture capital, and its real impact (innovation, and subsequent job growth).

For many venture capitalists the start of the new century was not easy. In 2002, many of the largest and most successful U.S. capital funds decided to release their limited partners from a number of agreed-upon capital calls. Thereby, smaller and newer firms were forced to leave the business entirely. The cyclical nature of downs and ups of the venture capital industry became evident once again with more losses than gains from actions formally described. In the global context, the significance of business practices raises the question of whether venture capital in smaller markets will survive.

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Verizon Communications

ONE OF THE LARGEST telecommunications service providers in the world, Verizon traces its lineage to the formation of the Bell telephone companies in New York and other Eastern states in the late 1800s. These local telephone exchange carriers operated as part of the AT&T monopoly. Verizon's modern history begins in 1984, under the name of Bell Atlantic, when AT&T divested its regional telephone operating companies and formed the "Baby Bells."

Much of Verizon's growth since divestiture has been through merger. NYNEX, another Baby Bell, merged with Bell Atlantic in 1997. In 2000, Bell Atlantic merged with GTE, the largest independent (non-Bell) local telephone service provider, and took the name Verizon. At the same time, Verizon and Vodafone Airtouch combined their United States wireless communications assets.

Today, Verizon's main lines of business are domestic telecommunications and wireless services, international telecommunications, and information services. The company is the largest player in the local phone service and wireless markets in the United States, with 132 million telephone lines served and 29 million wireless customers across the nation. In 2001, Verizon had revenues of \$67 billion and assets worth \$171 billion, which earned it a top-ten ranking in the Fortune 500.

The Telecommunications Act of 1996 allowed dominant local exchange carriers such as Verizon to enter the long distance business after regulators deemed their markets competitive. Bell Atlantic was the first of the Bell operating companies to receive approval, and began offering long distance service in New York in late 1999.

Verizon has invested in international wireless and wireline ventures in 19 countries in the Americas, Europe, Asia and the Pacific. Verizon is also the world's largest print and online telephone directory publisher. Other information services offered include directory services for online providers such as internet search engines and portals.

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Vickrey, William (1914–96)

CANADIAN ECONOMIST and Nobel laureate, born in Victoria, British Columbia, William S. Vickrey graduated from Yale University in 1935 with a B.S., and from Columbia University in 1937 with an M.A. degree. He began teaching at Columbia in 1946 and was awarded a Ph.D. in economics in 1948. Vickrey became a full professor in 1958, and a chaired professor in 1971.

A distinguished economics scholar, Vickrey also served as a consultant on many public policy projects. As a conscientious objector during WORLD WAR II, Vickrey spent part of his alternative service working as an advisor on tax policy in Puerto Rico. He later worked on assignments for the Twentieth Century Fund, the City of New York, and the United Nations, and served as a member of the National Academy of Sciences, president of the American Economic Association, and as Fellow of the Econometric Society. For his seminal work on auction theory, Vickrey was awarded the Nobel Prize in Economics on October 8, 1996 (jointly with James A. MIRRLEES of England). Two days after the prize announcement, Vickrey died in Hastings-on-Hudson, New York.

Vickrey pioneered the analysis of incentives under asymmetric information in the context of auctions. Vickrey's most celebrated contribution to economics is the second-price auction, or Vickrey Auction: Suppose a single object must be sold to one of several potential buyers. It is socially optimal to allocate the object to the person who has the highest willingness to pay for it, if this person bears the social cost implied by the fact that the object cannot be sold to somebody else, or be retained by the seller, at the same time (an opportunity cost). Often, a buyer knows his willingness to pay far better than the seller does—it is the buyer's private information that he typically does not want to reveal to the seller. It is hence a great challenge for economists to design market mechanisms that achieve the socially optimal outcome, even in the presence of asymmetric information.

Vickrey's mechanism implements the social optimum in the above problem in a strikingly simple and elegant way. In the Vickrey auction, each potential buyer is asked to submit a bid for the object. The good is then allocated to the highest bidder, who is required to pay the second-highest bid as the price. It is easy to see that under these rules, every bidder maximizes his own benefit by submitting a bid that equals his true private valuation for the object. Since nobody can win the good and control its price at the same time, bidding one's true valuation maximizes the chance of winning at a price that is below one's valuation. Consequently, the object is won by the person who values it the most. Moreover, since the payment by the winning bidder equals the second-highest valuation in the market, the winner pays the social opportunity cost.

Vickrey's original design is not used often in today's auction markets. Under certain conditions, however, it is equivalent (in terms of bidding behavior and outcomes) to other, more widely used auction forms.

Vickrey's work paved the way for the lively research area of auction theory, or auction design, that by now has resulted in many important applications, including U.S. and European spectrum auctions, treasury auctions, and auctions for offshore oil drilling rights.

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Vietnam

WHEN THE VIETNAM WAR ended in 1975, the communist government extended the North's centrally planned economy to the South. A series of bad harvests and Vietnam's military intervention in Cambodia, however, led to an economic crisis. This forced individuals and agricultural collectives to circumvent quotas and produce goods for market, a movement popularly known as "fence breaking." Communist leaders admitted in 1979 the necessity of modest reforms and began to liberalize retail trade. Communist Party General Secretary Le Duan's death in 1986 opened the way for further liberalization under the slogan "renovation."

Vietnam negotiated an end to the UNITED STATES' economic embargo in 1994 and restored diplomatic relations the following year. From 1993 to 1997, GROSS DOMESTIC PRODUCT (GDP) growth rates averaged around 9 percent per year. The 1997 ASIAN FINANCIAL CRISIS prompted the government to reassess the dangers of an unbridled market economy and to slow the pace of reform. The 2001 United States-Vietnam Bilateral Trade Agreement is expected to improve Vietnam's exports to the United States and to bring further legal and structural reform to Vietnam.

In 2001, the real GDP growth rate was 4.7 percent and industrial production including food processing, garments, shoes, machines, mining, and cement grew an estimated 10.4 percent. Agricultural products included rice, corn, potatoes, rubber, soybeans, coffee, tea, bananas, and sugar. Vietnam exports crude oil, fish, rice, coffee, rubber, tea, clothing, and shoes. Its main export markets are JAPAN at 18.1 percent, CHINA 10.6 percent, AUSTRALIA 8.8 percent and SINGAPORE 6.1 percent. In 2002, Vietnam's population was estimated at 81,098,416 and GDP was approximately $168.1 billion.

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Vietnam War

CONSIDERED THE LONGEST war the UNITED STATES has fought so far, the Vietnam War is also one of the few wars from which America did not come out as a winner. It cost 57,605 American lives and wounded 303,700 soldiers. It split the American nation and led to violent demonstrations that also cost lives. The war revealed the ineffectiveness of U.S. Cold War foreign policy and triggered a major rethinking of its global strategy.

America's involvement in VIETNAM was preceded by the French effort to reassert colonial control in southeast Asia after WORLD WAR II. As a part of European imperialist expansion, FRANCE established itself in southeast Asia (present-day Vietnam, Laos, and Cambodia) and claimed the region as its protectorate in the 1880s. France called its colonial possession Indochina. During World War II, the Nazi-controlled French Vichy government collaborated with the Japanese and allowed Japan to occupy Indochina. In 1941, the Vietminh (Vietnamese Independence League) was founded under the leadership of Ho Chi Minh, a member of the Indochina Communist Party. The Vietminh spearheaded a nationalist movement against both the French and Japanese for an independent Vietnam. On September 2, 1945, after Japan surrendered, Ho Chi Minh and the Vietminh declared the independence of Vietnam and founded the Democratic Republic of Vietnam (DRV). France, however, decided to reclaim Vietnam as its colonial possession and attempted to wipe out the Vietminh.

Despite its theoretical support for national self-determination, the United States did not support Vietnam's independence, nor did it oppose the French effort at reasserting colonial control. When the KOREAN WAR broke out in June 1950, the United States decided to aid the French in Vietnam as a comprehensive effort to contain the spread of communism. Between 1952 and 1954, American aid to the French in Vietnam amounted to $2.6 billion.

The war between the French and the Vietminh came to an end in 1954. At Dienbienphu, a village in northwest Vietnam, the French garrison was finally captured by Vietminh forces after a two-month siege. The Geneva Conference held in the same year formally ended French control in Vietnam. The Geneva Accord, the result of the Geneva Conference, temporarily divided Vietnam at the 17th parallel and scheduled to unify the country after a nationwide election in two years. The Geneva Accord was signed by all the other parties present at the conference except the United States and the Bao Dai government of South Vietnam.

Determined to support a pro-American government in South Vietnam against the spread of communism, the United States turned to Ngo Dinh Diem, a Vietnamese Catholic who had collaborated with the Japanese and, since 1950, had lived in Europe and America. Diem went back to South Vietnam and became premier in the South Vietnamese government. The Dwight EISENHOWER administration not only gave financial aid to Diem, it also started to send military advisors to train South Vietnamese troops. In 1955, Diem created the Republic of Vietnam, pushed Bao Dai aside, and made himself president in a rigged election in South Vietnam. Diem then refused to participate in the nationwide election stipulated in the Geneva Accords.

By 1961, President John KENNEDY was told that despite American aid, Diem only controlled 40 percent of South Vietnam. Diem's rule in South Vietnam was authoritarian and ineffective. His Catholic beliefs set him apart from the majority of the population, who were Buddhists. His support of the landlord class disappointed peasants who had been longing for land reform. His program of forcing peasants into government-controlled villages (called agrovilles or strategic hamlets) in an effort to prevent communist infiltration further estranged the peasant class.

Meanwhile, North Vietnamese communists infiltrated into the South to organize revolts against the American-backed Diem regime. In December 1960, the National Liberation Front (NLF) was formed in the south and provided leadership in the struggle against Americans and Diem. The Diem regime called the NLF "Vietcong" (a derogatory appellation meaning Vietnamese communists). The NLF quickly attracted many supporters, both communists and non-communists, in the South. With material support transported along the Ho Chi Minh Trails from the North to the South, the NLF fought against the South Vietnamese and American troops in a guerrilla war.

The Kennedy administration's response to the NLF revolts was to dispatch Green Berets, special forces trained to fight rebels in places such as Vietnam. By 1963, Kennedy had sent more than 16,000 American troops to South Vietnam. The Green Berets, in addition to American military advisors and aid, did not help the situation in South Vietnam. Diem's suppressive policies against his own people, that caused demonstrations (including those by Buddhist priests), and his inability to effectively deal with Northern infiltration led to a coup staged by his own generals (and with U.S. encouragement) on November 1, 1963. Diem died in the coup and Kennedy was assassinated three weeks later.

Lyndon JOHNSON, who became president after Kennedy's assassination, officially announced that the United States would help South Vietnam to win its war against communism. However, the new regime in South Vietnam proved to be as ineffective as the Diem government in dealing with communist infiltration. The Johnson administration, in early 1964, deliberated over using America's superior air power to bomb North Vietnam to stop its war in the South.

The pretext for Johnson's decision to bomb North Vietnam came in the Gulf of Tonkin Incident. On August 2 and 4, 1964, American destroyers *Maddox* and *Turner Joy* were allegedly torpedoed by North Vietnamese patrol boats in the international waters of the Gulf of Tonkin. Johnson ordered American planes to bomb North Vietnamese ships and bases as a response to the alleged attacks. On August 7, the U.S. Congress passed the Gulf of Tonkin Resolution, authorizing Johnson to "take all necessary measures to repel any armed attack against forces of the United States."

In response, CHINA stepped up its already substantial aid to North Vietnam, committing itself to the effort of driving away American military forces from Vietnam. Meanwhile, the SOVIET UNION sent advanced weapons to defend North Vietnam from America's air warfare.

America's war in Vietnam further escalated in early 1965 when ground troops were sent to Vietnam and in 1966 when American B-52s started to bomb North Vietnam. By the end of the year, 160,000 American troops were in Vietnam. At the height of the war, 543,000 American troops were fighting in Vietnam and the American cost of the war jumped from \$8 billion in 1966 to \$21 billion in 1967. Between 1965 and 1967, American planes dropped more bomb tonnage on Vietnam than the total bomb tonnage the Allies dropped on Europe in World War II.

As the United States deepened its commitment in 1965, university and college students throughout the country started to organize protests against the government's policy. In the next several years, anti-war protests joined the civil-rights movement to pressure the government to end the war in Vietnam and discrimination against African-Americans and other minorities. Martin Luther King, Jr., publicly spoke out against U.S. involvement in Vietnam. In October 1967, about 100,000 people protested outside the Pentagon. Yet, the Johnson administration pleaded for public support and told the nation that the United States was winning the war. He said he could already see the "light at the end of the tunnel."

Contrary to what the government had been saying, the NLF's surprise attack in South Vietnam in January 1968, revealed to the American people that the United States was far from winning the military conflict. During the Vietnamese New Year, Tet, the NLF with support from the North fought their way into Saigon, the South Vietnamese capital, and engaged in combat inside the U.S. Embassy compound. Although the American-supported South came out of the Tet Offensive victorious, televised images of the war's brutality further deepened opposition. More and more Americans questioned the involvement in Vietnam.

On March 31, 1968, Johnson declared on national television that he would limit the bombing of North Vietnam as a gesture to get Ho Chi Minh to the negotiating table. Yet, he had no intention of withdrawing American troops from South Vietnam, for preserving South Vietnam as a nation against communism was still an important part of America's foreign policy. In May 1968, peace talks began between the United States and North Vietnam but by October, the talks had stalled over the postwar political nature of South Vietnam.

The U.S. presidential elections in 1968 were much affected by the war in Vietnam. After the Tet Offensive in March, Johnson announced to the nation that he would not seek re-election. The deeply divided nation would witness the assassinations of King and Robert Kennedy within the year. The Democratic convention in Chicago was held amidst violent protests outside the conventional hall and deep divisions among delegates. The Democratic nominee Hubert Humphrey, burdened by his party's failures to win the war in Vietnam and to end domestic violence, was defeated by Republican Richard NIXON. The Republican candidate promised the nation to somehow withdraw American troops from Vietnam while still maintaining an independent non-communist South Vietnam.

The Nixon administration tried new tactics in Vietnam. It ordered the secret bombing of Cambodia in an attempt to destroy the Ho Chi Minh Trail. Meanwhile, Nixon announced a Vietnamization policy, which was to shift the burden of defeating the communists onto the South Vietnam military, with large American aid, and to reduce American military presence there. By the end of 1971, Nixon had reduced American troops in Vietnam from 543,000 in 1969 to 139,000. But, when the secret bombing finally led to an invasion of Cambodia in April 1970, the American public, particularly college students, organized large-scale protests against the widening of the war. At Kent State University, Ohio National Guard troops fired on student protesters, killing four. Nixon, however, persisted with his tactics and further widened the war when, in 1971, he launched an attack on Laos for the same purpose of stopping North Vietnamese supplies to the South.

Nixon's new tactics were not successful. South Vietnam depended on huge American aid to maintain its large army. The North Vietnamese government refused to withdraw its support to the NLF or talk about a divided Vietnam. The North remained determined to defeat the South Vietnamese regime supported by the United States and to unify the country under a national dispensation.

The frustration in Vietnam prompted the Nixon administration to take an overall inventory of America's Cold War foreign policy. As a result, the administration signaled to the People's Republic of China, which the United States had refused to recognize since its founding in 1949, that it was willing to talk with its leaders. In July 1971, Nixon shocked the world when he announced that he was going to visit China the following

February. The development of Chinese-American relations destroyed the bipolar international system, which had been dominated by U.S.-Soviet Union tensions.

U.S. envoy Henry Kissinger's negotiations with North Vietnamese representatives continued intermittently in 1972 as the United States continued to bomb North Vietnam and as communist forces and supplies continued to enter the South. In January 1973, Kissinger and Le Duc Tho, the head of the North Vietnamese delegation, signed an agreement. According to the agreement, the United States would withdraw all its troops from South Vietnam; the two sides would exchange prisoners of war; an international commission would supervise the truce; and a coalition of various factions in Vietnam would conduct elections in the South.

On April 30, 1975, communist forces took Saigon and renamed it Ho Chi Minh City to honor the nationalist leader who had died in 1969. Vietnam was finally a unified country.

America's long war in Vietnam had enormous economic costs, diverting domestic funding into the war. As the war progressed and developed in the late 1960s, inflation and interest rates began to soar. Johnson, who also had wanted to conduct a War on Poverty and build a social support system for all Americans called the Great Society, was continually distracted by the war and passage of his economic legislation was stalled. Nixon, also trying to balance the cost of war with domestic concerns attempted to control inflation with wage and price controls, but fared not much better.

Not only had the United States lost a war, more importantly it proved incapable of fully supplanting, whether it should or not, a system of its own choice on another nation.

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Vivendi Universal

ONE OF THE LARGEST French companies, Vivendi Universal delegates its corporate responsibilities to eight separate entities: Vivendi Environnement, Universal Music Group, Vivendi Universal Publishing, Vivendi Universal Entertainment, Canal Plus Group, Cegetel Group, Vivendi Telecom International and Vivendi Universal Net. Employing 381,000 workers around the world, Vivendi had an estimated income of €3.8 billion in 2001.

Environmental Services and Television & Film are the biggest revenue generators. Vivendi Environnement brought in €1.5 billion in the first half of 2002 and Vivendi Universal Entertainment & Canal Group (both are television and film) took in €600 million. The third largest generator is Telecommunications. Cegetel Group and Vivendi Telecom International brought in a combined total of €400 million in the first half of 2002.

Vivendi Environnement is a world leader in environmental services, providing water, waste management, energy, and transportation services. As just one example of Vivendi's reach, the water division has over 110 million customers in more than 100 countries. Its waste management division, Onyx, is the number 1 company in Europe and number 3 in the world, providing 70 million people with waste services. Connex, its transportation services group, counts more than 1 billion passenger miles.

After an acquisition spree in 2001, Vivendi Universal ran into several financial difficulties. It acquired Uproar Inc, Maroc Telecom, EMusic.com, Houghton Mifflin, and MP3.com. After some corporate restructuring, including firing half of its Paris office, and selling much of its privately held stock, Vivendi Universal solidified its position as a mega-media conglomerate with the approval of a €1.9 billion loan.

As of late 2002, the company was still negotiating legal issues with French telecommunications giant Vodafone. Selling many of the acquisitions of the year before, Vivendi Universal was under investigation by the United States Attorney's Office in New York City for accounting discrepancies.

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Volcker, Paul A. (1927–)

ASTUTE, CONTROVERSIAL, and some say brilliant, proponents of Paul A. Volcker describe him as one of

America's true heroes—a great, gutsy economist whose knowledge of the market and no-fear values affected the American economy for the better at a time when indecision and economic fears had Wall Street locked in apprehension.

Volcker took the chair of the FEDERAL RESERVE Board in 1979, when inflation had skyrocketed (at more than 13 percent). He prescribed harsh measures, including implementation of a monetary policy that produced soaring interest rates (much to the public's combustive reaction) and a recession (again received by a growling public), Volcker nonetheless proved that his strategy tamed inflation, after all. In fact, he had laid a cornerstone of economic rejuvenation.

Since Volcker's time, the U.S. economy has grown throughout the majority of subsequent quarters and inflation has never repeated the frightening levels of the 1970s.

Born in New Jersey, Volcker spent much of his childhood in the town of Teaneck, the son of a well-liked city manager who had rescued the town from bankruptcy. "My father made a big impact on my life because he was the central governmental figure in town," Volcker told interviewer Ben Wattenberg. "I didn't go out with the other boys and aim rocks at the street lamps for fear of ending up in my father's office being chastised."

After high school, Volcker attended Princeton University, then Harvard, and completed his studies at the London School of Economics. In his earliest college months he had been unsure of a direction and pondered a public administration career, but at Princeton, he took courses that fired his imagination. By the time he entered Harvard's Kennedy School, he preferred fewer administrative courses to concentrate solely on economics.

To complete his doctorate, he went to London in 1950. "My dissertation was going to be on comparing the transmission of monetary policy in Britain and in the United States," Volcker explained, "because Britain had a very different structure of the banking system."

The city of London intrigued him, but he never wrote the dissertation. Volcker's career over the next decade hop-scotched between civil servant and central banker; he moved among an elite line of political movers-and-shakers who respected his broad economic background with an emphasis on international market expertise. A towering figure in metaphor, he was also one physically. At 6-foot-7-inches, Volcker's presence at any political, social gathering drew people toward him.

During President Richard NIXON's term, Volcker served as under-secretary of the U.S. Treasury. Then, in 1979, President Jimmy CARTER offered him the position of the office of chairman of the Federal Reserve Bank. The position was the capstone of any economist's career, but it was not an enviable niche. The country's economy teetered on a bleak plateau; inflation spiraled upward; Wall Street trading had been dropping off significantly since 1976; the Carter administration was at a loss economically. Nevertheless, Volcker accepted the challenge with gusto.

Change was subtle and economic forecasters, at first, doubted Volcker's strategy of firmly controlling the money belt. But, the success of his measures soon became evident. Interest rates tightened, inflation figures eventually dipped until, by mid-1981, it was 9.7 percent. As Ronald REAGAN was elected over Carter in 1980, the new administration allowed Volcker to work uninterrupted. On August 17, 1982, economist Henry Kaufman announced that the worst was over. Thanks to Volcker, a base for sustained growth lay in place. Wall Street breathed a sigh of relief as the Dow Jones Industrial Average celebrated the largest single-day rise in the market's history.

Retiring in 1989, Volcker was succeeded by current (2003) Federal Reserve chairman, Alan GREENSPAN.

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Volkswagen

RANKED AS THE 21st-largest company in the world in 2002 by *Fortune* magazine, the German automobile manufacturing company was founded in 1937 to construct affordable "People's Cars," or Volkswagen. The earliest designs for what became the signature Volkswagen were created by engineer Ferdinand Porsche in the early 1930s. Porsche's innovative suspension system, considerably lighter than anything designed up to that time, promised to allow for the production of smaller and less expensive cars. This goal matched the aspirations of Adolf Hitler's new government, which wanted to build small and economical cars priced within the reach of most German families. In 1934, Porsche accepted a commission from the government to develop the people's car, later known as the KdF-Wagen (Kraft durch Freude Wagen, or "Strength Through Joy" car). The company was founded May 27, 1937, and its first factory was producing cars by 1938 near the city of Wolfsburg; the first commercial KdF-Wagen appeared one year later.

Volkswagen produced a variety of vehicles for the Nazi government during WORLD WAR II and following GERMANY's surrender, the company was overseen by the British military-occupation government before being handed back to the new West German government in 1949. As West Germany rebuilt after the war, Volkswagen emerged as the centerpiece of the country's auto industry. The company expanded international operations in the 1950s, entering CANADA in 1952, BRAZIL in 1953, and the UNITED STATES in 1955. North American sales were initially very slow, until a strikingly successful advertising campaign was launched in 1959 that dubbed the car "the Beetle," creating a cultural icon and a tremendously successful product line.

Though Volkswagen enjoyed great success and the Beetle was, for a time, the bestselling car in the world, by the 1970s the company's designs had not changed for many years and sales had seriously slumped. Averting bankruptcy, the company reorganized and rebounded by introducing new models such as the Golf and Passat. Volkswagen continued to expand its international ventures in South America and Asia into the 1990s, while flagging North American sales helped encourage the introduction of the "New Beetle" in 1997. Volkswagen further expanded its reach into the luxury-car market with the purchase of Bentley, Rolls Royce, and Bugatti manufacturers in the 1990s. Volkswagen reported over $79 billion in revenue for 2001.

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W

wage

AS WORKERS LEFT the agricultural sector to seek employment during the early days of the INDUSTRIAL REVOLUTION, the wage rate became a major economic issue. In line with their practice of influencing government to improve their own profits, the mercantilists promoted government regulations to keep wages down. They believed that when wages were down, WORKERS would work longer hours and produce more goods. Since goods were less expensive, more would be sold, and profits would increase accordingly. Workers had little control over how much they were paid until trade unions were established; and even then, wages fluctuated according to the health of the overall economic scene, the availability of workers, the supply of surplus goods, and the ups and downs of prices of particular goods.

Adam Smith (1723–90). After the publication of Adam SMITH's *An Inquiry into the Nature and Causes of The Wealth of Nations* in 1776, classical economics replaced MERCANTILISM as the predominant economic theory. Unlike mercantilists who saw wages simply in relation to their own profits, classical economists attempted to explain wages as a single element of the economic system. Smith defined wages as the revenue derived from LABOR and rent as the revenue produced from land. His theory of value stated that the amount of rent for land, plus the wages paid to workers, equaled the profit that the capitalist could make. He believed that wages tend to settle near the subsistence level; and according to Smith, the subsistence wage was "the lowest wage consistent with common humanity."

He believed that workers often lost their share in the profits as population increased. Population increases, of course, resulted in a larger pool of workers and in increased drains on the wages of particular families. Wages were likely to be higher in countries that were experiencing economic growth because employers were forced to compete for their services. For example, wages were much higher in the UNITED STATES than in England, and higher in England than in Scotland. He thought that wages should be adjusted to the type of work. For example, higher wages should be paid for work that was dangerous, for jobs that required intensive training, and for tasks that no one was likely to choose to do. Higher wages were also necessary when work might be irregular, such as with a construction worker who worked according to weather conditions. Positions that required a lot of trust such as doctors and lawyers also deserved higher wages. In occupations where only a limited number were successful, Smith believed only high wages would attract potential workers. In contemporary terms, this rationale would explain why entertainment and sports figures are so highly paid.

Smith contended that wages as well as profit and rent depended on the supply of available GOODS in relation to the demand for those goods. Whenever goods were stockpiled, wages rose but profits fell. He argued that conflict over the wage rate arose when employers kept wages low while workers attempted to raise rates as high as possible. Workers were likely to work harder when wages were higher because they were more motivated. In response to his question of what made nations wealthy, Smith determined that wealth derived from the economic progress of the people. He maintained that if workers were prosperous, production would improve and living standards and wages would remain high. Smith was committed to FREE TRADE and was opposed to government attempts to regulate wages. He contended that whenever government tried to legislate a wage rate, it usually failed to do it properly.

David Ricardo (1772–1823). Like Smith, David RICARDO was concerned with how nations became prosperous, he believed that the law of distribution was determined by the wages that workers received, the profits commanded by the capitalists, and rents collected by landowners. Ricardo's Labor Theory of Value, which greatly influenced Karl MARX, stated that the wage rate was determined by the cost of food, which in turn was based on the costs of production. It followed, then, that the cost of labor to produce a product influenced overall production costs. In 1817, in the *Principles of Political Economy and Taxation*, Ricardo developed what became known as his "iron law of wages."

He maintained that increases in population produced a greater supply of labor, which in turn caused wages to fall below a subsistence level, where they tended to stabilize. Since the goal of the worker was to take care of dependents and, hopefully, have enough of the extras to which they had all become accustomed, subsistence wages were never enough. The result was misery and sometimes starvation. Reduced population would then cause wages to rise again. As workers became accustomed to a new standard of living, the cycle would be repeated. Ricardo maintained that higher wages were not bound to raise prices. Sometimes, he believed, higher wages simply lowered profits for capitalists. However, Ricardo agreed with Smith that wages should be controlled by free competition and not through government regulation.

Other classical liberals. Thomas MALTHUS (1776–1834) argued that high wages and high prices tended to limit population growth, while low wages and low prices were likely to increase population. However, if population increased, as it was bound to, wages would settle at the subsistence level. Workers were happiest, Malthus thought, when high wages and high prices were accompanied by an increased demand for labor. Under these circumstances, workers were able to buy food and perhaps some of the luxuries of life.

John Stuart MILL (1806–73) defined profit as the difference between wages paid to laborers and the value of the product produced by the laborer. Because Mill, like other classical economists, believed in the idea of scarce resources, he initially argued that there was a limit on the amount of total wages that it was possible to pay. Mill later backed away from this idea and decided that capitalists set their own limits on wages.

Karl Marx (1818–83). Marx rejected the Malthusian ideas on population, calling them a "libel on the human race." His ideas on wages were heavily influence by his friend Friedrich ENGELS who had coined the term "wage slavery." Engels had worked in a factory in England and witnessed first-hand the conditions of workers. Marx saw the average price of wage labor as the minimum wage, or that wage which allowed the worker just enough money to survive. He argued that when wages rose too high, capitalists responded with new labor-saving machines that decreased the number of workers needed and forced wages back to the subsistence level. Marx was convinced that capitalism would destroy itself as the proletariat (workers) revolted against the bourgeoisie (capitalists). However, as industrialization progressed, higher wages, shorter work hours, and improved working conditions decreased the amount of ALIENATION felt by most workers.

John Maynard Keynes (1883–1946). Keynes rejected classical economic views that the market was self-regulating, and advocated government activism. When the economy became sluggish, classical economic theory called for negotiating with workers to accept lower wages in order to increase employment. While Keynes agreed that reducing wages would increase employment, he thought that the real wage was dependent on either the state or on effective demand and not on bargaining for a money wage.

Workers, in his view, were more likely to accept having less to spend because of rising prices than they were to accept a cut in the amount they placed in their pockets on payday. As Keynes saw it, full employment was possible only through wage reduction; but inflation could follow full employment with its accompanying increase in wages. According to Keynes, the solution to dealing with severe economic crisis like the Great DEPRESSION was for the government to intervene. Keynes was an advocate of using public works to stimulate employment. This theory was the guiding principle of Franklin D. ROOSEVELT's (1882–1945) NEW DEAL. Because of the Great Depression, the private sector was not hiring, so the government hired Americans to write, paint, build roads, etc. Roosevelt, like Keynes, believed that once people were employed their wages would stimulate the economy through the purchase of food, clothing, and entertainment. Keynes' impact on economic theory was so great that it launched what became known as the Keynesian Revolution.

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Wal-Mart

FROM THE FIRST WAL-MART discount department store in Rogers, Arkansas in 1962, Sam Walton built a chain of stores that ranked as the largest retailer in the United States at the time of his death in 1992. In 2002, Wal-Mart ranked as the largest company in the world with sales of $219 billion according to *Fortune* magazine. In the decade after Walton's death, Wal-Mart continued to rank as the nation's biggest retailer and largest private employer in the world, with well over one million employees. Although the chain faced criticism over its employment policies and competitive practices, it remained one of the few consistently profitable entities in the volatile retail sector.

The story of Wal-Mart is really the story of Samuel Moore Walton, born in Kingfisher, Oklahoma on March 29, 1918 to Thomas and Nannia Lee (Thompson) Walton. Along with his brother, James (Bud), Walton learned frugality from his parents; the lessons were reinforced as he accompanied his father, a mortgage and insurance agent, as he foreclosed on farms in Missouri, where the family lived during the Great DEPRESSION. After completing his bachelor's degree in economics at the University of Missouri in 1940, Walton worked as a manager trainee at a J.C. Penney's store in Iowa. In 1943, he married Helen Robson, the daughter of a wealthy Oklahoma rancher, lawyer, and businessman. With his wife's family putting up a major stake, Walton bought a retail franchise from the Ben Franklin variety store chain in 1945 and opened up his first store in Newport, Arkansas. He eventually held more than a dozen Ben Franklin franchises in the south-central United States, almost all of which were located in towns of fewer than 10,000 people.

Over the next decade, Walton developed the competitive strategies that he would later implement in the Wal-Mart chain. Regularly checking up on his competitors, Walton made a point of visiting other discount stores to take note of their stock, prices, and displays. Looking for the lowest possible prices on his merchandise, Walton also began buying directly from manufacturers and wholesalers instead of distributors, even though the habit drew the ire of Ben Franklin executives. At the heart of Walton's retail philosophy was the strategy of selling goods at a high volume with a small profit on each sale.

In June 1962, Walton opened the first store to bear the Wal-Mart name in Rogers, Arkansas. By 1969 he had 18 Wal-Mart stores in Oklahoma, Missouri, and Arkansas. As he had with most of his Ben Franklin franchises, Walton located the stores in small towns with little retail competition or in still-rural areas outside of major cities. Although his first stores sold mostly off-brand, irregular, and discontinued merchandise, Walton's growing clout allowed him to sell more brand-name consumer items by the end of the 1960s. The chain's sales volume and mostly rural- and small-town locations forced Walton to open his own warehouse and distribution system in 1969; although he resisted making the investment, the company's control of its distribution eventually gave it an edge over its competitors, such as K-Mart, which were slower and had less flexibility in getting goods on the store shelves.

In 1970, Wal-Mart became a publicly traded corporation, which allowed it to expand rapidly during the decade. By 1973, it had 55 stores in five south-central states and in 1979 it passed the $1 billion mark in sales. Expanding even through economic downturns, Wal-Mart emerged as the nation's largest retailer in 1991 and expanded its operations into Mexico and Europe. Although its low prices were popular with consumers, Wal-Mart's strategy of cost-cutting also raised controversy.

As a low-wage employer that offered few benefits to its employees, Wal-Mart was routinely accused of keeping its workers near or below the poverty level. The company's contracts with known sweatshop operators in the United States, Central America, and Asia made headlines throughout the 1990s. Its actions to prevent the unionization of its work force—including the firing of union supporters and closing of departments that had voted to unionize—resulted in hundreds of complaints to the National Labor Relations Board over its union-busting tactics. In 2002, an Oregon federal jury found Wal-Mart guilty of consistently forcing its employees to work overtime without paying them; 39 similar cases had yet to be tried. The company was also accused of destroying the commercial life of many small towns, where retailers could not compete with Wal-Mart's volume and prices. By the late 1990s, local movements to prevent Wal-Marts from opening had sprung up throughout the United States and watchdog groups continually publicized the company's ties to horrific conditions in sweatshops around the world.

After Walton's death from cancer in 1992, his four children continued to be active in Wal-Mart's management of 3,244 discount, supercenter, Sam's Club warehouse, and small neighborhood market stores in the United States and 4,414 stores in Europe, Central and South America, Canada, and China in 2002.

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Wall Street Journal

A DAILY NEWSPAPER published in the UNITED STATES in print and electronic format by Dow Jones and Company, the *Wall Street Journal* has remained one of the most influential and respected business periodicals since its foundation in 1889.

The *Wall Street Journal* was created by three young reporters from the Kiernan news agency in New York City with shared interests in reporting the American industrial and financial landscape: Charles H. Dow (1851–1902), Edward D. Jones (1856–1920), and Charles M. Bergstrasser. Dow and Jones were the first two collaborators, but they proved cash-poor, bringing on Bergstrasser for financial assistance to found DOW JONES and Company in 1882. The company's mission was to research fluctuations in American business and provide concise, objective reports for investors. For its clientele, it churned out a two-page financial review, the *Customers' Afternoon Letter*. Over the next few years, Dow and Jones realized the need for more detailed and extensive business news reporting of the changes in the volatile stock market, evolving the *Letter* into a more robust form as the *Wall Street Journal*.

The first edition of the *Wall Street Journal* appeared on July 8, 1889, running four pages and costing two cents. The new paper's mission was "to give fully and fairly the daily news attending the fluctuations in prices of stocks, bonds, and some classes of commodities." One of its chief features was the regular publication, beginning on October 7, 1896, of its famous Average, at first merely a daily averaging of the status of 11 industrial stocks. Before its appearance, while investors could track individual company's performances on a day-to-day basis in the stock market, there was no central index for charting the performance of the entire market itself. Even though the *Journal* greatly facilitated the transmission of financial news to its customers, Dow Jones saw the need for even greater speed, establishing the Dow Jones News Service, which transmitted financial data across telegraph wires in the famous broad-tape and ticker system. In addition to journalism focused upon the day's financial news and trends, the *Wall Street Journal* featured extensive tables of stock prices.

The *Journal* retained its journalistic structure and editorial outlook after the founding partners sold their interests to the journalist Clarence W. Barron in 1902; under Barron and a series of influential individuals including Kenneth "Casey" Hogate, the newspaper maintained its reputation for integrity and accuracy in business reporting while gradually expanding its focus beyond business and finance. By the time of WORLD WAR I, the newspaper's circulation had risen to nearly 20,000. After the war, the paper's reach continued to expand, as *Barron's Financial Weekly* was spun-off in 1921 targeting money managers, and a West Coast edition of the *Journal* appeared in 1929. Though the turmoil of the Great DEPRESSION was a sharp blow to the *Wall Street Journal*'s circulation in 1929, the newspaper survived and, indeed, expanded its coverage and circulation over the next few years.

Bernard "Barney" Kilgore became the managing editor at the *Journal* in 1941, and, under his direction, the paper assumed the shape it held through the end of the century. Under Kilgore, circulation surpassed 100,000 and the *Wall Street Journal* expanded in two directions following WORLD WAR II.

First, it began to truly extend its topical coverage beyond explicitly business-oriented subject matter, as its parent company Dow Jones spun off sister publications targeted at a general readership, such as the *National Observer*, founded in 1962, and through the acquisition of regional newspaper companies, especially the Ottoway group in the 1970s.

Second, the *Journal* benefited from technological leaps and bounds to expand its distribution to become a truly national daily newspaper. Technological advancements in printing and communications greatly facilitated the late-20th-century transformation of the newspaper. The *Journal* first became a true national paper in 1955, when identical editions began to be simultaneously printed in multiple facilities around the United States. Circulation surpassed 500,000 by the mid-1950s and the 1 million mark in 1966. On August 30, 1974, for the first time, an orbiting communications satellite was used for a plant-to-plan transmission of newspaper copy and layout.

The *Journal*'s focus and format continued to evolve through the end of the 20th century. As its parent company Dow Jones continued to expand internationally, so too did the *Wall Street Journal*. In 1980, a second section was added to the paper with a rotating section of topics and a third section followed in 1988. The *Asian Wall Street Journal* was founded in 1976, and a European edition was begun in Brussels, Belgium in 1983. The *Journal* expanded into syndicated radio as well during the 1980s, with the "Wall Street Journal Report" premiering in 1980, and the "Dow Jones Money Report" in 1987. The *Wall Street Journal* began electronic publication with the establishment of WSJ.com in 1996. *Wall Street Journal Sunday* began publication in 1999 as a syndicated column in many American newspapers.

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Walras, Léon (1834–1910)

FOUNDER OF THE MODERN theory of general economic EQUILIBRIUM, Marie-Esprit Léon Walras' rigorous mathematical formulation of the mechanics of the price system is a landmark in economics. In the early 20th century, economic scholars such as Joseph SCHUMPETER had already labeled him, "the greatest economist of all time," an arguable title that still stands sturdy today, a century later. Recommended by peers for one of the century's earliest Nobel Prizes, Walras died before he could be considered.

Walras (pronounced *Val*-rass) was born in Evreaux, FRANCE, the son of Louise de Sainte Beauve and Antoine-August Walras, a well-known philosopher and proto-marginalist. For years, the elder Walras had long professed, through his many writings on the subject of scarcity, that mathematicians alone held the key to the advancement of economics. His thoughts, revolutionary at the time, had sparked both a following and condemnation from the economic inner circle. Most assuredly, with the birth of Leon, he hoped that his son would defend and advance his teachings.

But, as a little boy growing up in the pastoral countryside of southern France, Walras exhibited little if any interest in his father's domain. His early school years at Caen School were quite ordinary, not showing any of the brilliance that would later emerge and place him in the forefront of his field. He eventually earned a Bachelor of Letters in Science, but after entering into a field of engineering study at the School of Mines in Paris, he soured at his would-be career, finding it uninteresting and too rigid for his tastes. For, once in Paris, his outlook had changed drastically. He had become acquainted with a host of friends outside the scholastic world who frequented the Bohemian cafes and coffeehouses, and who reveled in the colorful world of *la dramatique*. Walras dropped out of engineering school and, much against his father's wishes, explored the Parisian nightlife where, in 1855, he set himself up as a critic of the arts. He even wrote a novel, *Francis Saveur*, which garnered some literary accolades.

Despite his father's entreaties, Walras continued his creative life apart from anything his erudite father would have approved of. He moved in with a young lady named Célestine Fehrbach, with whom he produced two daughters out of wedlock. (They would eventually wed.) As a young columnist writing under a pseudonym of "Paul" for *La Gazette de Lausanne*, many of his articles attacked the then-popular artistic culture. Occasionally, his articles departed the ethereal to focus on philosophy and business. In 1860, he wrote a brilliant article attacking the radical economic/anarchist teachings of Pierre-Josef Proudhon.

Two years earlier, to appease his father, Walras had promised to consider a future in economics—that is, to familiarize himself with his father's and other economists' teachings. Many a night, long into the dark hours, Walras' lamp burned as he poured over thick tomes and complex theories.

It was also during this period that Walras left *La Gazette* to write for another newspaper, the popular Paris-wide *La Presse*, but his political views clashed with the conservative views of the editorial board. He was promptly terminated. Feeling that his journalistic points of view were restricted, he sought other employment. In 1861, he accepted a clerkship with a railway company. Pay was meager and supplied neither his family's food bill nor his ailing wife's constant medical bills.

Several times between 1861–69, Walras applied for an academic position, but lacked the educational credentials. For extra income, he contributed to newspapers such as the well-read *L'Independent de la Moselle*. His articles, now centered chiefly on taxation and financing cooperatives, caught the eye of lead reformers who offered him the opportunity to speak at a conference at Lausanne, Switzerland, and elsewhere in neighboring France. In 1870, an impressed Swiss government offered Walras the position of economics instructor at the University of Lausanne. He would remain there until he retired in 1892.

At Lausanne, he started his notes on what would become *Elements of Pure Economics* (1874). The book argued in defense of a mathematical, multi-market economy and the marginalist subjective theories his father had expressed. *Elements* provides the author's definition of the scope of economics, the subjective VALUE THEORY and the mathematical method. With some customization to suit the changing demands of the 20th century, Walras' teachings present the basic, mainstream essence of today's economic equilibrium theory.

Sadly, the credit Walras so richly deserved did not come to him in his lifetime. Economists, tending to encompass newer doctrines, disregarded his *Elements*, as well as his other significant works—such as *Equations of Capitalism* (1877) and *Mathematical Theories of Social Classes* (1883). His health failing, Walras retired from teaching to live a life of obscurity until his death in 1910.

Interest once again rose in his work in the 1930s when a series of economic historians from Lausanne rediscovered his work and its value. Thanks to scholars who demanded the first English translation of *Elements* (1954), Walras' brilliance spread to a whole new generation.

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Wang, An (1920–90)

AN INVENTOR, A BUSINESSMAN, and a philanthropist, An Wang grew up in a well-to-do family and received an education at some of the best Chinese schools, including Jiao Tong University (known as CHINA's MIT). He came to the United States in 1945 and earned a Ph.D. in applied physics at Harvard University in 1948.

Wang worked as a researcher in the Harvard Computation Laboratory where he invented magnetic memory cores. By precisely controlling the flow of magnetic energy, the memory cores provided a solution to the problem of data storage, a cutting-edge contribution to the computer revolution. In 1951, he left Harvard and started Wang Laboratories in Boston, Massachusetts. With $600 as capital, Wang, the sole proprietor, began to make magnetic memory cores in a 200-square-foot office furnished with a table, a chair, and a phone.

In 1955, he received a patent for his magnetic memory cores and Wang Labs became a corporation. In 1965, Wang introduced logarithmic calculating instrument (LOCI), a modern calculator, to the world. LOCI was an instantly successful commodity. In 1967, the company sold $4,259,000 worth of calculators. In the same year, Wang Labs became a public corporation, whose stock value rose from $12.50 per share at opening to $40.50 at closing on its first day of trading. In 1971, Wang Labs developed an automatic typewriter with editing functions, which was the forerunner of modern word-processing system. This automatic typewriter was further developed and in 1976, the company introduced to the market the Word Processing System (WPS), a word processor with a screen.

The WPS was "the first computer with which an ordinary person could interact," said Wang. This user-friendly machine brought Wang quick fortunes. In the early 1980s, Wang Labs ranked the 11th largest American computer manufacturer, with a work force of 24,800; in 1984, Wang was the fifth-richest person in the United States, with a personal wealth of $1.6 billion.

The expansion of business brought Wang to Lowell, Massachusetts, near Boston. In 1976, he bought a piece of land in Lowell for a production site; two years later, he moved his company's headquarters there. Wang Labs created job opportunities: in the early 1980s, it employed 14,000 local residents, and drew many other business companies to settle in Lowell, thus resurrecting the town from an enduring economic depression.

Besides being an inventor and a successful capitalist, Wang was also a philanthropist. He believed that "a sense of satisfaction comes from service to one's community." He founded the Wang Institute, a graduate school offering a graduate degree in software engineering. At MIT, he financially supported a program that offered fellowships to engineers from China; at Harvard, he donated $1 million to the Fairbank Center to promote understanding of Chinese culture. For the city of Boston, his money helped to build the Wang Center for the Performing Arts and the outpatient care unit of Massachusetts General Hospital. Together with his scientific inventions, Wang left behind a substantial cultural and technological legacy.

Wang was presented the Medal of Liberty by President Ronald Reagan in 1986. In 1988, Wang was inducted into the National Inventors Hall of Fame.

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War of 1812

THE WAR OF 1812 arose from tensions between the UNITED STATES and the UNITED KINGDOM reaching back to the AMERICAN REVOLUTION (1775–83), and was complicated by the Napoleonic Wars between Britain and FRANCE.

England, motivated by the desire to hamper Franco-American commerce, greatly curtailed American trade in the Caribbean through restrictive policies and by seizing American ships and sailors. The Jay Treaty of 1794, negotiated by George WASHINGTON's pro-British, Federalist administration, temporarily eased tensions by restoring Anglo-American trade and defining the United States' neutral status in the European conflicts. But the capture and impressment of American sailors continued; when the commercial agreements of the Jay Treaty expired and the British resumed their discriminatory trade policies, Republican Thomas JEFFERSON was far less tolerant.

At his urging, the U.S. Congress passed the Embargo Act of 1807, which closed all American ports to foreign trade. This measure, built on the assumption that England needed American trade, instead crippled the American economy while having very little impact on the British. When James MADISON became president in 1809, he eased the embargo slightly, but continued Jefferson's overall policy of economic retaliation. As this proved continually ineffective, Congress declared war on June 18, 1812. The vote was the closest for any war in American history; Federalists were overwhelmingly against a military conflict, fearing it would irreparably damage commercial relations with England, which they deemed vital to the United States' economic development.

The war was a major military challenge for the young nation; its army and navy were still woefully small, inexperienced and under-funded, and the American public was unenthusiastic. The initial strategy of a Canadian invasion went disastrously wrong. Not only did CANADA remain in British hands, by the end of 1812, the British had conquered sizable territory in the northwestern United States, including the outposts of Detroit and Ft. Dearborn on the Great Lakes.

By the summer of 1814, the United States had scored two notable retaliatory victories at the Battles of York in Canada (April, 1813) and Plattsburgh in New York (August, 1814). But by that time, the British had opened a new front on the Chesapeake Bay with a dramatic invasion of Washington, D.C. The British army set fire to much of the city, including the capitol and the executive mansion, before marching toward Baltimore. Forts McHenry and Covington managed to keep the British Navy at bay. It was while viewing the heavy bombardment of Fort McHenry that Francis Scott Key penned the words to the "Star-Spangled Banner."

The naval war went much better for the United States, an irony since the British Navy was the world's best and thought to be invincible. Early on, the super-frigate *U.S.S. Constitution* scored two impressive victories off the coasts of Halifax, Canada, and Brazil. All told, the U.S. navy won 13 of 25 naval engagements, a better navy record than any other nation against the British.

The last major campaign of the war took place at New Orleans, where the British launched an attack in December 1814. The climactic battle occurred on January 8, when American forces under General Andrew Jackson overwhelmingly repelled the British offensive. Unbeknownst to its participants, the battle actually took place after the conclusion of the Treaty of Ghent, which ended the war. Nevertheless, the win at New Orleans helped legitimize an overall American victory, which was largely due to British fatigue rather than American military superiority. It also made a national hero out of future President Andrew JACKSON.

Although the war was of little military consequence, it is seen as a pivotal event in the political and economic life of the United States. Politically, the war saw the demise of the Federalist Party, already out of step with the democratic trend of American politics, then completely undone by its opposition to the war. The war also ushered in a new economic nationalism within the Republican Party, which had previously been the party of state sovereignty and strict LAISSEZ-FAIRE. In the aftermath of the war, these "new Republicans" approved a re-charter of the national bank, internal improvements and a new protective TARIFF. In addition to these political trends, the war's disruption of foreign trade stimulated American industry and manufacturing, accelerating capitalist development.

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Washington, George (1732–99)

COMMANDER OF THE Continental Army during the AMERICAN REVOLUTION and first president of the UNITED STATES, George Washington played an essential role in the founding and grounding of the United States as an independent nation. His graceful wielding of military and political power gave his countrymen, highly suspicious of centralized power, the confidence needed for the creation of an effective, strong, federal government.

Washington's administration provided the crucial political and economic stability that ensured the success of the American experiment.

Washington was born to a Virginia farming family of modest means. He first gained notoriety and prestige during the French and Indian War (1754–63), in which he commanded a force against the French in the Ohio River Valley. By the time of the American Revolution, Washington was an affluent and well-respected member of the Virginia House of Burgesses. When fighting broke out in 1775, the Second Continental Congress unanimously selected him to command the yet-to-be created Continental Army. Accepting reluctantly, he faced the daunting task of constructing a national army from the volunteers of the Massachusetts militia skilled enough to match the British.

It would be the first of many challenges. Washington's army suffered numerous defeats, and faced a chronic shortage of manpower, funding, and supplies. The nadir came in the winter of 1777–78 at Valley Forge, where Washington's army had fled after the British invaded Philadelphia. By that time, Washington's men had barely enough food to prevent starvation and were barefoot in the snow. He is credited for holding the army together through deprivation, desertion, and demoralization and eventually leading it on to victory. In 1781, British commander George Cornwallis surrendered to Washington and his French allies at Yorktown, on the Virginia coast.

Upon the war's conclusion, Washington planned to retire quietly, but his near mythic status as the liberator of the United States made him indispensable to the new nation. When the Constitutional Convention of 1787 discussed the creation of an executive branch, it was with Washington in mind. The idea that he would fill and define the authoritative position eased many fears that the presidency might become a dictatorship. Washington was the quintessential republican, the symbol of an enlightened, naturally elite leader who assumed power sacrificially. He was inaugurated as the nation's first president in New York on April 30, 1789.

One of Washington's best decisions as president was his selection of Alexander HAMILTON as his secretary of treasury. With the president's support, Hamilton devised a plan for putting the United States on firm financial footing through the sound management of the nation's debt. His Reports on Public Credit recommended the full funding of debts to foreign nations and to public creditors, and the establishment of a national bank. Their passage radically improved American credit, stimulated economic growth and tied wealthy Americans to the federal government, thereby better ensuring its stability and legitimacy.

Politically, Washington mediated a series of conflicts and crises, both domestic and foreign. On the diplomatic front, Washington's administration managed threats from the British, French and Spanish, successfully kept the United States out of European wars, and restored and improved Anglo-American trade with the Jay Treaty of 1794. In that year, he also confronted a domestic challenge by skillfully subduing the revolt against a federal excise tax on whiskey by Pennsylvania farmers. Balancing deference to the popular will and governmental authority, Washington first sent in commissioners to negotiate with the rebels. By the time he ordered 13,000 militia men into action, the Whiskey Rebellion was all but over, and no violence was necessary. Washington showed similar diplomacy in straddling the growing rift within his administration between supporters of Hamilton and a faction, led by James MADISON and Thomas JEFFERSON, over Hamilton's policies and the United States' stance on the FRENCH REVOLUTION. As the first party system, comprising Federalists and Republicans, coalesced, Washington identified with the Federalists. But he retained his distaste for partisan politics, which he believed indicated the demise of civic virtue, and remained a largely neutral arbiter in the political wrangling of the era.

Disillusioned with the bitter party battles that had developed by 1796, Washington chose to retire rather than run for re-election. His farewell address is widely regarded as a distilled expression of republican ideals. He appealed for an allegiance to country above that to party, section or state and urged pursuit of national self-interest and neutrality in matters of foreign policy. When he died on December 13, 1799, he was deeply mourned as the revered, almost worshiped, father of his nation.

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welfare

THOUGH *WELFARE* MAY conjure images such as the government-supported aid to the poor, the term has a more pronounced focus in the study of capitalism. Welfare economics is the combination of economic concepts with utilitarian political philosophy to determine which economic policies and institutions are "best" for promoting human happiness.

Classical economists (such as Adam SMITH and Karl MARX) and their predecessors (such as Josiah Child, Richard Cantillon, and the PHYSIOCRATS) openly supported specific economic policies and saw certain social conditions as better or worse than others. Modern economists, however, see economics as a value-free science, like physics.

Physics, for example, tells us how to make atomic bombs, but has nothing to say about whether making bombs is good or bad. Physicists do have opinions about the morality of bomb making, but those opinions reflect their personal moral beliefs rather than their expertise as physicists.

Likewise, economics tells us that quotas on imported goods will protect the jobs of people in industries that face import competition, but at the expense of consumers who pay higher prices for goods produced by the protected industries. Mainstream economics has nothing to say about which is better: to let some workers lose their jobs so that consumers can enjoy lower prices, or to make consumers pay more so that the workers can keep their jobs.

Welfare economics attempts to answer such questions. Relying on the utilitarian view that policies should aim at producing the largest total quantity of happiness in society, welfare economics tries to determine which economic policies produce the largest total of human happiness.

A typical application of welfare economics is to evaluate the distribution of income in society. The economic idea of marginal utility states that people who have many units of X tend to value an extra unit of X less than people who have only a few units of X. For example, a person who has just eaten a full meal will tend to get less satisfaction from eating a piece of bread than would a person who hadn't eaten in two days. Likewise, welfare economics supposes that someone with a large amount of money will get less happiness from each dollar than would someone with only a small amount of money. Transferring the dollar from the rich person to the poor person would, on this view, increase the total amount of happiness in society. On this basis, some—but not all—welfare economists support welfare government programs.

Welfare economists realize that some of their assumptions are difficult to justify. A long and tortuous debate has raged over whether "amounts of happiness" can be measured in the manner required to determine that one policy produces more total happiness than another. Other contentious issues are whether the amount of happiness enjoyed by one person can be meaningfully compared with the amount of happiness enjoyed by another, or whether such measurements and comparisons are even necessary.

However, because of the impact of economic policy in promoting human happiness, welfare economics continues to be an important branch of economics. As welfare economics concepts and techniques are improved, economics may be able to make even greater contributions to human society.

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Wells Fargo

AN EXPRESS, POSTAL, and banking service, Wells Fargo was formed in 1852 to profit from the California Gold Rush. Wells Fargo played a major role in the development of the American west by serving as the chief communications conduit between the eastern and western UNITED STATES. Eventually pushed out of the postal and express services by the government, Wells Fargo shifted its business plan to focus solely on banking in 1918. It operated quietly for decades before becoming one of the nation's largest banks through a series of mergers.

Wells Fargo began when two men spotted an opportunity. In 1852, while California boomed in a gold-seeking frenzy, the directors of American Express debated whether to extend their mail and package service to the west. The company had grown by providing fast and reliable delivery that the U.S. government did not offer, and two American Express directors, Henry Wells (1805–78) and William Fargo, (1818–81) saw similar business opportunities in this rapidly developing region. When American Express refused to expand, Wells and Fargo formed a joint stock association in New York on March 18, 1852, and modeled the company after American Express. The new company specialized in shipping gold dust, bullion, specie, letters, packages, parcels, and freight of all kinds from New York to San Francisco. It gradually expanded to service most of the west.

Wells Fargo became so popular because the delivery service provided by the U.S. POSTAL SERVICE was so poor.

Wells Fargo had a broader reach and provided greater efficiency, a fact that the United States recognized by not challenging the company's interference with the government MONOPOLY on mail service. With more green Wells Fargo mailboxes on western streets than red government ones, the company delivered the bulk of the mail west of Salt Lake City and Albuquerque.

The company cultivated its reputation for speedy service. Many letters were carried by Pony Express, a business that Wells Fargo bought in 1861 and operated for only a short time before the advent of the transcontinental railroad. Pony Express riders dodged Native Americans and robbers while racing to the next station to switch ponies or rest. The work of the riders was dangerous, but glamorous, and publicity given to the riders added to the prestige of Wells Fargo. Stagecoaches operated by the company faced the same hazards as the riders. The stagecoaches numbered 2,500 in 1866 and traveled the 1,913-mile journey from Kansas to California. Most of the coaches had been acquired through mergers. They carried passengers as well as the famed green ironbound boxes, which were guarded by armed company messengers, and were much sought-after by robbers. By 1895, the Post Office had become a strong competitor and Wells Fargo ended its letter service but continued its express service.

Wells Fargo's use of express refrigerator railroad cars in 1897 brought fresh vegetables and fruits to the northeast. Besides helping to improve the health of Americans, the company stabilized the citrus fruit industry enabling it to develop into one of the most important perishable crop concerns in the country. In 1918, the government consolidated 10,000 Wells Fargo express offices as a wartime measure, forcing the company to develop its commercial banking side.

Wells Fargo Bank joined Union Trust, grew slowly until merging with American Trust Company in 1960 to become the nation's 11th largest bank. The firm helped introduce MasterCard in 1967, offered online banking in 1989, but achieved most of its growth through mergers. It joined Crocker National Bank in 1986, and merged with midwest banking giant Norwest in 1998 to create a $186 billion diversified financial services company.

Wells Fargo became a success through excellent service and shrewd marketing. More of a consolidator than an innovator, Wells Fargo achieved dominance largely by adding value to other businesses.

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Westinghouse, George (1846–1914)

BORN NEAR SCHENECTADY, New York, George Westinghouse, Jr. became one of the United States' preeminent inventors during the Age of Invention of the late-19th century. His father was a skilled mechanic with numerous patents of his own; the young Westinghouse followed in his footsteps early on, preferring to tinker with machines than attend to his scholastic duties. He dropped out of school at 14, served in the navy during the AMERICAN CIVIL WAR, and briefly attended college after its conclusion. He patented his first invention, a rotary steam engine, in 1865.

In 1869, Westinghouse witnessed a collision between two trains unable to stop quickly, and the idea for his most famous invention was born. Later that year, he took out the first patent on a air-brake system for trains that allowed a single train engineer to apply the brakes on all the train's cars simultaneously. The system worked by transporting compressed air from a steam-powered pump to a network of pipes leading to the brake shoes of each car. At first he had trouble selling his idea to skeptical railroad companies; he had to fund his system's first demonstration and insure the trains involved in the case of damage. But by the mid-1890s his brake system had been installed on over 400,000 cars and 27,000 engines, making Westinghouse extraordinarily wealthy and greatly facilitating safe train travel.

He next immersed himself in electrical invention. Westinghouse had been in the audience of inventors when Thomas EDISON debuted his incandescent electrical lamp in 1878. But his electrical system employed direct current, which limited the distance electricity could be transmitted from a central power source. Westinghouse thought he could do better, and in 1886 he devised an alternating current that transmitted electricity over a long distance. He and Edison became fierce competitors over whose system would electrify the United States. Westinghouse established the Westinghouse Electric Company and hired other inventors to assist him in perfecting his alternating current. Among them was Nikola Tesla, a Hungarian immigrant who invented an electrical motor that used alternating electricity to power mechanical devices. By the 1890s Westinghouse's firm had proven that the benefits of alternating current outweighed those of Edison's direct current. In 1893, a hydroelectric plant that employed Westinghouse and Tesla's inventions was constructed at Niagara Falls and transmitted electricity over a 22-mile distance. By the turn of the century, power plants across the country running on alternating currents could send 30,000 volts of electricity up to 75 miles away.

By the time of his death in 1914, Westinghouse had patented more than 400 inventions. Westinghouse's inventions helped fuel the larger process of industrial growth and economic development in the Gilded Age. His air brakes facilitated the era's transportation boom, which linked markets and aided the flow of goods and people across the country. His electrical innovations made cheap electricity widely available and applicable as a source of power, revolutionizing leisure, work and production.

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Whitney, Eli (1765–1825)

ELI WHITNEY'S NAME became synonymous with American ingenuity after his invention of the cotton gin, a device that separated cotton seeds from fiber. His invention made cotton "king" in the South: production of the short-staple cotton (a variety which grew well in North America but was difficult to clean) rose exponentially because of his innovation.

Born in Massachusetts, Whitney studied at Yale University and worked as a schoolteacher to support himself. He headed south in 1793, and while a guest at a Georgia plantation learned of the challenges posed by cotton production. He devised a model for a machine that used a roller with wire teeth and a slotted sieve to tear the cotton fibers away from the seeds. A revolving brush caught the cleaned cotton, and the seeds dropped into a separate compartment. The contraption allowed one person to separate more cotton in a single day than a hundred workers doing it by hand. In 1794, Whitney applied for a patent on his invention.

Whitney's mechanical ingenuity did not, however, ensure his business success. Many planters were excited by the potential of the gin and quickly pirated his invention. Whitney and his partner, plantation manager Phineas Miller, tried in vain to recoup their losses in court. Yet, even if the cotton gin did not make Whitney's personal fortune, it transformed the nation's economy. By the 1850s, three-quarters of the world's supply of cotton came from the American South.

Whitney's invention also affected the entrenchment of SLAVERY. Cotton production was well suited to the Southern plantation system. Slavery had been in decline by 1790, but the cotton boom prompted planters to import more slaves into the Southern states before the legal closure of the slave trade in 1808. The cotton gin further encouraged farmers to focus on a single cash crop and work the land until it was exhausted, then move to new land, a devastating agricultural practice.

After the cotton gin debacle, Whitney turned to the manufacture of firearms. He was awarded a federal contract for 10,000 muskets in 1798, largely because he proposed a more standardized practice of manufacturing that would cut down on the hand-finishing typically required of guns. Whitney is sometimes credited with developing the idea of interchangeable parts for manufactured goods. This is not quite correct: although Whitney staged an 1801 demonstration for government officials, including John ADAMS and Thomas JEFFERSON, suggesting his musket was made up of standardized parts, his own arms factory was never able to put this principle fully into practice. He is better recognized as an early publicist of mechanization and interchangeability, ideas that in turn influenced others, including Samuel Colt and Henry FORD.

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Wilson, Woodrow (1856–1924)

THE FIRST DEMOCRATIC president of the 20th century and the only true academic elected to the office, Woodrow Wilson has a complicated historical legacy. Although he was admired for his moral piety, his critics found fault with his elitism. Both his strengths and weaknesses would reveal themselves during his difficult terms in office, years characterized by his progressive economic agenda, American excursions in Latin America, WORLD WAR I and its aftermath, and ultimately his own poor health.

(Thomas) Woodrow Wilson was born in Staunton, Virginia to Presbyterian Minister Joseph Ruggles Wilson and Janet (Jessie) Woodrow. At a young age, Wilson determined that he wanted to enter politics. He attended the College of New Jersey, now Princeton University, and enjoyed a successful academic career through his graduation in 1879. Wilson went on to the University of

Virginia Law School and practiced law briefly before enrolling in post-graduate studies at Johns Hopkins University in Baltimore. Wilson earned his Ph.D. in history in 1886.

In 1890, after holding professorial positions at other eastern universities, Wilson was appointed professor of jurisprudence and political economy at Princeton University. He published a series of books and developed a unique set of political values. Consistent with the moral imperatives of the progressive era, Wilson was concerned with reforming the abuses of industrial capitalism. To this end, he advocated the pursuit of "social order" through "representative government." Neither a liberal nor a conservative, Wilson was entirely committed to the preservation of a just society; however, his conception of social justice stopped at the color line: a white Southerner of the late 19th century, Wilson was a white supremacist who sanctioned racial segregation.

In 1902, Wilson was elected president of Princeton University, a position that propelled him into the national spotlight. By 1910 he resigned at the urging of New Jersey political operatives who helped him win the governorship. By 1911, the Democratic Party had nominated him for president. In part due to the split in the Republican Party between candidates President William Howard TAFT and former President Teddy ROOSEVELT, Wilson was elected to office on his platform of progressive-era policies and his own brand of liberal democracy, which he labeled "The New Freedom."

The New Freedom has been described by historians as a middle-class imperative, complemented by rural and labor support, to preserve and strengthen the democratic, capitalist society by progressive initiatives that included lower tariffs, an improved banking system, stronger business regulation and protection for unions and workers. To this end, during his first term in office, Wilson oversaw the creation of the various economic reforms, including the Underwood Tariff Act that reduced tariff rates and instituted an income tax; the Federal Reserve Act that established a central bank to monitor the nation's finances; the Clayton Anti-Trust Act that strengthened antitrust regulations; and the creation of the Federal Trade Commission that shored up government regulation of business.

When shaky governments in Latin America and the Caribbean hampered their ability to repay debts owed to American investors, Wilson sought to enforce effective financial supervision over various countries through military intervention. Though his forays into Haiti, the Dominican Republic and Nicaragua had merits, American intervention in Mexico was unsuccessful and eventually resulted in a Mexican-American skirmish incited by rebel General Pancho Villa.

The year 1914 was eventful for Wilson both personally and professionally. In August of that year, his wife, Alice, passed away. Though devastated by her death, Wilson rebounded seven months later when he met Edith Bolling Galt, a widow from Washington, D.C. After only two months of courtship, Wilson announced their engagement.

Also in 1914, Western Europe became embroiled in the military conflict that would become World War I. Although Wilson maintained American neutrality in an attempt to preserve his role as a world mediator, the United States increasingly offered economic assistance to the Allied forces. Growing hostility between the United States and Germany was intensified in the spring of 1915 when a German submarine sank the *Lusitania*, a British passenger liner. Amid the ongoing struggle, Wilson was renominated for president in 1916. Bolstered by the slogan, "He kept us out of the war," Wilson defeated Republican Charles Evans Hughes by a narrow margin.

However, German aggression persisted and in April 1917, Wilson signed the declaration of war. In January of the following year, Wilson proposed his "Fourteen Points" for a postwar settlement. This doctrine for peace included open diplomacy, self-determination for nation-states, and the creation of an international League of Nations. An instrumental player in drafting the Treaty of Versailles in Europe, which officially ended the war in 1919, Wilson pushed his peacetime agenda.

Upon returning to the United States following the negotiations, Wilson tried to arouse national support for the treaty and especially the League of Nations; however, he met great opposition in Congress, particularly from Senator Henry Cabot Lodge. Wilson's exhaustive efforts to ignite public opinion ultimately took their toll on his health. On September 26, 1919, he suffered a paralytic stroke. As he recovered, Wilson's wife Edith directed many of his political affairs leading many to speculate about the extent of her influence.

Although Wilson remained in office until 1921, the stroke had left him virtually unable to govern and the duration of his administration was plagued by postwar inflation and labor strikes. However, his progressive tenure did see the passage of both the 18th Amendment, Prohibition, and the 19th Amendment, which secured women's suffrage.

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worker

BEFORE THE INDUSTRIAL REVOLUTION, most people worked in agriculture. In this context, the term "worker," as it is understood today, had little meaning. It was only as people left the land and moved to cities to work in factories for long hours in repetitive jobs for little pay that the term "worker" signified a distinction between the "servants of industry" and the profit-making capitalists. Economists, philosophers, and writers have attempted in a variety of ways to explain the role of the worker in the capitalistic society.

Classical economics. Classical LIBERALISM or classical economics became the predominant school of thought during the last quarter of the 18th century. John LOCKE (1632–1704), the founder of classical liberalism, argued that each individual has a property in his or her own person. Therefore, the worker owns the results of LABOR produced through effort. Locke believed that God commanded individuals to labor; and since no one could labor hard enough to gain ownership of all land, each should be satisfied with a moderate portion.

Adam SMITH (1723–90) and David RICARDO (1772–1823), the founders of classical economics, were concerned with understanding how the capitalist economic system worked and how it affected the wealth of a nation as a whole. Smith believed that all the different elements of the economic system were connected. The capitalist paid WAGES to the worker, who in turn paid rent to the landlord. The circle was completed when both the worker and the landlord purchased various GOODS from the capitalist. The worker naturally wanted to make the highest wage possible but was prevented from doing so by both the capitalist and the landlord who were after the highest profits possible. Unlike Locke, Smith argued that the worker did not own all that he or she produced because the capitalist who owned the place of production, the machinery, and raw materials with which goods were produced also owned a share in the finished product. Smith recognized that the lives of workers were not always happy. He wrote of the "stultifying effect of mass production" and believed that doing the same task over and over made workers both stupid and ignorant. Smith accepted the responsibility of government to issue regulations for worker protection. He was concerned that young boys were put to work in factories without receiving an education and feared that they would grow up with no moral restraints. He saw education as a way to improve the lives of workers to keep them from being viewed as extensions of the machinery they operated.

Ricardo maintained that the goal of the worker was simply to have enough money to take care of his dependents at the standard of living to which they were accustomed. On the whole, Ricardo saw the worker as cog in the machinery of industrialization. He argued that increased wages always resulted in increased population, with its subsequent drain on limited resources. Ricardo opposed government regulations that helped the poor survive and was against trade UNIONS because he believed that workers often lost jobs when unions negotiated for higher wages. Even though Ricardo could see the effect of capitalism on workers, he believed that workers contributed to their own demeaning lives through inherent weakness.

Between 1750–1850, land that had been in common use was enclosed to allow more progressive methods of farming. While the results were beneficial to landowners, they were often disastrous to agricultural families. Losing their livelihood forced people into the cities in hopes of high wages and a larger share of available resources. As the 19th century began, Great Britain was the center of manufacturing. In London, the population more than quadrupled from 1800–80. When workers were left with no means of support, the government used Poor Laws or public workhouses as a way to deal with the poor and unemployed.

The results were often degrading and inhumane for the workers and their families. Writer Charles Dickens described his experience as a young boy in a workhouse in his novel *Oliver Twist*. Essayist and historian Thomas Carlyle estimated that, at one point, over 2 million of England's 15 million workers were housed in workhouses and poorhouse prisons. Generally, the poor were willing to do almost anything to stay out of workhouses. Some of the poor already had jobs, but the pay was insufficient to support the workers and their families. A number of reformers, such as Robert Owen (1771–1858) argued that higher wages would not only break the cycle of poverty but it would also help the economy as well because workers would buy more goods, which would then help the British economy.

Thomas Robert MALTHUS (1776–1834) who strongly endorsed the classical liberal belief in scarce resources contended that capitalists were always likely to possess the lion's share of those resources, so what was left for poor workers would never be enough to lift them out of their miserable state. John Stuart MILL (1806–1873), on the other hand, believed that if workers were educated so that they developed a sense of social class and understood the value of freedom of association, they would reject the capitalist system and establish their own cooperatives, allowing the workers to share the profits rather than making capitalists richer.

Socialism. Like Locke, Karl MARX (1818–83) believed that each worker owned the fruits of his or her labor. Not having control of one's own labor, Marx thought, resulted in exploited workers who became more wretched as the number of goods produced increased.

However, increased production made workers poorer and did not improve their lives. According to Marx, the worst kind of labor was that which the worker performed over and over. He believed that such actions robbed the worker of a sense of pride in the work performed. Marx wrote in the *Communist Manifest* that after a time the worker simply became an appendage of the machine, enslaved by the capitalist and by the means of production. The wheels of capitalism, Marx argued, were greased by greed and self-interest, with workers treated as commodities. This inhuman treatment resulted in a feeling of estrangement and ALIENATION. This alienation extended not only to the objects produced but also to the individual's role in society and government. However, the worker continued to be bound to the work as a means of survival.

Marx opens the *Communist Manifesto,* which he co-wrote with Friedrich ENGELS, with the warning that the specter of communism is haunting Europe. In this work, Marx describes all history as the history of class struggle: the battle between the bourgeoisie (capitalists) and the proletariat (workers). Because of the greed of the capitalists, the worker is always exploited and victimized. The goal of socialism, Marx insisted, was not to abolish private property but to abolish the mistreatment of workers that resulted from unchecked capitalism. He argued that at least nine-tenths of the population owned no property. Marx's labor theory of value states that the value of a product is derived from the labor involved in producing it. He maintained that the worker earns the subsistence wage in the first six hours of the working day. The rest of the workday was spent in SURPLUS value, which provided excess profit for the capitalist rather than higher wages for the worker.

The *Communist Manifesto* called for "working men of all countries to unite."

This unity would occur, according to Marx, through the stages in the war between the proletariat (workers) and the bourgeoisie (capitalists). In the beginning, individual workers began to be dissatisfied, possibly directing anger toward the factory owner rather than toward the capitalist system. As soon as economic crisis occurred—perhaps through reduced wages and personal deprivations—riots might occur, drawing a group of workers together. As the situation worsened, workers would band together and form a political party to influence legislation aimed at helping workers. When the changes were not drastic enough to suit the workers, a revolutionary class developed, and the goal of this class was to overthrow the existing system.

Marxist theories led to the introduction of communism in the SOVIET UNION, CHINA, CUBA, and much of Eastern Europe. Most Western countries contain elements of socialist thought, and socialist parties continue to thrive. In the UNITED STATES, however, socialist thought never gained prominence. While socialists were active in the 1920s and the Communist Party of the USA was a definite presence in the United States during the 1930s, SOCIALISM was virtually nonexistent after August 1939, when the Soviet Union signed a non-aggression pact with GERMANY as WORLD WAR II began, leaving American socialists stunned and disillusioned. Many reasons have been given for the absence of socialism in the United States. In the early days of the INDUSTRIAL REVOLUTION, land was still plentiful, so people could always go west instead of working for subsistence wages in a factory. The United States also has a relatively open class system and universal suffrage, and Democrats and Republicans have a tendency to incorporate third-party platforms, so American workers have never felt alienated from the political and economic systems in the way that Marx predicted.

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World Bank

THE WORLD BANK was founded in 1944 during the United Nations Monetary and Financial Conference (or BRETTON WOODS conference). According to the articles of agreement its chief goals were "to assist in the reconstruction and development of territories of members by facilitating the investment of capital for productive purposes [and] to promote private foreign investment by means of guarantees or participation in loans [and] to supplement private investment by providing, on suitable conditions, finance for productive purposes out of its own capital."

As such, it is one of the world's largest sources of economic assistance to developing countries, while also providing technical assistance, policy advice, and supervision for the implementation of free-market reforms. In conjunction with the INTERNATIONAL MONETARY FUND (IMF) and the WORLD TRADE ORGANIZATION (WTO), the bank plays a major role in overseeing economic policy, the reformation of public institutions within developing nations, and in shaping global macroeconomic agendas.

Though related to the United Nations, the bank functions independently of the General Assembly and Security Council. The bank is owned by 184 member nations, who are represented by a board of governors and a Washington, D.C.-based board of directors. The governors are usually their countries' foreign ministers or central bank governors. The power to make actual decisions rests mainly with the 24-member board of directors. The UNITED STATES, FRANCE, the UNITED KINGDOM, GERMANY, and JAPAN appoint their own executive directors. The remaining countries are divided into regions, each of which elects an executive director. Throughout its history, the president of the World Bank has been an American.

Five institutions comprise the World Bank Group: the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA), and the International Centre for Settlement of Investment Disputes (ICSID). The IBRD provides market rate loans to middle-income developing countries and creditworthy lower-income ones. The IBRD finances most of its funds via global capital markets. The IDA provides interest-free long-term loans, technical assistance, and policy advice to low-income developing countries in the areas of education, rural development, and health. The IDA's loans are financed via contributions from developed countries. The IFC, in conjunction with private investors, provides loans, loan guarantees, and equity financing to businesses in developing countries. The MIGA provides loan guarantees and insurance to foreign investors against loss caused by non-commercial risk in developing countries. The ICSID oversees settlements of investment disputes between foreign investors and the host developing countries. These settlements are achieved through conciliation or arbitration.

World Bank decisions. In the decision-making process of the bank, member countries act as shareholders. However, each country does not have an equal share. Rather, a country's capital subscription determines their voting power. And since a country's capital subscription is determined by its economic resources, the wealthier the country the greater the voting power, which in turn leads to developing countries holding only a small percentage of voting power. Thus, the countries most in need of the bank's financial support and advice may not have the necessary voting voice to receive such.

The bank's funds come from member nations' capital subscriptions, bond flotations on global capital markets, and net earnings accrued from interest payments on IBRD and IFC loans. Approximately 10 percent of capital subscriptions are paid directly to the bank. The rest is subject to call if needed to meet obligations.

The bank has offices in more than 70 countries and approximately 25 percent of its staff resides in developing countries. In many of these countries, the staff function as policy advisors to various ministries, including the ministry of finance. The bank maintains consultative and informal ties to the world's financial markets and institutions, as well as to nongovernmental organizations in both developing and developed nations.

Loans are granted only to member nations and only for the financing of specific projects. Prior to issuing a loan, bank advisors and experts determine if the country can meet the bank's conditions, most of which are designed to ensure the loan's productive use and repayment. The borrower must be unable to secure a loan from any other source and the borrower must show that the project is technically feasible and economically sound. Repayment is ensured, via member countries guaranteeing loans made to private concerns within their territories. Subsequent to the loan being granted, periodic reports regarding the loan's use and the project's progress are required from both the borrower and the bank's own observers.

History. The bank did not begin operations until 1946, at which time its initial efforts were geared toward reconstruction of postwar Europe. In the mid-1950s, the bank began financing investments in infrastructural projects in developing nations, including roads, water facilities, and ports. Since the late 1960s, the majority of loans have been granted to developing nations in Latin America, Africa, and Asia. Starting in the 1980s, the bank began focusing on projects that would directly benefit a developing nation's poorest people. The bank attempted to accomplish this by providing loans for urban development, rural and agricultural development, and small-scale enterprises. During this time, the bank also expanded its support of projects geared toward ecological concerns and energy development.

The 1980s debt crisis played an integral role in the evolution of the bank's operations. By the early 1980s, the bank was increasingly involved in shaping economic and social policies of indebted developing countries. As a loan condition, these countries had to institute severe "structural adjustment programs," which usually required major cuts in health and education spending, liberalization of trade, deregulation of financial sectors, privatization of enterprises, and elimination of price controls. Rather than restoring economic stability, these programs often exacerbated the conditions. Learning from the debt crisis, the bank now provides financial assistance via balance-of-payment support and loans.

After the fall of communism in the late 1980s and early 1990s, the bank was a central figure in the free-market reforms of Eastern and Central Europe. The bank also provided reconstruction loans to countries suffering internal conflicts or crisis. Unfortunately, this support did not lead to the reformation of positive infrastructures, and in several instances resulted in a drastic reduction in the standard of living.

The bank is the largest multilateral creditor in the world. The result is that for many of the most indebted poor countries, the largest part of their external debt (sometimes more than 50 percent) is owed to the World Bank and its associated multilateral regional development banks. Many feel that this debt, which as per the bank's statutes cannot be canceled or rescheduled, is a major factor in the continuing economic stagnation of developing nations.

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World Economic Forum

AN INTERNATIONAL, NON-PROFIT, and non-partisan organization, the World Economic Forum (WEF) was originally formed in January 1971, in Davos, Switzerland, as the European Management Forum (EMF). It was founded by Klaus Schwab, then professor of general management at the International Management Institute in Geneva and, since 1972, professor of business policy at the University of Geneva.

Initially, the forum brought together the executives of leading European companies to discuss the problems and the promises of the internationalization of economic activity. In 1987, the name of the EMF was changed to the World Economic Forum to reflect its focus on worldwide issues, and specifically on improving the state of the world by providing an opportunity to its members to discuss important social, economic, and political issues and problems facing the industrial and the developing world alike.

Its membership consists of approximately 1,000 large corporations that have a global focus, in countries ranging from the UNITED STATES and EUROPEAN UNION member countries, to developing countries such as Syria and Kenya. In 2003, 43 percent of the corporate members were from Europe; 26 percent from North America; 13 percent from Asia, 7 percent from Central and South America; 4.5 percent from the Middle East; 4.3 percent from Africa; and 2.2 percent from AUSTRALIA and NEW ZEALAND. Annual meetings of the WEF are traditionally held in Davos. In 2002, however, it was held in New York City to express solidarity with that city in the aftermath of the September 11, 2001, terrorist attack on the World Trade Center.

In the early 1980s, the WEF invited heads of states, cabinet ministers with high portfolios, and the directors of key international organizations such as the WORLD BANK, the INTERNATIONAL MONETARY FUND (IMF), and the WORLD TRADE ORGANIZATION (WTO) to participate in its deliberations. The WEF has been successful in initiating dialogs between ISRAEL and the Palestinian Authority, and between GREECE and TURKEY, to name a few. It has been instrumental in facilitating the transition of emerging market economies in Eastern Europe into the global economy by supporting the implementation of free-market-oriented economic, social, and political reforms.

Outreach programs of the WEF have taken various forms. For example, Global Leaders for Tomorrow aims to reach the young leaders, in politics, academia, and business. The World Arts Forum tries to foster cross-cultural appreciation and understanding.

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World Trade Organization

THE WORLD TRADE Organization (WTO) is a multinational organization that defines rules for international trade, adjudicates disputes, and punishes countries that violate the rules of trade.

Established in 1995, the World Trade Organization was founded in 1995 at meetings held under the GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT), an international treaty that governed trade between its signatory nations from 1948 until the WTO took over the functions of GATT.

By the 1940s, trade barriers and tariffs had become a significant block to world economic progress. GATT, based on the principle of open, non-discriminatory trade, attempted to reduce the blockage. GATT tried to discourage trade barriers, such as tariffs and import quotas, and provided a forum for resolving disputes between participating countries.

Under GATT, nations participated in regular rounds of negotiation to remedy gaps in the international trading system and attempted to reduce or eliminate trade barriers. Nations initially conducted bilateral negotiations with their main trading partners, reducing their own tariffs and trade barriers in exchange for similar reductions by their trading partners. They then offered the same terms of trade to all GATT signatories as part of GATT's encouragement of non-discriminatory trade.

By the 1970s, GATT negotiations had significantly reduced tariffs, and the only remaining barriers to trade were non-tariff barriers such as import quotas, licensing requirements, and similar measures. However, non-tariff barriers were still a major impediment to trade, and thorny disputes remained over issues such as agricultural subsidies, industrial policy, and intellectual property. These are some of the issues with which the WTO wrestles at the start of the 21st century.

The WTO incorporated all of GATT's principles. Established by the Uruguay Round (1986–94) of GATT negotiations, the WTO placed its headquarters in Geneva, SWITZERLAND and was officially launched on January 1, 1995.

GATT was focused mainly on the elimination of tariffs and traditional non-tariff barriers. The WTO extended GATT in three ways. First, as a well-defined organization rather than merely a coalition of signatories to a treaty, it was better positioned to administer the global-trading system. Second, the WTO's mission went beyond GATT: the WTO monitors national trade policies, provides technical and other assistance to developing countries, and coordinates its efforts with other international organizations such as the WORLD BANK and the INTERNATIONAL MONETARY FUND (IMF). Third, the WTO is working systematically to define global rules for international trade—not only with respect to tariffs and trade barriers, but also for intellectual property, industrial policy, environmental policy, and for specific industries.

To achieve those goals, the WTO imposes legal obligations on its members. Each member is required to submit schedules for improving the openness of its markets for international trade and must abide by WTO rules governing issues such as goods, services, industrial policy, and intellectual property. Though these moves benefit the international trading system, they are not without drawbacks to WTO member nations. In the UNITED STATES, for example, the WTO has been criticized for ruling that U.S. anti-pollution laws violate international trade rules because some foreign gasoline products fail to meet U.S. environmental standards.

Similar concerns have been raised in countries where taxes are lower and regulations less onerous than in other WTO member countries. Will countries be left free to decide on tax and regulatory policy, or will officials of the WTO usurp those decisions? It is not surprising that anti-globalizations forces target the WTO specifically as a world-corporate-government liaison and entity that threatens national and individual freedom.

The top policy-making body of the WTO is the Ministerial Conference, which consists of representatives from member countries and meets at least once every two years. Between meetings of the Ministerial Conference, the WTO General Council carries out the organization's mission. The General Council also convenes under two other names to handle specific problems:

1. The Dispute Settlement Body, which handles trade disputes between member nations. Initial rulings are made by a panel, and appeals can be made based either on facts or on points of law.
2. The Trade Policy Review Body, which reviews and assesses member nations' trade-related policies and practices.

The General Council also oversees three lower-level councils: the Council for Trade in Goods, the Council for Trade-Related Aspects of Intellectual Property Rights (TRIPS), and the Council for Trade in Services. The Trade Negotiations Committee, which is on the same level as the General Council, oversees trade negotiations and the work of specific-purpose groups such as the Committee on Agriculture.

In spite of its importance, the WTO is quite small compared to other international organizations, with its budget a fraction of those enjoyed by the World Bank, the Organization for Economic Cooperation and Development, and the International Monetary Fund. Moreover, troubling questions remain about the relation between the WTO's authority to rule on trade issues and the right of member countries to make their own decisions on domestic issues such as labor standards, anti-pollution laws, and product safety laws.

Nonetheless, the WTO's work continues to open new markets and win gradual acceptance of international trade rules by countries that previously demurred. In the 21st century, the WTO will likely be a key element in a growing and healthy system of global commerce.

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World War I

THE EVENT THAT LED to World War I, often called The Great War, took place in Europe on June 28, 1914, when a Bosnian radical shot Archduke Franz Ferdinand, the heir to the throne of the Austro-Hungarian Empire, and his wife Duchess Sophie von Chotkova. When the government retaliated with violence, it started a chain of events that brought in other countries because of various treaties. On August 1, 1914, GERMANY declared war on RUSSIA, and other countries soon followed by declaring war on Germany. President Woodrow WILSON (1856–1924) announced that the UNITED STATES would continue its ongoing policy of isolationism. The UNITED KINGDOM became the major player on the Allied side when Germany attacked BELGIUM on August 4. In many ways, World War I illustrated that the world had become a small place interconnected by politics and finance.

Pre-war economics. Even before the United States entered the war, the lives of Americans were directly affected in many ways. On October 22, 1914, Congress passed the Emergency Revenue Act, increasing taxes on liquor and adding an excise tax to items that many Americans considered essential: toilet articles, telegraph and telephone messages, and chewing gum. Additional taxes were placed on stamps, bankers, and brokers; however, the government raised only $52 million from the new taxes rather than the $100 million that had been predicted.

Initially, the United States experienced a short decline in the output of goods; but as the war continued in Europe, American business boomed. The country produced guns, ammunition, food, and clothing for the Allies, exporting goods to the warring nations and receiving investment capital from foreign investors. England, FRANCE, and Russia often wrote off outstanding American debts in payment for goods being shipped to help them fight the war. Other means of payment included gold and gilt-edged certificates. The result of the increased export trade was prosperity and high employment for America.

Wilson had only been in office for seven months when the war began. Wilson was a scholar, and as such tended to approach politics and economics on an intellectual level. War, however, called for action. Congress had created the FEDERAL RESERVE, the country's central bank in 1913, and Wilson was almost immediately faced with the task of overseeing its implementation. Earlier in July 1914, European banks shut down, and trading increased in the United States as foreign investors hurried to liquidate. New York banks ended up with a deficit of $17 million. On July 31, the NEW YORK STOCK EXCHANGE shut down for the first time since 1873. On August 3, the secretary of the treasury announced that the government would issue $100 million in emergency funds to the New York banks and to other banks as needed. On August 4, Congress removed the limits on the amount of emergency funds that could be issued. By month's end, around $208,810,790 in new money had been circulated. The number grew to $381,530,000 by the end of November. For the first time, the Federal Reserve began to actively influence the amount of available MONEY and CREDIT, and this role would continue after the war ended.

The United States enters the war. On April 6, 1917, the United States entered the war by declaring war on Germany and followed this with a declaration of war on Austria-Hungary on December 7. As American troops were mobilized, the country needed to equip the military, and an appropriations bill was passed on June 15 to provide essentials for soldiers, such as clothing and bedding. Factories were quickly built to meet the needs of the war, and war products took precedence over other goods. Congress rarely acts quickly because of competing party and regional interests, so the lack of appropriation of funds for supplies sometimes resulted in discomfort for the military. The few individuals who tried to take advantage of the increased need for goods by charging exorbitant prices were prevented by government intervention.

The mobilization of 3,000,000 U.S. troops invigorated the war effort and helped to bring Germany to terms. Although the country was only actively involved for 17 months, the American contribution changed the course of history. Within the country, the powers of government changed almost overnight. New government agencies were created to handle different aspects of the war, and each of them had powers over resources that changed the lives of the American people. While most agencies were dismantled after the war, the role of government and the public's perceptions of its role had changed immeasurably.

Financing the war. In the United States, the national debt had remained around the $1 billion mark for the previous 30 years. By 1919, the figure would grow to $25 billion, partially because of the $32,080,266,968 that the United States spent on World War I ($9,455,014,125 of this was advanced to Allied countries). Federal spending grew from 1.5 percent of the GROSS NATIONAL PRODUCT (GNP) in 1916 to 24.2 percent of the GNP by 1918. Because of the war, the nation was close to full employment.

Economists maintain that a government can finance war in four ways: taxing the people, borrowing from the people, drafting soldiers and other resources directly from the people, and creating money that did not exist before the war. The United States government used all four methods to finance World War I. The War Reserve Act of 1917 increased both personal and corporate taxes and levied excise, excess profit, and luxury taxes. War financing consisted of 24.5 percent from taxes, 61.3 percent from funds borrowed from the public and 14.2 percent derived from creating new money. Much of the money borrowed from the public was raised through huge bond rallies, featuring such celebrities as Mary Pickford, Charlie Chaplin, and Douglas Fairbanks. Almost $7 billion of the bond sales were sold to persons with incomes of less than $2,000 a year, and even schoolchildren contributed to the war effort by buying thrift stamps at 25 cents each. The Federal Reserve possessed over $4 billion in government bonds.

Experiencing the war. A major problem for the U.S. government during World War I was to control the supply of food so that the public would be amply cared for while sending food products to American and Allied troops. Exports of agricultural products soared during the war. From December to April 1914, the United States had exported 18 million bushels of wheat. By 1915, wheat exports had risen to 98 million bushels. In August 1917, Congress passed the Lever Food and Fuel Control Act and created both a Food Administrator and a Fuel Administrator. Herbert HOOVER (1929–33) was named as Food Administrator. His task was to walk a line between serving the interests of the public and meeting the needs of the war effort. Hoover responded by inviting the public to prove their patriotism with "Meatless Mondays" and "Wheatless Wednesdays." "Victory Bread," a mix of wheat flower and lower-quality substitutes, appeared on American tables. Harry A. Garfield, the Fuel Administrator, was immediately faced with heating the country through an unusually severe cold winter. The railways, already taxed by the transportation of war-related goods, could not deliver domestic fuel quickly enough. Garfield was forced to shut down factories for a few days and on what was called "Heatless Mondays" to give the railroad time to meet demands. When factories shut down, working people lost wages, and they blamed Garfield for their problems. The lack of fuel also affected ships. During the fuel shortage, 37 ships loaded with military supplies were stalled in a New York harbor. In addition to the Food and Fuel Agencies, Congress created a War Industries Board, and Wilson appointed Bernard Baruch to head the agency. Baruch aggressively set out to regulate the prices of key industrial products. Other prices were regulated by the Price-Fixing Committee, another wartime creation.

As business boomed in war industries and the demand for labor increased, the labor market tightened. The government had obtained contracts, financing them through both borrowed money and new money. Laborers working under government contract tended to make higher wages and enjoy better working conditions. Wilson averted most strikes by threatening dissatisfied workers with the military draft, but he nationalized the railroads rather than deal with strikes from this essential method of transportation. His move resulted in higher wages and better working conditions for railroad employees also. When the railroads returned to private ownership after the war, a number of people protested. Charged with international transportation of war goods, the shipping industry changed drastically during World War I. For instance, a section of Delaware wasteland was turned into a shipyard with 28 waterways, which often contained ships under simultaneous construction. Since large numbers of horses were shipped to Europe to be used in transporting equipment on the field, farmers switched to tractors for the first time.

Women and African-Americans and the war. Before the beginning of World War I, women demanding the right of suffrage were common on American streets, but the war seemed to make criticizing the government unpatriotic. Carrie Chapman Catt (1859–1947), the leader of the National American Woman Suffrage Association (NAWSA), encouraged the suffragettes to support both the war effort and women's suffrage. NAWSA sponsored a hospital in France, and members began knitting socks, raising and canning food, selling Liberty Bonds, and working for the Red Cross. Their hard work paid off when the 19th Amendment was ratified on August 26, 1920, granting women the right to vote. World War I did not bring larger numbers of women into the work force (around one million), but it did change the kinds of jobs that women were doing. In fact, after the war, daily newspapers published an open letter to women from the government thanking them for working beyond their natural capacities in the war effort. While most women returned to their homes after the war, the general perceptions of women's roles in society had been altered.

African-Americans had also joined the labor force during World War I. Many Southern blacks, glad to leave the discrimination of their homelands, migrated north during this period. Segregation in the American South determined what employment opportunities were open to African-Americans during the World War I boom. Since white males owned most businesses, opportunities for professional and white-collar jobs were limited. Jobs that were available tended to be low paying with few opportunities for advancement. Because of its enormous need for workers, the government offered free transportation to entice African-Americans into northern factories. White workers who resented what they saw as unfair reacted with race riots. The northern migration of African-Americans continued after the war, opening new avenues of economic opportunity.

The end of the war. Following his habit of approaching politics from an intellectual angle, Wilson spoke to Congress in January 1918 and announced his Fourteen Points, which identified the requirements for peace with Germany. Wilson's document called for a peace treaty, freedom of the seas, resumption of open trade, arms reduction, territorial adjustments, respect for national sovereignty, an international peacekeeping body and monetary compensation to the Allies. Germany ultimately agreed, and plans for a peace conference began. The major participants were David Lloyd George (1863–1945) for Great Britain, Georges Clemenceau (1841–1929) for France, Vittorio Orlando (1860–1952) for ITALY, and Wilson for the United States. Since Italy had earlier ties to Germany, the other three basically ran the show.

The Treaty of Versailles, named for the large palace in Paris in which the conference took place, was signed on June 28, 1919. However, the Republican-controlled Senate and Democratic President Wilson could not agree on terms, and the treaty was not ratified in the United States by seven votes. Wilson had been totally committed to the League of Nations established by the treaty and was devastated when it was defeated. He suffered a stroke, which virtually ended his political career, even though he technically completed his term. The League of Nations never became the reality Wilson envisioned. The Treaty of Versailles called for $33 million in Allied claims for reparation. Economist John Maynard KEYNES (1883–1946), a British representative to the conference in Versailles, argued unsuccessfully that it was an impossible requirement and contended that it would be far better to promote German production, rather than forcing Germany into a financial straightjacket (which most historians agree contributed to World War II). Contemporary sources put the total cost of World War I at around $200 billion, with $40 billion in additional property damages, and $65 billion in lost production. The cost in human life was immeasurable. Approximately 117,000 Americans died as a result of World War I and another 204,000 were injured. At least 15 million people died in a disastrous flu epidemic during the war.

Aftermath of the war. When the Armistice was signed in November 1919, the American economy slowed down and prices soared. Despite this, the United States continued to have war-related expenses. The troops still had to be brought home, and the military had been promised veteran benefits from the government. As part of their payment for services rendered during the war, veterans had been promised postwar payments of $1 a day for domestic service and $1.25 a day for foreign service. Payment was to be made immediately if the total payment were $50 or less, and remaining benefits were to be paid in 1945. By 1932 the Great DEPRESSION was in full swing, and 32,000 businesses failed. Unemployment was near 25 percent. Since veterans and their families were often broke, they demanded payment immediately. The Bonus Army, made up of hungry and dissatisfied veterans, came to Washington, D.C., and established themselves in communities of shacks known as "Hoovervilles." The name was a slur on President Herbert Hoover for what many saw as his indifference to the country's economic crisis.

In addition to military-related expenditures, the United States was faced with dismantling the enormous bureaucracy that had grown up in response to the needs of supporting the Allies and fighting a war. The United States entered the war as a debtor nation but had finished the war as a creditor nation, possessing a good deal of the world's gold, and had become the leading industrial nation of the world.

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World War II

ECONOMIC FACTORS HAVE traditionally been considered to feature much more prominently in the causes and consequences of the First World War than the Second. The belief that modern wars invariably have their roots in capitalist rivalries attained the status of conventional wisdom among the European political left in the 1930s, and underpinned much isolationist sentiment in the UNITED STATES during the same period.

The democracies' attempt to comprehend the Nazi phenomenon was thus complicated by searches for the "powerful forces," usually identified with the more prominent figures in German heavy industry, who were thought responsible for the rise of Adolf Hitler. The course of the war itself made clear how wide of the mark such interpretations were, and the spectacular racism and brutality of the National Socialist (Nazi) regime has tended to obscure more remote causes of the conflict. Similarly, the determination of the victorious powers to ensure that the question of war debts and reparations did not overshadow the post-1945 era as it had done the interwar years—coupled with the astonishing rapidity with which nearly all the combatants made good their wartime losses—caused the economic dimensions of World War II to figure less conspicuously in popular consciousness than had formerly been the case. From the perspective of a new century, however, it is apparent that the economic consequences of World War II were far more thoroughgoing, and lasting, than those of its predecessor.

Economics and war. Although it is far too simplistic to say that the Great DEPRESSION of 1929–33 set the world inexorably on the path to war, the near-breakdown of the international economic system during these years had a profound and damaging psychological impact. Not only did the slump erode confidence in the ability of liberal-democratic policies to cope with modern problems, but the worldwide stampede toward protectionism and discriminatory trade measures that ensued, strengthened the hands of those who equated economic self-sufficiency with national security and prosperity. Autarkic measures represented an early prototype of the "siege economies" that would appear with the onset of war, and provided a justification for the acquisition, if necessary by force, of the territories and resources that would free those who controlled them from dependence upon the vagaries of the world market.

The psychological ramifications of the Depression, indeed, were in some respects perhaps more significant than its material consequences. The volume of world trade, which at the depths of the slump had fallen by 28 percent from the mark set in 1929, had recovered to its former level by 1938. Manufacturing production in Europe performed even better, surpassing its pre-slump output by 12 percent in the same year. Mass unemployment, though hardly eliminated, had been brought under control thanks in part to quasi-Keynesian measures in the United States and Scandinavia and the implementation of rearmament programs in Western Europe.

Unfortunately, these signs of recovery were not accompanied by the dismantling of the protectionist regimes created by the principal manufacturing economies in the early 1930s. The system of imperial preferences established for the British Commonwealth at the 1932 Ottawa Conference, while not the most discriminatory then existing, was bound to have a significant effect on international trade inasmuch as the Commonwealth included within its boundaries approximately a quarter of the world's population. The French Empire constituted a still more tightly protected trading area. Both Germany and Italy pursued AUTARKY and sought preferential relationships with their neighbors in southeast Europe; while America and the SOVIET UNION, secure behind high tariff walls, had become virtually self-sufficient by the end of the 1930s.

Countries waging war. The outbreak of World War II in September 1939, at once represented a continuation of this pattern, and was responsible for violently disrupting it. Compelled to rely on their own resources or those plundered from neighboring states, the Axis powers intensified their autarkic economic policies during the war. At the outset, the Allied countries likewise attempted to maintain "business as usual"; but the collapse of FRANCE in 1940, the near-bankruptcy of Britain by the spring of 1941 and the grave danger in which the United States found itself compelled them to adopt of new and radical expedients. Nonetheless, in mobilizing their economies for war, the principal belligerents found themselves driven to pursue broadly similar policies. The outcome of the war, consequently, is attributable more to the natural advantages, or otherwise, enjoyed by each of the combatants than the success or failure of their economic management.

For GERMANY and JAPAN, the ability to wage aggressive war constituted, from the mid-1930s on, the principal rationale of their economic planning. At the time of his accession to power in 1933, Hitler's first priority had been job creation. The volume of resources devoted to re-armament was initially small because there were few munitions projects that would have had a significant short-term impact on unemployment. From 1935 on, though, with full employment achieved and with the principal brake on German output becoming an increasingly acute labor shortage, re-armament took precedence over all other forms of public investment.

By the time of the Sudeten (German territorial expansion) crisis in September 1938, fully half of all public spending was being applied to military purposes. This vast re-armament project was financed largely through the manipulation of various credit instruments, supplemented by rigorous state controls—amounting almost to a complete takeover—of overseas trade. Notwithstanding the dubious nature of many of these transactions, there is little reason to believe that the German economy was heading for an inevitable crash before the war, although the comforting illusion that the rearmament effort had strained Germany to the point of collapse paradoxically helped sustain British morale, and commitment to continuing the war, after the Dunkirk defeat.

Japan, for its part, began to mobilize its economy simultaneously with its attack upon China in 1937. Japan's motives were purely predatory: To acquire by force the territories, resources and markets to which it believed it was entitled by virtue of the racial superiority and technological advancement of its people, and upon which Japan's status as a first-rate power was thought to depend. Heavily reliant on supplies of iron, steel, oil, and machine tools from America, Japan adopted a series of schemes in the late 1930s aimed at reducing import dependence and drastically increasing the output of munitions industries. No sooner had each of these plans been approved, however, than external events compelled their revision.

The outbreak of the European war in 1939 drove up the price of commodities on the world market and sharply eroded the purchasing power of Japan's already meager foreign-currency reserves. The outlook worsened still further with the U.S. suspension of scrap-metal exports in September 1940, and the German attack on the Soviet Union the following year, putting an end to shipments of goods via the Trans-Siberian Railway. Japan's occupation of southern Indochina in the summer of 1941, to which the United States, Britain, and the NETHERLANDS responded with an economic boycott, closed off all sources of external trade outside the empire and threatened Japan with imminent economic crisis. In November 1941, confronted with the alternative of foregoing its ambitions to obtain by force a hegemonic position in east Asia, or precipitating a dangerous worldwide confrontation with the United States and Britain, the Japanese government of Tojo Hideki opted for the latter course. The attacks on Pearl Harbor and the resource-rich British and Dutch East Indian colonies immediately followed.

Responding to the breakdown of the Disarmament Conference in 1934 and the growing menace of the Axis powers, the Western Allies finally moved to accelerate their own re-armament programs, albeit at an alarmingly sedate pace. British defense preparations to meet the new danger were set in motion in 1935, although, until the Sudeten crisis, the British Cabinet continued to plan on the basis that any future European conflict would be "a war of limited liability." As late as 1938, British armaments expenditure was running at a rate of £358 million, barely one-fifth of what Germany spent in the same year.

France's war preparations were still less effectual. A disproportionate share of French military spending was devoted to the maintenance—though not the completion—of the defensive Maginot Line; defense acquisition policies were uncoordinated and incoherent; and the extensive rearmament scheme inaugurated by the Popular Front government of 1936–37 was badly disrupted by a wave of strikes affecting, in particular, the crucial aircraft industry and was worsened by the persistent instability of the French franc. The outbreak of the war thus found both Allies poorly prepared, with British defense industries unable to spend all of the appropriations voted at the last moment by a panic-stricken Parliament, and the French armed services relying on equipment that was both insufficient in quantity and inadequate in quality.

The defeat of the Allies on the continent, nonetheless, was far from inevitable. The German victory in POLAND in the first weeks of the war had been accomplished only by leaving the western frontier virtually undefended against an Allied advance; while the availability of even a small mobile reserve may well have been sufficient to cut off and defeat the German advance in May 1940. But after the fall of France in June, only the intervention of an outside power could prevent a complete German victory in Europe. By the end of the year, British foreign currency reserves had been all but exhausted; and whereas the extension of Lend-Lease aid from the United States in March 1941 came as a lifeline to the hard-pressed economy, it could only have postponed, not prevented, the final outcome.

Britain persevered, less by its achievement in "standing alone"—a somewhat misleading characterization in any event, inasmuch as it benefited from the assistance of some 500 million subjects of the Empire-Commonwealth, whose consent in most cases had never been solicited—than by Hitler's monumentally misconceived action in declaring war on both the Soviet Union and the United States. Thereafter, the disparity between the rival power blocs, both in terms of population and of productive capacity, would tilt steadily in the Allies' favor.

German economic war machine. By the mid-point of the war, Germany was still capable of holding its own economically against opponents. The once-popular view that German war mobilization was less comprehensive than that of the other combatants is now being revised. Although it is true that the output of the civilian sector remained almost constant from 1939–41, up to half of the goods and services it produced were absorbed by the armed forces. Additionally, large-scale capital projects in munitions-related industries initiated in the late 1930s had not yet begun to bear fruit, providing a misleading picture of the scale of German mobilization. It was the coming stream of many of these projects that accounts in large measure for the extraordinary leap forward in German production capacity from 1942 onward.

Another significant factor was the reform of the state-planning apparatus under Fritz Todt and his successor, Albert Speer. The command economy instituted in the mid-1930s had been both bureaucratic and utterly lacking in organization, with the Ministry of Economics, the Organization for the Four-Year Plan, and the War Economy Office each issuing conflicting instructions and competing for resources. Todt's and Speer's reorganizations, devolving decision-making authority downward to individual managers, laid the foundations not only for industrial rationalization during the war, but part of the managerial structure upon which West German prosperity was built in the 1950s and 1960s.

Lastly, the thoroughness with which the Nazis stripped the occupied territories of both labor and materials—in 1943, 36 percent of French national income was being taken by Germany in the form of levies—helped sustain the war economy even as the tide of battle turned decisively toward the Allied powers.

To offset German success, however, the economies of the other Axis powers performed badly under the stress of war. Alone among the major combatants, ITALY failed to increase its output significantly above peacetime levels during the war. This was caused by a combination of raw materials shortages, with Germany competing successfully for such imports as were available; large-scale movement of labor to German munitions factories; and the innate deficiencies of the Italian manufacturing sector. The Italian armed forces do not deserve the reputation they have acquired from some critics; they fought with considerable tenacity, as is attested to by the deaths of some 290,000 servicemen during the conflict. But they were let down by poor planning, bad equipment and the lamentable performance of Italian industry: A not-so-infrequent occurrence was for basic army training to be curtailed so as to try to prevent soldiers' boots from wearing through.

Likewise, in the Far East, the material and productive imbalance between Japan and its enemies was so pronounced that, as long as the latter were determined to continue the fight, there could only be one possible outcome. Notwithstanding Japan's early successes and the ruthlessness with which it exploited the occupied territories in Korea, CHINA, Formosa, and Southeast Asia, neither the volume nor the variety of plundered supplies could substitute for the commodities previously obtained through overseas trade. A more serious problem was the increasingly acute shortage of ships to transport goods extracted from the conquered areas back to the homeland. The ill-fated Midway and Guadalcanal operations had a catastrophic impact on the Japanese merchant fleet, which by the third quarter of 1944 had dwindled to little more than half its pre-war tonnage. An increasing reliance on slave labor, female labor, and even the mobilization of children for war work failed to have a major impact on war production, sustained largely by squeezing the civilian sector almost to starvation levels.

It has been estimated that by 1944, the Japanese military accounted for a scarcely credible five-sixths of government expenditure. Efforts on this scale could not be sustained for long; nor was the Japanese economy sufficiently large for such desperate measures to have a decisive effect on the battlefield.

The Allied record, by contrast, was one of general success in meeting the challenges of mobilization. After a slow start—nearly a year after the war had begun, more than a million workers remained unemployed—the United Kingdom mounted an impressive production effort, with 55 percent of GROSS DOMESTIC PRODUCT (GDP) being devoted to war purposes by 1943. Even the Soviet Union, which saw the destruction of perhaps a quarter of its physical assets, was able to match and then exceed German output by the same year, although only at the cost of a very drastic reduction in the production of civilian goods. The Soviet Union's principal contribution to the war effort, however, was physical rather than material: For every American citizen who died in the struggle against the common enemy, more than 150 Soviet citizens lost their lives.

Effects of the war. The United States emerged from the war less affected, physically or materially, than any of the other principal combatants. Uniquely, overall levels of civilian output in the United States were maintained while a vast munitions production sector was constructed almost from scratch. The impressive growth rates that made possible such an accomplishment were achieved largely as a result of the recruitment of 17 million extra workers between 1940 and 1944; the re-allocation of Midwestern and Southern labor from agricultural to industrial processes; the increased participation of women in the labor force; and—though perhaps least importantly—increased capital investment. The immense amount of capacity latent in the manufacturing economy permitted America to maintain a military establishment of 11.4 million servicemen and women, subsidize allies to the tune of approximately $50 billion in Lend-Lease transfers, and boost real personal consumption to an all-time high by 1944.

The final defeat of the Axis powers in 1945 thus found the United States in a position of unprecedented global dominance. The course of the war had enabled it to take advantage of the financial difficulties of allies no less than enemies: American businesses benefited, for example, from the sale of British assets—often at deeply discounted prices—in the United States as well as British firms' forced withdrawal from long-established markets in Latin America. Nor was the U.S. government slow to make use of its power to secure its economic position after the return of peace. Lend-Lease was abruptly terminated after V-J Day upon 24 hours' notice; the extension of a reconstruction loan to the United Kingdom was made conditional upon the abolition of the Ottawa Agreement tariffs (although the United States did not agree to dismantle its own tariff barriers); and even U.S. reconstruction aid came with strings attached—not least the requirement of recipients to ratify the BRETTON WOODS agreements on international payments and trade.

Few in 1945 could have predicted the rapidity with which the material damage of World War II would be made good. In 1946, European industrial production stood at one-third, and agricultural production at half, of its pre-war level. Wartime damage was estimated to have destroyed 45 percent of France's total wealth; by comparison with much of Central and Eastern Europe the French had escaped lightly. Worldwide, some 50 million people had been killed in the war, and at least as many displaced from their homes.

Within 10 years, nevertheless—and in some cases much sooner—all the great powers had not merely achieved but surpassed their pre-war levels of production. There were several reasons for this. Despite the scenes of apparent devastation on every side, much of the wartime damage was not difficult to repair. A great deal of military activity had been directed against chokepoints in the enemy's economy; once these were relieved, normality was quickly restored. Wartime investment and rationalization in many cases actually left the belligerent countries with an enhanced productive capacity. Notwithstanding defeat, Germany emerged from the war with a greater stock of capital equipment than when the war began. Much of the military technology developed during the war—jet aircraft, sophisticated electronics, synthetic textiles—had valuable peacetime applications.

In retrospective assessments of the lessons to be learned from the war, the revival of the principal belligerents has most commonly been depicted as a Keynesian success story. The cancellation of inter-Allied war debts; the injection into Western Europe of $13 billion of U.S. aid under the MARSHALL PLAN; the spread of social democracy with its openness to economic interventionism; and the inauguration of a multilateral trade system have ensured that the crises of the interwar years would not be repeated. While there are fewer firm indications than was once assumed to show a cause-and-effect relationship between any of these factors and the pace of recovery, it can be said that economic integration was one of the few positive consequences of the war. The leaders of the United States saw protectionism as one of the principal causes of the conflict, and multilateralism as the cure. The post-war leaders of the former Axis powers concurred, although in the circumstances they would scarcely have been permitted to dissent.

So, too, did the leaders of the occupied countries in Europe, who attributed their swift defeat to political and economic isolationism. It is far from coincidental that the Soviet Union and Great Britain, the only countries to make serious attempts to resist the integrationist tide and preserve their prewar systems as much as possible, should have lagged behind in the pace of their respective recoveries, nor that both continued for many decades to regard the war itself rather than the peace that followed it as their "finest hour."

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WorldCom, Inc.

TRYING TO RESURRECT itself from one of history's most massive bankruptcies and scandals caused by ACCOUNTING irregularities, WorldCom hired Michael Cappellas as chairman, president and CHIEF EXECUTIVE OFFICER (CEO) to help restore the company's solvency. The former president of Hewlett Packard and CEO of Compaq, Cappellas promised to bring back not only the customer-conscious, technically driven company that it had been, but in mid-2003, Cappellas and his team put WorldCom behind them and renamed the company MCI.

To emerge from its financial difficulties, cost-trimming measures have continued to make up for lost business time; cuts include further layoffs—more than the 17,000 workers already downsized by 2003—as well as the closing of several non-core business groups, such as its wireless resale unit.

The company has been in operation since 1983, its roots starting in Hattiesburg, Mississippi, under the name LDDS, an acronym for Long Distance Discount Services. A few rough years of red ink followed until profits began to soar in the early 1990s. The name WorldCom was inaugurated in 1995. After WorldCom purchased competitor MCI's businesses in 1998, a merger ensued and for the next two years consumers knew the company as MCI WorldCom. By the turn of the millennium the MCI part was dropped.

WorldCom continued its communications services for tens of thousands of businesses globally, and carried more international voice traffic than any other carrier. Its market share of internet communications technology was as large as its piece of the global networks market (95,000 route miles to more than 82,000 locations). As well, it owned and operated a global internet protocol backbone that provided connectivity to 2,600 cities in 100 countries, and 2,400 banking, frame, relay, and voice switches.

Part of the company's strategy to put the past behind it is to produce breakthrough products, one of which may be its WorldCom Connection, voted the 2002 Product of the Year by *Internet Telephony* trade magazine. The product consolidates a customer's entire communications needs over a single network solution, allowing for better network management, lowered costs, and use of new multimedia technology.

"We're still the same company we've always been," emphasizes the company's annual report. "The pre-eminent global communications company for the digital generation, [we] are working to regain our financial health . . . during the reorganization process."

A glimpse of the company's financials can be seen in its filing on January 29, 2003 of its November 2002 monthly operating report. During that 30-day period, it recorded $2.2 billion in revenue, an operating loss from continuing operations of $163 million and a net loss from continuing operations of $194 million.

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Yemen

THE REPUBLIC OF YEMEN is located on the southwestern corner of the Arabian peninsula, with the Red Sea to the west, the Arabian Sea to the south, Oman in the East, and SAUDI ARABIA to the north. The capital is Sana'a.

The country's population is 18.7 million (2002), primarily ethnic Arabs. Most of the population speaks Arabic, although dialects differ from region to region. Almost the entire population is Muslim; however, a few Christians and a Jewish community have resided within Yemen since pre-Islamic times.

Yemen's relative isolation and traditionally weak economy have produced a number of long-standing social problems, including one of the lowest literacy rates in Asia and underdeveloped healthcare. Disease spreads quickly in the region due to polluted drinking water, inadequate vaccinations, and a shortage of medical personnel and facilities. Yemen plays an important role in the ongoing War on Terrorism, attracting the scrutiny of the UNITED STATES as the superpower tracks potential terrorists moving across Yemen's fluid borders. With the help of foreign aid, Yemeni leaders have made great efforts to provide social welfare to the people of Yemen. The country's GROSS DOMESTIC PRODUCT (GDP) stands at $14.8 billion, one of the poorest in the Arab world, with most of its trade coming from crude OIL exports.

Traditionally, the people of Yemen have had an economy based on subsistence agriculture and were self-sufficient. However, by the late 20th century the country began to rely heavily on cheap imported goods from Saudi Arabia and the Persian Gulf States. The PERSIAN GULF WAR of 1990–91, followed by a civil war in 1994, has led to economic hardships for Yemen, and as a result the country has suffered infrastructure damage, rampant inflation, and devaluation of the Yemeni currency.

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yen

AS JAPAN'S OFFICIAL monetary unit since 1871, the yen (¥) has become one of the world's most important currencies. Although Chinese coins had circulated in JAPAN earlier, the first recorded Japanese coins were minted in 708 C.E. Like their Chinese counterparts, these coins were round with a square hole in the center allowing them to be strung together for easy transport. In the more recent Tokugawa period (1600–1868), the shogun's government minted gold, silver, and copper coins. The first recorded paper currency dates from around 1600, when a merchant in Ise issued paper notes to his customers.

The Tokugawa Shogunate's collapse in 1868 ushered in the Meiji regime, which was dedicated to modernizing Japan's economy. The New Currency Act, promulgated in 1871, replaced the Tokugawa gold *ryō* with the yen and created a decimal system of *sen* and *rin* to denote tenths and hundredths of a yen. The government also adopted Western style round stamped coins made of gold, silver, and copper. In 1872, a German company was contracted to print the first paper yen notes. Eager to provide additional currency for Japan's growing economy, the government also chartered private banks to print bank notes in the 1870s.

Japan's financial system had to be modified, however, after the Satsuma Rebellion contributed to rapid inflation in the late 1870s. To curb inflation and stabilize the yen, Finance Minister Matsukata Masayoshi established the BANK OF JAPAN in 1882 to centralize monetary control. The government accumulated silver to back its currency and by 1885, the Bank of Japan was prepared to issue convertible bank notes.

The 1897 Coins Law moved Japan from a silver to a gold standard. Using gold extracted from China in the Sino-Japanese War, the Japanese government made the yen redeemable for 0.75 grams of gold (one contemporary U.S. dollar contained 1.5 grams gold). In 1899, the Bank of Japan issued 10-yen gold coins and convertible banknotes.

The gold standard remained in effect until WORLD WAR I (1914–18) forced the advanced capitalist powers to halt their gold shipments. During the war, Japanese companies made windfall profits exporting to the Allied powers and to Asian markets vacated by European firms. This wartime boom rapidly increased Japanese domestic prices and forced Japan to suspend the yen's convertibility to gold. After the war, the Japanese government's attempts to restore convertibility with deflationary policies aggravated an already severe RECESSION.

The yen's convertibility to gold was finally restored in 1930, but the timing could not have been worse. The onset of the Great DEPRESSION further weakened Japanese exports resulting in mounting trade deficits. In just six months, the Japanese lost ¥250 million in gold reserves. This financial disaster contributed to Japan's nationalist rejection of the liberal international economic system in the 1930s, leading to WORLD WAR II.

The Japanese currency, the yen, has been the country's monetary unit since 1871.

After World War II, Japan participated in the BRETTON WOODS system of fixed exchange rates sponsored by the UNITED STATES to promote economic stability among its Cold War allies. In the 1950s and 1960s, the yen was pegged at ¥360 to $1. In the early 1970s, however, the financial strain of the VIETNAM WAR forced the United States to allow exchange rates to fluctuate according to currency market forces. By 1978, the yen had appreciated to ¥230 per DOLLAR. In 1985, the Bank of Japan agreed in the Plaza Accords to cooperate with other major central banks to depreciate the dollar. The Plaza agreement resulted in the yen's appreciation to ¥120 to $1 by 1988.

In the 1990s, the yen fluctuated dramatically between ¥80 and ¥160 per dollar. This exchange rate volatility generated considerable discussion of a yen-based east Asian economic group patterned on the North American Free Trade Agreement (NAFTA) and the EUROPEAN UNION, but by 2003, a yen bloc had not materialized. As of the mid 1990s, the majority of Japan's imports and exports continued to be invoiced in currencies other than the yen. Furthermore, most Asian currencies continued to have stronger ties to the dollar than to the yen, as east Asian regional trade seemed to be weakening.

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Zimbabwe

LOCATED IN SOUTHERN Africa, Zimbabwe is an average-sized African country, landlocked, with a total landmass of 390,680 square km, comparable to the state of Montana in the UNITED STATES. A parliamentary democracy, six areas of Zimbabwe are under provincial rule. Harare is the capital city.

With a population of 11,376,676, native Africans dominate Zimbabwe's ethnic structure with approximately 98 percent of the population from African heritage. The Shona and Ndebele ethnic groups make up 82 percent and 14 percent of the majority, respectively. Asians and whites are in the minority with about 1 percent of the population each. Zimbabwe's official language, being a former colony of the British Empire, is English, although the languages of the Shona and Ndebele are spoken as well.

Zimbabwe's per capita life-expectancy rate is extremely low, at around 35 years, mainly due to the major prevalence of AIDS in Zimbabwean society. It was recorded in 1999 that 1.5 million people, or over 10 percent of the population, had been infected with the HIV virus, and that 160,000 people each year die from the deadly disease.

Several nomadic groups are believed to be the first inhabitants of Zimbabwe, a people that would later become the Shona tribe. The Zimbabwean empire, which controlled most of southeastern Africa, experienced an era of prosperity until the 15th century, when the Shona tribes split off into self-governing states, eventually most of them banding together to form the Rozwi state. Zimbabwe experienced political turmoil for the next few centuries, with the Shona and Ndebele groups engaging in repeated power struggles. By the late 19th century, Europeans seeking mineral and other natural resources took advantage of the country's political hardships and, by 1895, Zimbabwe was under British control and a white legislature was set up. It became known as Southern Rhodesia. Conflicts over African exclusion from ownership and other widespread racial issues led to guerrilla uprisings in the mid-1900s, and in 1980 newly appointed British Prime Minister Margaret THATCHER granted Zimbabwe its independence. Robert Mugabe came to power in the democratic election of March 1980, and has retained control of the country to date in July 2003.

Mining is the main contribution to Zimbabwe's economy, with the nation specializing in coal, gold, copper, nickel, tin, clay, and numerous ores. Its main agricultural product is tobacco, which makes up approximately 30 percent of its exports, but it also specializes in wheat, coffee, sugar cane, and corn, albeit of limited quantity. Zimbabwe's exports were valued in 2002 at $2.1 billion and its imports at $1.5 billion, and its main trading partner was the neighboring nation of SOUTH AFRICA. The INTERNATIONAL MONETARY FUND (IMF) suspended financial help to the country in the wake of Zimbabwe failing to meet budgetary guidelines.

Zimbabwe's economic status has raised international concern. Inflation has risen at an alarming rate, from an annual rate of 32 percent in 1998 to 59 percent in 1999, stabilizing somewhat at 60 percent in 2000, and then reaching a new height of 100 percent in 2001. Its GROSS DOMESTIC PRODUCT (GDP) growth rate is in serious decline, at –6.5 percent by the end of 2001. Furthermore, Zimbabwe's per capita income is at $2,450, truly indicative of its poverty and unemployment level of 60 percent. Zimbabwe's economic problems stem from its lack of natural resources and limited sovereignty from the British Empire over the last century, restricting its ability to develop a successful market-based economy. Zimbabwean leader Mugabe's controversial land redistribution campaign, launched in 2000, has forced white commercial farmers to give up OWNERSHIP of their land to landless blacks without any compensation. Crippling the predominant commercial agriculture sector of the country's economy, Mugabe's tactic has come under fire and he has received international condemnation. Despite the international community's and his own peoples' staunch protest, Mugabe ran for re-election in 2002 and won by a very small margin, prompting suspicion of a rigged campaign.

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Zurich Financial Services

DRAWING FROM ITS EXPERTISE gained over its 130 years, SWITZERLAND-based Zurich Financial Services offers a wide spectrum of solutions in financial protection, life and non-life insurance, risk management, and asset management. Customized products help to insure customers' assets, current and future, and are distributed via a number of channels, one-on-one or electronically. These channels include Zurich's immediate sales force, specific brokers and bankers, assorted partners and alliances, direct marketing programs, and the internet.

Within the list of Zurich's more popular product outlets are recognizable brand names such as Farmers Group and Kemper (in the UNITED STATES), and Allied Dunbar (in the UNITED KINGDOM).

At present, Zurich's client base totals 38 million customers who are served through 60 offices spread throughout Switzerland, continental Europe, North America, and the United Kingdom. Employees, 70,000 of them, monitor and maintain customer programs and the status of each product, whether their client is a small business, a corporation, or a multinational company.

The company dates back to 1872 with the establishment of the Zurich Insurance Company. Within a hundred years its scope widened and, with it, its turf. In 1998, the Zurich Financial Services group carried out several mergers and, by 2002, the company was ranked among the largest 100 companies in the world. Reporting revenues of $38.6 billion in 2002, Zurich faced strong competition and was re-honing its fundamental initiatives—strategic focus, operational efficiency, balance sheet and capital base. One strategic move was appointing a new CHIEF EXECUTIVE OFFICER (CEO) in 2003, PriceWaterhouseCooper's Berto Fisher, to lead these initiatives.

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Glossary

absolute advantage: when better natural endowments or production-related experience equip one nation with the ability to produce more of a good than another nation, even though both nations have equal quantities of resources.

accounting profit: the difference between a firm's total revenues and total costs, where total costs are measured as the firm's actual (operating) expenditures.

ad valorem tax: a tax levied on the sale of a good, where the tax on each unit sold is determined by the value or price of that unit (e.g., a sales tax).

allocative efficiency: a condition that describes the efficiency associated with how markets allocate goods and services or resources. Allocative efficiency arises when the last unit of a good is sold at a price that is equal to the economic cost of producing or providing that unit (i.e., when a good's price is equal to the good's marginal cost).

antitrust legislation: government laws aimed at preventing anticompetitive practices that firms may use to drive equally efficient rivals from an industry or to perpetuate monopoly status against otherwise equally efficient rivals.

appreciation: when the value of one country's currency increases relative to the value of another country's currency.

arbitrage: opportunistic behavior where an individual buys a good, typically a financial asset, in order to profit from selling that good elsewhere at a higher price.

asset: money or any other good with value that an individual or firm owns. Generally speaking, assets are a form of saving (non-consumption) and help to determine the wealth of an individual or firm.

autarky: when an economic system is closed to all international trade, such that domestic consumption depends solely upon domestic production.

automatic stabilizers: fiscal policy instruments enacted by government to "automatically" affect economic activity throughout the business cycle by supporting demand during recession and restrain demand during periods of inflationary pressure. Because automatic stabilizers are already in place when GDP changes, these instruments do not require any change in government policy.

average cost: the cost of the average unit of output, measured as the total economic cost divided by the number of units produced (or output).

average product: the number of units produced by the average factor of production (e.g., average laborer), measured as the total number of units produced (or output) divided by the quantity of a specific factor used to produce that output.

balance of payments: an accounting record measuring the total value of one nation's economic transactions with the other nations of the world in any given year.

barrier to entry: a long-run concept referring to the ease with which firms may enter into an industry. There are natural barriers to entry, such as significant economies of scale, and legal barriers to entry, such as patents.

barter: an economic transaction between individuals that involves the exchange of actual goods and services, rather than exchanging goods and money.

break-even: arises in microeconomic analysis when a firm's total revenues are equal to the firm's total cost, and is discussed in macroeconomics in the context of a consumer spending all disposable income on current consumption.

budget deficit: when the difference between an economic system's government expenditure and tax revenues is greater than zero (i.e., expenditures exceed tax revenues). A negative budget deficit is a budget surplus, and a budget deficit of zero is referred to as a balanced budget.

burden of a tax: the ability of a tax (e.g., per unit tax) to both increase the price paid by demanders and decrease the price received by suppliers. The change in the price paid is considered the demander's tax burden, whereas the change in the price received is considered the supplier's tax burden.

business cycle: fluctuations in the economic activity of an economic system, typically measured by changes in macroeconomic variables like real GDP and the unemployment rate.

capital account: an accounting record that measures the value of one nation's exchange of physical and financial assets with other nations in any given year.

capital flight: when the physical and financial assets of citizens from less-developed countries are invested in foreign nations.

capital stock: the cumulative value of all buildings, equipment, and machinery (i.e., capital goods) in a nation or firm at a given point in time.

capital intensive production: a production technique that utilizes more capital than another factor like labor, such as an automated production process.

cartel: price-fixing agreements whereby firms agree to decrease output and raise prices in order to increase profits to monopoly-like levels. Cartels are an overt form of collusion.

central bank: an economic institution with the responsibility of monitoring and regulating the nation's banking system, and for controlling the growth and level of the nation's money supply. In the United States, the Federal Reserve operates as the central bank.

Coase theorem: a theory stating that individuals within the private sector can resolve an externality if property rights are well defined and the bargaining costs associated with resolving the externality are low.

collective bargaining: the negotiation process by which employers and labor unions reach agreements regarding wages, fringe benefits, hiring practices, work and safety conditions, etc.

collusion: non-competitive behavior designed to maximize the profits of an entire industry or set of firms, rather than the profits of one single firm. Collusion is behavior that allows separate firms to approximate the behavior of a monopoly, thereby raising the profits of all firms within the industry.

comparative advantage: the ability of one individual, firm, or nation to produce a specific good at lower opportunity cost than another individual, firm, or nation.

complementary goods: goods related in consumption such that the two goods are purchased and consumed together (e.g., sugar and coffee). The demands for these goods are positively related, implying that increases in the demand for one good corresponds with increased demand for that good's complements.

concentration ratio: a measure calculated by summing up the squared market shares of all firms in a specific industry. The concentration ratio implies something about the degree of competition within an industry, in that greater competition is implied by lesser concentration and lesser competition is implied by greater concentration.

constant returns to scale: a condition that occurs when a firm may double the number of factors hired in the long run and consequently double the quantity of output produced.

constant-cost industry: an industry characterized by no change in long-run average cost when firms are increasing their scale of operation.

consumer goods: goods and services purchased by households (e.g., food, clothing, etc.).

consumer price index (CPI): a measure of the (weighted) average price of a particular set of consumer goods. The CPI informs consumers as to how consumer goods prices are changing over time.

consumer's surplus: the difference between the most a consumer is willing to pay and the actual price paid for a good, typically calculated for the market as a whole (i.e., for all units sold within the market, rather than for just one consumer).

consumption expenditure: the sum of all expenditures on consumer goods by households in a given period.

contestable market: a market with no barriers to entry or exit, allowing any potential firm to very easily begin or cease operations within that market.

corporation: a type of firm organization, where the firm's owners have purchased equity (stock) in the firm, with liability limited to the extent of the owner's investment in the firm.

cross-price elasticity of demand: a measure of the percentage change in the quantity of a good sold relative to the change in the price of some related good. This measure informs us of the degree of substitution.

crowding out: an economic condition that occurs when the investment expenditure of the private sector decreases as the result of increases in the expenditure of the public sector.

current account: an accounting record measuring the value of one nation's exchange of goods and services with other nations in any given year. The current account is sometimes also referred to as the trade balance.

decreasing-cost industry: an industry characterized by decreases in long-run average cost when firms are increasing their scale of operation.

deflate: the process of converting a nominal variable into a real variable (i.e., removing the effect of inflation).

deflation: a decrease in the average price of a group of goods and services.

demand curve: a graphical relationship between the price of a good and the quantity of the good consumers will buy at that price.

depreciation: the value of one country's currency decreases relative to the value of another country's currency.

deregulation: the process of removing government controls and regulations on certain industries in an attempt to improve the economic efficiency and performance of that industry.

derived demand: when the demand for one good, typically the demand for a factor of production, is dependent on the demand for another good. For example, the demand for labor is called a derived demand because the quantity of labor demanded varies with changes in the demand for the hiring firm's output.

discouraged workers: individuals who are not employed and have stopped actively looking or interviewing for a new job.

diseconomies of scale: when long-run increases in a firm's output (or scale of operation) lead to increases in long-run average cost.

disinflation: a decrease in the rate of inflation.

disposable income: the amount of income left over for consumers to use on consumption and/or saving once personal taxes are deducted.

dumping: the act of selling goods in a foreign country at a price below what is charged domestically. Dumping is a form of price discrimination.

durable goods: products designed for use in excess of one year.

economic efficiency: when goods and services are allocated in such a way as to maximize net benefit (that is, allow the most benefit to all to be achieved for the least cost).

economic cost: the sum of a firm's actual (monetary) expenditures and the opportunity cost associated with using the resources and factors making up those expenditures.

economic profit: the difference between a firm's total revenue and total economic cost. Because economic profit includes opportunity cost, economic profit provides a natural comparison between an owner's investment in a firm and the return on the next-best alternative investment.

economic system: a means of organizing demanders, suppliers, and the government in order to answer questions about what goods and services to produce, how to produce those goods and services, and then how to distribute the goods and services produced.

economies of scale: when long-run increases in a firm's output (or scale of operation) leads to decreases in long-run average cost.

elasticity: a measure of how changes in one variable respond to changes in another (related) variable, where those changes are calculated in terms of percentage change. When the response is small (i.e., less than one), the relationship is said to be inelastic, whereas when the response is larger.

entrepreneur: the individuals who bear the risk and expend the effort associated with creating profit-making (business) opportunities.

equilibrium: a state of rest or balance that exists when individuals or firms have no incentive to change their current behavior or actions.

excess capacity: a situation arising when firms produce an output level that is below minimum average cost (i.e., the minimum point on the average cost curve). Excess capacity may result from firms selling increasingly differentiated products.

exchange rate: the price of one nation's currency in terms of another nation's currency. Exchange rates may be set by the foreign exchange market (e.g., flexible exchange rates) or at specific levels by government (e.g., fixed exchange rates).

explicit costs: monetary (actual) costs of firms from producing goods and services.

exports: the quantity of goods, services, and capital assets that a country sells to other nations.

externality: when the consumption or production of a good by one individual affects the consumption or production of another individual and no compensation is made for this negative or positive effect. Externalities with negative effects, like pollution, are negative externalities and can result in overproduction or consumption, whereas externalities with positive effects, like research and development, are positive externalities and can result in underproduction or consumption.

factor market: organized markets that facilitate the exchange of factors of production (i.e., labor, land, capital) between buyers and sellers.

fiscal policy: when government chooses to affect economic activity with changes in government expenditure and/or taxation in order to accomplish specific macroeconomic goals.

fixed costs: the economic cost associated with hiring fixed inputs to produce goods and services. Fixed costs consist of both sunk costs and recoverable fixed costs, and do not change with changes in output.

foreign exchange: money or currency from different countries used to assist or facilitate international trade in goods, services, and financial assets.

free enterprise: a system that allows demanders and suppliers to freely exchange goods, services, and financial assets without government intervention.

free rider: an individual who can consume a good and avoid having to compensate the seller. Free riders may arise during the provision of public goods.

free trade: when countries engage in international trade, exchanging goods and services, but without the existence of trade barriers like quotas and tariffs.

game theory: a formal approach to analyzing strategic behavior.

gold standard: an international monetary system that allows a nation's currency to be exchanged for gold.

government expenditure: the overall expenditure by (some combination of) the various levels of government. Depending on the level of government, these expenditures include national defense, fire protection, public parks, etc.

government securities: government issued debt, including bonds and treasury bills.

gross domestic product (GDP): a measure of economic activity. GDP is calculated as the total value of all final goods and services produced in a given period within a nation's borders. When assigning value to these goods and services, one may use current prices (nominal GDP) or constant prices (real GDP).

human capital: any characteristic, such as skill level, education, etc., that improves an individual's productivity.

imperfect competition: markets that consist of firms capable of influencing the market price of a good (i.e., an industry made up of price setters).

implicit costs: the implied value of an activity in terms of what one must give up in order to engage in that activity. Within production, the implicit cost of an input would be the value of that input in some alternative use.

imports: the quantity of goods, services, and capital assets that a country buys from other nations.

income elasticity of demand: a measure of the percentage change in the quantity of a good sold relative to a percentage change in consumer income. The measure informs us as to whether consumers buy more or less of the good as their income rises (i.e., whether the good is a normal or inferior good) and whether the response is inelastic or elastic (i.e., whether the good is a necessity or luxury).

increasing returns to scale: a condition that occurs when a firm may double the number of factors hired in the long run and consequently more than double the quantity of output produced. Increasing returns to scale is consistent with economies of scale.

increasing-cost industry: an industry characterized by increases in long-run average cost when firms are increasing their scale of operation.

infant industry: a name given to new or recently formed industries made up of firms with (typically) higher unit costs than similar, more established firms producing the same good or service in other nations.

inferior good: a good characterized by a negative relationship between purchases of that good and changes in consumer income.

inflation: an increase in the average price of a group of goods and services.

inflation rate: the percentage change (or growth) in the average price of a group of goods and services. Price indexes provide an approximation of the average price of a set of goods at a moment in time, whereas percentage changes in a price index approximate the inflation rate between periods.

interest rate: the percentage of borrowed funds that must be repaid to a lender in exchange for the privilege of borrowing those funds.

investment expenditure: the sum of all private expenditures on capital goods like buildings, equipment, and machinery.

labor force: all civilian persons, typically over the age of sixteen, who are employed or actively seeking employment.

labor income: the wages or salaries received by laborers in exchange for supplying a specific amount of labor.

labor union: a group who joins together on behalf of certain laborers in order to maximize the collective benefit of those laborers regarding their wages, fringe benefits, work conditions, etc.

Laffer curve: a graphical bell-shaped relationship between (income) tax rates and tax revenues. When the tax rate is zero, and when the rate is one hundred percent, government receives no tax revenues. However, as tax rates are adjusted away from these extremes, tax revenues rise to a maximum point somewhere in between.

laissez-faire: a French phrase used to characterize economic systems with little to no government intervention in private sector markets. Laissez-faire is consistent with the concept of free enterprise.

law of demand: an observed negative relationship between the price of a good and the number of units purchased of that good. This law is used to explain why demand curves have a negative slope.

law of diminishing marginal returns: the understanding that, at some point, an individual or firm will obtain smaller increases in benefit from each additional unit consumed or produced.

law of supply: an observed positive relationship between the price of a good and the number of units purchased of that good. This law is used to explain why supply curves have a positive slope.

liability: items that one person, firm, or group potentially owe another person, firm, or group. For example, when borrowing money from a lender, that borrowed money is considered a liability for the borrower because the money must be repaid.

long run: a period of time or decision-making period where all factors of production are variable.

Lorenz curve: a graphical means of illustrating how income or wealth is distributed within an economic system. The curve is often used to measure the proportion of income earned by a cumulative percentage of the population within that economic system.

macroeconomics: the study of how the whole economy allocates goods and services across competing ends with unlimited wants. Macroeconomics focuses on the behavior of variables like GDP, inflation, unemployment, and long-run economic growth.

manager: an individual within the firm who is responsible for directing the production or sale of the firm's output.

marginal analysis: an examination of how benefits and costs change as the result of changes in certain variables. For example, when a market moves from one equilibrium to another, marginal analysis may be used to explain the direction and magnitude of that change.

marginal cost: the change in total economic cost associated with producing an additional unit of some good or service. For a firm, the marginal cost of producing additional output is calculated as the change in total cost divided by the respective change in output.

marginal product: the change in output possible from hiring an additional factor of production. For a firm, the marginal product associated with hiring additional units of a factor is calculated as the change in output divided by the respective change in the amount of factor hired.

marginal revenue: the change in revenue possible from producing and selling an additional unit of output. For a firm, the marginal revenue associated with producing and selling additional output is calculated as the change in total revenues divided by the respective change in output.

market: a collection of demanders and suppliers who exchange goods and services.

market failure: when prices fail to adjust in ways that allow the efficient distribution or production of goods and services within a market. Market failures can occur when consumers (free riders) obtain public goods without compensating the good's suppliers or when externalities are present, and can become an argument for allowing government intervention in the economy.

market power: the ability of a firm to set prices in excess of marginal cost. Market power is sometimes also referred to as monopoly power.

mercantilism: a set of policies designed to keep a nation prosperous by means of the government influencing the behavior of the private sector. For example, between the 16th and 18th centuries, major trading nations assumed that their national wealth and power were best obtained by promoting exports in exchange for precious metals (e.g., gold).

merger: when two firms join together to become a single firm. The merger is characterized as being horizontal if the two joining firms exist within the same level of production, and vertical if the two joining firms exist in different levels of production.

microeconomics: the study of how specific parts of the whole economy (e.g., individual industries) allocate goods and services across competing ends with unlimited wants. Microeconomics focuses on variables like output and price.

minimum efficient scale: the lowest level of output where minimum long-run average costs are achieved.

monetary policy: when government chooses to affect economic activity with changes in the money supply and/or interest rates in order to accomplish specific macroeconomic goals.

money: any good that fulfills the functions associated with facilitating the exchange of goods and services. Money is described as simultaneously functioning as a unit of account, a medium of exchange, and a store of value.

monopolistic competition: an industry that consists of many small firms who produce goods that are slightly different from firm to firm, but where the barriers to entry and exit are nonexistent.

monopoly: an industry that consists of one firm serving the entire market, where the barriers to entry are high enough to keep all other firms out for some period of time.

monopsony: a market with only one buyer for a particular good. Monopsony is often discussed in the context of labor markets, where only one employer for a specific type of labor exists.

moral hazard: opportunistic behavior where one person is able to take advantage of another person, because the opportunistic individual has additional information or does not bear the true cost of their actions.

multiplier effect: the overall effect of a change in expenditure on the income of an economic system. In many cases, the change in income is greater than the change in expenditure (e.g., when considering the effect of a change in investment or government expenditure on real GDP).

national debt: the sum of all of a nation's previous budget deficits. This sum represents the total amount owed by the nation's government.

natural monopoly: a monopoly with significant economies of scale (i.e., decreasing average costs) through some relevant range of market demand.

natural rate of unemployment: the level of unemployment associated with a stable or constant inflation rate. It is believed that all unemployment is voluntary at the natural rate of unemployment (i.e., workers choose to not work at the existing wage).

non-price competition: when firms compete using methods other than prices (e.g., product quality) to attract consumers.

normal good: a good characterized by a positive relationship between purchases of that good and changes in consumer income.

normative economics: economic analysis that explains or predicts outcomes on the basis of moral judgements, opinions, or beliefs.

Okun's Law: an observed negative relationship between changes in unemployment and national output which states that a one percentage point decrease in the unemployment rate is associated with a 2 to 2.5 percent increase in real GDP.

oligopoly: an industry consisting of a few large firms and fairly high barriers to entry. Oligopolistic firms are often characterized as being mutually interdependent, which implies that strategic interaction may exist within oligopolistic industries.

opportunity cost: the implicit cost of producing or consuming additional units, expressed in terms of what was given up to obtain those additional units (i.e., the value of the next-best alternative).

participation rate: the percentage of persons (civilians over the age of 16) in the population who have joined the labor force.

partnership: a type of firm organization, where two or more individuals (often) with complementary skills and knowledge, create a firm. Unlike corporations, where liability is limited to the extent of an individual's investment in the firm, partnerships are characterized as having unlimited liability.

patent: a legal means of appropriating a return on innovative activity, whereby an inventor is allowed to operate as the only seller of an innovation for a specific period of time.

per capita income: income per person, typically measured by dividing a nation's real GDP by the number of persons in the population.

perfect competition: an industry that consists of many small firms who, as individual firms, are unable to influence the market price. Perfectly competitive firms produce identical products (standardized goods) and operate in industries where the barriers to entry or exit are nonexistent.

per unit tax: a tax levied on the sale of a good, where each unit sold is taxed at the same rate (e.g., an excise tax).

Phillips Curve: an observed (graphical) relationship between unemployment rates and the rate of inflation. Economists often debate as to the nature of this relationship, in terms of whether the relationship is negative, positive, or even possibly nonexistent.

positive economics: economic analysis that explains or predicts outcomes in an objective manner. That is, analysis that is more descriptive than otherwise.

poverty: a less than acceptable level of income.

predatory pricing: the act of pricing below cost with the intent of reducing or eliminating competition within an industry.

present value: the value today of a future stream of income or payments.

price ceiling: a price control that establishes a maximum price for a good. If the price ceiling causes market prices to fall, then shortages will arise.

price control: when government imposes a specific price on an industry, often different from the price that would have otherwise arisen in the market.

price discrimination: the act of charging different prices to different consumers, but not on the basis of differences in cost.

price elasticity of demand: a measure of the percentage change in the quantity of a good sold relative to the percentage change in the price of the same good.

price floor: a price control that establishes a minimum price for a good. If the price floor causes market prices to increase, then surpluses will arise.

price leadership: an industry where one firm sets the price for the industry as a whole, where the other firms within the industry respond by selling their goods at the leader's price.

price setter: a firm that has the ability to set a specific (profit-maximizing) price for its own goods, rather than having to accept a price established by the market as a whole.

price taker: a firm that must accept the price established by the market as a whole, but who can sell as many units of output as desired at that market price.

privatization: the process of converting government-owned enterprises into private sector firms.

producer's surplus: the difference between the lowest price a producer would be willing to receive for a good and the actual price of the good, typically calculated for a market as a whole (i.e., for all units sold within the market, rather than for just one producer).

productive efficiency: a condition that describes the efficiency associated with producing goods and services at low cost. Productive efficiency occurs when goods are produced at the lowest possible opportunity cost (i.e., when firms minimize costs).

product markets: organized markets that facilitate the exchange of goods and services between buyers and sellers (also called output markets).

productivity: the average output produced per factor (e.g., labor) within a specific time period.

profit maximization: the process by which firms set output or prices in order to achieve the greatest possible profits. Firms are characterized as profit maximizing when producing where the marginal cost of a certain level of output is equal to the marginal revenue associated with selling that output.

progressive tax: a tax where persons with higher incomes pay a greater percentage of their income in taxes than do lower income groups.

property rights: the legal right to determine how a good or service is used. Private individuals, firms, and government (acting on behalf of society as a whole) may each possess the property rights for various goods and services within an economy.

proportional tax: a tax where persons with higher incomes pay the same percentage of their income in taxes as do lower income groups.

public choice: a branch of economic analysis that examines political decision-making within an economic system.

public good: any good that may be consumed by more than one individual at a specific moment in time, where one person's consumption does not exclude others from consuming the same good.

pure capitalism: an economic system where ownership and decision-making is predominantly the responsibility of private individuals, rather than the government.

pure communism: an economic system where ownership of human and nonhuman resources, as well as all decision-making is bestowed on society as a whole.

quota: a quantity restriction on the sale or importation of a good or service.

rational self interest: an assumption within economic analysis stating that individuals will behave in such a way as to maximize the net benefit of their actions.

rationing: the process of allocating goods and services among demanders, typically on the basis of one's willingness to pay a specific price to obtain the good.

recession: a fall in economic activity that can be observed through decreases in real GDP and increases in unemployment.

regressive tax: a tax where persons with lower incomes pay a greater percentage of their income in taxes than do higher income groups.

relative prices: a ratio comparing one good's price to that of other goods.

rent: payment received by a factor of production in excess of the opportunity cost associated with using that factor.

saving: the amount of disposable income not spent on current consumption, also referred to as non-consumption expenditure.

Say's Law: the belief that supply creates its own demand in that any given amount of output produced will influence demand to the degree that demanders will purchase all of any existing output.

services: any intangible good produced that has value to demanders (e.g., law services produced by lawyers).

short run: a period of time or decision-making period where at least one factor of production is fixed and cannot change.

shutdown: a short-run decision made by suppliers, typically during periods of low demand, to produce zero units of output.

social costs: the economic cost of producing or consuming a good that falls on society as a whole, and includes the actual cost of production or consumption as well as any negative effects from existing externalities that were created by that production or consumption.

socialism: an economic system where the government has ownership over most productive (nonhuman) resources, and is responsible for the predominant amount of decision-making.

sole proprietorship: a type of firm organization, where one individual becomes the owner of a firm. Like partnerships, sole proprietorships are characterized as having unlimited liability.

specialization: the act of concentrating on the production of one specific good.

spillovers: when the costs or benefits associated with providing a good fall on individuals (or society) not directly involved in producing or consuming the good.

substitute goods: goods related in consumption such that the two goods are alternatives to one another (e.g., tea and coffee). The demands for these goods are negatively related, which implies that increased demand for one good corresponds with decreased demand for that good's substitutes.

sunk costs: non-recoverable fixed costs, typically paid in advance of the decision to produce a certain level of output.

supply curve: a graphical relationship between the price of a good and the quantity of the good suppliers are willing to provide at that price.

supply of loan-able funds: a graphical relationship that illustrates how much individuals are willing to lend or save at various interest rates.

tariff: a tax levied on imported goods.

technology: the knowledge associated with producing a certain amount of output, but also a description of how factors are combined during production.

transaction costs: the economic cost of time, effort, and other resources directly related to the initiation and completion of trade and exchange. Transaction costs are also sometimes characterized as the cost of doing business.

transfer payment: a payment received by an individual from the government, where the individual is not required to compensate the government for receiving that payment. Payment may be in-kind (a transfer of nonmonetary goods or resources) or monetary (a transfer of money).

transportation costs: the economic cost of transporting goods between locations in order to finalize exchange between buyer and seller.

unemployment: defined by government as all individuals without employment, but who are actively seeking employment (or waiting to begin a new job).

unemployment rate: the percentage of persons in the labor force who are not employed, but actively seeking employment (or waiting to begin a new job).

variable costs: the economic cost associated with hiring variable inputs to produce goods and services. Variable costs change with changes in output, whereas fixed costs do not change with changes in output.

wealth: the value of the physical and financial assets owned by an individual, less the accumulated liabilities (e.g., debt) incurred by that individual.

SOURCES. Peter H. Lindert and Thomas A. Pugel, *International Economics*, 10th ed. (Irwin Publishing, 1996); Paul A. Samuelson and William D. Nordhaus, *Economics,* 17th ed. (Irwin-McGraw Hill Publishing, 2001).

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Resource Guide

With more than 100 academic authors and 700 articles in the *Encyclopedia of Capitalism*, select bibliographic sources run common to a majority of topics. Certain books, authors, papers, journals, associations, websites, universities, and publishers are cited in bibliographies following the articles in this encyclopedia.

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American Demographics (Primedia Publishing)

Asia Inc. (Asia Inc.)

Black Enterprise (Earl G. Graves, Ltd.)

Bloomberg Markets (Bloomberg LP)

Business 2.0 (Business 2.0 Media, Inc.)

Businessweek (McGraw-Hill Companies, Inc.)

Euromoney (Euromoney Institutional Investor PLC)

Far Eastern Economic Review (Dow Jones & Compaay, Inc., Hong Kong)

Fast Company (Gruner + Jahr USA Publishing)

Forbes (Forbes, Inc.)

Fortune (Time Inc., AOL Time Warner)

Inc. (Gruner + Jahr USA Publishing)

Industry Week (Penton Media, Inc.)

Kiplinger's (The Kiplinger Washington Editors, Inc.)

Money (Time Inc., AOL Time Warner)

Smart Money (Dow Jones & Company)

The Economist (The Economist Group, Inc.)

Worth (Worth Media)

Newspapers

Crain's Chicago Business (Crain Communications)

Crain's New York Business (Crain Communications)

Financial Times (The Financial Times, Ltd.)

Investor's Business Daily (Investors' Business Daily, Inc.)

The International Herald Tribune (The New York Times Co.)

The New York Times (The New York Times Company)

The Wall Street Journal (Dow Jones & Company, Inc.)

The Washington Post (The Washington Post Company)

Internet websites

Almost all journals, magazines, newspapers, and associations have dedicated websites that can be easily located using standard internet search engines. One rule of caution in using internet research tools in economics and capitalism is that you should rely on "branded" media, that is, websites associated with known media and institutions. Some recommended websites include:

www.albany.edu/econ/eco_phds.html (State University of New York listing and links to university economics departments)

www.aynrand.org (Organization dedicated to the philosophy of Ayn Rand)

www.bbc.co.uk/learning/library/economics.shtml (BBC News links to economics websites)

www.capitalism.org (Independent organization promoting capitalism)

www.cia.gov/cia/publications/factbook/ (Central Intelligence Agency World Factbook)

www.commerce.gov (U.S. Department of Commerce)

www.hoovers.com (Hoover's Handbook of American Business 2003)

www.loc.gov (U.S. Library of Congress)

www.lse.ac.uk (London School of Economics)

www.nber.org (National Bureau of Economic Research)

www.stern.nyu.edu/globalmacro/ (New York University's Nouriel Roubini's website)

www.un.org/ (United Nations)

www.ustreas.gov (U.S. Treasury)

www.whitehouse.gov/omb/budget/fy2004/ (Budget of the United States)

www.worldbank.org (World Bank)

Appendix A:

International Trade by Region

THE FOLLOWING APPENDIX is provided by the World Trade Organization (© WTO) and presents comprehensive, comparable, and up-to-date statistics on trade in merchandise and commercial services for an assessment of world trade flows by country, region, and main product groups or service categories. Compiled from Section III of the WTO International Trade Statistics, the appendix retains the WTO organizational structure (i.e, charts and tables are labeled III) for easy reference within the WTO publications. For further information contact:

WORLD TRADE ORGANIZATION
Centre William Rappard, Rue de Lausanne 154,
CH-1211 Geneva 21, Switzerland • www.wto.org

1. Overview

Chart III.1

Value of world merchandise trade by region, 1994-01

(Annual percentage change in value)

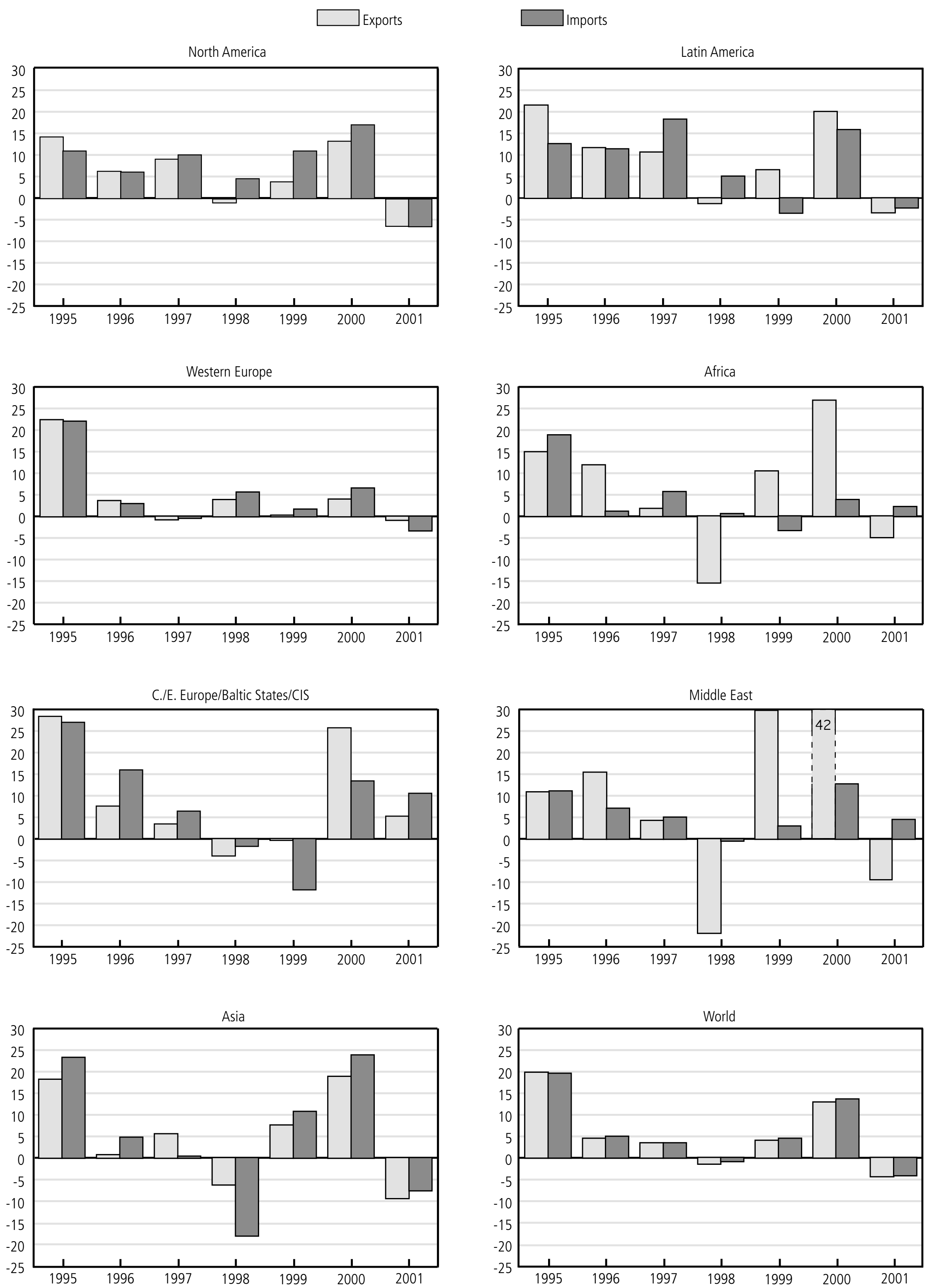


Chart III.2

The volume of world merchandise trade by selected region, 1994-01

(Annual percentage change)

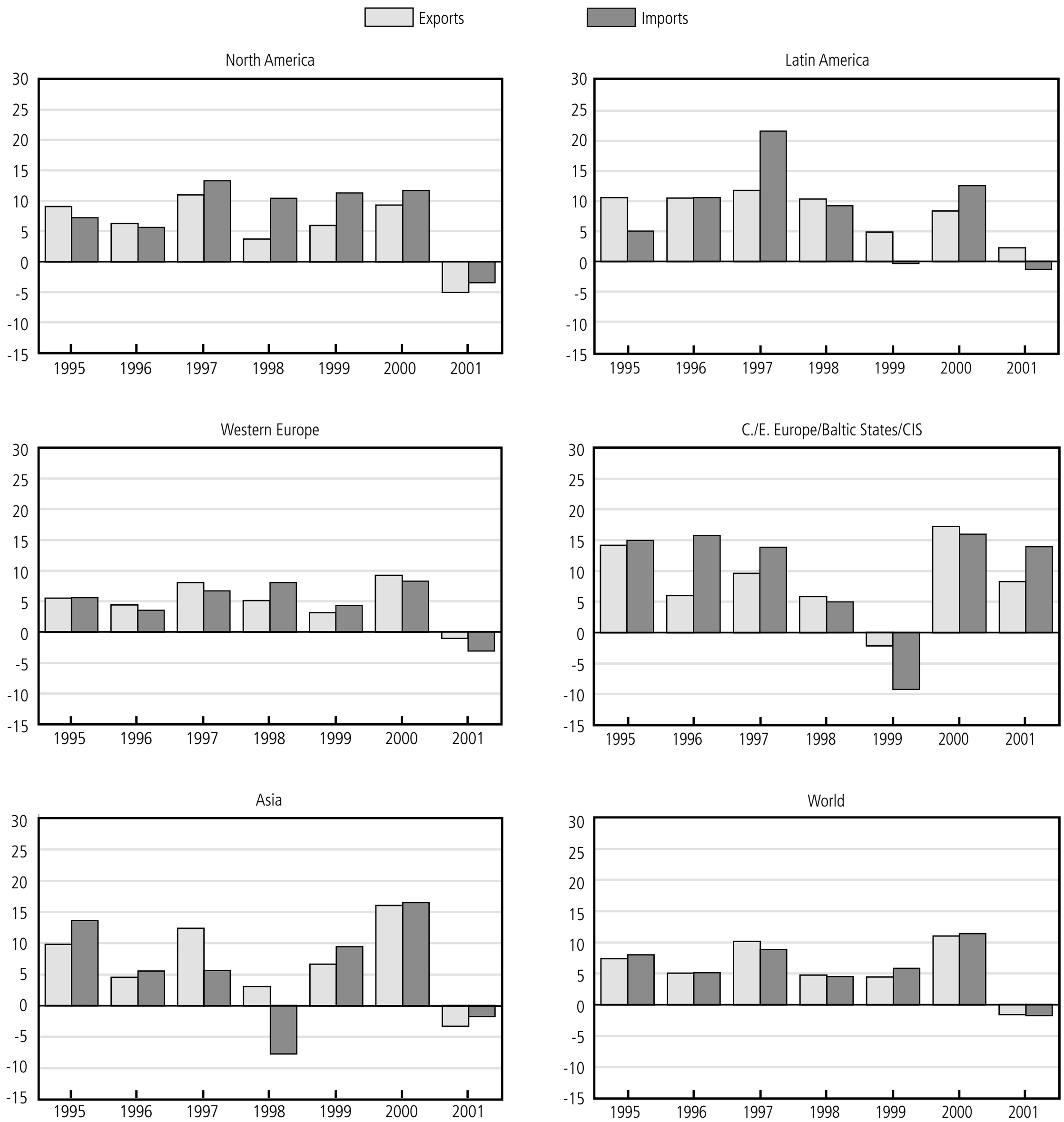


Table III.1

World merchandise exports by region, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
World	5984	100.0	100.0	5	4	13	-4
North America	991	15.4	16.6	6	4	14	-6
United States	731	11.6	12.2	6	2	13	-6
Latin America	347	4.3	5.8	8	7	20	-3
Mexico	159	1.2	2.6	13	16	22	-5
Western Europe	2485	48.2	41.5	4	0	4	-1
European Union (15)	2291	44.4	38.3	4	0	3	-1
C./E. Europe/Baltic States/CIS	286	3.1	4.8	7	0	26	5
Central and Eastern Europe	129	1.4	2.2	8	1	14	12
Russian Fed.	103	-	1.7	-	1	39	-2
Africa	141	3.1	2.4	3	11	27	-5
South Africa	29	0.7	0.5	3	1	12	-2
Middle East	237	4.1	4.0	5	30	42	-9
Asia	1497	21.8	25.0	7	7	18	-9
Japan	403	8.5	6.7	3	8	14	-16
China	266	1.8	4.4	14	6	28	7
Six East Asian traders	568	7.8	9.5	7	8	19	-12
Memorandum item:							
NAFTA (3)	1149	16.6	19.2	7	5	15	-6
MERCOSUR (4)	88	1.4	1.5	6	-9	14	4
ASEAN (10)	385	4.2	6.4	9	9	19	-10

Table III.2

World merchandise imports by region, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
World	6270	100.0	100.0	5	4	13	-4
North America	1408	18.3	22.5	7	11	18	-6
United States	1180	14.8	18.8	8	12	19	-6
Latin America	380	3.7	6.1	11	-3	16	-2
Mexico	176	1.2	2.8	14	14	23	-4
Western Europe	2524	48.6	40.3	4	2	6	-3
European Union (15)	2334	44.6	37.2	4	2	6	-3
C./E. Europe/Baltic States/CIS	267	3.3	4.3	6	-12	14	11
Central and Eastern Europe	159	1.4	2.5	10	-1	12	9
Russian Fed.	54	-	0.9	-	-33	13	20
Africa	136	2.8	2.2	3	-3	4	2
South Africa	28	0.5	0.5	4	-9	11	-4
Middle East	180	3.0	2.9	5	3	13	4
Asia	1375	20.3	21.9	6	10	23	-7
Japan	349	6.7	5.6	4	11	22	-8
China	244	1.5	3.9	15	18	36	8
Six East Asian traders	532	8.0	8.5	6	11	26	-13
Memorandum item:							
NAFTA (3) a	1578	19.3	25.2	8	12	18	-6
MERCOSUR (4)	84	0.8	1.3	10	-17	8	-6
ASEAN (10)	336	4.6	5.4	7	7	22	-8

a Imports of Canada and Mexico (1990-99) are valued f.o.b.

Table III.3

Intra- and inter-regional merchandise trade, 2001

(Billion dollars and percentage)

Origin / Destination	North America	Latin America	Western Europe	C./E. Europe/ Baltic States/CIS	Africa	Middle East	Asia	World
Value								
North America	391	164	188	7	13	21	207	991
Latin America	211	59	42	3	4	4	22	347
Western Europe	255	58	1677	147	63	65	195	2485
C./E. Europe/Baltic States/CIS	12	6	158	76	3	8	19	286
Africa	25	5	73	1	11	3	21	141
Middle East	39	3	39	2	9	18	112	237
Asia	376	40	252	17	24	45	722	1497
World	1308	335	2429	252	127	163	1298	5984
Share of intra- and inter-regional trade flows in each region’s total merchandise exports								
North America	39.5	16.5	19.0	0.7	1.3	2.1	20.9	100.0
Latin America	60.8	17.0	12.1	0.9	1.2	1.2	6.3	100.0
Western Europe	10.3	2.3	67.5	5.9	2.5	2.6	7.8	100.0
C./E. Europe/Baltic States/CIS	4.2	2.1	55.2	26.6	1.0	2.8	6.6	100.0
Africa	17.7	3.5	51.8	0.7	7.8	2.1	14.9	100.0
Middle East	16.5	1.3	16.5	0.8	3.8	7.6	47.3	100.0
Asia	25.1	2.7	16.8	1.1	1.6	3.0	48.2	100.0
World	21.9	5.6	40.6	4.2	2.1	2.7	21.7	100.0
Share of intra- and inter-regional trade flows in world merchandise exports								
North America	6.5	2.7	3.1	0.1	0.2	0.4	3.5	16.6
Latin America	3.5	1.0	0.7	0.1	0.1	0.1	0.4	5.8
Western Europe	4.3	1.0	28.0	2.5	1.1	1.1	3.3	41.5
C./E. Europe/Baltic States/CIS	0.2	0.1	2.6	1.3	0.1	0.1	0.3	4.8
Africa	0.4	0.1	1.2	0.0	0.2	0.1	0.4	2.4
Middle East	0.7	0.1	0.7	0.0	0.2	0.3	1.9	4.0
Asia	6.3	0.7	4.2	0.3	0.4	0.8	12.1	25.0
World	21.9	5.6	40.6	4.2	2.1	2.7	21.7	100.0

Chart III.3

World trade in commercial services by selected region, 1994-01

(Annual percentage change in value)

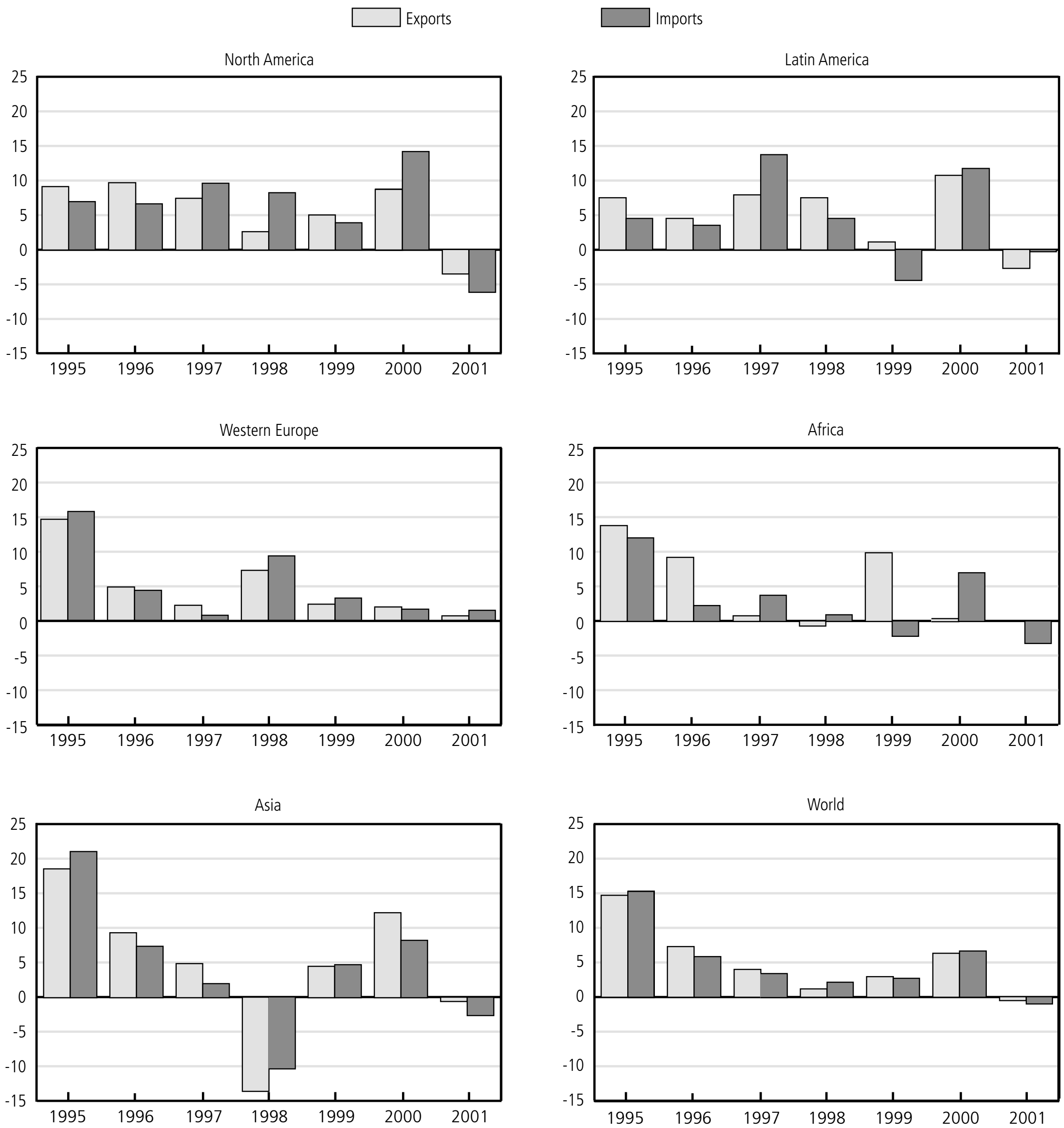


Table III.4

World exports of commercial services by region, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
World	1460	100.0	100.0	6	3	6	0
North America	299	19.3	20.5	6	5	9	-3
United States	263	17.0	18.1	6	5	9	-3
Latin America	58	3.8	4.0	6	1	11	-3
Mexico	13	0.9	0.9	5	1	17	-7
Brazil	9	0.5	0.6	8	-3	29	-1
Western Europe	679	53.1	46.5	5	2	2	1
European Union (15)	612	47.2	41.9	5	4	1	1
United Kingdom	108	6.9	7.4	7	7	3	-6
France	80	8.5	5.5	2	-3	-1	-2
Germany	80	6.6	5.5	4	2	-3	-1
Italy	57	6.2	3.9	1	-13	-3	2
C./E. Europe/Baltic States/CIS	56	2.6	3.8	10	-14	11	11
Africa	31	2.4	2.1	5	10	0	0
Egypt	9	0.6	0.6	6	18	4	-9
South Africa	5	0.4	0.3	3	-4	-3	-4
Middle East	33	2.0	2.2	7	9	16	-7
Israel	11	0.6	0.8	9	19	32	-21
Asia	303	16.8	20.8	8	4	12	-1
Japan	64	5.3	4.4	4	-2	13	-7
Hong Kong, China	42	2.3	2.9	8	2	14	2
China	33	0.7	2.3	17	10	15	9
Korea, Rep. of	30	1.2	2.0	11	4	15	0
Singapore	26	1.6	1.8	7	25	13	-2
India	20	0.6	1.4	14	27	26	15

Table III.5

World imports of commercial services by region, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
World	1445	100.0	100.0	5	3	7	-1
North America	229	15.4	15.9	6	4	14	-6
United States	188	12.0	13.0	6	3	16	-7
Latin America	71	4.3	4.9	7	-4	12	0
Mexico	17	1.2	1.1	5	12	19	-1
Brazil	16	0.8	1.1	8	-15	19	0
Western Europe	647	48.1	44.8	5	3	2	1
European Union (15)	605	42.9	41.9	5	3	2	2
Germany	133	9.7	9.2	5	5	-3	0
United Kingdom	92	5.5	6.3	7	9	5	-4
France	62	6.2	4.3	2	-4	-3	0
Italy	56	5.7	3.9	2	-11	-3	2
C./E. Europe/Baltic States/CIS	59	3.0	4.1	8	-8	19	13
Africa	37	3.3	2.6	3	-2	7	-3
Egypt	6	0.4	0.4	6	1	20	-10
South Africa	5	0.4	0.4	3	2	0	-8
Middle East	45	4.1	3.1	3	1	8	-7
Israel	12	0.6	0.9	9	11	16	1
Asia	355	21.9	24.6	6	5	8	-3
Japan	107	10.3	7.4	2	3	1	-7
China	39	0.5	2.7	23	17	16	9
Korea, Rep. of	33	1.2	2.3	11	11	23	0
Hong Kong, China	25	1.4	1.7	8	-5	3	-2
Taipei, Chinese	24	1.7	1.6	5	0	11	-8
India	23	0.7	1.6	13	20	15	19

Table III.6

Exports of commercial services of selected economies by selected partners, 2000

(Percentage)

	World	United States	EU (15)	Japan	Other economies
World	100	14	18	8	60
United States	100	-	33	12	55
European Union (15)	100	40	-	6	53
Japan	100	34	18	-	49
Other economies	100	8	19	8	65

Note: Excluding intra-EU trade.

Table III.7

Imports of commercial services of selected economies by selected partners, 2000

(Percentage)

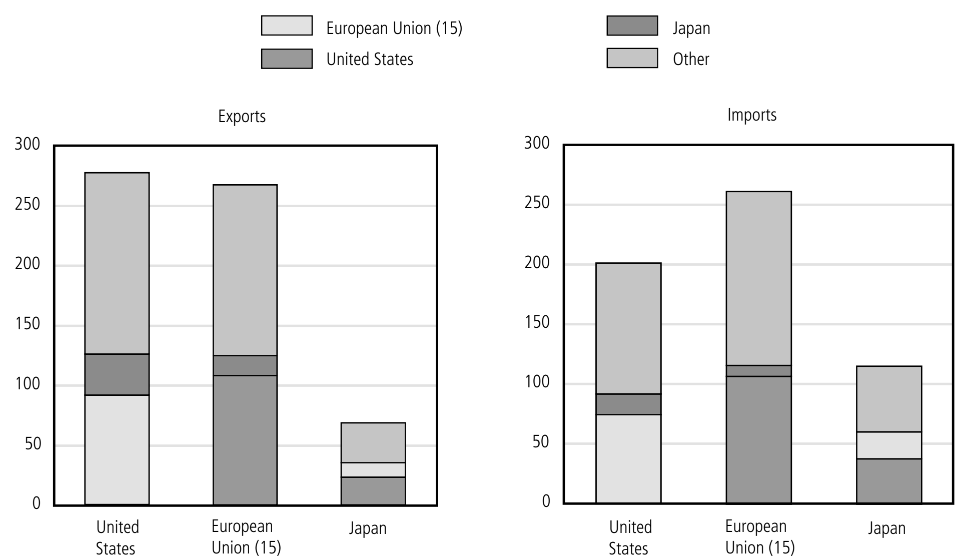
	World	United States	EU (15)	Japan	Other economies
World	100	19	18	5	58
United States	100	-	37	9	54
European Union (15)	100	41	-	4	56
Japan	100	33	20	-	48
Other economies	100	15	19	5	61

Note: Excluding intra-EU trade.

Chart III.4

Trade in commercial services of selected economies by selected partners, 2000

(Billion dollars)



Note: Excluding intra-EU trade

2. North America

Table III.8

Merchandise trade of North America, 2001

(Billion dollars and percentage)

	Exports	Imports
Value	991	1408
Share in world merchandise trade	16.6	22.5
Annual percentage change		
Value		
1980-85	1	6
1985-90	11	8
1990-01	6	7
1999	4	11
2000	14	18
2001	-6	-6
Volume		
1980-85	-0.5	7.0
1985-90	8.5	5.0
1990-01	6.0	7.5
1999	6.0	11.0
2000	9.5	11.5
2001	-5.0	-3.5

Table III.9

Merchandise trade of North America by region and by major product group, 2001

(Billion dollars and percentage)

	Value		Share	
	Exports	Imports	Exports	Imports
Total	991	1408	100.0	100.0
Region				
North America	391	363	39.4	25.8
Latin America	164	218	16.5	15.5
Western Europe	188	276	19.0	19.6
C./E. Europe/Baltic States/CIS	7	16	0.7	1.1
Africa	13	28	1.3	2.0
Middle East	21	41	2.1	2.9
Asia	207	462	20.9	32.8
Product group				
Agricultural products	104	84	10.5	6.0
Mining products	74	173	7.5	12.3
Manufactures	763	1093	77.0	77.6

Chart III.5

Merchandise trade of North America, 1990-01

(Billion dollars)

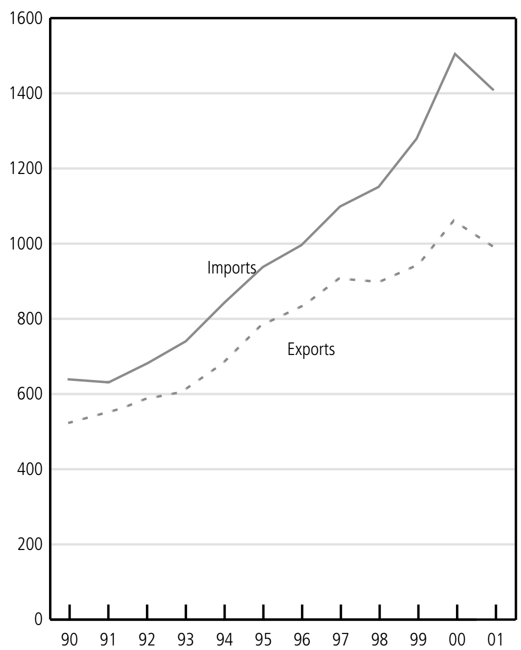


Chart III.6

Share of North America in world merchandise trade, 1990-01

(Percentage based on value data)

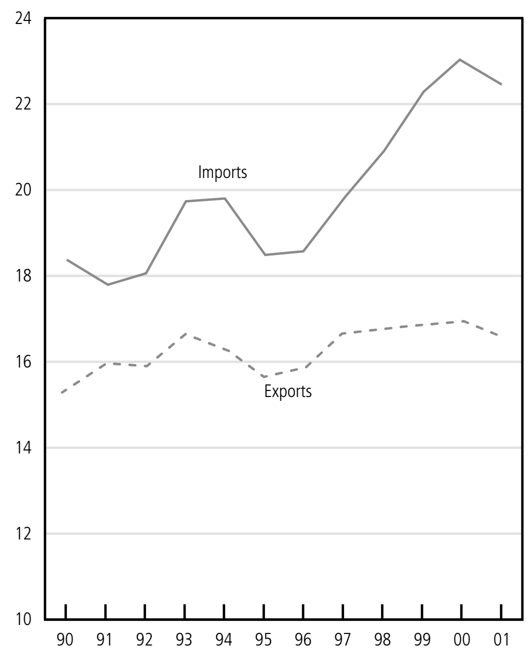


Table III.10

Merchandise exports of North America by product, 2001

(Billion dollars and percentage)

	Value	Share in exports of North America		Share in world exports		Annual percentage change			
	2001	1990	2001	1990	2001	1990-01	1999	2000	2001
Total merchandise exports	991.0	100.0	100.0	15.4	16.6	6	4	14	-6
Agricultural products	103.8	15.7	10.5	19.7	19.0	2	-3	8	-3
Food	73.5	10.2	7.4	16.9	16.8	3	-4	5	2
Raw materials	30.3	5.4	3.1	28.7	27.5	1	0	14	-12
Mining products	74.4	9.1	7.5	9.7	9.4	4	1	44	-2
Ores and other minerals	9.8	2.2	1.0	22.2	15.5	-2	-7	16	-1
Fuels	49.5	4.8	5.0	6.9	8.0	6	9	65	0
Non-ferrous metals	15.0	2.1	1.5	14.7	13.5	3	-7	17	-9
Manufactures	763.3	69.7	77.0	15.2	17.0	7	5	12	-7
Iron and steel	8.8	1.1	0.9	5.2	6.8	4	-9	14	-8
Chemicals	97.3	8.8	9.8	15.6	16.3	7	4	15	0
Other semi-manufactures	67.6	6.1	6.8	12.1	15.7	7	6	12	-6
Machinery and transport equipment	474.3	44.0	47.9	18.9	19.3	7	6	11	-9
Automotive products	118.4	11.7	11.9	19.1	21.0	6	12	4	-7
Office and telecom equipment	139.5	11.0	14.1	19.2	16.9	8	10	25	-20
Other machinery and transport equipment	216.4	21.4	21.8	18.7	20.4	6	-1	7	-2
Textiles	12.7	1.1	1.3	5.5	8.6	7	3	14	-4
Clothing	9.0	0.6	0.9	2.7	4.6	11	-4	6	-16
Other consumer goods	93.7	8.0	9.5	13.9	17.9	8	5	17	-5

Table III.11

Merchandise imports of North America by product, 2001

(Billion dollars and percentage)

	Value	Share in imports of North America		Share in world imports		Annual percentage change			
	2001	1990	2001	1990	2001	1990-01	1999	2000	2001
Total merchandise imports	1408.5	100.0	100.0	18.1	22.5	8	12	18	-6
Agricultural products	84.4	7.7	6.0	11.1	14.2	5	6	5	0
Food	64.9	5.9	4.6	11.0	13.7	5	6	5	2
Raw materials	19.5	1.9	1.4	11.2	16.4	5	7	4	-8
Mining products	172.9	15.0	12.3	18.7	20.6	6	19	62	-8
Ores and other minerals	8.1	1.2	0.6	13.2	11.2	1	-6	8	-9
Fuels	142.1	12.0	10.1	20.1	21.7	6	26	76	-7
Non-ferrous metals	22.7	1.8	1.6	16.0	19.9	6	7	25	-11
Manufactures	1093.3	73.9	77.6	19.2	23.4	8	11	14	-7
Iron and steel	19.2	2.0	1.4	11.5	13.6	4	-19	19	-22
Chemicals	102.1	5.0	7.3	10.3	16.5	11	13	16	6
Other semi-manufactures	96.9	7.0	6.9	16.1	21.1	7	12	12	-6
Machinery and transport equipment	621.9	43.0	44.2	22.3	24.6	8	13	14	-10
Automotive products	208.1	16.4	14.8	32.4	35.9	7	19	8	-4
Office and telecom equipment	197.2	11.6	14.0	24.6	23.1	9	13	22	-20
Other machinery and transport equipment	216.7	15.0	15.4	15.8	19.8	8	7	12	-5
Textiles	19.3	1.4	1.4	8.4	12.4	7	5	10	-4
Clothing	70.7	4.6	5.0	26.2	34.5	8	6	14	-1
Other consumer goods	163.1	10.9	11.6	22.5	29.3	8	11	13	-2

Table III.12

Merchandise exports of North America by destination, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
World	991.0	100.0	100.0	6	4	14	-6
Intra-North America	390.7	34.2	39.4	7	10	13	-7
Asia	206.9	25.5	20.9	4	3	17	-10
Japan	62.9	10.7	6.3	1	-1	13	-12
Korea, Rep. of	23.5	3.0	2.4	4	37	21	-20
China	22.0	1.2	2.2	12	-7	26	17
Hong Kong, China	14.8	1.4	1.5	7	-3	16	-4
Western Europe	188.1	24.0	19.0	4	3	8	-4
European Union (15)	171.4	21.9	17.3	4	3	8	-4
Latin America	163.8	10.7	16.5	10	0	20	-6
Mexico	103.2	5.5	10.4	12	10	28	-9
Brazil	16.5	1.1	1.7	11	-13	15	3
Middle East	20.6	2.4	2.1	5	-10	-8	1
Africa	13.4	1.7	1.3	4	-13	9	11
C./E. Europe/Baltic States/CIS	7.3	1.0	0.7	3	-25	8	11
Inter-regional trade	600.0	65.3	60.6	5	1	14	-6

Table III.13

Merchandise imports of North America by origin, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
World	1408.5	100.0	100.0	7	12	18	-6
Asia	462.3	34.4	32.8	7	11	17	-10
Japan	139.8	15.9	9.9	3	8	12	-14
China	118.2	2.7	8.4	19	17	23	2
Taipei, Chinese	37.6	4.0	2.7	4	8	14	-18
Korea, Rep. of	39.5	3.3	2.8	6	29	30	-13
Singapore	16.0	1.6	1.1	4	0	6	-22
Hong Kong, China	10.9	1.7	0.8	0	1	9	-16
Intra-North America	362.8	26.3	25.8	7	10	12	-7
Western Europe	275.8	20.3	19.6	7	12	13	-1
European Union (15)	252.3	18.4	17.9	7	12	13	0
Latin America	217.7	11.1	15.5	11	16	24	-5
Mexico	141.3	5.0	10.0	14	17	24	-3
Brazil	16.2	1.4	1.2	5	11	22	4
Middle East	40.6	3.2	2.9	4	32	54	-5
Africa	28.4	2.8	2.0	4	6	60	-9
C./E. Europe/Baltic States/CIS	16.1	0.4	1.1	17	6	38	-12
Inter-regional trade	1041.0	72.3	73.9	8	12	20	-6

Table III.14

Gross domestic product and trade in goods and services of Canada and the United States, 2001

(Billion dollars and percentage)

	Value	Annual percentage change in volume						
	2001	1990-01	1996	1997	1998	1999	2000	2001
Gross domestic product								
North America	10838	2.9	3.4	4.4	4.2	4.2	3.9	0.4
Canada	695	2.7	1.5	4.4	3.3	5.5	4.6	1.5
United States	10143	2.9	3.6	4.4	4.3	4.1	3.8	0.3
Exports of goods and services								
North America	1307	6.0	7.7	11.5	3.5	4.5	9.1	-4.3
Canada	302	7.0	5.6	8.3	8.9	9.9	7.6	-3.7
United States	1005	5.9	8.2	12.3	2.1	3.2	9.5	-4.5
Imports of goods and services								
North America	1619	7.9	7.9	13.8	10.4	9.9	12.3	-3.3
Canada	267	5.6	5.1	14.2	4.9	7.3	8.1	-5.7
United States	1352	8.1	8.6	13.7	11.8	10.5	13.4	-2.7

Table III.15

Merchandise exports and imports of Canada and the United States, 2001

(Billion dollars and percentage)

		Annual percentage change							
	Value	Value				Volume			
	2001	1990-01	1999	2000	2001	1990-01	1999	2000	2001
Exports									
North America	991	6	4	14	-6	6.0	6.0	9.5	-5.0
Canada	260	7	11	16	-6	7.5	11.0	9.0	-3.5
United States	731	6	2	13	-6	5.5	4.5	9.5	-5.5
Imports									
North America	1408	7	11	18	-6	7.5	11.0	11.5	-3.5
Canada	227	6	7	11	-7	7.5	11.0	13.0	-5.5
United States	1180	8	12	19	-6	7.5	11.5	11.5	-3.0

Table III.16

Merchandise trade of Canada by region and economy, 2001

(Billion dollars and percentage)

Destination	Exports					Origin	Imports a				
	Value	Share		Annual percentage change			Value	Share		Annual percentage change	
	2001	1990	2001	2000	2001		2001	1990	2001	2000	2001
Region						Region					
World	259.90	100.0	100.0	16	-6	World	221.35	100.0	100.0	11	-8
North America	226.63	75.1	87.2	18	-6	North America	140.88	64.6	63.6	7	-9
Asia	13.45	10.9	5.2	14	-9	Asia	31.37	14.4	14.2	18	-10
Western Europe	12.82	9.8	4.9	-4	-7	Western Europe	28.25	14.5	12.8	17	-3
Latin America	4.49	1.8	1.7	10	7	Latin America	12.16	3.4	5.5	24	-2
Middle East	1.06	0.7	0.4	15	-12	Africa	1.49	0.8	0.7	35	-20
Africa	1.00	0.8	0.4	-3	-5	Middle East	1.65	0.7	0.7	110	-4
C./E. Europe/ Baltic States/CIS	0.45	0.8	0.2	4	6	C./E. Europe/ Baltic States/CIS	0.95	0.4	0.4	29	-22
Economy						Economy					
United States	226.59	75.0	87.2	18	-6	United States	140.87	64.6	63.6	7	-9
European Union (15)	11.80	8.5	4.5	-5	-7	European Union (15)	24.75	12.7	11.2	13	0
Japan	5.28	5.5	2.0	7	-13	Japan	9.45	7.0	4.3	10	-15
China	2.73	1.1	1.1	40	9	China	8.21	1.0	3.7	26	8
Mexico	1.75	0.4	0.7	25	28	Mexico	7.82	1.3	3.5	27	-4
Above 5	248.14	90.6	95.5	16	-6	Above 5	191.10	86.6	86.3	9	-7
Korea, Rep. of	1.28	1.1	0.5	13	-15	Korea, Rep. of	2.97	1.7	1.3	44	-14
Hong Kong, China	0.76	0.5	0.3	20	-13	Taipei, Chinese	2.85	1.6	1.3	8	-15
Australia	0.69	0.6	0.3	23	-13	Malaysia	1.22	0.3	0.6	21	-27
Taipei, Chinese	0.64	0.5	0.2	0	-17	Thailand	1.09	0.3	0.5	11	-3
Norway	0.64	0.4	0.2	3	24	Australia	1.04	0.6	0.5	28	0
Brazil	0.59	0.3	0.2	3	-18	Brazil	0.99	0.6	0.4	10	-2
Venezuela	0.52	0.2	0.2	21	23	Switzerland	0.91	0.5	0.4	11	-4
India	0.42	0.2	0.2	18	27	Venezuela	0.87	0.4	0.4	39	-8
Iran, Islamic Rep. of	0.33	0.2	0.1	21	-26	Hong Kong, China	0.79	0.8	0.4	11	-19
Indonesia	0.30	0.2	0.1	29	-37	India	0.75	0.2	0.3	21	-10
Thailand	0.29	0.3	0.1	23	16	Algeria	0.74	0.0	0.3	91	-12
Cuba	0.26	0.1	0.1	-17	15	Singapore	0.73	0.4	0.3	12	-22
Singapore	0.25	0.3	0.1	0	1	Philippines	0.63	0.1	0.3	34	-33
Chile	0.24	0.1	0.1	23	-21	Indonesia	0.62	0.1	0.3	3	3
Colombia	0.23	0.1	0.1	19	14	Iraq	0.56	0.1	0.3	319	22
Israel	0.22	0.1	0.1	5	7	Saudi Arabia	0.52	0.5	0.2	113	-16
Malaysia	0.22	0.2	0.1	-3	-19	Chile	0.41	0.1	0.2	32	10
Philippines	0.22	0.1	0.1	32	-15	Israel	0.40	…	0.2	35	0
Switzerland	0.22	0.7	0.1	5	-37	New Zealand	0.34	0.2	0.2	40	-3
Saudi Arabia	0.21	0.2	0.1	9	-3	South Africa	0.29	0.1	0.1	-19	-14
Algeria	0.19	0.2	0.1	3	-42	Colombia	0.27	0.1	0.1	19	20
Russian Fed.	0.19	0.0	0.1	11	40	Cuba	0.23	0.1	0.1	33	-15
Morocco	0.16	0.2	0.1	35	2	Russian Fed.	0.23	0.0	0.1	10	-48
New Zealand	0.14	0.1	0.1	-7	9	Argentina	0.23	0.1	0.1	17	-6
United Arab Emirates	0.13	0.0	0.1	25	-12	Jamaica	0.21	0.1	0.1	-1	58
Above 30	257.49	97.7	99.1	-	-	Above 30	211.00	95.5	95.3	-	-

a Imports are valued f.o.b.

Table III.17

Merchandise trade of the United States by region and economy, 2001

(Billion dollars and percentage)

Destination	Exports Value 2001	Share 1990	Share 2001	Annual percentage change 2000	Annual percentage change 2001
Region					
World	730.8	100.0	100.0	13	-6
Asia	193.5	30.2	26.5	17	-10
Western Europe	175.1	28.7	24.0	9	-3
North America	164.1	21.1	22.5	8	-7
Latin America	159.3	13.7	21.8	20	-6
Middle East	19.6	2.9	2.7	-9	2
Africa	12.4	2.0	1.7	11	13
C./E. Europe/ Baltic States/CIS	6.9	1.1	0.9	9	12
Economy					
Canada	163.7	21.1	22.4	8	-7
European Union (15)	159.4	26.3	21.8	9	-3
Mexico	101.5	7.2	13.9	28	-9
Japan	57.6	12.3	7.9	14	-12
Korea, Rep. of	22.2	3.7	3.0	22	-20
Above 5	504.5	70.6	69.0	13	-8
China	19.2	1.2	2.6	24	18
Taipei, Chinese	18.2	2.9	2.5	28	-26
Singapore	17.7	2.0	2.4	10	-1
Brazil	15.9	1.3	2.2	16	4
Hong Kong, China	14.1	1.7	1.9	16	-4
Australia	10.9	2.2	1.5	5	-12
Switzerland	9.8	1.3	1.3	19	-1
Malaysia	9.4	0.9	1.3	21	-15
Philippines	7.7	0.6	1.0	22	-13
Israel	7.5	0.8	1.0	1	-3
Thailand	6.0	0.8	0.8	33	-10
Saudi Arabia	6.0	1.0	0.8	-21	-4
Venezuela	5.7	0.8	0.8	3	2
Dominican Republic	4.4	0.4	0.6	9	0
Argentina	3.9	0.3	0.5	-5	-16
Egypt	3.8	0.6	0.5	10	13
India	3.8	0.6	0.5	-1	3
Colombia	3.6	0.5	0.5	4	-2
Chile	3.1	0.4	0.4	12	-9
Turkey	3.1	0.6	0.4	17	-17
South Africa	3.0	0.5	0.4	9	-4
Russian Fed.	2.7	0.0	0.4	26	18
United Arab Emirates	2.6	0.3	0.4	-16	15
Indonesia	2.5	0.5	0.3	31	-2
Costa Rica	2.5	0.3	0.3	3	2
Above 30	691.6	93.0	94.6	-	-

Origin	Imports Value 2001	Share 1990	Share 2001	Annual percentage change 2000	Annual percentage change 2001
Region					
World	1180.2	100.0	100.0	19	-6
Asia	428.7	39.5	36.3	16	-10
Western Europe	246.0	21.9	20.8	13	-1
North America	220.2	18.1	18.7	16	-5
Latin America	204.5	13.0	17.3	24	-5
Middle East	38.8	3.9	3.3	52	-5
Africa	26.8	3.3	2.3	62	-8
C./E. Europe/ Baltic States/CIS	15.1	0.5	1.3	39	-11
Economy					
European Union (15)	226.1	20.0	19.2	13	0
Canada	220.1	18.1	18.7	16	-5
Mexico	132.8	6.0	11.3	24	-3
Japan	129.7	18.2	11.0	12	-14
China	109.4	3.1	9.3	23	2
Above 5	818.1	65.4	69.3	16	-4
Korea, Rep. of	36.5	3.7	3.1	28	-13
Taipei, Chinese	34.8	4.6	2.9	15	-18
Malaysia	23.1	1.1	2.0	19	-13
Venezuela	16.1	1.9	1.4	64	-18
Thailand	15.6	1.1	1.3	15	-10
Singapore	15.3	2.0	1.3	5	-22
Brazil	15.3	1.7	1.3	23	4
Saudi Arabia	14.4	2.1	1.2	69	-4
Israel	12.2	0.7	1.0	32	-8
Philippines	11.8	0.7	1.0	13	-19
Indonesia	10.9	0.7	0.9	9	-3
India	10.3	0.7	0.9	18	-9
Hong Kong, China	10.1	1.9	0.9	9	-16
Switzerland	10.0	1.1	0.8	6	-7
Nigeria	9.2	1.2	0.8	139	-17
Australia	6.8	0.9	0.6	22	0
Russian Fed.	6.5	-	0.6	34	-19
Iraq	6.3	0.6	0.5	44	-3
Colombia	6.1	0.7	0.5	11	-18
Norway	5.5	0.4	0.5	41	-8
South Africa	4.6	0.4	0.4	24	5
Dominican Republic	4.3	0.4	0.4	2	-4
Chile	4.1	0.3	0.3	12	11
Angola	3.3	0.4	0.3	46	-13
Argentina	3.3	0.3	0.3	19	-2
Above 30	1114.1	94.8	94.4	-	-

Table III.18

Merchandise exports of NAFTA countries by destination, 1990-01

(Billion dollars and percentage)

Origin	Destination	United States	Canada	Mexico	NAFTA (3)	All other countries	World
Value							
United States	1990	-	83.0	28.3	111.3	282.3	393.6
	1995	-	126.0	46.3	172.3	412.4	584.7
	1999	-	163.9	87.0	250.9	441.9	692.8
	2000	-	176.4	111.7	288.1	493.0	781.1
	2001	-	163.7	101.5	265.2	465.6	730.8
Canada	1990	95.2	-	0.5	95.7	31.9	127.6
	1995	152.8	-	0.8	153.6	38.6	192.2
	1999	205.0	-	1.1	206.1	32.3	238.4
	2000	241.6	-	1.4	243.0	33.6	276.6
	2001	226.6	-	1.8	228.4	31.5	259.9
Mexico	1990	32.3	0.2	-	32.6	8.2	40.7
	1995	66.3	2.0	-	68.3	11.2	79.5
	1999	120.5	2.4	-	122.9	13.5	136.4
	2000	147.2	3.3	-	150.5	15.9	166.4
	2001	140.7	3.1	-	143.8	14.7	158.5
NAFTA (3)	1990	127.6	83.2	28.9	239.6	322.3	561.9
	1995	219.1	128.0	47.1	394.3	462.2	856.5
	1999	325.5	166.3	88.1	579.9	487.7	1067.6
	2000	388.8	179.7	113.1	681.6	542.5	1224.1
	2001	367.3	166.8	103.3	637.4	511.8	1149.2
Share							
United States	1990	-	14.8	5.0	19.8	50.2	70.0
	2001	-	14.2	8.8	23.1	40.5	63.6
Canada	1990	16.9	-	0.1	17.0	5.7	22.7
	2001	19.7	-	0.2	19.9	2.7	22.6
Mexico	1990	5.8	0.0	-	5.8	1.5	7.2
	2001	12.2	0.3	-	12.5	1.3	13.8
NAFTA (3)	1990	22.7	14.8	5.1	42.6	57.4	100.0
	2001	32.0	14.5	9.0	55.5	44.5	100.0
Annual percentage change							
United States	1990-01	-	7	14	9	5	6
	2000	-	8	28	15	12	13
	2001	-	-7	-9	-8	-6	-6
Canada	1990-01	9	-	13	9	0	7
	2000	18	-	27	18	4	16
	2001	-6	-	29	-6	-6	-6
Mexico	1990-01	16	30	-	16	6	15
	2000	22	38	-	22	18	22
	2001	-4	-6	-	-4	-8	-5
NAFTA (3)	1990-01	11	7	14	10	5	7
	2000	19	8	28	18	11	15
	2001	-6	-7	-9	-6	-6	-6

Table III.19

Trade in commercial services of Canada, 2001

(Billion dollars and percentage)

	Exports			Imports		
	Value	Share		Value	Share	
	2001	1995	2001	2001	1995	2001
Total commercial services	35.6	100.0	100.0	41.5	100.0	100.0
Transportation	6.8	20.7	19.1	9.2	24.1	22.1
Sea transport	1.6	5.7	4.4	3.4	9.0	8.2
Air transport	3.1	8.3	8.6	4.1	10.2	9.9
Other transport	2.2	6.6	6.1	1.7	4.8	4.0
Travel	10.8	31.1	30.3	11.6	31.1	28.1
Other commercial services	18.1	48.2	50.7	20.7	44.8	49.8
Communication services	1.2	5.0	3.4	1.3	3.9	3.1
Construction services	0.2	0.4	0.5	0.1	0.6	0.2
Insurance services	2.0	8.9	5.6	2.9	8.4	6.9
Financial services	1.5	2.5	4.3	1.7	2.9	4.0
Computer and information services	1.4	4.0	4.0	0.9	1.5	2.1
Royalties and licence fees	1.5	1.5	4.2	3.5	5.7	8.4
Other business services	8.9	23.0	24.9	8.9	18.8	21.4
Personal, cultural, and recreational services	1.4	2.9	3.8	1.5	3.0	3.6

Table III.20

Trade in commercial services of the United States, 2001

(Billion dollars and percentage)

	Exports			Imports		
	Value	Share		Value	Share	
	2001	1995	2001	2001	1995	2001
Total commercial services	263.4	100.0	100.0	187.7	100.0	100.0
Transportation	46.1	22.7	17.5	61.7	32.3	32.8
Sea transport	4.7	2.8	1.8	19.4	9.2	10.3
Air transport	22.6	11.2	8.6	26.8	13.5	14.3
Other transport	18.8	8.6	7.1	15.5	9.6	8.3
Travel	88.7	37.7	33.7	61.6	35.7	32.8
Other commercial services	128.6	39.7	48.8	64.5	32.0	34.3
Communication services a	4.4	1.8	1.7	5.5	6.0	2.9
Construction services a	5.5	1.3	2.1	0.2	0.3	0.1
Insurance services a	3.2	0.7	1.2	1.4	4.1	0.7
Financial services a	14.5	3.5	5.5	3.9	1.9	2.1
Computer and information services a	5.1	1.2	2.0	0.7	0.2	0.4
Royalties and licence fees	38.9	15.3	14.8	16.4	5.4	8.7
Other business services	49.6	14.6	18.8	36.3	14.0	19.3
Personal, cultural, and recreational services	7.4	1.3	2.8	0.2	0.1	0.1

a Excludes transactions between affiliates, which are recorded under "Other business services".

3. Latin America

Table III.21

Merchandise trade of Latin America, 2001

(Billion dollars and percentage)

	Exports	Imports
Value	347	380
Share in world merchandise trade	5.8	6.3
Annual percentage change		
Value		
1980-85	0	-7
1985-90	6	10
1990-01	8	11
1999	7	-3
2000	20	16
2001	-3	-2
Volume		
1980-85	5.5	-6.5
1985-90	5.0	6.0
1990-01	8.0	10.0
1999	5.0	-0.5
2000	8.5	12.5
2001	2.0	-1.0

Table III.22

Merchandise trade of Latin America by region and by major product group, 2001

(Billion dollars and percentage)

	Value	Share	
	Exports	Exports	Imports
Total	347	100.0	100.0
Region			
North America	211	60.7	48.9
Latin America	59	17.1	17.7
Western Europe	42	12.2	17.2
C./E. Europe/Baltic States/CIS	3	0.8	1.8
Africa	4	1.1	1.5
Middle East	4	1.1	0.9
Asia	22	6.4	12.0
Product group			
Agricultural products	63	18.1	9.3
Mining products	75	21.5	11.0
Manufactures	208	59.9	77.3

Note: Import shares are derived from the Secretariat's network of world merchandise trade by product and region.

Chart III.7

Merchandise trade of Latin America, 1990-01

(Billion dollars)

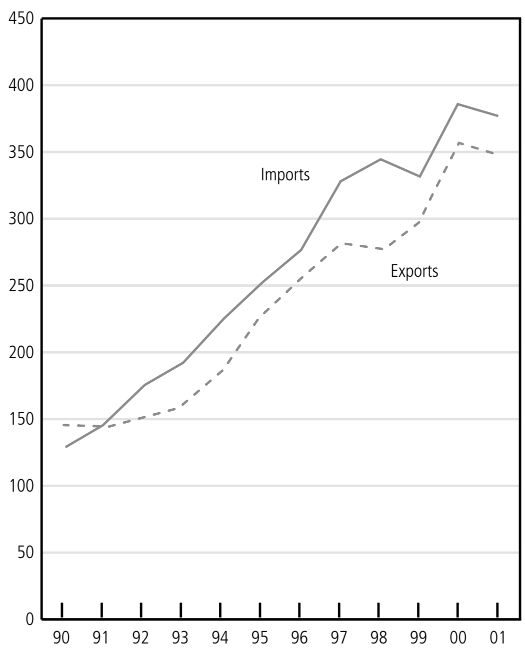


Chart III.8

Share of Latin America in world merchandise trade, 1990-01

(Percentage based on value data)

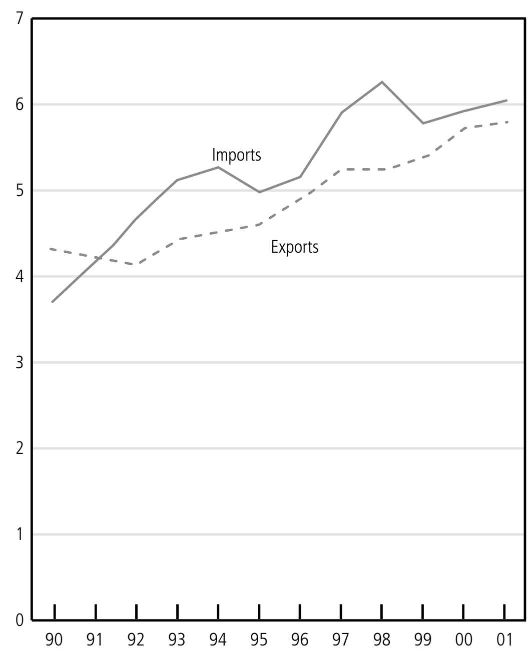


Table III.23

Merchandise exports of Latin America by product, 2001

(Billion dollars and percentage)

	Value	Share in exports of Latin America		Share in world exports		Annual percentage change			
	2001	1990	2001	1990	2001	1990-01	1999	2000	2001
Total merchandise exports	347.2	100.0	100.0	4.3	5.8	9	7	20	-3
Agricultural products	62.7	27.0	18.1	9.6	11.5	5	-8	1	2
Food	55.1	24.0	15.9	11.2	12.6	5	-9	0	3
Raw materials	7.6	3.0	2.2	4.4	6.9	6	3	14	-3
Mining products	74.7	33.3	21.5	10.0	9.4	4	22	45	-11
Ores and other minerals	10.3	5.1	3.0	14.3	16.3	3	-2	16	0
Fuels	54.0	22.7	15.6	9.2	8.8	5	36	58	-14
Non-ferrous metals	10.3	5.4	3.0	10.9	9.3	3	2	19	-9
Manufactures	207.8	38.0	59.9	2.3	4.6	14	8	19	-2
Iron and steel	7.2	4.2	2.1	5.8	5.6	2	-16	16	-12
Chemicals	16.6	4.7	4.8	2.3	2.8	9	-1	17	-2
Other semi-manufactures	18.3	4.8	5.3	2.7	4.2	10	3	13	2
Machinery and transport equipment	120.9	16.3	34.8	2.0	4.9	18	13	21	-1
Automotive products	39.3	5.0	11.3	2.3	7.0	18	4	19	3
Office and telecom equipment	39.1	3.7	11.3	1.8	4.7	22	27	25	2
Other machinery and transport equipment	42.5	7.6	12.2	1.9	4.0	14	12	20	-6
Textiles	4.0	1.5	1.2	2.2	2.8	6	0	10	-13
Clothing	20.1	2.4	5.8	3.3	10.3	19	9	15	-5
Other consumer goods	20.6	4.0	5.9	2.0	3.9	13	6	19	-1

Table III.24

Merchandise exports of Latin America by destination, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
World	347.2	100.0	100.0	8	7	20	-3
North America	210.9	45.4	60.7	11	17	24	-5
Intra-Latin America	59.3	14.0	17.1	10	-12	21	-2
Western Europe	42.3	21.2	12.2	3	0	6	-3
European Union (15)	39.6	20.2	11.4	3	0	5	-2
Asia	22.3	9.5	6.4	4	3	14	5
Japan	6.6	5.1	1.9	-1	6	9	-13
China	5.0	0.8	1.4	14	-21	74	28
Other	10.7	3.7	3.1	6	8	4	10
Middle East	4.0	1.6	1.1	5	-16	8	33
Africa	3.7	1.4	1.1	5	-19	2	29
C./E. Europe/Baltic States/CIS	2.7	4.5	0.8	-8	-12	-9	17
Inter-regional trade	285.8	83.8	82.3	8	12	20	-3

Table III.25

Leading merchandise exporters and importers in Latin America, 2001

(Billion dollars and percentage)

	Value	Share				Annual percentage change			
	2001	1980	1990	1995	2001	1990-01	1999	2000	2001
Exporters									
Latin America	347.2	100.0	100.0	100.0	100.0	8	7	20	-3
Mexico	158.5	16.4	27.7	34.7	45.7	13	16	22	-5
maquiladoras	76.9	2.3	9.4	13.6	22.1	17	20	24	-3
Brazil	58.2	18.3	21.4	20.3	16.8	6	-6	15	6
Venezuela	27.4	17.5	11.9	8.0	7.9	5	17	58	-10
Argentina	26.7	7.3	8.4	9.1	7.7	7	-12	13	1
Chile	17.4	4.3	5.7	7.0	5.0	7	5	16	-4
Colombia	12.3	3.6	4.6	4.4	3.5	6	7	13	-6
Peru	7.1	3.6	2.2	2.4	2.0	7	6	15	1
Dominican Republic	5.3	1.1	1.5	1.6	1.5	9	3	12	-7
Costa Rica	5.0	0.9	1.0	1.5	1.4	12	19	-11	-15
Trinidad and Tobago	4.7	3.7	1.4	1.1	1.4	8	24	52	10
Ecuador	4.5	2.3	1.8	1.9	1.3	5	6	11	-9
El Salvador	2.9	0.9	0.4	0.7	0.8	16	2	17	-3
Guatemala	2.5	1.4	0.8	0.9	0.7	7	-7	12	-9
Uruguay	2.1	1.0	1.2	0.9	0.6	2	-19	3	-10
Netherlands Antilles	1.8	4.7	1.2	0.7	0.5	0	24	28	-1
Importers									
Latin America	379.6	100.0	100.0	100.0	100.0	11	-3	16	-2
Mexico	176.2	17.9	33.4	29.8	46.4	14	14	23	-2
maquiladoras	57.6	1.4	7.9	10.3	15.2	17	18	22	-7
Brazil	58.3	20.2	17.3	21.1	15.3	9	-15	13	-15
Argentina	20.3	8.5	3.1	7.9	5.4	16	-19	-1	-9
Venezuela	18.0	9.6	5.6	5.0	4.7	9	-11	15	-6
Chile	17.2	4.7	5.9	6.2	4.5	8	-19	20	0
Colombia	12.8	3.8	4.3	5.4	3.4	8	-27	8	-8
Dominican Republic	8.8	1.6	2.3	2.0	2.3	10	6	18	10
Peru	8.6	2.0	2.7	3.6	2.3	9	-18	9	-5
Costa Rica	6.6	1.2	1.5	1.6	1.7	11	1	1	11
Guatemala	5.6	1.3	1.3	1.3	1.5	12	-6	9	3
Ecuador	5.3	1.8	1.4	1.6	1.4	10	-46	23	1
El Salvador	5.0	0.8	1.0	1.3	1.3	13	3	21	-15
Cuba	4.9	5.3	3.5	1.1	1.3	1	3	13	-7
Trinidad and Tobago	3.6	2.6	1.0	0.7	0.9	10	-9	21	42
Jamaica	3.3	0.9	1.5	1.1	0.9	5	-4	11	2
Memorandum item:									
ANDEAN (5)									
Exports	53.7	27.8	21.2	17.2	15.5	5	11	34	-7
Imports	46.5	17.8	14.5	16.2	12.2	9	-22	12	10
MERCOSUR (4)									
Exports	87.9	26.9	31.6	30.7	25.3	6	-9	14	4
Imports	83.8	30.6	22.5	31.4	22.1	10	-17	8	-6

Table III.26

Merchandise exports of MERCOSUR countries by region, 1990-01

(Million dollars and percentage)

Origin	Destination	MERCOSUR (4)	All other regions: Total	Latin America	Other regions	World
Value						
Argentina	1990	1833	10520	1577	8943	12353
	1995	6780	14187	3119	11068	20967
	2000	8402	18007	4262	13745	26409
	2001	7448	19207	4852	14355	26655
Brazil	1990	1320	30094	2399	27695	31414
	1995	6154	40352	4624	35728	46506
	2000	7762	47324	6114	41210	55086
	2001	6364	51859	7141	44718	58223
Paraguay	1990	379	580	123	457	959
	1995	528	391	73	318	919
	2000	553	316	121	195	869
	2001	519	470	193	277	989
Uruguay	1990	595	1098	94	1004	1693
	1995	995	1111	130	981	2106
	2000	1024	1271	224	1047	2295
	2001	840	1220	211	1009	2060
MERCOSUR (4)	1990	4127	42292	4193	38099	46419
	1995	14457	56041	7946	48095	70498
	2000	17741	66918	10721	56197	84659
	2001	15171	72756	12397	60359	87927
Share						
Argentina	1990	3.9	22.7	3.4	19.3	26.6
	2001	8.5	21.8	5.5	16.3	30.3
Brazil	1990	2.8	64.8	5.2	59.7	67.7
	2001	7.2	59.0	8.1	50.9	66.2
Paraguay	1990	0.8	1.2	0.3	1.0	2.1
	2001	0.6	0.5	0.2	0.3	1.1
Uruguay	1990	1.3	2.4	0.2	2.2	3.6
	2001	1.0	1.4	0.2	1.1	2.3
MERCOSUR (4)	1990	8.9	91.1	9.0	82.1	100.0
	2001	17.3	82.7	14.1	68.6	100.0
Annual percentage change						
Argentina	1990-01	14	6	11	4	7
	2000	19	11	25	7	13
	2001	-11	7	14	4	1
Brazil	1990-01	15	5	10	4	6
	2000	15	15	30	13	15
	2001	-18	10	17	9	6
Paraguay	1990-01	3	-2	4	-4	0
	2000	80	-27	137	-49	17
	2001	-6	49	60	42	14
Uruguay	1990-01	3	1	8	0	2
	2000	2	3	18	1	3
	2001	-18	-4	-6	-4	-10
MERCOSUR (4)	1990-01	13	5	10	4	6
	2000	17	13	29	11	14
	2001	-14	9	16	7	4

Table III.27

Merchandise imports of MERCOSUR countries by region, 1990-01

(Million dollars and percentage)

Destination	Origin	MERCOSUR (4)	All other regions: Total	Latin America	Other regions	World
Value						
Argentina	1990	833	3243	516	2727	4076
	1995	4603	15519	1286	14233	20122
	2000	6881	18362	1364	16998	25243
	2001	5910	14401	1198	13203	20311
Brazil	1990	2443	20081	1551	18530	22524
	1995	7280	46503	4046	42457	53783
	2000	8182	50350	4322	46028	58532
	2001	7359	50906	3413	47493	58265
Paraguay	1990	405	947	64	883	1352
	1995	1237	1907	126	1781	3144
	2000	1132	1061	96	965	2193
	2001	1202	943	130	813	2145
Uruguay	1990	560	783	137	646	1343
	1995	1321	1546	176	1370	2867
	2000	1518	1948	275	1673	3466
	2001	1350	1711	305	1406	3061
MERCOSUR (4)	1990	4241	25054	2268	22786	29295
	1995	14441	65475	5634	59841	79916
	2000	17713	71721	6057	65664	89434
	2001	15821	67961	5046	62915	83782
Share						
Argentina	1990	2.8	11.1	1.8	9.3	13.9
	2001	7.1	17.2	1.4	15.8	24.2
Brazil	1990	8.3	68.5	5.3	63.3	76.9
	2001	8.8	60.8	4.1	56.7	69.5
Paraguay	1990	1.4	3.2	0.2	3.0	4.6
	2001	1.4	1.1	0.2	1.0	2.6
Uruguay	1990	1.9	2.7	0.5	2.2	4.6
	2001	1.6	2.0	0.4	1.7	3.7
MERCOSUR (4)	1990	14.5	85.5	7.7	77.8	100.0
	2001	18.9	81.1	6.0	75.1	100.0
Annual percentage change						
Argentina	1990-00	19	15	8	15	16
	2000	9	-4	-7	-4	-1
	2001	-14	-22	-12	-22	-20
Brazil	1990-00	11	9	7	9	9
	2000	16	13	42	11	13
	2001	-10	1	-21	3	0
Paraguay	1990-00	10	0	7	-1	4
	2000	18	12	140	6	15
	2001	6	-11	35	-16	-2
Uruguay	1990-00	8	7	8	7	8
	2000	4	3	8	2	3
	2001	-11	-12	11	-16	-12
MERCOSUR (4)	1990-00	13	9	8	10	10
	2000	12	8	26	6	8
	2001	-11	-5	-17	-4	-6

Table III.28

Merchandise exports of ANDEAN countries by region, 1990-01

(Million dollars and percentage)

Origin	Destination	ANDEAN (5)	All other regions: Total	Latin America	Other regions	World
Value						
Bolivia	1990	60	866	357	509	926
	1995	222	878	213	665	1100
	2000	311	919	333	586	1230
	2001	367	918	428	490	1285
Colombia	1990	373	6393	802	5591	6766
	1995	1939	8186	1064	7122	10125
	2000	2170	10870	1682	9188	13040
	2001	2757	9500	1619	7881	12257
Ecuador	1990	189	2525	587	1938	2714
	1995	359	3948	612	3336	4307
	2000	662	4265	862	3403	4927
	2001	836	3659	662	2997	4495
Peru	1990	214	3016	283	2733	3230
	1995	405	5170	548	4622	5575
	2000	448	6580	823	5757	7028
	2001	514	6578	852	5726	7092
Venezuela	1990	489	17008	2278	14730	17497
	1995	1887	16570	4714	11856	18457
	2000	1589	30213	6515	23698	31802
	2001	1402	26007	5073	20934	27409
ANDEAN (5)	1990	1325	29808	4307	25501	31133
	1995	4812	34752	7151	27601	39564
	2000	5180	52847	10215	42632	58027
	2001	5876	46662	8634	38028	52538
Share						
Bolivia	1990	0.2	2.8	1.1	1.6	3.0
	2001	0.7	1.7	0.8	0.9	2.4
Colombia	1990	1.2	20.5	2.6	18.0	21.7
	2001	5.2	18.1	3.1	15.0	23.3
Ecuador	1990	0.6	8.1	1.9	6.2	8.7
	2001	1.6	7.0	1.3	5.7	8.6
Peru	1990	0.7	9.7	0.9	8.8	10.4
	2001	1.0	12.5	1.6	10.9	13.5
Venezuela	1990	1.6	54.6	7.3	47.3	56.2
	2001	2.7	49.5	9.7	39.8	52.2
ANDEAN (5)	1990	4.3	95.7	13.8	81.9	100.0
	2001	11.2	88.8	16.4	72.4	100.0
Annual percentage change						
Bolivia	1990-01	18	1	2	0	3
	2000	6	21	40	13	17
	2001	18	0	29	-16	4
Colombia	1990-01	20	4	7	3	6
	2000	33	9	32	6	13
	2001	27	-13	-4	-14	-6
Ecuador	1990-01	14	3	1	4	5
	2000	38	7	20	5	11
	2001	26	-14	-23	-12	-9
Peru	1990-01	8	7	11	7	7
	2000	29	14	30	12	15
	2001	15	0	4	-1	1
Venezuela	1990-01	10	4	8	3	4
	2000	30	59	15	78	58
	2001	-12	-14	-22	-12	-14
ANDEAN (5)	1990-01	15	4	7	4	5
	2000	30	34	20	38	34
	2001	13	-12	-15	-11	-9

Table III.29

Merchandise imports of ANDEAN countries by region, 1990-01

(Million dollars and percentage)

Origin		ANDEAN (5)	All other regions			World
Destination			Total	Latin America	Other regions	
Value						
Bolivia	1990	30	657	301	356	687
	1995	111	1313	431	882	1424
	2000	157	1673	761	912	1830
	2001	179	1545	780	765	1724
Colombia	1990	474	5116	732	4384	5590
	1995	1845	12008	1604	10404	13853
	2000	1613	9926	1609	8317	11539
	2001	1401	11433	1870	9563	12834
Ecuador	1990	119	1742	302	1440	1861
	1995	705	3447	661	2786	4152
	2000	839	2882	681	2201	3721
	2001	1182	4117	883	3234	5299
Peru a	1990	515	2385	440	1945	2900
	1995	1190	6394	1439	4955	7584
	2000	1397	6018	1454	4564	7415
	2001	1150	6166	1554	4612	7316
Venezuela a	1990	213	6388	697	5691	6601
	1995	1017	9774	1638	8136	10791
	2000	1391	13193	2589	10604	14584
	2001	1898	14538	3243	11295	16436
ANDEAN (5)	1990	1351	16288	2472	13816	17639
	1995	4868	32936	5773	27163	37804
	2000	5397	33692	7094	26598	39089
	2001	5810	37799	8330	29469	43609
Share						
Bolivia	1990	0.2	3.7	1.7	2.0	3.9
	2001	0.4	3.5	1.8	1.8	4.0
Colombia	1990	2.7	29.0	4.1	24.9	31.7
	2001	3.2	26.2	4.3	21.9	29.4
Ecuador	1990	0.7	9.9	1.7	8.2	10.6
	2001	2.7	9.4	2.0	7.4	12.2
Peru	1990	2.9	13.5	2.5	11.0	16.4
	2001	2.6	14.1	3.6	10.6	16.8
Venezuela	1990	1.2	36.2	4.0	32.3	37.4
	2001	4.4	33.3	7.4	25.9	37.7
ANDEAN (5)	1990	7.7	92.3	14.0	78.3	100.0
	2001	13.3	86.7	19.1	67.6	100.0
Annual percentage change						
Bolivia	1990-01	18	8	9	7	9
	2000	2	4	11	0	4
	2001	14	-8	2	-16	-6
Colombia	1990-01	10	8	9	7	8
	2000	12	8	17	6	8
	2001	-13	15	16	15	11
Ecuador	1990-01	23	8	10	8	10
	2000	37	20	30	17	23
	2001	41	43	30	47	42
Peru	1990-01	8	9	12	8	9
	2000	35	4	24	-1	9
	2001	-18	2	7	1	-1
Venezuela	1990-01	22	8	15	6	9
	2000	48	5	34	-1	8
	2001	36	10	25	7	13
ANDEAN (5)	1990-01	14	8	12	7	9
	2000	29	7	24	3	9
	2001	8	12	17	11	12

a Imports are valued f.o.b.

Table III.30

Leading exporters and importers of commercial services in Latin America, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
Exporters							
Latin America	58.2	100.0	100.0	6	1	11	-3
Mexico	12.5	24.3	21.5	5	1	17	-7
Brazil	8.7	12.5	15.0	8	-3	29	-1
Chile	3.9	6.0	6.8	7	-8	4	2
Argentina	3.9	7.6	6.7	5	-4	2	-11
Cuba a	3.0	2.1	5.1	15	…	…	…
Dominican Republic	2.9	3.7	5.0	9	14	14	-7
Colombia	2.1	5.2	3.7	3	-4	10	7
Jamaica	1.9	3.3	3.2	6	12	2	-6
Bahamas	1.9	4.9	3.2	2	18	12	-7
Costa Rica	1.8	2.0	3.1	11	13	14	6
Panama	1.8	3.1	3.1	6	-1	7	-1
Netherlands Antilles	1.6	3.8	2.7	3	-5	1	5
Peru	1.4	2.4	2.5	7	-12	0	-2
Uruguay	1.2	1.5	2.0	9	-6	7	-11
Venezuela	1.1	3.8	1.8	-1	-14	-5	-1
Importers							
Latin America	70.9	100.0	100.0	7	-4	12	0
Mexico	16.5	29.0	23.3	5	12	19	-1
Brazil	15.8	19.4	22.3	8	-15	19	0
Argentina	7.9	8.3	11.1	10	-6	3	-8
Chile	4.5	5.7	6.4	8	-3	10	4
Venezuela	4.3	6.9	6.1	6	-28	14	7
Colombia	3.5	4.9	4.9	7	-8	5	7
Peru	2.1	3.1	3.0	7	-7	3	-3
Jamaica	1.5	1.9	2.1	7	2	9	5
Ecuador	1.4	2.2	2.0	6	-8	8	16
Costa Rica	1.3	1.6	1.8	8	6	7	2
Dominican Republic	1.3	1.3	1.8	10	-6	9	-6
Panama	1.1	1.9	1.5	5	-7	0	0
El Salvador	1.1	0.9	1.5	12	11	16	14
Cuba a	0.9	0.9	1.2	10	…	…	…
Bahamas	0.8	1.5	1.2	4	-4	3	-9

a Includes Secretariat estimates.

4. Western Europe

Table III.31

Merchandise trade of Western Europe, 2001

(Billion dollars and percentage)

	Exports	Imports
Value	2485	2524
Share in world merchandise trade	41.5	40.3
Annual percentage change		
Value		
1980-85	-1	-3
1985-90	16	16
1990-01	4	4
1999	0	2
2000	4	6
2001	-1	-3
Volume		
1980-85	4.0	2.0
1985-90	4.5	7.0
1990-01	4.5	4.0
1999	3.0	4.5
2000	9.0	8.0
2001	-1.0	-3.0

Table III.32

Merchandise trade of Western Europe by region and by major product group, 2001

(Billion dollars and percentage)

	Value		Share	
	Exports	Imports	Exports	Imports
Total	2485	2524	100.0	100.0
Region				
North America	255	203	10.2	8.0
Latin America	58	49	2.3	1.9
Western Europe	1677	1675	67.5	66.4
C./E. Europe/Baltic States/CIS	147	153	5.9	6.0
Africa	63	76	2.5	3.0
Middle East	65	44	2.6	1.7
Asia	195	286	7.9	11.3
Product group				
Agricultural products	228	250	9.2	9.9
Mining products	179	283	7.2	11.2
Manufactures	2010	1911	80.9	75.7

Chart III.9

Merchandise trade of Western Europe, 1990-01

(Billion dollars)

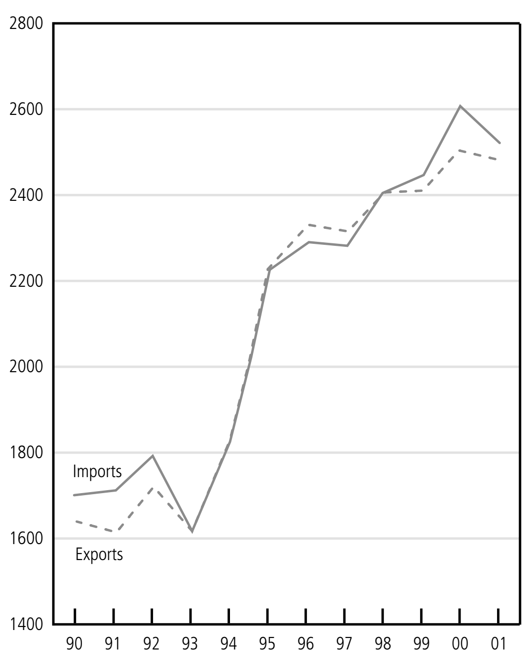


Chart III.10

Share of Western Europe in world merchandise trade, 1990-01

(Percentage based on value data)

Table III.33

Merchandise exports of Western Europe by product, 2001

(Billion dollars and percentage)

	Value	Share in exports of Western Europe		Share in world exports		Annual percentage change			
	2001	1990	2001	1990	2001	1990-01	1999	2000	2001
Total merchandise exports	2485	100.0	100.0	48.2	41.5	4	2	4	-1
Agricultural products	228	11.4	9.2	45.2	41.6	2	-1	-4	-2
Food	192	9.4	7.7	48.6	43.9	2	-2	-6	0
Raw materials	36	2.1	1.4	34.3	32.4	0	6	6	-9
Mining products	179	7.2	7.2	24.2	22.7	4	12	40	-8
Ores and other minerals	16	0.9	0.6	26.9	24.5	1	1	10	-6
Fuels	120	4.3	4.8	19.4	19.5	5	21	56	-8
Non-ferrous metals	44	2.1	1.8	46.1	39.3	2	1	18	-7
Manufactures	2010	79.1	80.9	54.2	44.9	4	3	3	-1
Iron and steel	62	3.9	2.5	61.0	48.0	0	-14	9	-6
Chemicals	347	11.8	14.0	65.0	58.4	6	5	4	4
Other semi-manufactures	213	10.0	8.6	61.8	49.2	2	1	1	-3
Machinery and transport equipment	1040	37.2	41.9	50.2	42.4	5	6	4	-1
Automotive products	276	10.6	11.1	54.4	48.8	4	4	-1	0
Office and telecom equipment	248	5.8	10.0	32.0	29.9	9	10	15	-10
Other machinery and transport equipment	517	20.8	20.8	57.1	48.7	4	5	2	2
Textiles	57	3.4	2.3	53.1	38.7	0	-10	-4	-3
Clothing	56	2.9	2.3	43.6	28.9	2	-5	-5	1
Other consumer goods	234	10.0	9.4	54.5	44.5	3	3	1	-1

Table III.34

Merchandise imports of Western Europe by product, 2001

(Billion dollars and percentage)

	Value	Share in imports of Western Europe		Share in world imports		Annual percentage change			
	2001	1990	2001	1990	2001	1990-01	1999	2000	2001
Total merchandise imports	2524	100.0	100.0	48.6	40.3	4	2	6	-3
Agricultural products	250	13.1	9.9	50.3	42.1	1	-4	-3	-2
Food	201	10.0	8.0	50.3	42.5	2	-4	-6	0
Raw materials	49	3.1	1.9	50.3	40.9	-1	-3	9	-12
Mining products	283	13.0	11.2	43.3	33.6	2	8	44	-7
Ores and other minerals	28	1.7	1.1	50.4	39.4	0	-9	12	-8
Fuels	201	8.9	8.0	40.0	30.7	3	16	58	-7
Non-ferrous metals	53	2.4	2.1	54.9	46.8	3	-1	22	-7
Manufactures	1911	72.2	75.7	50.2	41.0	4	2	4	-3
Iron and steel	58	3.3	2.3	49.8	40.8	0	-16	12	-9
Chemicals	288	10.0	11.4	55.7	46.4	5	1	4	3
Other semi-manufactures	200	9.0	7.9	55.6	43.6	3	1	1	-3
Machinery and transport equipment	991	33.6	39.2	46.8	39.2	5	6	5	-5
Automotive products	246	9.5	9.7	50.1	42.4	4	3	-4	-1
Office and telecom equipment	302	8.0	12.0	45.2	35.4	8	5	16	-12
Other machinery and transport equipment	443	16.2	17.5	45.9	40.5	4	9	4	-2
Textiles	50	3.2	2.0	50.1	32.1	-1	-13	-4	-7
Clothing	85	3.6	3.4	55.2	41.5	3	-5	-3	-1
Other consumer goods	239	9.4	9.5	52.2	43.0	4	2	2	-1

Table III.35

Merchandise exports of Western Europe by destination, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change		
	2001	1990	2001	1990-01	2000	2001
World	2485	100.0	100.0	4	4	-1
Intra-Western Europe	1677	71.4	67.5	3	2	-2
European Union (15)	1542	65.1	62.0	3	2	-1
North America	255	7.8	10.2	6	11	-1
United States	226	6.9	9.1	6	10	-3
Asia	195	7.3	7.9	5	11	-1
Japan	44	2.1	1.8	2	9	-4
China	28	0.5	1.1	12	13	16
Australia and New Zealand	17	0.8	0.7	3	-2	-3
Other	106	4.0	4.3	5	13	-3
C./E. Europe/Baltic States/CIS	147	3.8	5.9	8	9	12
Central and Eastern Europe	102	1.7	4.1	12	7	7
Russian Fed.	26	-	1.1	-	17	35
Baltic States	8	-	0.3	-	9	10
Middle East	65	2.8	2.6	3	5	5
Africa	63	3.3	2.5	1	-2	3
South Africa	12	0.5	0.5	4	5	2
Other Africa	51	3.0	2.1	0	-3	3
Latin America	58	1.8	2.3	6	5	0
Inter-regional trade	782	26.8	31.5	5	8	2

Table III.36

Merchandise imports of Western Europe by origin, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change		
	2001	1990	2001	1990-01	2000	2001
World	2524	100.0	100.0	4	6	-3
Intra-Western Europe	1675	69.0	66.4	3	2	-2
European Union (15)	1546	63.2	61.3	3	1	-2
Asia	286	10.0	11.3	5	11	-9
Japan	72	4.3	2.8	0	5	-17
China	71	0.8	2.8	16	22	3
Australia and New Zealand	11	0.5	0.4	2	8	1
Other	132	4.3	5.2	6	10	-11
North America	203	8.2	8.0	3	9	-6
United States	184	7.3	7.3	4	8	-6
C./E. Europe/Baltic States/CIS	153	3.6	6.0	9	24	5
Central and Eastern Europe	92	1.6	3.7	12	12	10
Russian Fed.	42	-	1.7	-	50	-3
Baltic States	7	-	0.3	-	27	3
Africa	76	3.9	3.0	1	27	-2
South Africa	17	0.6	0.7	4	16	11
Other Africa	60	3.3	2.4	1	29	-5
Latin America	49	2.3	1.9	2	14	-5
Middle East	44	2.3	1.7	1	43	-17
Inter-regional trade	810	30.3	32.1	4	15	-5

Table III.37

Gross domestic product and trade in goods and services in Western Europe, 2001

(Billion dollars and percentage)

	Value	Annual percentage change in volume								
	GDP	GDP			Exports of goods and services			Imports of goods and services		
	2001	1990-01	2000	2001	1990-01	2000	2001	1990-01	2000	2001
Western Europe a	8456	2.0	3.5	1.4	6.1	11.9	1.5	5.7	11.3	-0.2
Germany	1846	1.8	3.0	0.6	5.6	13.3	1.1	5.4	10.0	0.1
France	1310	1.8	3.8	1.8	6.1	13.3	1.1	5.0	15.4	-0.2
United Kingdom	1424	2.3	3.0	2.2	5.7	10.3	1.0	6.1	10.9	2.8
Italy	1089	1.6	2.9	1.8	5.4	11.7	0.8	4.4	9.4	0.2
Spain	582	2.7	4.1	2.8	9.4	9.6	3.4	8.5	9.8	3.7
Netherlands	380	2.7	3.5	1.1	5.4	9.5	1.1	5.1	9.4	1.1
Switzerland	247	0.9	3.0	1.3	3.7	10.0	1.0	3.8	8.5	0.0
Belgium	230	2.0	4.1	1.0	4.5	9.7	-0.4	4.2	9.7	-1.3
Sweden	210	1.7	3.6	1.2	6.7	10.3	-1.4	4.6	11.5	-3.9
Turkey	148	2.2	7.4	-7.4	5.9	19.2	7.4	6.0	25.4	-24.8
Austria	189	2.6	3.0	1.0	10.5	12.2	5.5	6.4	11.1	3.6
Denmark	162	2.2	3.0	0.9	4.6	11.5	3.1	5.4	11.2	3.8
Norway	164	3.2	2.3	1.4	4.9	2.7	5.3	4.0	2.5	0.3
Finland	121	2.0	5.6	0.7	8.3	18.2	-0.7	4.6	16.2	-1.0
Greece	117	2.5	4.4	4.0	7.1	18.9	2.3	6.1	15.0	1.9
Portugal	110	2.6	3.6	1.6	5.0	8.1	3.2	6.8	6.0	0.8
Ireland	103	7.1	11.4	5.9	14.1	17.8	7.4	12.4	16.6	5.2
Memorandum item:										
European Union (15)	8430	2.0	3.4	1.6	6.3	12.2	1.4	5.8	11.6	-0.2

a Excludes the former Yugoslavia.

Table III.38

Leading merchandise exporters and importers in Western Europe, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change: Value				Annual percentage change: Volume			
	2001	1990	2001	1990-01	1999	2000	2001	1990-01	1999	2000	2001
Exporters											
Western Europe	2485.1	100.0	100.0	4	0	4	-1	4.5	3.0	9.0	-1.0
Germany	570.8	25.7	23.0	3	0	2	3	4.5	3.5	10.5	2.5
France	321.8	13.2	13.0	4	1	0	-1	4.5	5.0	6.0	-1.0
United Kingdom	273.1	11.3	11.0	4	-1	5	-4	1.5	-2.0	0.5	-5.5
Italy	241.1	10.4	9.7	3	-4	2	0	5.0	0.0	15.5	-0.5
Netherlands	229.5	8.0	9.2	5	2	7	-2	5.5	4.0	7.0	-3.5
Belgium	179.7	-	7.2	-	-	5	-5	-	-	11.0	-4.0
Spain	109.7	3.4	4.4	6	-7	10	-5	8.5	-4.5	18.5	-3.0
Ireland	82.8	1.5	3.3	12	11	9	7	12.5	19.0	16.5	3.0
Switzerland	82.1	3.9	3.3	2	2	2	1	3.5	4.0	10.5	-1.5
Sweden	75.3	3.5	3.0	2	0	3	-14	4.5	2.5	9.0	-8.0
Austria	70.3	2.5	2.8	5	3	2	4	8.0	9.0	14.5	5.5
Norway	57.9	2.1	2.3	5	13	32	-3	6.5	4.5	4.5	0.5
Denmark	51.9	2.3	2.1	3	3	2	1	4.5	6.0	9.5	3.0
Finland	42.9	1.6	1.7	4	-3	9	-7	7.0	3.0	13.5	-2.0
Turkey	31.2	0.8	1.3	8	-1	4	12	9.5	3.0	11.5	22.0
Importers											
Western Europe	2524.5	100.0	100.0	4	2	6	-3	4.0	4.5	8.0	-3.0
Germany	492.8	20.9	19.5	3	1	5	-1	4.0	3.5	6.0	-0.5
United Kingdom	331.8	13.1	13.1	4	1	6	-3	2.0	-0.5	4.5	-3.5
France	325.8	13.8	12.9	3	2	6	-2	4.0	5.5	8.5	-2.5
Italy	232.9	10.7	9.2	2	1	8	-2	4.0	5.5	12.0	-1.5
Netherlands	207.3	7.4	8.2	5	5	6	-5	5.0	8.0	4.0	-4.0
Belgium	168.7	-	6.7	-	-	8	-5	-	-	9.5	-4.5
Spain	142.7	5.2	5.7	5	-1	15	-9	7.0	0.5	16.5	-6.5
Switzerland	84.1	4.1	3.3	2	0	5	1	3.5	8.0	7.0	-0.5
Austria	74.4	2.9	2.9	4	3	2	3	5.5	5.5	10.0	2.5
Sweden	62.6	3.2	2.5	1	0	6	-14	3.5	0.0	11.0	-9.0
Ireland	50.7	1.2	2.0	8	8	9	-1	6.5	13.5	9.0	-6.0
Denmark	45.4	2.0	1.8	3	-2	0	0	4.0	1.0	8.5	1.0
Turkey	40.6	1.3	1.6	6	-11	34	-26	6.5	-1.0	32.5	-25.0
Portugal	38.0	1.5	1.5	4	4	0	-5	5.0	8.0	6.0	-5.0
Norway	32.4	1.6	1.3	2	-9	1	-6	4.0	-3.5	8.0	-5.5
Memorandum item:											
European Union (15)											
Exports	2291.4	92.2	92.2	4	0	3	-1	4.5	3.5	9.5	-1.5
Extra-exports	874.1	32.3	35.2	5	-1	7	0	4.0	0.5	13.0	0.0
Imports	2334.2	91.6	92.5	4	2	6	-3	4.0	4.5	8.0	-2.5
Extra-imports	912.8	33.9	36.2	4	4	15	-4	4.0	5.5	9.0	-2.0

Table III.39

Merchandise trade of the European Union by region and economy, 2001

(Billion dollars and percentage)

Exports

Destination	Value	Share		Annual percentage change	
	2001	1990	2001	2000	2001
Region					
World	2291.4	100.0	100.0	3	-1
Western Europe	1546.5	71.6	67.5	1	-2
North America	232.5	7.8	10.1	10	0
Asia	178.6	7.2	7.8	11	-1
C./E. Europe/ Baltic States/CIS	137.8	3.7	6.0	9	12
Africa	59.3	3.4	2.6	-1	3
Middle East	58.9	2.7	2.6	5	5
Latin America	54.1	1.8	2.4	5	-1
Economies					
European Union (15)	1417.3	64.9	61.9	1	-2
United States	210.8	6.9	9.2	10	-1
Switzerland	66.2	3.7	2.9	-2	2
Japan	39.2	2.0	1.7	10	-4
Poland	31.3	0.4	1.4	1	2
Above 5	1764.7	78.0	77.0	2	-1
China	26.5	0.5	1.2	14	14
Russian Fed.	24.4	0.0	1.1	17	36
Czech Rep.	23.9	0.0	1.0	13	10
Norway	22.9	-	1.0	-4	-1
Hungary	20.9	0.3	0.9	8	0
Canada	19.2	0.9	0.8	8	2
Hong Kong, China	18.8	-	0.8	13	1
Turkey	17.7	0.7	0.8	28	-35
Brazil	16.1	0.3	0.7	2	7
Australia	13.7	0.6	0.6	-1	-5
Korea, Rep. of	13.6	0.5	0.6	25	-8
Mexico	13.2	0.3	0.6	17	3
Singapore	12.9	0.5	0.6	8	-5
Israel	12.2	0.5	0.5	9	-14
United Arab Emirates	12.1	0.3	0.5	6	12
Saudi Arabia	11.5	0.7	0.5	2	6
Taipei, Chinese	11.4	0.4	0.5	10	-14
South Africa	11.2	0.5	0.5	5	2
India	10.7	0.5	0.5	13	-12
Romania	9.3	0.1	0.4	20	16
Malaysia	8.2	0.2	0.4	13	8
Slovenia	7.5	-	0.3	2	0
Tunisia	7.1	0.3	0.3	5	6
Slovak Rep.	7.0	0.0	0.3	4	16
Algeria	6.7	0.4	0.3	1	19
Above 30	2123.1	-	92.7	-	-

Imports

Origin	Value	Share		Annual percentage change	
	2001	1990	2001	2000	2001
Region					
World	2334.2	100.0	100.0	6	-3
Western Europe	1543.4	69.1	66.1	2	-2
Asia	269.2	10.1	11.5	11	-8
North America	189.3	8.2	8.1	8	-5
C./E. Europe/ Baltic States/CIS	136.6	3.4	5.9	22	6
Africa	72.2	4.0	3.1	25	-1
Latin America	46.6	2.3	2.0	13	-4
Middle East	39.9	2.2	1.7	43	-17
Economies					
European Union (15)	1421.4	63.0	60.9	1	-2
United States	172.0	7.3	7.4	7	-5
China	67.3	0.8	2.9	22	4
Japan	67.2	4.3	2.9	5	-16
Switzerland	54.4	3.0	2.3	-1	-2
Above 5	1782.3	78.5	76.4	2	-2
Russian Fed.	34.3	0.0	1.5	49	-2
Poland	23.7	-	1.0	15	10
Czech Rep.	22.3	0.0	1.0	12	12
Hungary	21.7	0.3	0.9	7	8
Taipei, Chinese	21.2	0.8	0.9	15	-11
Korea, Rep. of	19.2	0.6	0.8	18	-16
Turkey	18.0	-	0.8	1	11
Brazil	16.2	0.8	0.7	14	0
Canada	15.9	0.8	0.7	18	-6
South Africa	15.8	0.6	0.7	16	11
Malaysia	12.4	0.3	0.5	4	-12
Saudi Arabia	11.6	0.7	0.5	63	-21
Singapore	11.5	0.4	0.5	6	-17
India	11.4	0.4	0.5	7	0
Thailand	10.7	0.3	0.5	9	-6
Algeria	10.5	0.6	0.4	81	-8
Libyan Arab Jamahiriya	10.2	0.7	0.4	65	-16
Indonesia	9.6	0.2	0.4	8	-5
Hong Kong, China	8.9	0.7	0.4	-5	-16
Romania	8.4	0.1	0.4	15	19
Israel	8.3	0.3	0.4	13	-9
Australia	8.2	0.4	0.3	11	0
Slovak Rep.	7.3	-	0.3	2	11
Mexico	6.4	0.0	0.3	30	0
Iran, Islamic Rep. of	6.0	0.5	0.3	54	-23
Above 30	2132.0	-	91.3	-	-

Table III.40

Leading exporters and importers of commercial services in Western Europe, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
Exporters							
Western Europe	678.7	100.0	100.0	5	2	2	1
United Kingdom	108.4	13.0	16.0	7	7	3	-6
France	79.8	15.9	11.8	2	-3	-1	-2
Germany	79.7	12.4	11.7	4	2	-3	-1
Spain	57.4	6.7	8.5	7	8	0	8
Italy	57.0	11.7	8.4	1	-13	-3	2
Netherlands	51.7	6.9	7.6	6	5	-3	0
Belgium-Luxembourg	42.6	5.9	6.3	5	10	6	-1
Austria	32.5	5.5	4.8	3	6	1	5
Denmark	26.9	3.1	4.0	7	32	21	10
Switzerland	25.2	4.4	3.7	3	1	0	-4
Sweden	21.8	3.2	3.2	4	11	2	9
Ireland	20.0	0.8	3.0	18	-7	8	20
Greece	19.4	...	2.9	...	...	...	1
Norway	16.7	3.0	2.5	3	1	8	12
Turkey	15.9	1.9	2.3	7	-30	19	-17
Importers							
Western Europe	647.2	100.0	100.0	5	3	2	1
Germany	132.6	20.2	20.5	5	5	-3	0
United Kingdom	91.6	11.4	14.1	7	9	5	-4
France	61.6	12.9	9.5	2	-4	-3	0
Italy	55.7	11.9	8.6	2	-11	-3	2
Netherlands	52.9	7.4	8.2	6	4	3	2
Belgium-Luxembourg	39.3	6.2	6.1	4	7	5	2
Ireland	34.8	1.3	5.4	19	-10	8	21
Spain	33.2	3.9	5.1	7	11	3	7
Austria	31.5	3.6	4.9	8	7	1	6
Denmark	23.5	2.6	3.6	8	17	19	6
Sweden	22.9	4.3	3.5	3	4	4	-2
Norway	15.3	3.1	2.4	2	3	-1	6
Switzerland	14.9	2.8	2.3	3	4	-1	-3
Greece	11.2	...	1.7	...	...	...	2
Finland	8.1	1.9	1.3	1	2	7	-3
Memorandum item:							
European Union (15)							
Exports	611.5	88.9	90.1	5	4	1	1
Imports	604.9	89.2	93.5	5	3	2	2

Table III.41

Trade in commercial services of France, 2001

(Billion dollars and percentage)

	Exports			Imports		
	Value	Share		Value	Share	
	2001	1995	2001	2001	1995	2001
Total commercial services	79.8	100.0	100.0	61.6	100.0	100.0
Transportation	18.1	24.6	22.6	17.4	32.9	28.2
Sea transport	4.4	4.5	5.5	5.0	7.4	8.1
Air transport	8.0	10.7	10.1	8.0	14.5	12.9
Other transport	5.6	9.5	7.1	4.4	10.9	7.1
Travel	30.5	33.2	38.1	18.1	25.4	29.3
Other commercial services	31.3	42.2	39.2	26.2	41.7	42.5
Communication services	1.6	0.6	2.0	1.5	0.6	2.5
Construction services	2.7	3.7	3.4	1.6	1.6	2.6
Insurance services	0.9	2.2	1.1	0.6	2.4	1.0
Financial services	1.1	3.1	1.3	1.4	3.6	2.3
Computer and information services	1.2	0.4	1.5	1.0	0.8	1.6
Royalties and licence fees	2.5	2.2	3.1	1.9	3.6	3.1
Other business services	20.0	28.5	25.0	16.1	27.0	26.2
Personal, cultural, and recreational services	1.4	1.4	1.8	2.0	2.1	3.2

Table III.42

Trade in commercial services of Germany, 2001

(Billion dollars and percentage)

	Exports			Imports		
	Value	Share		Value	Share	
	2001	1995	2001	2001	1995	2001
Total commercial services	79.7	100.0	100.0	132.6	100.0	100.0
Transportation	20.0	26.0	25.1	24.5	19.6	18.5
Sea transport	8.3	8.2	10.4	8.2	6.1	6.2
Air transport	8.1	12.6	10.1	6.2	6.5	4.7
Other transport	3.7	5.2	4.6	10.0	7.0	7.6
Travel	17.3	23.8	21.7	46.1	41.6	34.8
Other commercial services	42.4	50.2	53.2	62.0	38.7	46.8
Communication services	1.5	2.7	1.9	3.1	2.4	2.3
Construction services	3.1	7.0	3.9	4.6	4.7	3.5
Insurance services	0.3	1.7	0.4	0.8	1.2	0.6
Financial services	3.9	3.2	4.8	3.5	0.4	2.6
Computer and information services	4.5	1.9	5.7	5.9	1.6	4.5
Royalties and licence fees	3.0	4.2	3.8	4.8	4.7	3.6
Other business services	25.7	29.3	32.3	36.0	22.2	27.1
Personal, cultural, and recreational services	0.3	0.2	0.4	3.3	1.6	2.5

Table III.43

Trade in commercial services of Italy, 2001

(Billion dollars and percentage)

	Exports			Imports		
	Value	Share		Value	Share	
	2001	1995	2001	2001	1995	2001
Total commercial services	57.0	100.0	100.0	55.7	100.0	100.0
Transportation	8.2	17.7	14.4	11.9	24.5	21.4
Sea transport	3.9	7.5	6.8	5.3	11.9	9.5
Air transport	2.4	6.1	4.3	3.7	7.2	6.6
Other transport	1.9	4.1	3.4	3.0	5.4	5.3
Travel	25.8	47.0	45.3	14.2	27.2	25.5
Other commercial services	22.9	35.3	40.3	29.5	48.4	53.0
Communication services	1.4	0.5	2.5	2.6	1.1	4.7
Construction services	1.6	5.2	2.9	1.6	2.8	2.9
Insurance services	1.1	2.3	1.9	1.4	1.6	2.6
Financial services	0.4	4.3	0.7	0.6	8.2	1.0
Computer and information services	0.4	0.3	0.6	0.9	0.8	1.7
Royalties and licence fees	0.4	0.8	0.8	1.3	2.1	2.4
Other business services	17.0	21.5	29.9	20.0	29.7	35.9
Personal, cultural, and recreational services	0.5	0.6	1.0	1.1	2.0	2.0

Table III.44

Trade in commercial services of the United Kingdom, 2001

(Billion dollars and percentage)

	Exports			Imports		
	Value	Share		Value	Share	
	2001	1995	2001	2001	1995	2001
Total commercial services	108.4	100.0	100.0	91.6	100.0	100.0
Transportation	17.6	21.0	16.2	22.8	27.2	24.9
Sea transport	6.2	8.7	5.7	7.2	10.7	7.9
Air transport	10.1	10.9	9.4	13.5	15.1	14.7
Other transport	1.2	1.4	1.1	2.1	1.4	2.3
Travel	18.2	26.8	16.8	37.9	40.0	41.4
Other commercial services	72.6	52.2	67.0	30.9	32.8	33.7
Communication services	1.8	2.1	1.7	2.5	3.4	2.7
Construction services	0.2	0.3	0.2	0.1	0.2	0.1
Insurance services	5.5	4.8	5.1	1.1	1.3	1.2
Financial services	18.7	11.5	17.2	4.4	2.7	4.8
Computer and information services	3.5	1.6	3.2	1.1	0.7	1.2
Royalties and licence fees	8.2	7.9	7.5	5.9	8.3	6.4
Other business services	33.2	22.5	30.7	14.8	14.8	16.1
Personal, cultural, and recreational services	1.5	1.4	1.4	1.0	1.2	1.1

5. Central and Eastern Europe, the Baltic States, and the CIS

Table III.45

Merchandise trade of Central and Eastern Europe, the Baltic States and the CIS, 2001

(Billion dollars and percentage)

	Exports	Imports
Value	286	267
Share in world merchandise trade	4.8	4.3
Annual percentage change		
Value		
1980-85 a	0	-1
1985-90 a	3	5
1990-01	7	6
1999	0	-12
2000	26	14
2001	5	11
Volume		
1990-01	5.5	5.0
1999	-2.0	-9.0
2000	17.0	16.0
2001	8.0	14.0

a Includes the former German Democratic Republic.

Table III.46

Merchandise trade of C./E. Europe, the Baltic States and the CIS by region and by major product group, 2001

(Billion dollars and percentage)

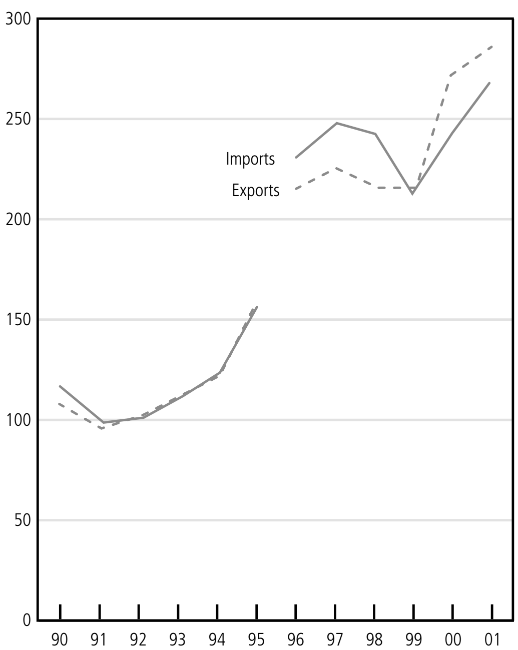
	Value	Share	
	Exports	Exports	Imports
Total	286	100.0	100.0
Region			
North America	12	4.1	2.9
Latin America	6	2.1	1.1
Western Europe	158	55.4	58.2
C./E. Europe/Baltic States/CIS	76	26.5	30.0
Africa	3	1.1	0.4
Middle East	8	2.7	0.7
Asia	19	6.7	6.7
Product group			
Agricultural products	25	8.7	10.5
Mining products	93	32.6	13.9
Manufactures	161	56.4	74.7

Note: Import shares are derived from the Secretariat's network of world merchandise trade by product and region.

Chart III.11

Merchandise trade of Central and Eastern Europe, the Baltic States and the CIS, 1990-01

(Billion dollars)

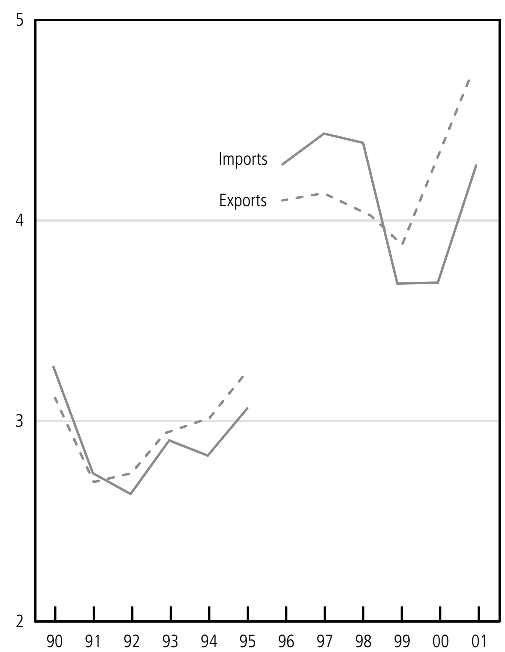


Note: New valuation in 1990 and change in area definition in 1992 and 1996.

Chart III.12

Share of Central and Eastern Europe, the Baltic States and the CIS in world merchandise trade, 1990-01

(Percentage based on value data)



Note: New valuation in 1990 and change in area definition in 1992 and 1996.

Table III.47

Merchandise exports of C./E. Europe, the Baltic States and the CIS by major product group and main destination, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1996	2001	1998	1999	2000	2001
Central and Eastern Europe							
Total merchandise							
World	129.4	100.0	100.0	11	1	14	12
Western Europe	95.6	66.2	73.8	18	5	16	11
C./E. Europe/Baltic States/CIS	22.1	23.1	17.1	-3	-13	10	13
Manufactures							
World	107.4	100.0	100.0	16	1	15	12
Western Europe	82.0	68.7	76.4	23	5	16	12
C./E. Europe/Baltic States/CIS	16.0	20.7	14.9	-1	-14	11	15
Agricultural products							
World	10.7	100.0	100.0	-3	-8	-2	12
Western Europe	6.1	53.9	56.8	-2	3	-1	10
C./E. Europe/Baltic States/CIS	3.1	36.3	29.5	-9	-28	0	10
Mining products							
World	10.1	100.0	100.0	-11	-2	34	4
Western Europe	6.6	67.2	65.6	-9	-4	34	1
C./E. Europe/Baltic States/CIS	2.8	25.1	27.7	-11	-1	36	9
Baltic States							
Total merchandise							
World	9.9	100.0	100.0	3	-19	24	12
Western Europe	6.0	43.5	61.0	20	1	26	5
C./E. Europe/Baltic States/CIS	3.1	52.6	30.9	-13	-44	19	23
Manufactures							
World	6.4	100.0	100.0	6	-16	23	13
Western Europe	4.2	47.2	64.9	25	1	28	4
C./E. Europe/Baltic States/CIS	1.8	48.2	27.5	-14	-44	15	31
Agricultural products							
World	2.0	100.0	100.0	0	-20	6	11
Western Europe	1.2	42.2	57.3	13	1	7	-3
C./E. Europe/Baltic States/CIS	0.6	54.6	31.0	-15	-46	-2	28
Mining products							
World	1.4	100.0	100.0	-1	-26	64	11
C./E. Europe/Baltic States/CIS	0.7	72.6	45.8	-8	-41	56	1
Western Europe	0.7	25.4	49.1	7	3	76	30
Commonwealth of Independent States							
Total merchandise							
World	43.2	100.0	100.0	-12	-5	34	5
C./E. Europe/Baltic States/CIS	19.7	61.2	45.5	-19	-18	38	4
Western Europe	12.0	20.2	27.8	7	-8	42	7
Manufactures							
World	21.0	100.0	100.0	-9	-13	20	15
C./E. Europe/Baltic States/CIS	9.8	61.5	46.4	-15	-23	22	12
Western Europe	4.6	15.7	21.9	20	-14	29	13
Mining products							
World	15.6	100.0	100.0	-8	8	79	-4
C./E. Europe/Baltic States/CIS	6.3	60.3	40.6	-14	-17	84	-3
Western Europe	5.7	29.0	36.7	1	-1	77	5
Agricultural products							
World	5.8	100.0	100.0	-26	-6	5	8
C./E. Europe/Baltic States/CIS	3.4	63.8	59.2	-33	-4	17	2
Asia	0.2	5.4	4.0	-38	0	-44	-8

Table III.48

Leading merchandise exporters and importers in Central and Eastern Europe, the Baltic States and the CIS, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change		
	2001	1996	2001	1999	2000	2001
Exporters						
C./E. Europe/Baltic States/CIS	285.6	100.0	100.0	0	26	5
Russian Fed.	103.1	41.2	36.1	1	39	-2
Poland	36.1	11.4	12.6	-3	15	14
Czech Rep. a	33.4	10.3	11.7	1	10	15
Hungary	30.5	7.3	10.7	9	12	9
Ukraine	16.3	6.7	5.7	-8	26	12
Slovak Rep. a	12.6	4.1	4.4	-4	16	6
Romania	11.4	3.8	4.0	2	22	10
Kazakhstan	8.6	2.8	3.0	3	64	-5
Belarus	7.5	2.6	2.6	-16	24	3
Bulgaria	5.1	2.3	1.8	-7	20	6
Importers						
C./E. Europe/Baltic States/CIS	267.5	100.0	100.0	-12	14	11
Russian Fed.	53.9	29.8	20.1	-33	13	20
Poland	50.3	16.1	18.8	-2	7	3
Czech Rep. a	36.5	12.0	13.6	-1	14	14
Hungary	33.7	7.9	12.6	9	15	5
Ukraine	15.8	7.6	5.9	-19	18	13
Romania	15.6	5.0	5.8	-11	24	19
Slovak Rep. a	14.8	4.8	5.5	-14	13	16
Belarus	8.0	3.0	3.0	-22	30	-7
Bulgaria	7.2	2.2	2.7	10	18	11
Kazakhstan	6.4	1.8	2.4	-15	37	26
Memorandum item:						
Central and Eastern Europe						
Exports	129.4	39.2	45.3	1	14	12
Imports	159.3	48.4	59.6	-1	12	9
Baltic States						
Exports	9.9	3.2	3.5	-19	24	12
Imports	14.1	4.4	5.3	-19	15	9
CIS						
Exports	146.3	57.6	51.2	-1	38	0
Imports	94.1	47.2	35.2	-27	16	14

a Imports are valued f.o.b.

Table III.49

Merchandise exports of selected Central and Eastern European countries by region, major trading partner and major product group, 1999-01

(Million dollars and percentage)

Destination / Origin		Bulgaria	Czech Rep.	Slovak Rep.	Hungary	Poland	Romania
				Value			
Total	1999	4005	26240	10240	25015	27405	8485
	2000	4825	28995	11870	28090	31650	10365
	2001	5105	33405	12630	30500	36090	11385
				Share in total			
Region and major trading partner							
North America	1999	4.5	2.6	1.6	5.3	2.8	4.0
	2000	4.6	3.0	1.6	5.4	3.7	4.0
	2001	6.5	3.2	1.4	5.2	2.8	3.5
Latin America	1999	0.8	0.9	0.6	0.5	1.2	1.0
	2000	1.0	0.6	0.4	0.6	1.2	0.8
	2001	1.0	0.6	0.3	0.5	1.2	1.1
Western Europe	1999	69.4	68.6	63.5	80.9	73.0	74.6
	2000	73.6	72.8	63.5	80.3	73.2	73.9
	2001	71.2	72.8	64.1	79.4	73.0	76.1
European Union (15)	1999	52.5	63.6	59.4	76.2	69.2	65.5
	2000	51.1	68.6	59.1	75.2	70.0	63.8
	2001	54.8	68.9	60.0	74.3	69.2	67.8
C./E. Europe/Baltic States/CIS	1999	17.7	21.0	31.9	9.8	18.3	9.8
	2000	13.8	19.1	32.0	10.0	17.3	11.5
	2001	10.7	19.3	32.1	11.0	18.3	9.4
Central and Eastern Europe	1999	4.2	16.5	29.0	6.8	8.4	6.6
	2000	4.0	15.9	29.3	7.2	8.0	7.7
	2001	5.0	16.2	29.1	8.0	8.4	6.6
Russian Fed.	1999	4.7	1.5	1.0	1.4	2.8	0.6
	2000	2.4	1.0	0.9	1.6	2.7	0.9
	2001	2.3	1.5	1.0	1.5	2.9	0.7
Africa	1999	2.1	1.3	0.7	0.4	1.4	3.8
	2000	1.6	0.5	0.5	0.4	1.2	3.6
	2001	1.8	0.5	0.5	0.4	1.4	2.6
Middle East	1999	2.4	2.5	0.5	0.8	0.9	4.1
	2000	3.0	1.3	0.5	0.7	1.0	3.3
	2001	3.3	1.3	0.5	1.0	0.9	3.9
Asia	1999	3.0	2.5	1.0	2.3	2.0	2.5
	2000	2.3	2.6	1.3	2.6	2.1	2.8
	2001	1.9	2.1	1.0	2.6	2.0	3.1
Major product group							
Agricultural products	1999	18.4	6.8	6.5	10.0	11.0	10.4
	2000	12.5	6.6	5.4	8.7	9.6	8.0
	2001	11.7	5.8	5.7	9.0	9.4	8.0
Mining products	1999	18.3	4.9	8.2	3.7	10.3	10.3
	2000	27.5	4.9	10.4	4.1	10.3	14.7
	2001	25.1	4.7	10.1	4.0	9.9	12.5
Manufactures	1999	59.7	88.0	84.8	86.3	78.6	78.3
	2000	58.3	88.1	83.6	87.2	80.0	76.7
	2001	61.6	89.1	83.7	86.5	80.6	79.0

Table III.50
Merchandise imports of selected Central and Eastern European countries by region, major trading partner and major product group, 1999-01
(Million dollars and percentage)

Origin / Destination		Bulgaria	Czech Rep.	Slovak Rep a	Hungary	Poland	Romania
				Value			
Total	1999	5515	28100	11265	28010	45910	10555
	2000	6505	32110	12775	32080	48940	13055
	2001	7240	36490	14765	33680	50275	15550
				Share in total			
Region and major trading partner							
North America	1999	3.3	4.4	2.8	3.7	4.0	3.8
	2000	3.2	4.7	2.2	4.1	4.8	3.4
	2001	2.9	4.3	2.1	4.4	3.7	3.5
Latin America	1999	2.1	0.7	0.6	1.6	1.2	1.9
	2000	3.0	0.9	0.5	1.3	1.3	2.3
	2001	3.4	1.0	0.6	1.2	1.8	2.3
Western Europe	1999	54.3	67.6	54.3	67.4	68.5	65.3
	2000	49.9	65.5	51.4	61.3	64.5	61.2
	2001	55.9	65.7	52.5	60.8	65.2	62.0
European Union (15)	1999	48.6	64.2	51.7	64.4	65.0	60.4
	2000	44.0	61.9	48.9	58.5	61.2	56.6
	2001	49.4	61.8	49.8	57.8	61.4	57.3
C./E. Europe/Baltic States/CIS	1999	31.7	17.4	35.7	13.5	14.0	18.1
	2000	38.5	19.4	39.1	16.2	18.3	21.5
	2001	31.5	18.2	37.7	15.9	18.0	20.9
Central and Eastern Europe	1999	5.9	11.4	22.0	6.6	6.2	8.5
	2000	8.3	11.3	20.1	7.0	6.6	8.5
	2001	7.6	11.1	21.1	7.4	6.9	9.3
Russian Fed.	1999	20.7	4.8	12.0	5.8	5.8	6.8
	2000	24.4	6.4	17.0	8.1	9.5	8.6
	2001	19.9	5.5	14.8	7.0	8.8	7.6
Africa	1999	2.0	0.6	0.3	0.4	0.9	0.8
	2000	0.7	0.7	0.3	0.4	0.6	0.6
	2001	0.8	0.7	0.3	0.5	0.9	0.8
Middle East	1999	0.7	0.4	0.2	0.3	0.5	1.3
	2000	0.5	0.3	0.2	0.3	0.4	1.0
	2001	0.6	0.3	0.2	0.3	0.4	1.7
Asia	1999	5.8	7.3	5.3	13.1	10.7	8.3
	2000	4.2	7.4	5.4	16.5	9.8	9.7
	2001	4.9	8.0	5.8	16.8	9.7	6.3
Major product group							
Agricultural products	1999	7.5	8.0	8.3	4.8	9.0	8.8
	2000	6.6	7.0	7.5	4.4	8.1	8.4
	2001	6.8	6.6	7.4	4.5	8.2	9.0
Mining products	1999	26.5	10.1	16.4	8.6	9.8	13.3
	2000	32.4	13.2	21.2	11.1	13.7	16.0
	2001	27.2	12.5	18.9	10.8	12.8	16.0
Manufactures	1999	64.4	81.8	75.2	86.6	81.0	77.0
	2000	58.9	79.7	71.2	84.4	78.2	75.2
	2001	64.6	80.9	73.7	84.2	78.8	74.8

a Imports are valued f.o.b.

Table III.51

Relative importance of inter-regional trade in the total merchandise trade of the Baltic States, 2001

(Million dollars and percentage)

	Exports						Imports				
	Value			Share			Value			Share	
	World	Baltic States a	All other countries	Baltic States	All other countries		World	Baltic States	All other countries	Baltic States	All other countries
Baltic States	9895	1335	8560	13.5	86.5	Baltic States	14085	915	13170	6.5	93.5
Estonia	3310	335	2975	10.1	89.9	Estonia	4300	235	4065	5.5	94.5
Latvia	2000	275	1725	13.8	86.3	Latvia	3505	515	2990	14.7	85.3
Lithuania b	4585	725	3860	15.8	84.2	Lithuania b	6280	165	6115	2.6	97.4

a includes transit trade of fuels through Latvia and Lithuania.
b Lithuania trade recorded using the general system of trade. See Technical Notes.

Table III.52

Relative importance of inter-regional trade in the total merchandise trade of the CIS, 2001

(Million dollars and percentage)

	Exports						Imports				
	Value			Share			Value			Share	
	World	CIS	All other countries	CIS	All other countries		World	CIS	All other countries	CIS	All other countries
CIS	146300	30855	115445	21.1	78.9	CIS	94060	34840	59220	37.0	63.0
Armenia	340	90	250	26.5	73.5	Armenia	870	190	680	21.8	78.2
Azerbaijan	2315	225	2090	9.7	90.3	Azerbaijan	1675	445	1230	26.6	73.4
Belarus	7525	4470	3055	59.4	40.6	Belarus	8045	5585	2460	69.4	30.6
Georgia	345	145	200	42.0	58.0	Georgia	685	250	435	36.5	63.5
Kazakhstan	8645	2630	6015	30.4	69.6	Kazakhstan	6365	3250	3115	51.1	48.9
Kyrgyz Rep.	475	170	305	35.8	64.2	Kyrgyz Rep.	465	260	205	55.9	44.1
Moldova, Rep. of	570	345	225	60.5	39.5	Moldova, Rep. of	895	340	555	38.0	62.0
Russian Fed.	103100	15300	87800	14.8	85.2	Russian Fed.	53860	13190	40670	24.5	75.5
Tajikistan	650	210	440	32.3	67.7	Tajikistan	690	540	150	78.3	21.7
Turkmenistan	2620	1440	1180	55.0	45.0	Turkmenistan	2105	600	1505	28.5	71.5
Ukraine	16265	4675	11590	28.7	71.3	Ukraine	15775	9000	6775	57.1	42.9
Uzbekistan	3450	1155	2295	33.5	66.5	Uzbekistan	2630	1190	1440	45.2	54.8

Table III.53

Merchandise exports of selected economies to the CIS, 1999-01

(Million dollars)

Origin	European Union (15)			Central and Eastern Europe			Turkey		
Destination	1999	2000	2001	1999	2000	2001	1999	2000	2001
Commonwealth of Independent States	21884	25130	33125	4465	4630	5025	1533	1636	1978
Armenia	181	224	168	51	31	18	0	0	0
Azerbaijan	226	275	301	66	67	57	248	230	225
Belarus	1067	1027	1217	356	367	376	5	12	20
Georgia	175	221	240	132	127	114	114	131	144
Kazakhstan	1026	1134	1388	181	177	158	97	116	120
Kyrgyz Rep.	80	54	52	9	8	7	23	20	17
Moldova, Rep. of	267	307	335	214	255	225	21	26	28
Russian Fed.	15359	17960	24389	1825	1900	2335	589	639	924
Tajikistan	34	32	30	19	3	3	5	4	16
Turkmenistan	220	148	224	37	52	19	107	119	105
Ukraine	2719	3305	4308	1477	1559	1658	226	256	289
Uzbekistan	529	444	473	99	85	57	99	82	90

Origin	United States			Japan			China		
Destination	1999	2000	2001	1999	2000	2001	1999	2000	2001
Commonwealth of Independent States	2844	3325	3837	755	792	956	2233	3183	3477
Armenia	50	57	50	1	2	0	12	1	2
Azerbaijan	55	210	65	36	8	65	1	2	11
Belarus	26	31	35	4	3	3	5	41	9
Georgia	83	109	107	7	4	6	2	2	4
Kazakhstan	179	124	163	61	69	73	494	599	328
Kyrgyz Rep.	21	24	28	6	4	1	103	110	77
Moldova, Rep. of	11	27	36	3	1	5	0	0	2
Russian Fed.	1845	2318	2724	480	570	715	1497	2233	2710
Tajikistan	13	13	29	3	1	0	2	7	5
Turkmenistan	18	73	248	14	56	32	7	12	31
Ukraine	204	186	205	54	51	37	81	136	247
Uzbekistan	339	151	148	86	25	18	27	39	51

Table III.54

Merchandise imports of selected economies from the CIS, 1999-01

(Million dollars)

Destination	European Union (15)			Central and Eastern Europe			Turkey		
Origin	1999	2000	2001	1999	2000	2001	1999	2000	2001
Commonwealth of Independent States	29805	43418	43090	10830	16940	16625	3734	5682	4630
Armenia	101	118	67	0	0	0	0	0	0
Azerbaijan	473	904	991	11	10	113	44	96	78
Belarus	574	684	611	292	314	355	21	18	11
Georgia	127	212	269	3	4	1	93	155	127
Kazakhstan	1866	2934	2642	207	523	400	296	346	90
Kyrgyz Rep.	140	120	105	16	8	9	3	2	6
Moldova, Rep. of	145	174	205	61	54	55	11	7	3
Russian Fed.	23492	34930	34294	8871	14198	13611	2374	3880	3436
Tajikistan	59	41	54	14	44	90	4	16	14
Turkmenistan	264	204	141	21	27	74	67	98	72
Ukraine	2146	2630	3148	1233	1664	1764	774	977	758
Uzbekistan	418	467	564	101	93	153	47	86	36

Destination	United States			Japan			China		
Origin	1999	2000	2001	1999	2000	2001	1999	2000	2001
Commonwealth of Independent States	7165	9842	8326	4020	4917	4179	5282	7367	9642
Armenia	16	24	35	1	0	1	0	4	1
Azerbaijan	28	22	25	0	1	4	0	4	4
Belarus	100	113	122	6	8	14	21	73	35
Georgia	19	34	36	1	2	11	1	2	3
Kazakhstan	240	443	376	87	91	105	644	958	961
Kyrgyz Rep.	1	2	4	1	1	1	32	67	42
Moldova, Rep. of	98	115	77	0	0	0	0	8	13
Russian Fed.	6017	8038	6744	3767	4579	3850	4223	5770	7959
Tajikistan	24	9	6	0	1	0	6	10	5
Turkmenistan	9	30	51	0	1	0	2	4	1
Ukraine	586	975	790	124	154	140	340	455	610
Uzbekistan	27	37	58	34	79	53	13	12	8

6. *Africa*

Table III.55

Merchandise trade of Africa, 2001

(Billion dollars and percentage)

	Exports	Imports
Value	141	136
Share in world merchandise trade	2.4	2.2
Annual percentage change		
Africa		
1980-85	-8	-6
1985-90	5	6
1990-01	3	3
1999	11	-3
2000	27	4
2001	-5	2
South Africa		
1980-85	-9	-10
1985-90	8	10
1990-01	3	4
1999	1	-9
2000	12	11
2001	-2	-4
Other Africa		
1980-85	-7	-6
1985-90	4	6
1990-01	3	3
1999	14	-2
2000	32	2
2001	-6	4

Table III.56

Merchandise trade of Africa by region and by major product group, 2001

(Billion dollars and percentage)

	Value	Share	
	Exports	Exports	Imports
Total	141	100.0	100.0
Region			
North America	25	17.6	10.5
Latin America	5	3.6	2.9
Western Europe	73	51.7	49.2
C./E. Europe/Baltic States/CIS	1	0.7	2.5
Africa	11	8.0	8.9
Middle East	3	2.1	7.2
Asia	21	14.7	18.8
Product group			
Agricultural products	21	14.7	15.3
Mining products	80	57.0	11.6
Manufactures	36	25.3	70.8

Note: Import shares are derived from the Secretariat's network of world merchandise trade by product and region.

Chart III.13

Merchandise trade of Africa, 1990-01

(Billion dollars)

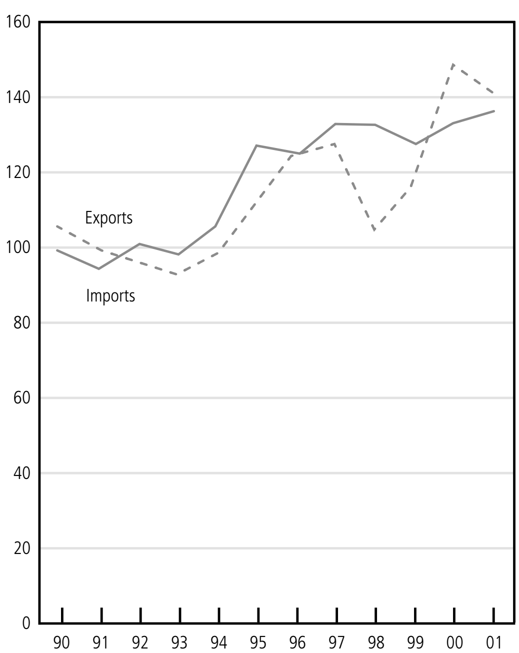


Chart III.14

Share of Africa in world merchandise trade, 1990-01

(Percentage based on value data)

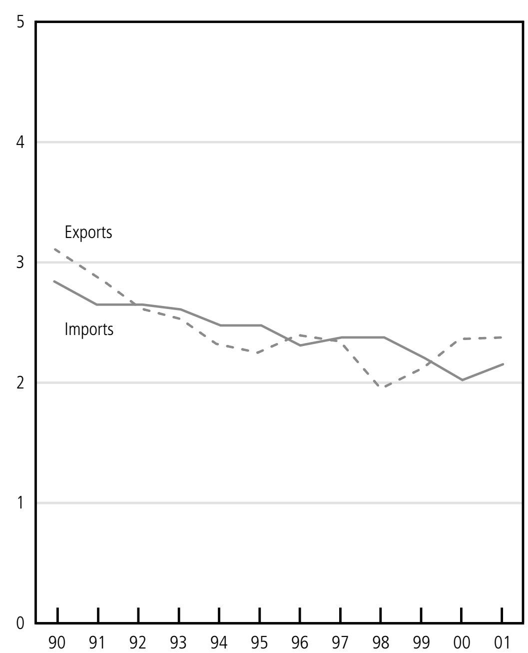


Table III.57

Merchandise exports of Africa by major product group and main destination, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
Total merchandise a							
World	141.2	100.0	100.0	3	11	27	-5
Western Europe	73.0	57.6	51.7	2	5	26	-3
North America	24.8	15.2	17.6	4	7	55	-9
Asia	20.7	7.7	14.7	9	35	23	-13
Mining products							
World	80.5	100.0	100.0	3	23	50	-8
Western Europe	37.9	61.5	47.0	1	16	51	-7
North America	20.0	24.7	24.8	3	11	66	-12
Asia	12.5	5.9	15.6	13	68	42	-15
Manufactures							
World	35.7	100.0	100.0	5	2	10	2
Western Europe	21.7	62.1	60.7	5	3	12	2
Africa	4.9	11.6	13.8	7	-5	-1	-3
North America	3.8	5.9	10.7	11	-3	22	11
Agricultural products							
World	20.7	100.0	100.0	2	-4	-4	0
Western Europe	10.7	61.2	51.8	1	-10	-8	2
Asia	3.9	15.1	18.7	4	9	5	-2
Africa	2.8	11.8	13.5	3	1	1	-2

a Includes significant exports of unspecified products.

Table III.58

Merchandise exports of Africa by destination, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
World	141.2	100.0	100.0	3	11	27	-5
Western Europe	73.0	57.6	51.7	2	5	26	-3
European Union (15)	67.4	52.2	47.8	2	5	23	-3
North America	24.8	15.2	17.6	4	7	55	-9
Asia	20.7	7.7	14.7	9	35	23	-13
Japan	3.5	3.0	2.5	1	-1	23	-9
Other	17.2	4.8	12.2	12	46	24	-14
Intra-Africa	11.4	5.9	8.0	6	4	9	-6
Latin America	5.1	1.5	3.6	11	32	26	12
Middle East	2.9	1.5	2.1	6	14	31	-4
C./E. Europe/Baltic States/CIS	1.1	2.2	0.7	-7	-10	-11	32
Inter-regional trade	127.7	85.7	90.4	3	11	30	-5

Table III.59

Leading merchandise exporters and importers in Africa, 2001

(Billion dollars and percentage)

	Value	Share				Annual percentage change			
	2001	1980	1990	1995	2001	1990-01	1999	2000	2001
Exporters									
Africa	141.2	100.0	100.0	100.0	100.0	3	11	27	-5
South Africa a	29.3	21.0	22.3	25.0	20.7	3	1	12	-2
Algeria	20.1	11.4	12.3	9.2	14.2	4	27	76	-9
Nigeria	19.2	21.4	12.9	11.1	13.6	3	41	51	-9
Libyan Arab Jamahiriya	11.7	18.0	12.5	8.0	8.3	-1	19	69	-13
Morocco	7.1	2.1	4.0	6.2	5.0	5	3	1	-4
Angola	6.7	1.6	3.7	3.3	4.7	5	46	53	-15
Tunisia	6.6	1.8	3.3	4.9	4.7	6	2	0	13
Egypt	4.1	2.5	3.3	3.1	2.9	2	14	32	-12
Côte d'Ivoire	3.7	2.6	2.9	3.4	2.6	2	1	-17	-4
Gabon	2.6	1.8	2.1	2.4	1.9	2	31	26	-17
Botswana	2.3	0.4	1.7	1.9	1.6	2	36	3	-15
Congo	2.1	0.8	0.9	1.1	1.5	7	6	60	-16
Equatorial Guinea	2.0	0.0	0.1	0.1	1.4	36	77	71	53
Kenya	1.9	1.0	1.0	1.7	1.4	6	-13	-1	12
Zimbabwe	1.8	1.2	1.6	1.9	1.3	0	-11	2	-8
Importers									
Africa	136.0	100.0	100.0	100.0	100.0	3	-3	4	2
South Africa a	28.4	20.1	18.5	24.2	20.9	4	-9	11	-4
Egypt	12.8	5.0	12.5	9.3	9.4	0	-1	-13	-9
Nigeria	11.2	17.1	5.7	6.5	8.2	6	-7	2	28
Morocco	11.0	4.3	7.0	7.9	8.1	4	-4	16	-5
Algeria	9.7	10.8	9.9	8.1	7.1	0	-3	0	6
Tunisia	9.6	3.6	5.6	6.2	7.0	5	1	1	11
Libyan Arab Jamahiriya	8.7	7.0	5.4	4.3	6.4	5	-21	79	12
Angola	3.4	1.4	1.6	1.2	2.5	7	50	3	4
Ghana	3.0	1.2	1.2	1.5	2.2	9	36	-15	2
Kenya	2.9	2.2	2.2	2.4	2.1	2	-11	10	-7
Côte d'Ivoire	2.6	3.0	2.1	2.3	1.9	2	9	-22	1
Botswana	2.5	0.7	2.0	1.5	1.8	2	-7	11	-1
Mauritius	2.0	0.6	1.6	1.6	1.5	2	8	-7	-4
Cameroon	1.9	1.6	1.4	0.9	1.4	3	-12	13	24
Tanzania, United Rep. of	1.7	1.3	1.0	1.3	1.2	4	7	-2	9

a Beginning with 1998, figures refer to South Africa only and no longer to the Southern African Customs Union.

Note: Recent figures for a number of traders in the region have been estimated by the Secretariat.

Table III.60

Merchandise exports of the European Union to Africa by product, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
Total merchandise exports	59.3	100.0	100.0	1	-6	-1	3
Manufactures	49.1	80.9	82.8	2	-5	-4	5
Machinery and transport equipment	27.0	43.0	45.5	2	-3	-3	4
Power generating machinery	1.3	1.8	2.1	3	-7	5	-3
Other non-electrical machinery	8.3	16.1	14.0	0	-7	-13	8
Office and telecom equipment	5.0	4.9	8.4	7	-3	12	-8
Electrical machinery and apparatus	3.0	4.3	5.0	3	-2	-5	2
Automotive products	6.3	10.5	10.6	1	-1	4	22
Other transport equipment	3.2	7.4	5.4	-2	2	-11	-10
Chemicals	7.3	12.2	12.3	1	-5	-4	4
Other semi-manufactures	4.8	9.2	8.0	0	-6	-6	7
Textiles	3.4	4.7	5.7	3	-4	-6	5
Iron and steel	1.5	4.2	2.5	-3	-33	0	19
Agricultural products	7.1	14.1	12.0	0	-12	1	-2
Food	6.2	12.2	10.5	0	-13	2	-1
Mining products	2.6	3.6	4.3	3	-11	57	-17
Fuels	1.8	2.3	3.1	4	-9	81	-22

Note: The European Union accounted for 47 per cent of Africa's merchandise imports in 2001.

Table III.61

Merchandise imports of the European Union from Africa by product, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
Total merchandise imports	72.2	100.0	100.0	1	2	25	-1
Mining products	35.4	58.9	49.0	0	5	66	-7
Fuels	31.1	49.3	43.1	0	8	75	-8
Ores and other minerals	2.2	4.4	3.1	-2	-9	8	1
Non-ferrous metals	2.0	5.3	2.8	-4	-10	38	2
Manufactures	23.0	17.0	31.9	7	5	5	7
Clothing	6.1	5.5	8.5	6	0	-4	5
Other semi-manufactures	6.0	4.0	8.3	8	25	26	5
Agricultural products	11.5	18.0	15.9	0	-8	-10	3
Food	8.9	13.1	12.3	1	-6	-14	6
Raw materials	2.6	4.9	3.5	-2	-13	5	-4

Note: The European Union accounted for 48 per cent of Africa's merchandise exports in 2001.

7. Middle East

Table III.62

Merchandise trade of the Middle East, 2001

(Billion dollars and percentage)

	Exports	Imports
Value	237	180
Share in world merchandise trade	4.0	2.9
Annual percentage change		
1980-85	-14	-3
1985-90	6	2
1990-01	5	5
1999	30	3
2000	42	13
2001	-9	4

Table III.63

Merchandise trade of the Middle East by region and by major product group, 2001

(Billion dollars and percentage)

	Value	Share	
	Exports	Exports	Imports
Total	237	100.0	100.0
Region			
North America	39	16.5	12.6
Latin America	3	1.3	2.4
Western Europe	39	16.3	39.8
C./E. Europe/Baltic States/CIS	2	0.7	4.7
Africa	9	3.9	1.8
Middle East	18	7.5	10.9
Asia	112	47.3	27.8
Product group			
Agricultural products	8	3.3	13.4
Mining products	175	73.8	8.1
Manufactures	52	21.8	75.2

Note: Import shares are derived from the Secretariat's network of world merchandise trade by product and region.

Chart III.15

Merchandise trade of the Middle East, 1990-01

(Billion dollars)

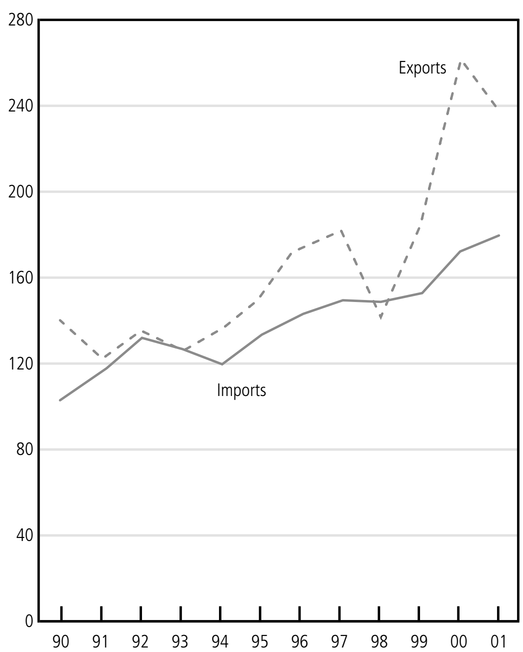


Chart III.16

Share of the Middle East in world merchandise trade, 1990-01

(Percentage based on value data)

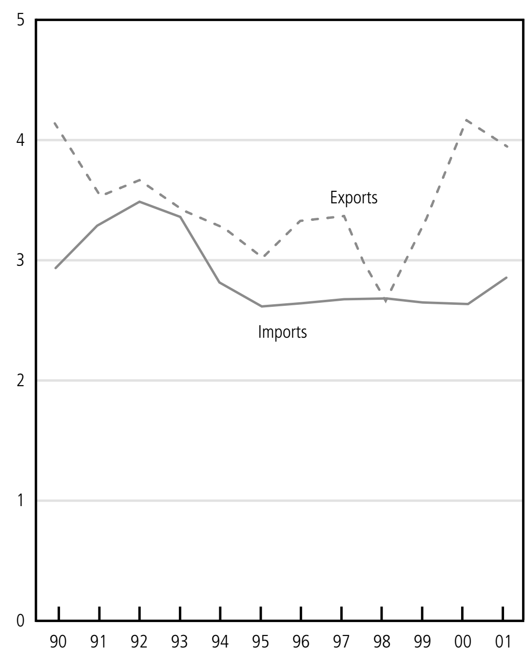


Table III.64

Merchandise exports of the Middle East by major product group and main destination, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
Total merchandise							
World	236.8	100.0	100.0	5	30	42	-9
Asia	112.0	39.8	47.3	7	37	49	-11
North America	39.0	14.0	16.5	6	38	50	-5
Western Europe	38.6	26.9	16.3	0	12	31	-19
Middle East	17.7	6.3	7.5	7	8	26	8
Mining products							
World	174.8	100.0	100.0	4	38	54	-12
Asia	101.9	45.2	58.3	7	39	55	-12
Western Europe	23.8	24.9	13.6	-2	19	52	-25
North America	23.6	14.0	13.5	4	58	67	-5
Manufactures							
World	51.5	100.0	100.0	9	13	14	-1
North America	14.0	16.4	27.2	14	17	33	-6
Western Europe	12.8	32.4	24.8	6	5	4	-7
Asia	8.7	19.6	16.9	7	27	2	4
Middle East	8.1	17.9	15.7	7	0	21	12
Agriculture							
World	7.9	100.0	100.0	5	14	1	5

Table III.65

Merchandise exports of the Middle East by destination, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
World	236.8	100.0	100.0	5	30	42	-9
Asia	112.0	39.8	47.3	7	37	49	-11
Japan	41.1	20.9	17.4	3	28	51	-10
Other	70.9	18.9	29.9	9	43	48	-11
Western Europe	38.6	26.9	16.3	0	12	31	-19
European Union (15)	36.4	23.9	15.4	1	13	32	-17
North America	39.0	14.0	16.5	6	38	50	-5
Intra-Middle East	17.7	6.3	7.5	7	8	26	8
Africa	9.2	3.1	3.9	7	16	40	-11
Latin America	3.0	3.7	1.3	-5	-3	36	-5
C./E. Europe/Baltic States/CIS	1.7	2.5	0.7	-6	-15	-4	11
Inter-regional trade	203.5	90.1	85.9	4	28	44	-11

Table III.66

Imports of fuels of selected regions and economies from the Middle East, 1990 and 2001

(Billion dollars and percentage)

	Value		Annual percentage change			
	1990	2001	1990-01	1999	2000	2001
North America	16.7	24.2	3	51	67	-3
United States	16.0	23.1	3	52	64	-3
Canada a	0.7	1.1	5	8	168	4
Western Europe	28.5	26.4	-1	14	55	-14
European Union (15)	25.5	24.2	0	15	55	-14
Turkey	2.5	2.0	-2	17	59	-10
Asia	50.1	88.5	5	27	67	-25
Japan	29.4	42.6	3	20	66	-10
Korea, Rep. of	4.8	22.0	15	28	84	-10
Singapore	6.3	8.9	3	20	46	-15
China	0.2	7.2	41	8	212	-17
Taipei, Chinese	2.8	6.2	8	44	71	16
Thailand	1.1	5.1	15	29	54	-7
Pakistan	1.2	2.8	8	46	73	-20
Philippines	1.4	2.7	6	25	56	-14

a Imports are valued f.o.b.

Table III.67

Leading merchandise exporters and importers in the Middle East, 2001

(Billion dollars and percentage)

	Value	Share				Annual percentage change			
	2001	1980	1990	1995	2001	1990-01	1999	2000	2001
Exporters									
Middle East	236.8	100.0	100.0	100.0	100.0	5	30	42	-9
Saudi Arabia	68.2	51.3	31.9	33.0	28.8	4	31	53	-12
United Arab Emirates	42.9	10.3	16.9	18.3	18.1	6	11	28	-2
Israel	29.0	2.6	8.7	12.6	12.3	8	12	22	-8
Iran, Islamic Rep. of	25.3	6.6	13.9	12.1	10.7	2	60	35	-11
Kuwait	16.1	9.2	5.1	8.4	6.8	8	28	59	-17
Iraq	15.9	12.4	8.9	0.3	6.7	2	132	62	-23
Oman	11.1	1.8	4.0	4.0	4.7	7	31	50	2
Qatar	10.9	2.7	2.8	2.4	4.6	10	43	61	-6
Bahrain	5.5	1.7	2.7	2.7	2.3	4	27	38	-3
Syrian Arab Republic	4.5	1.0	3.0	2.3	1.9	1	20	34	-3
Importers									
Middle East	180.0	100.0	100.0	100.0	100.0	5	3	13	4
United Arab Emirates	41.7	8.5	10.8	15.7	23.2	13	15	15	9
Israel	35.1	9.5	16.2	22.2	19.5	7	13	14	-7
Saudi Arabia	31.2	29.3	23.2	21.1	17.3	2	-7	8	3
Iran, Islamic Rep. of	17.5	11.9	19.6	10.4	9.7	-1	-11	13	22
Iraq	11.0	13.6	7.4	0.5	6.1	3	85	37	-1
Kuwait	7.7	6.4	3.8	5.8	4.3	6	-12	-6	8
Lebanon	7.3	3.6	2.4	5.5	4.1	10	-12	0	17
Oman	5.8	1.7	2.6	3.2	3.2	7	-18	8	15
Jordan	4.8	3.4	2.5	2.8	2.7	6	-3	22	7
Syrian Arab Republic	4.3	2.3	2.3	3.5	2.4	5	-2	0	13

Note: Recent figures for a number of significant traders in the region have been estimated by the Secretariat.

8. Asia

Table III.68

Merchandise trade of Asia, 2001

(Billion dollars and percentage)

	Exports	Imports
Value	1497	1375
Share in world merchandise trade	25.0	21.9
Annual percentage change		
Value		
1980-85	5	2
1985-90	13	14
1990-01	7	6
1999	7	10
2000	18	23
2001	-9	-7
Volume		
1980-85	7.5	5.5
1985-90	8.0	12.0
1990-01	7.5	7.5
1999	6.5	9.5
2000	16.0	16.5
2001	-3.5	-1.5

Table III.69

Merchandise trade of Asia by region and by major product group, 2001

(Billion dollars and percentage)

	Value	Share	
	Exports	Exports	Imports
Total	1497	100.0	100.0
Region			
North America	376	25.1	15.9
Latin America	40	2.7	1.7
Western Europe	252	16.8	15.1
C./E. Europe/Baltic States/CIS	17	1.1	1.5
Africa	24	1.6	1.6
Middle East	45	3.0	8.6
Asia	722	48.2	55.6
Product group			
Agricultural products	100	6.7	9.7
Mining products	114	7.6	18.0
Manufactures	1248	83.3	70.0

Note: Import shares are derived from the Secretariat's network of world merchandise trade by product and region.

Chart III.17

Merchandise trade of Asia, 1990-01

(Billion dollars)

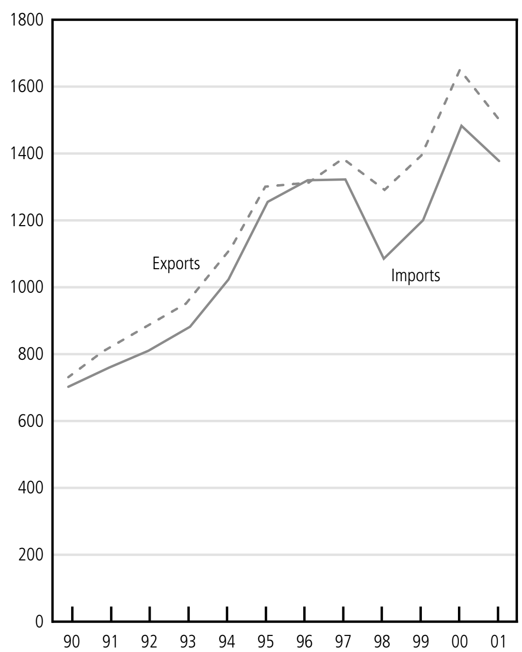


Chart III.18

Share of Asia in world merchandise trade, 1990-01

(Percentage based on value data)

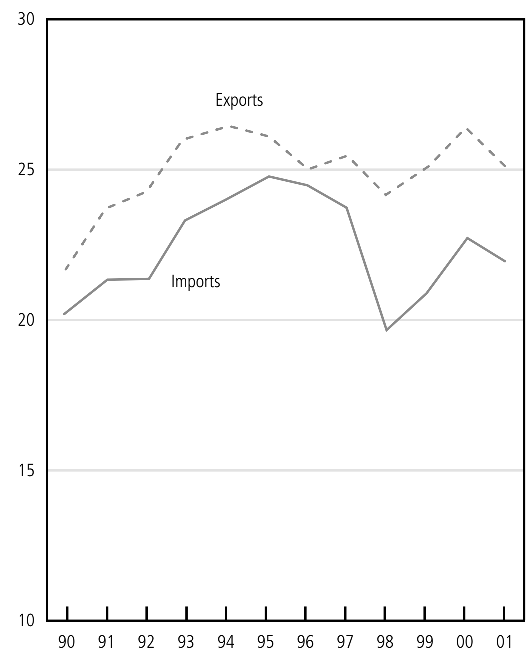


Table III.70

Merchandise exports of Asia by main product group and main destination, 2001

(Billion dollars and percentage)

	Value	Share in total merchandise		Share in product group		Annual percentage change		
	2001	1990	2001	1990	2001	1990-01	2000	2001
Total merchandise								
World	1497.4	100.0	100.0	-	-	7	18	-9
Intra-Asia	722.2	42.1	48.2	-	-	8	24	-10
Japan	147.9	10.4	9.9	-	-	6	28	-7
Other	574.2	31.7	38.3	-	-	8	24	-11
North America	375.8	28.3	25.1	-	-	5	15	-11
Western Europe	251.8	20.0	16.8	-	-	5	11	-10
All other regions	126.4	8.1	8.4	-	-	7	16	3
Manufactures								
World	1247.9	79.1	83.3	100.0	100.0	7	18	-10
Intra-Asia	551.2	28.5	36.8	36.0	44.2	9	25	-12
Japan	99.3	4.3	6.6	5.5	8.0	11	30	-7
Other	452.0	24.1	30.2	30.5	36.2	9	24	-13
North America	349.0	26.1	23.3	33.0	28.0	6	15	-12
Western Europe	224.7	17.4	15.0	22.0	18.0	5	12	-11
All other regions	106.8	6.2	7.1	7.8	8.6	8	17	2
Mining products								
World	113.8	8.9	7.6	100.0	100.0	5	38	-5
Intra-Asia	93.0	7.1	6.2	79.6	81.7	5	40	-6
Japan	28.8	3.6	1.9	40.5	25.3	1	40	-8
Other	64.2	3.5	4.3	39.0	56.4	9	40	-6
Western Europe	8.2	0.6	0.5	6.9	7.2	6	25	9
North America	6.5	0.8	0.4	8.9	5.8	1	36	-13
All other regions	4.6	0.3	0.3	2.8	4.0	9	33	11
Agricultural products								
World	99.7	9.7	6.7	100.0	100.0	3	5	-1
Intra-Asia	60.5	5.5	4.0	56.8	60.7	4	6	-2
Japan	19.0	2.3	1.3	23.2	19.1	1	5	-6
Other	41.4	3.3	2.8	33.6	41.5	5	7	-1
Western Europe	14.1	1.7	0.9	17.2	14.1	1	-1	-4
North America	13.4	1.1	0.9	11.4	13.4	5	11	-3
All other regions	11.4	1.4	0.8	14.3	11.4	1	4	8

Table III.71

Merchandise exports of Asia by product, 2001

(Billion dollars and percentage)

	Value	Share in exports of Asia		Share in world exports		Annual percentage change			
	2001	1990	2001	1990	2001	1990-01	1999	2000	2001
Total merchandise exports	1497.4	100.0	100.0	21.8	25.0	7	7	18	-9
Agricultural products	99.7	9.7	6.7	17.4	18.2	3	-2	5	-1
Food	78.5	6.8	5.2	16.0	17.9	4	-1	3	1
Raw materials	21.3	2.9	1.4	21.7	19.3	0	-4	15	-10
Mining products	113.8	8.9	7.6	13.5	14.4	5	9	38	-5
Ores and other minerals	16.6	1.5	1.1	20.5	26.2	4	2	19	6
Fuels	77.5	6.2	5.2	12.6	12.6	5	11	49	-6
Non-ferrous metals	19.7	1.3	1.3	12.8	17.8	7	7	19	-10
Manufactures	1247.9	79.1	83.3	24.4	27.9	7	9	18	-10
Iron and steel	29.2	2.8	2.0	19.5	22.6	3	-9	18	-16
Chemicals	95.2	4.6	6.4	11.4	16.0	10	12	19	-5
Other semi-manufactures	87.1	6.2	5.8	17.3	20.2	6	8	12	-6
Machinery and transport equipment	730.5	43.2	48.8	26.3	29.8	8	11	21	-13
Automotive products	107.2	9.7	7.2	22.4	19.0	4	9	9	-6
Office and telecom equipment	382.2	18.6	25.5	45.9	46.2	10	14	25	-16
Other machinery and transport equipment	241.0	15.0	16.1	18.6	22.7	7	7	20	-11
Textiles	64.7	5.0	4.3	35.3	44.0	5	3	13	-7
Clothing	88.7	6.4	5.9	43.6	45.5	6	1	14	-2
Other consumer goods	152.4	11.0	10.2	27.1	29.0	6	8	14	-7

Table III.72

Merchandise exports of Asia by destination, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
World	1497.4	100.0	100.0	7	7	18	-9
Intra-Asia	722.2	42.1	48.2	8	12	24	-10
Japan	147.9	10.4	9.9	6	13	28	-7
Australia and New Zealand	37.7	2.7	2.5	6	9	5	-6
China	100.9	3.3	6.7	14	8	28	-5
Other	435.6	25.7	29.1	8	13	24	-13
North America	375.8	28.3	25.1	5	8	15	-11
Western Europe	251.8	20.0	16.8	5	1	11	-10
European Union (15)	237.6	18.6	15.9	5	4	11	-10
Middle East	45.3	2.9	3.0	7	-7	15	6
Latin America	40.3	1.8	2.7	10	-9	23	-4
Africa	23.9	1.5	1.6	7	-1	4	7
South Africa	5.9	0.2	0.4	12	-10	15	-12
Other Africa	18.0	1.2	1.2	6	2	0	16
C./E. Europe/Baltic States/CIS	16.9	1.9	1.1	2	-11	20	10
C./E. Europe	7.5	0.4	0.5	10	-1	13	5
Russian Fed.	6.6	-	0.4	-	-26	31	16
Inter-regional trade	753.9	56.4	50.4	6	3	14	-9

Table III.73

Leading merchandise exporters and importers in Asia, 2001

(Billion dollars and percentage)

				Annual percentage change							
	Value	Share		Value				Volume			
	2001	1990	2001	1990-01	1999	2000	2001	1990-01	1999	2000	2001
Exporters											
Asia	1497.4	100.0	100.0	7	7	18	-9	7.0	6.5	16.0	-3.5
Japan	403.5	38.9	26.9	3	8	14	-16	1.5	2.0	9.5	-10.0
China	266.2	8.4	17.8	14	6	28	7	14.0	9.5	28.5	9.5
Hong Kong, China	191.1	-	-	8	0	16	-6	8.5	3.5	17.0	-3.0
domestic exports	20.3	3.9	1.4	-3	-9	5	-14	-3.0	-7.0	7.5	-11.0
re-exports	170.8	-	-	11	1	18	-5	12.0	5.5	18.5	-2.0
Korea, Rep. of	150.4	8.8	10.0	8	9	20	-13	14.5	12.0	21.0	3.5
Taipei, Chinese	122.5	9.1	8.2	6	10	22	-17	4.0	5.0	10.0	-14.5
Singapore	121.8	7.1	8.1	8	4	20	-12	10.0	5.5	15.5	-4.5
domestic exports	66.1	4.7	4.4	6	8	15	-16	8.0	8.0	10.0	-11.0
re-exports	55.6	2.4	3.7	11	-1	28	-6	11.5	1.5	26.5	-5.5
Malaysia	87.9	4.0	5.9	10	15	16	-10	12.0	20.0	19.5	-6.5
Thailand	65.1	3.1	4.3	10	7	18	-6	9.5	12.0	22.0	-5.5
Australia	63.4	5.4	4.2	4	0	14	-1	7.0	5.0	10.0	3.0
Indonesia	56.3	3.5	3.8	7	0	28	-9	8.5	-1.5	24.0	-5.5
India	43.6	2.4	2.9	8	7	19	3	10.5	13.0	20.0	7.0
Philippines	32.1	1.1	2.1	13	24	9	-19	16.0	28.0	13.0	-1.0
Viet Nam	15.1	0.3	1.0	18	23	25	4	…	…	…	…
New Zealand	13.7	1.3	0.9	4	3	7	3	4.5	1.5	5.5	3.0
Pakistan	9.2	0.8	0.6	5	0	6	2	4.0	12.5	12.0	…
Importers											
Asia	1374.6	100.0	100.0	6	10	23	-7	7.0	10.0	16.0	-1.5
Japan	349.1	33.2	25.4	4	11	22	-8	4.5	9.5	11.0	-1.5
China	243.6	7.5	17.7	15	18	36	8	15.0	15.0	31.5	15.0
Hong Kong, China	202.0	-	-	8	-3	18	-6	9.0	0.0	18.0	-2.5
retained imports	31.2	4.4	2.3	0	-21	22	-11	0.5	-18.5	21.0	-7.5
Korea, Rep. of	141.1	9.9	10.3	7	28	34	-12	8.5	29.0	19.0	-4.0
Singapore	116.0	8.6	8.4	6	9	21	-14	6.5	9.5	15.0	-12.5
retained imports	60.4	6.1	4.4	3	18	16	-20	…	…	…	…
Taipei, Chinese	107.3	7.7	7.8	6	6	26	-23	6.0	3.5	10.0	-12.0
Malaysia	74.1	4.1	5.4	9	11	27	-10	10.0	13.5	24.5	-8.0
Australia	63.9	5.9	4.6	4	7	3	-11	6.5	6.5	5.5	-5.5
Thailand	62.1	4.7	4.5	6	17	23	0	3.0	23.5	21.5	-10.5
India	49.6	3.3	3.6	7	9	9	-3	9.0	3.5	5.5	2.5
Philippines	31.4	1.8	2.3	8	3	4	-7	12.0	6.0	22.0	7.0
Indonesia	31.0	3.1	2.3	3	-12	40	-8	3.5	-11.5	37.0	-4.0
Viet Nam	15.6	0.4	1.1	17	1	31	2	…	…	…	…
New Zealand	13.3	1.3	1.0	3	14	-3	-4	4.5	13.5	-2.5	3.0
Pakistan	10.6	1.0	0.8	3	10	10	-6	4.0	8.0	-1.5	…
Memorandum item:											
ASEAN (10)											
Exports	385.2	19.5	25.7	9	9	19	-10	…	…	…	…
Imports	336.0	22.9	24.4	7	-25	22	-8	…	…	…	…
SAPTA (7)											
Exports	65.1	3.7	4.3	8	5	17	1	…	…	…	…
Imports	76.6	5.4	5.6	7	-2	9	10	…	…	…	…

Table III.74

Merchandise trade of Japan by region and economy, 2001

(Billion dollars and percentage)

Destination	Exports: Value	Share		Annual percentage change		Origin	Imports: Value	Share		Annual percentage change	
	2001	1990	2001	2000	2001		2001	1990	2001	2000	2001
Region						Region					
World	403.50	100.0	100.0	14	-16	World	348.61	100.0	100.0	22	-8
Asia	171.50	34.2	42.5	25	-17	Asia	165.01	35.1	47.3	27	-6
North America	129.10	34.0	32.0	11	-15	North America	71.44	26.1	20.5	8	-12
Western Europe	68.23	22.2	16.9	5	-18	Western Europe	49.18	18.2	14.1	8	-5
Latin America	11.66	2.5	2.9	15	-12	Middle East	44.25	13.3	12.7	62	-10
Middle East	10.88	3.2	2.7	-2	9	Latin America	9.10	4.0	2.6	15	-14
Africa	3.72	1.5	0.9	-7	-11	C./E. Europe/ Baltic States/CIS	5.12	1.7	1.5	25	-12
C./E. Europe/ Baltic States/CIS	2.44	1.1	0.6	25	-3	Africa	4.50	1.6	1.3	22	-9
Economy						Economy					
United States	122.32	31.6	30.3	11	-15	United States	63.63	22.5	18.3	7	-12
European Union (15)	64.37	20.4	16.0	5	-18	China	57.75	5.1	16.6	29	5
China	30.94	2.1	7.7	30	2	European Union (15)	44.51	16.0	12.8	9	-5
Korea, Rep. of	25.25	6.1	6.3	34	-18	Korea, Rep. of	17.16	5.0	4.9	28	-16
Taipei, Chinese	24.19	5.4	6.0	25	-33	Indonesia	14.84	5.4	4.3	30	-9
Above 5	267.06	65.5	66.2	14	-16	Above 5	197.90	54.0	56.8	16	-6
Hong Kong, China	23.23	4.5	5.8	23	-15	Australia	14.43	5.3	4.1	16	-2
Singapore	14.68	3.7	3.6	28	-29	Taipei, Chinese	14.16	3.6	4.1	40	-21
Thailand	11.86	3.2	2.9	21	-13	Malaysia	12.83	2.3	3.7	33	-11
Malaysia	10.99	1.9	2.7	25	-21	United Arab Emirates	12.82	3.9	3.7	69	-14
Philippines	8.18	0.9	2.0	17	-20	Saudi Arabia	12.30	4.5	3.5	71	-13
Australia	7.67	2.4	1.9	1	-11	Thailand	10.36	1.8	3.0	20	-2
Canada	6.55	2.3	1.6	8	-12	Canada	7.74	3.6	2.2	10	-11
Indonesia	6.40	1.8	1.6	57	-16	Philippines	6.40	0.9	1.8	36	-11
Panama	4.82	1.0	1.2	-6	-25	Qatar	6.01	0.9	1.7	70	3
Mexico	4.09	0.8	1.0	19	-22	Singapore	5.37	1.5	1.5	18	-16
Saudi Arabia	3.59	1.2	0.9	-7	16	Iran, Islamic Rep. of	5.01	1.5	1.4	71	-6
United Arab Emirates	2.56	0.5	0.6	0	1	Kuwait	4.42	0.7	1.3	66	-11
Brazil	2.47	0.4	0.6	23	-2	Russian Fed.	3.85	0.0	1.1	22	-16
Switzerland	1.96	1.0	0.5	-3	-6	Switzerland	3.28	1.7	0.9	-2	0
India	1.92	0.6	0.5	3	-23	South Africa	2.78	-	0.8	31	-7
Viet Nam	1.78	0.1	0.4	21	-10	Viet Nam	2.60	0.3	0.7	35	-1
South Africa	1.49	0.5	0.4	14	-20	Brazil	2.53	1.4	0.7	12	-15
New Zealand	1.18	0.4	0.3	-15	-7	Chile	2.43	0.7	0.7	13	-15
Korea, Dem. People's Rep. of	1.06	0.1	0.3	41	415	Oman	2.36	0.8	0.7	20	16
Israel	0.93	0.2	0.2	20	-27	India	2.21	0.9	0.6	17	-16
Iran, Islamic Rep. of	0.80	0.6	0.2	1	39	New Zealand	2.05	0.7	0.6	15	-6
Oman	0.79	0.1	0.2	11	6	Mexico	2.00	0.8	0.6	44	-16
Venezuela	0.74	0.1	0.2	26	46	Brunei Darussalam	1.69	0.5	0.5	57	2
Hungary	0.74	0.0	0.2	31	-13	Hong Kong, China	1.45	0.9	0.4	-7	-13
Turkey	0.73	0.3	0.2	33	-39	Norway	1.04	0.3	0.3	-10	-12
Above 30	388.28	94.3	96.2	-	-	Above 30	340.04	94.3	97.5	-	-

Table III.75

Merchandise exports of the United States, the European Union and Japan to China by major product, 2001

(Billion dollars and percentage)

	Value	Share in economy's total merchandise exports		Share in economy's tolal exports by product group		Annual percentage change			
	2001	1990	2001	1990	2001	1990-01	1999	2000	2001
United States									
Total merchandise exports	19.2	100.0	100.0	1.2	2.6	13	-8	24	18
Agricultural products	2.7	24.4	14.0	2.0	3.9	8	-24	88	13
Food	1.5	11.2	8.0	1.3	2.9	10	-31	98	2
Mining products	1.2	2.7	6.3	0.5	4.6	22	26	77	18
Manufactures	15.1	71.9	78.6	1.2	2.5	14	-7	14	20
Chemicals	2.2	21.9	11.5	2.7	2.7	7	6	11	-5
Other semi-manufactures	0.8	2.7	4.1	0.6	1.8	18	0	32	-1
Machinery and transport equipment	10.3	40.4	53.5	1.1	2.7	16	-13	13	27
Other non-electrical machinery	2.2	12.0	11.3	1.7	3.3	13	-5	36	20
Office and telecom equipment	3.9	5.2	20.5	0.5	3.1	28	9	44	22
Other transport equipment	2.6	16.1	13.3	2.1	4.6	12	-35	-25	44
Other consumer goods	1.6	5.1	8.4	0.7	2.1	19	10	17	31
European Union (15)									
Total merchandise exports	26.5	100.0	100.0	0.5	1.2	12	7	14	14
Agricultural products	1.0	8.4	3.8	0.4	0.5	5	36	2	-14
Food	0.4	5.7	1.5	0.3	0.2	0	13	-29	-13
Mining products	0.8	1.0	3.1	0.1	0.6	24	119	19	0
Manufactures	24.4	88.4	92.0	0.5	1.3	13	11	14	16
Chemicals	2.4	10.9	9.1	0.5	0.8	10	22	24	10
Other semi-manufactures	1.7	4.8	6.5	0.2	0.9	15	18	19	4
Machinery and transport equipment	17.6	63.6	66.6	0.8	1.8	13	10	12	16
Other non-electrical machinery	6.9	33.4	26.0	53.0	3.3	10	9	3	29
Office and telecom equipment	4.3	4.7	16.4	0.4	1.8	26	8	28	-7
Other consumer goods	1.6	4.0	6.1	0.2	0.8	16	13	22	27
Japan									
Total merchandise exports	30.9	100.0	100.0	2.1	7.7	16	16	30	2
Agricultural products	0.7	3.7	2.4	6.9	14.2	11	-4	25	16
Mining products	1.5	2.0	4.8	3.1	21.5	26	20	14	27
Non-ferrous metals	0.8	0.8	2.5	2.1	18.1	29	41	6	21
Manufactures	27.7	92.8	89.6	2.1	7.4	15	16	31	0
Iron and steel	2.1	17.3	6.7	8.5	15.3	6	1	39	-2
Chemicals	3.9	12.2	12.6	4.7	12.8	16	30	32	-2
Other semi-manufactures	1.5	6.3	4.9	2.8	8.8	13	14	28	-4
Machinery and transport equipment	15.6	43.8	50.3	1.3	5.7	17	12	32	1
Other non-electrical machinery	5.0	14.4	16.2	2.5	10.4	17	13	24	9
Office and telecom equipment	5.2	16.7	16.8	1.5	6.3	16	25	45	-1
Electrical machinery and apparatus	3.2	5.2	10.3	1.9	10.8	23	22	33	-6
Textiles	2.5	7.1	8.0	7.4	39.9	17	26	14	-4
Other consumer goods	2.2	5.9	7.0	1.5	6.2	18	26	41	3

Table III.76

Merchandise imports of the United States, the European Union and Japan from China by major product, 2001

(Billion dollars and percentage)

	Value	Share in economy's total merchandise imports		Share in economy's tolal imports by product group		Annual percentage change			
	2001	1990	2001	1990	2001	1990-01	1999	2000	2001
United States									
Total merchandise imports	109.4	100.0	100.0	3.1	9.3	21	17	23	2
Agricultural products	1.7	4.3	1.5	1.8	2.5	9	15	17	7
Food	1.3	3.6	1.2	2.0	2.5	8	17	20	11
Mining products	1.0	5.8	0.9	1.1	0.7	1	-14	67	-28
Manufactures	105.4	89.0	96.4	3.9	11.6	22	17	22	2
Chemicals	2.2	2.2	2.0	1.5	2.7	20	17	9	13
Other semi-manufactures	9.1	4.6	8.4	2.1	11.6	29	28	26	8
Machinery and transport equipment	36.5	15.6	33.4	1.2	7.2	31	24	32	0
Office and telecom equipment	22.3	8.2	20.4	2.1	12.9	33	24	32	-1
Electrical machinery and apparatus	8.8	4.1	8.0	3.4	17.1	29	22	31	1
Textiles	2.0	4.3	1.8	10.3	12.9	11	12	15	2
Clothing	9.3	22.7	8.5	13.7	14.0	10	4	15	4
Other consumer goods	45.8	39.1	41.8	11.0	32.8	22	15	16	2
Toys and games	13.7	14.7	12.6	25.0	61.8	19	7	11	-3
Footwear	10.3	9.6	9.4	15.7	64.2	21	7	9	6
Travel goods	2.4	4.6	2.1	31.4	50.8	12	4	13	-2
Furniture	5.8	1.0	5.3	3.1	28.8	43	55	39	11
European Union (15)									
Total merchandise imports	67.3	100.0	100.0	0.9	2.9	17	18	22	4
Agricultural products	2.4	12.7	3.5	1.0	1.0	3	-3	10	4
Food	1.6	7.8	2.4	0.7	0.8	4	-7	12	12
Mining products	1.4	3.0	2.1	0.4	0.5	13	-11	21	16
Manufactures	63.3	84.1	94.2	0.9	3.6	19	20	23	4
Chemicals	2.6	6.2	3.9	0.5	1.0	12	-4	9	9
Other semi-manufactures	5.4	6.4	8.0	0.6	2.9	20	21	20	6
Machinery and transport equipment	25.6	13.7	38.1	0.3	2.8	30	31	40	8
Office and telecom equipment	14.9	8.8	22.2	1.3	5.2	29	25	45	12
Electrical machinery and apparatus	6.2	2.0	9.2	0.5	6.4	37	43	36	-8
Textiles	1.8	8.5	2.7	2.3	4.0	5	-2	21	0
Clothing	8.4	21.5	12.5	7.1	10.6	11	15	4	3
Other consumer goods	19.3	27.4	28.6	2.5	8.9	18	20	17	-1
Toys and games	5.6	9.2	8.4	13.7	36.2	16	27	16	-3
Footwear	1.7	2.6	2.6	2.6	9.3	17	-4	16	2
Travel goods	2.5	4.7	3.7	19.0	46.4	15	20	10	-4
Furniture	1.2	0.8	1.8	0.7	5.1	27	36	32	4
Japan									
Total merchandise imports	57.8	100.0	100.0	5.1	16.6	17	16	29	5
Agricultural products	6.9	23.1	12.0	5.5	12.1	10	14	13	-2
Food	6.0	17.5	10.4	6.2	13.1	11	14	12	0
Mining products	2.9	28.8	5.1	4.4	3.3	-2	-5	47	-10
Manufactures	47.4	47.6	82.1	5.7	24.0	24	17	30	7
Chemicals	1.7	4.5	2.9	3.6	6.7	12	4	22	5
Other semi-manufactures	3.1	2.4	5.3	2.6	21.1	27	15	29	10
Machinery and transport equipment	15.1	3.8	26.1	1.3	15.8	42	19	41	16
Office and telecom equipment	8.1	1.4	14.1	1.5	15.5	47	19	51	26
Electrical machinery and apparatus	4.2	1.2	7.3	3.7	31.1	40	23	37	1
Textiles	2.1	6.7	3.7	19.7	44.9	10	12	18	5
Clothing	14.8	19.9	25.6	27.5	77.1	20	20	29	0
Other consumer goods	10.3	7.5	17.9	4.5	28.7	28	17	22	7
Toys and games	1.9	1.2	3.4	7.6	57.6	30	6	15	7
Footwear	2.0	1.4	3.5	12.5	66.4	28	21	13	4
Travel goods	1.3	1.0	2.3	9.6	43.2	26	22	20	4
Furniture	1.3	0.5	2.3	4.6	34.9	35	34	51	23

Table III.77

Merchandise exports of ASEAN countries by region, 1990-01

(Billion dollars and percentage)

Origin	Destination	ASEAN (10)	All other regions: Total	All other regions: Asia	All other regions: Other regions	World
Value						
ASEAN (10)	1990	28.95	115.24	...	...	144.20
	1995	81.88	239.00	...	...	320.88
	2000	103.05	324.43	...	...	427.48
	2001	90.38	294.88	...	...	385.27
Indonesia	1990	2.57	23.11	15.31	7.80	25.68
	1995	6.50	38.92	22.15	16.77	45.42
	2000	10.88	51.24	28.93	22.31	62.12
	2001	9.51	46.81	26.18	20.64	56.32
Malaysia	1990	8.62	20.83	9.65	11.18	29.45
	1995	20.41	53.51	22.83	30.68	73.91
	2000	26.06	72.08	32.93	39.15	98.14
	2001	22.13	65.79	30.47	35.33	87.92
Philippines	1990	0.59	7.58	2.59	4.98	8.17
	1995	2.36	15.14	5.04	10.10	17.50
	2000	6.24	33.54	12.42	21.12	39.78
	2001	4.99	27.14	10.97	16.17	32.13
Singapore a	1990	13.57	39.16	15.16	24.00	52.73
	1995	38.24	80.03	34.81	45.21	118.27
	2000	41.53	96.27	45.00	51.27	137.80
	2001	35.99	85.76	42.23	43.53	121.75
Thailand	1990	2.75	20.32	6.78	13.54	23.07
	1995	12.33	44.11	18.17	25.95	56.44
	2000	13.38	55.68	23.44	32.24	69.06
	2001	12.60	52.51	22.06	30.45	65.11
Share						
ASEAN (10)	1990	20.1	79.9	...	...	100.0
	2001	23.5	76.5	...	...	100.0
Indonesia	1990	1.8	16.0	10.6	5.4	17.8
	2001	2.5	12.2	15.4	11.6	14.6
Malaysia	1990	6.0	14.4	6.7	7.8	20.4
	2001	5.7	17.1	7.9	9.2	22.8
Philippines	1990	0.4	5.3	1.8	3.5	5.7
	2001	1.3	7.0	2.8	4.2	8.3
Singapore	1990	9.4	27.2	10.5	16.6	36.6
	2001	9.3	22.3	11.0	11.3	31.6
Thailand	1990	1.9	14.1	4.7	9.4	16.0
	2001	3.3	13.6	5.7	7.9	16.9
Annual percentage change						
ASEAN (10)	1990-01	11	9	...	...	9
	2000	28	16	...	...	19
	2001	-12	-9	...	...	-10
Indonesia	1990-01	13	7	5	9	7
	2000	31	27	32	21	28
	2001	-13	-9	-10	-7	-9
Malaysia	1990-01	9	11	11	11	10
	2000	29	12	19	7	16
	2001	-15	-11	-14	-10	-10
Philippines	1990-01	21	12	14	11	13
	2000	20	7	10	5	9
	2001	-20	-19	-12	-23	-19
Singapore	1990-01	9	7	10	6	8
	2000	29	17	24	11	20
	2001	-13	-11	-6	-15	-12
Thailand	1990-01	15	9	11	8	10
	2000	23	17	27	11	18
	2001	-6	-6	-6	-6	-6

a Includes significant re-exports.

Table III.78

Merchandise imports of ASEAN countries by region, 1990-01

(Billion dollars and percentage)

Destination	Origin	ASEAN (10)	All other regions: Total	All other regions: Asia	All other regions: Other regions	World
Value						
ASEAN (10)	1990	26.31	136.02	...	...	162.33
	1995	66.88	288.43	...	...	355.31
	2000	86.80	280.33	...	...	367.13
	2001	76.54	259.62	...	...	336.16
Indonesia	1990	1.88	19.96	10.12	9.83	21.84
	1995	4.22	36.41	18.13	18.29	40.63
	2000	6.49	27.03	13.76	13.27	33.52
	2001	5.46	25.50	12.82	12.68	30.96
Malaysia	1990	5.65	23.61	12.12	11.49	29.26
	1995	13.52	64.17	34.85	29.32	77.69
	2000	19.72	49.62	33.73	15.89	82.20
	2001	16.72	49.62	29.82	19.81	74.08
Philippines	1990	1.37	11.67	5.22	6.45	13.04
	1995	3.36	24.98	12.64	12.34	28.34
	2000	5.46	28.34	14.55	13.80	33.81
	2001	4.99	26.37	13.94	12.43	31.36
Singapore a	1990	12.45	48.32	20.78	27.54	60.77
	1995	31.50	93.01	44.38	48.63	124.51
	2000	39.82	94.73	41.83	52.89	134.55
	2001	34.39	81.61	33.38	48.23	116.00
Thailand	1990	4.37	28.68	15.82	12.86	33.05
	1995	9.51	61.28	32.62	28.66	70.79
	2000	10.31	51.62	26.88	24.73	61.92
	2001	10.04	52.02	25.76	26.26	62.06
Share						
ASEAN (10)	1990	16.2	83.8	...	...	100.0
	2001	22.8	77.2	...	...	100.0
Indonesia	1990	1.2	12.3	6.2	6.1	13.5
	2001	1.6	7.6	3.8	3.8	9.2
Malaysia	1990	3.5	14.5	7.5	7.1	18.0
	2001	5.0	14.8	8.9	5.9	22.0
Philippines	1990	0.8	7.2	3.2	4.0	8.0
	2001	1.5	7.8	4.1	3.7	9.3
Singapore	1990	7.7	29.8	12.8	17.0	37.4
	2001	10.2	24.3	9.9	14.3	34.5
Thailand	1990	2.7	17.7	9.7	7.9	20.4
	2001	3.0	15.5	7.7	7.8	18.5
Annual percentage change						
ASEAN (10)	1990-01	10	6	...	...	7
	2000	28	21	...	...	22
	2001	-12	-7	...	...	-8
Indonesia	1990-01	10	2	2	2	3
	2000	36	41	61	24	40
	2001	-16	-6	-7	-4	-8
Malaysia	1990-01	10	7	9	5	9
	2000	28	0	26	-31	27
	2001	-15	0	-12	25	-10
Philippines	1990-01	12	8	9	6	8
	2000	15	2	-1	6	4
	2001	-9	-7	-4	-10	-7
Singapore	1990-01	10	5	4	5	6
	2000	27	19	24	15	21
	2001	-14	-14	-20	-9	-14
Thailand	1990-01	8	6	5	7	6
	2000	29	22	25	18	23
	2001	-3	1	-4	6	0

a Includes significant imports for re-export.

Table III.79

Leading exporters and importers of commercial services in Asia, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
Exporters							
Asia	302.6	100.0	100.0	8	4	12	-1
Japan	63.7	31.5	21.0	4	-2	13	-7
Hong Kong, China	42.4	13.8	14.0	8	2	14	2
China	32.9	4.4	10.9	17	10	15	9
Korea, Rep. of	29.6	7.0	9.8	11	4	15	0
Singapore	26.4	9.7	8.7	7	25	13	-2
India	20.4	3.5	6.7	14	27	26	15
Taipei, Chinese	20.3	5.3	6.7	10	3	16	2
Australia	15.7	7.5	5.2	4	7	5	-12
Malaysia	14.0	2.9	4.6	13	4	16	3
Thailand	12.9	4.8	4.3	7	11	-5	-6
Indonesia a	5.2	1.9	1.7	7	3	14	…
New Zealand	4.2	1.8	1.4	5	15	1	-2
Macao, China	3.8	1.1	1.2	9	-5	21	15
Philippines	3.1	2.2	1.0	1	…	-18	-21
Viet Nam a	2.7	…	0.9	…	-5	8	…
Importers							
Asia	355.0	100.0	100.0	6	5	8	-3
Japan	107.0	47.1	30.1	2	3	1	-7
China	39.0	2.3	11.0	23	17	16	9
Korea, Rep. of	33.1	5.6	9.3	11	11	23	0
Hong Kong, China	25.1	6.2	7.1	8	-5	3	-2
Taipei, Chinese	23.7	7.8	6.7	5	0	11	-8
India	23.4	3.3	6.6	13	20	15	19
Singapore	20.0	4.8	5.6	8	7	13	-6
Malaysia	16.5	3.0	4.7	11	13	14	0
Australia	16.4	7.5	4.6	2	6	-1	-8
Thailand	14.5	3.4	4.1	8	13	14	-6
Indonesia a	14.5	3.3	4.1	9	-3	30	…
Philippines	5.1	1.0	1.4	10	…	-19	-16
New Zealand	4.2	1.8	1.2	2	2	-1	-6
Viet Nam a	3.2	…	0.9	…	-3	7	…
Pakistan a	2.0	1.0	0.6	1	-7	11	…

a Includes Secretariat estimates.

Table III.80

Trade in commercial services of Japan, 2001

(Billion dollars and percentage)

	Exports			Imports		
	Value	Share		Value	Share	
	2001	1995	2001	2001	1995	2001
Total commercial services	63.7	100.0	100.0	107.0	100.0	100.0
Transportation	24.0	35.2	37.7	32.4	29.6	30.3
Sea transport	16.4	23.1	25.8	20.4	19.0	19.1
Air transport	7.6	12.1	11.9	11.9	10.6	11.1
Other transport	0.0	0.0	0.0	0.1	0.0	0.1
Travel	3.3	5.0	5.2	26.5	30.2	24.8
Other commercial services	36.4	59.8	57.1	48.1	40.2	45.0
Communication services	0.7	0.8	1.1	1.1	0.7	1.0
Construction services	4.8	10.3	7.5	3.8	2.6	3.6
Insurance services	-0.1	0.5	-0.2	2.6	2.1	2.5
Financial services	2.7	0.5	4.3	1.6	0.4	1.5
Computer and information services	1.4	...	2.2	2.6	...	2.5
Royalties and licence fees	10.5	9.4	16.4	11.1	7.7	10.4
Other business services	16.2	38.2	25.5	23.8	26.2	22.2
Personal, cultural, and recreational services	0.1	0.2	0.2	1.4	0.5	1.3

Table III.81

Trade in commercial services of China, 2001

(Billion dollars and percentage)

	Exports			Imports		
	Value	Share		Value	Share	
	2001	1997	2001	2001	1997	2001
Total commercial services	32.9	100.0	100.0	39.0	100.0	100.0
Transportation	4.6	12.1	14.1	11.3	35.9	29.0
Sea transport	2.0	4.0	6.1	6.9	24.5	17.7
Air transport	1.3	2.7	3.9	2.4	6.5	6.1
Other transport	1.4	5.3	4.1	2.1	4.8	5.3
Travel	17.8	49.3	54.1	13.9	29.3	35.6
Other commercial services	10.5	38.7	31.8	13.8	34.8	35.4
Communication services	0.3	1.1	0.8	0.3	1.0	0.8
Construction services	0.8	2.4	2.5	0.8	4.4	2.2
Insurance services	0.2	0.7	0.7	2.7	3.8	6.9
Financial services	0.1	0.1	0.3	0.1	1.2	0.2
Computer and information services	0.5	0.3	1.4	0.3	0.8	0.9
Royalties and licence fees	0.1	0.2	0.3	1.9	2.0	5.0
Other business services	8.4	33.7	25.7	7.5	21.5	19.2
Personal, cultural, and recreational services	0.0	0.0	0.1	0.1	0.2	0.1

Table III.82

Trade in commercial services of Taipei, Chinese, 2001

(Billion dollars and percentage)

	Exports			Imports		
	Value	Share		Value	Share	
	2001	1995	2001	2001	1995	2001
Total commercial services	20.3	100.0	100.0	23.7	100.0	100.0
Transportation	3.5	30.5	17.3	5.5	27.6	23.3
Sea transport	2.1	17.0	10.3	3.2	19.8	13.4
Air transport	1.4	13.5	7.0	2.3	7.8	9.9
Other transport	...	...	...	...	...	...
Travel	4.0	22.0	19.7	7.3	36.8	30.9
Other commercial services	12.8	47.5	63.0	10.8	35.6	45.8
Communication services	0.3	3.8	1.3	0.4	2.1	1.9
Construction services	0.1	0.7	0.5	0.4	1.2	1.7
Insurance services	0.4	2.8	2.0	0.7	2.2	3.1
Financial services	0.5	...	2.5	0.7	...	3.0
Computer and information services	0.2	...	0.8	0.3	0.2	1.1
Royalties and licence fees	0.3	1.6	1.7	1.5	4.1	6.3
Other business services	11.0	38.6	54.1	6.6	25.1	27.9
Personal, cultural, and recreational services	0.0	0.0	0.2	0.2	0.7	0.8

Table III.83

Ratio of exports of goods and commercial services to GDP of least-developed countries, 1990 and 2000

(Million dollars and percentage)

	Value	Ratio to GDP					
	GDP	Goods and commercial services		Goods		Commercial services	
	2000	1990	2000	1990	2000	1990	2000
Total LDCs	166200	17	26	14	22	2	4
Afghanistan	…	…	…	…	…	…	…
Angola	8828	38	93	38	89	1	3
Bangladesh	47106	7	14	6	14	1	1
Benin	2168	19	24	13	18	6	6
Bhutan	487	33	30	23	23	10	6
Burkina Faso	2192	11	11	10	9	1	1
Burundi	689	7	7	6	7	1	0
Cambodia	3183	…	47	…	42	…	5
Cape Verde	558	15	22	6	4	9	18
Central African Republic	963	11	18	10	17	1	1
Chad	1407	15	18	13	16	1	2
Comoros	202	10	24	7	6	2	18
Congo, Dem. Rep. of	4481	27	…	25	…	2	…
Djibouti	553	…	27	…	14	…	14
Equatorial Guinea	1341	32	97	29	96	3	1
Eritrea	608	…	14	…	4	…	10
Ethiopia	6391	8	14	4	8	4	6
Gambia	422	52	59	35	35	17	24
Guinea	3012	27	25	24	24	3	1
Guinea-Bissau	215	9	32	8	30	2	2
Haiti	4050	10	12	9	8	1	4
Kiribati	43	34	…	10	…	23	…
Lao People's Dem. Rep.	1709	10	30	9	23	1	7
Lesotho	899	15	27	10	23	6	4
Liberia	…	…	…	…	…	…	…
Madagascar	3878	15	29	10	21	4	8
Malawi	1697	24	26	22	24	2	3
Maldives	556	90	82	39	20	51	62
Mali	2298	17	27	14	24	3	4
Mauritania	935	45	40	44	37	1	3
Mozambique	3754	9	18	5	10	4	9
Myanmar	7337	11	29	8	22	3	7
Nepal	5497	11	22	6	14	5	7
Niger	1826	21	14	20	14	1	1
Rwanda	1794	5	6	4	4	1	2
Samoa	236	21	25	4	6	17	20
Sao Tome and Principe	46	12	33	7	7	5	26
Senegal	4371	23	29	16	21	6	8
Sierra Leone	636	22	8	17	6	5	2
Solomon Islands	275	42	44	33	28	9	16
Somalia	…	…	…	…	…	…	…
Sudan	11516	3	16	2	16	1	0
Tanzania, United Rep. of	9027	13	14	10	7	3	7
Togo	1219	39	47	32	43	7	4
Tuvalu	…	…	…	…	…	…	…
Uganda	6170	…	10	…	7	…	3
Vanuatu	212	46	69	9	14	37	56
Yemen	8532	30	50	29	48	2	2
Zambia	2911	41	30	38	26	3	4
Memorandum item:							
World	…	18	23	15	18	4	4

Note: Trade in goods is derived from balance of payments statistics and does not correspond to the merchandise trade statistics given elsewhere in this report. Data are estimated for most countries. See the Technical Notes.

Table III.84

Merchandise exports and imports of least-developed countries by selected country grouping, 2001

(Million dollars and percentage)

	Exports					Imports				
	Value	Annual Percentage Change				Value	Annual Percentage Change			
	2000	1990-01	1999	2000	2001	2000	1990-01	1999	2000	2001
Total LDCs	36232	7	11	28	1	41818	5	4	4	4
Oil exporters	15057	9	51	65	-10	7582	7	6	9	4
Angola	7886	5	46	53	-15	3215	7	50	3	4
Yemen	4079	15	63	67	-21	2324	3	-7	16	-3
Sudan	1807	14	31	132	-10	1510	9	-27	9	4
Equatorial Guinea	1285	36	77	71	53	533	25	20	26	31
Exporters of manufactures	11847	15	7	24	9	17125	9	6	9	3
Bangladesh	6399	13	6	17	2	8360	8	10	9	0
Myanmar	1620	19	6	44	40	2371	24	-14	3	17
Cambodia	1327	30	9	35	17	1525	23	13	26	3
Madagascar	824	10	9	41	14	997	5	7	34	17
Nepal	804	12	27	34	-8	1573	7	14	11	-6
Lao People's Dem. Rep.	330	14	-16	6	2	535	10	-5	2	3
Haiti	323	5	13	-5	-14	1036	11	29	1	-2
Lesotho	220	15	-11	28	28	728	0	-10	-7	-6
Exporters of commodities	8147	3	-5	-3	12	14780	3	3	-4	5
Senegal	920	3	6	-10	17	1521	2	5	3	-1
Guinea	750	2	-3	3	10	612	-2	2	-13	-2
Zambia	746	-4	-7	-1	17	750	-2	-11	12	28
Tanzania, United Rep. of	663	8	-8	22	18	1524	4	7	-2	9
Mali	545	7	3	-5	36	592	1	9	-28	11
Liberia	500	6	-18	0	23	290	3	4	4	0
Ethiopia	482	3	-20	7	-13	1260	0	-5	-9	-17
Uganda	461	11	4	-11	-1	1517	17	-5	13	5
Benin	392	3	2	-7	-3	613	9	11	-18	6
Mozambique	364	17	14	38	93	1158	2	44	2	-8
Togo	363	4	-1	-7	19	565	1	2	-5	10
Malawi	355	-3	-14	-20	-13	569	0	21	-18	-3
Mauritania	300	-5	7	-20	-7	320	-1	-15	5	5
Niger	283	0	-14	-1	-3	372	1	7	-8	12
Burkina Faso	213	1	-20	-16	-18	550	2	-21	-5	19
Chad	183	-1	-23	-9	-10	323	8	-11	2	96
Central African Republic	155	1	-3	6	-15	120	-2	-10	-11	8
Bhutan	116	5	7	0	0	180	8	36	-1	0
Solomon Islands	85	2	16	-42	1	125	2	-31	14	-10
Maldives	76	3	-14	19	-2	389	10	14	-3	1
Guinea-Bissau	62	10	89	22	-11	62	-3	1	-10	5
Eritrea	35	-	-29	75	-14	471	-	-6	-5	0
Vanuatu	25	-10	-24	-4	-76	57	-2	9	-41	33
Kiribati	17	21	-5	175	45	41	3	9	17	-12
Samoa	14	5	33	-30	14	106	4	19	-8	23
Djibouti	13	-6	0	8	0	165	-3	-3	8	-3
Cape Verde	11	5	20	-8	-9	238	5	9	-4	-2
Gambia	8	-11	-74	14	13	190	1	-22	-1	5
Comoros	7	-10	27	40	-14	72	5	70	-10	18
Sao Tome and Principe	3	0	-20	-25	33	22	1	-8	0	5
Tuvalu	0	-7	86	-81	68	6	2	-7	21	-8
Other LDCs a	1181	-9	-19	-12	-7	2331	-3	-7	8	1
Memorandum Item:										
World b	6430100	5	4	13	-4	6710700	6	4	14	-4

a Other LDCs comprise Congo, Dem. Rep. of, Somalia, Rwanda, Afghanistan, Burundi and Sierra Leone. Their trade data are strongly affected by conflict and civil strife.
b Includes significant re-exports or imports for re-export.
Note : Data for 2001 are largely estimated.

Table III.85

Imports of agricultural products and manufactures of European Union, Asia and North America from least-developed countries, 2001

(Million dollars and percentage)

	Value	Annual percentage change			Value	Annual percentage change			Value	Annual percentage change	
	2000	2000	2001		2000	2000	2001		2000	2000	2001
Agricultural products											
	European Union (15)				Asia a,b				North America		
Total LDCs	2693	2	-8	Total LDCs	2415	4	…	Total LDCs	531	9	-2
Senegal	309	-13	-3	Myanmar	666	20	…	Bangladesh	159	27	-37
Tanzania, United Rep. of	255	47	-10	Tanzania, United Rep. of	197	-3	…	Myanmar	53	102	-4
Madagascar	249	-1	2	Bangladesh	145	5	…	Malawi	53	-29	40
Uganda	198	-21	2	Equatorial Guinea	109	-11	…	Liberia	47	45	-6
Malawi	193	-14	-13	Mozambique	97	44	…	Madagascar	44	32	99
Bangladesh	186	43	-6	Madagascar	92	69	…	Ethiopia	32	-5	2
Ethiopia	178	12	-48	Mauritania	91	-29	…	Mozambique	26	188	-70
Mozambique	116	19	-13	Lao People's Dem. Rep.	86	10	…	Uganda	24	7	-20
Sudan	102	-1	-10	Sudan	74	28	…	Haiti	18	0	-30
Mauritania	86	2	28	Mali	72	-30	…	Tanzania, United Rep. of	15	-28	5
Liberia	80	87	13	Solomon Islands	66	-39	…				
Congo, Dem. Rep. of	58	-18	-25	Ethiopia	65	-7	…				
Myanmar	55	5	10	Malawi	62	60	…				
Chad	52	-12	-4	Cambodia	58	-16	…				
Mali	45	-25	-39	Liberia	44	337	…				
Afghanistan	45	104	-64	Yemen	38	61	…				
Zambia	44	-1	14	Senegal	34	1	…				
Burkina Faso	41	-4	-8	Togo	33	-35	…				
Benin	39	13	6	Uganda	31	25	…				
Central African Republic	38	12	10	Vanuatu	20	32	…				
Burundi	31	-7	-49								
Others (28)	292	-8	-2	Others (29)	336	-8	…	Others (39)	60	-35	20
Manufactures											
	European Union (15)				North America				Asia a		
Total LDCs	6575	13	3	Total LDCs	4997	35	4	Total LDCs	694	-21	…
Bangladesh	2666	25	5	Bangladesh	2560	26	-2	Bangladesh	287	9	…
Congo, Dem. Rep. of	746	-3	-8	Cambodia	887	39	16	Cambodia	176	-3	…
Angola	646	16	-19	Myanmar	494	104	-1	Myanmar	111	18	…
Cambodia	326	16	31	Haiti	292	-1	-10	Nepal	44	-66	…
Myanmar	320	74	17	Nepal	258	31	-15				
Liberia	300	-21	88	Lesotho	151	…	53				
Madagascar	279	6	0	Madagascar	122	127	63				
Guinea	171	27	-25	Maldives	104	77	5				
Central African Republic	169	8	-44								
Nepal	163	1	-26								
Lao People's Dem. Rep.	112	7	7								
Sierra Leone	92	62	-66								
Niger	84	-31	-15								
Ethiopia	46	50	11								
Tanzania, United Rep. of	44	98	16								
Others (34)	410	-9	13	Others (41)	129	-31	2	Others (45)	75	-64	…

a China, Hong Kong, India, Japan, Malaysia, Republic of Korea, Singapore, Taipei Chinese and Thailand

b Includes Secretariat estimates for India

Table III.86

Exports of commercial services of least-developed countries by category, 2000

(Million dollars and percentage)

	Value	Share in commercial services					
	Commercial services	Transport		Travel		Other services	
	2000	1990	2000	1990	2000	1990	2000
Total LDCs	5900	29	21	35	44	36	34
Afghanistan	…	…	…	…	…	…	…
Angola	295	49	30	21	0	31	70
Bangladesh	283	13	32	6	18	81	50
Benin	126	33	13	50	60	16	27
Bhutan	30	…	…	…	…	…	…
Burkina Faso	28	37	17	34	48	29	35
Burundi	2	38	43	52	38	9	19
Cambodia	159	…	44	…	40	…	16
Cape Verde	99	50	46	20	41	30	13
Central African Republic	11	51	3	16	36	33	61
Chad	25	18	5	34	50	47	45
Comoros	36	63	13	29	80	8	6
Congo, Dem. Rep. of	…	30	…	30	…	40	…
Djibouti	75	65	57	16	9	19	33
Equatorial Guinea	10	…	1	…	81	…	18
Eritrea	61	…	…	…	…	…	…
Ethiopia	387	81	56	2	15	17	30
Gambia	101	9	9	88	78	3	13
Guinea	36	14	54	33	5	53	41
Guinea-Bissau	4	5	9	0	52	95	39
Haiti	151	20	2	79	64	1	34
Kiribati	…	40	…	13	…	47	…
Lao People's Dem. Rep.	111	75	18	24	80	1	1
Lesotho	36	14	1	51	67	35	31
Liberia	…	…	…	…	…	…	…
Madagascar	314	32	16	31	39	37	45
Malawi	44	46	18	43	78	11	4
Maldives	345	10	6	88	93	2	1
Mali	83	31	37	54	43	15	21
Mauritania	28	35	3	65	83	0	15
Mozambique	325	61	30	0	23	39	47
Myanmar	510	10	17	21	33	69	50
Nepal	410	4	15	66	38	31	47
Niger	12	5	3	59	58	35	39
Rwanda	39	56	31	33	60	11	8
Samoa	46	15	3	61	88	24	9
Sao Tome and Principe	12	14	0	59	70	28	30
Senegal	330	19	10	43	49	38	40
Sierra Leone	15	10	26	76	46	14	28
Solomon Islands	44	13	3	38	9	49	88
Somalia	…	…	…	…	…	…	…
Sudan	24	14	63	16	22	70	15
Tanzania, United Rep. of	615	20	9	36	61	44	29
Togo	46	27	24	51	13	22	63
Tuvalu	…	…	…	…	…	…	…
Uganda	182	…	13	…	82	…	5
Vanuatu	118	10	23	68	46	21	31
Yemen	174	27	12	49	42	24	46
Zambia	114	69	37	14	58	18	5
Memorandum item:							
World	1465100	29	24	34	32	38	44

Note: Data are estimated for most countries.

Appendix B:

International Trade by Sector

THE FOLLOWING APPENDIX is provided by the World Trade Organization (© WTO) and presents comprehensive, comparable, and up-to-date statistics on trade in merchandise and commercial services for an assessment of world trade flows by country, region, and main product groups or service categories. Compiled from Section IV of the WTO International Trade Statistics, the appendix retains the WTO organizational structure (i.e, charts and tables are labeled IV) for easy reference within the WTO publications. For further information contact:

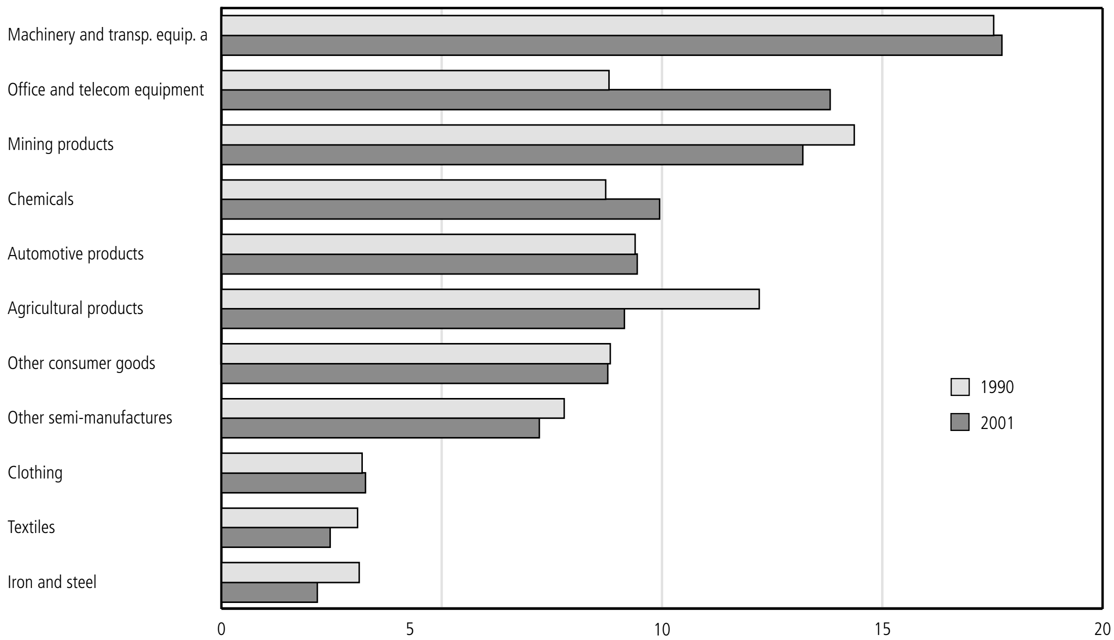
WORLD TRADE ORGANIZATION
Centre William Rappard, Rue de Lausanne 154,
CH-1211 Geneva 21, Switzerland • www.wto.org

1. Overview

Chart IV.1

World merchandise exports by product, 1990 and 2001

(Share based on value)



a Excluding automotive products and office and telecom equipment (throughout this report they are included with machinery and transport equipment, unless otherwise noted).

Table IV.1

World merchandise exports by product, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change		
	2001	1990	2001	1990-01	2000	2001
All products a	5984	100.0	100.0	5	13	-4
Agricultural products	547	12.2	9.1	3	1	-1
Food	437	9.3	7.3	3	-2	1
Raw materials	110	2.9	1.8	1	10	-9
Mining products	790	14.4	13.2	4	46	-8
Ores and other minerals	63	1.6	1.1	2	14	-1
Fuels	616	10.7	10.3	5	57	-8
Non-ferrous metals	111	2.1	1.9	4	20	-9
Manufactures	4477	70.4	74.8	6	10	-4
Iron and steel	130	3.1	2.2	2	14	-8
Chemicals	595	8.7	9.9	7	9	2
Other semi-manufactures	432	7.8	7.2	5	7	-3
Machinery and transport equipment	2453	35.7	41.0	7	12	-6
Automotive products	565	9.4	9.4	5	4	-2
Office and telecom equipment	828	8.8	13.8	10	22	-14
Other machinery and transport equipment	1061	17.5	17.7	5	8	-2
Textiles	147	3.1	2.5	3	6	-5
Clothing	195	3.2	3.3	6	7	-1
Other consumer goods	525	8.8	8.8	5	8	-3

a Includes unspecified products. They accounted for 3 per cent of world merchandise exports in 2001.

Chart IV.2

World exports of commercial services by category, 1990, 1995 and 2001

(Share based on value)

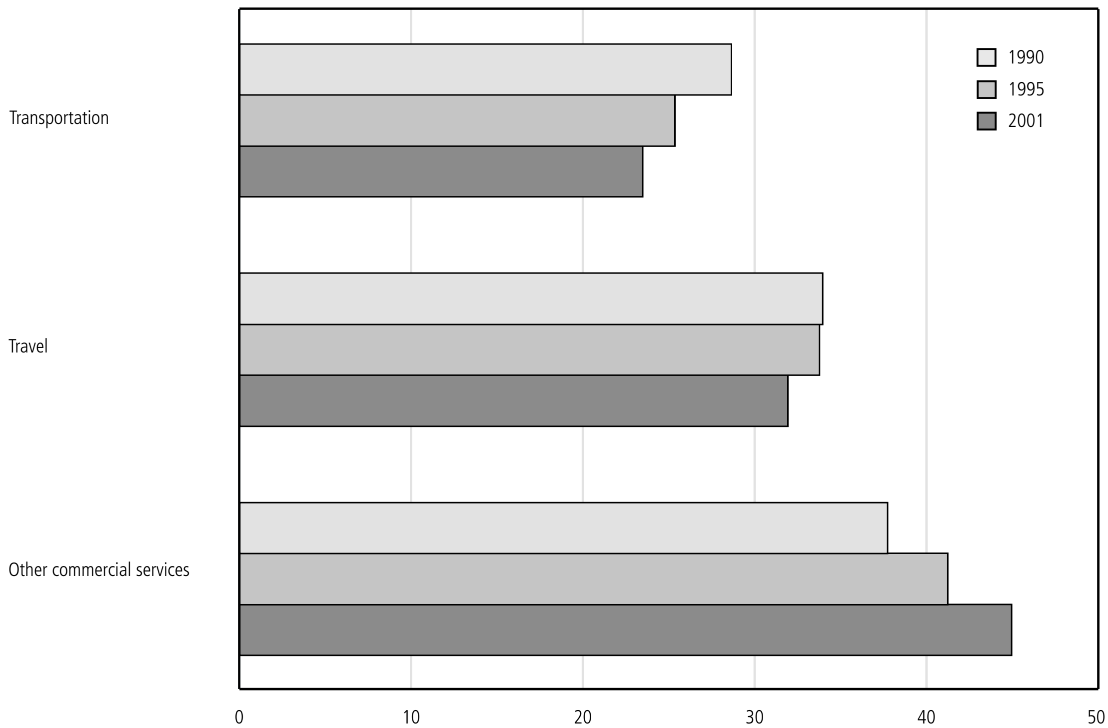


Table IV.2

World exports of commercial services by category, 2001

(Billion dollars and percentage)

	Value	Share		Annual percentage change			
	2001	1990	2001	1990-01	1999	2000	2001
All commercial services	1460	100.0	100.0	6	3	6	0
Transportation	340	28.5	23.4	4	3	8	-1
Travel	465	33.8	31.8	5	4	4	-2
Other commercial services	655	37.6	44.8	8	2	7	1

Note: Exports of transportation services are significantly under-reported. See the Technical Notes.

2. Agricultural Products

Table IV.3

World trade in agricultural products, 2001

(Billion dollars and percentage)

Value	547
Annual percentage change	
1980-85	-2
1985-90	9
1990-01	3
2000	1
2001	-1
Share in world merchandise trade	9.1
Share in world exports of primary products	40.9

Table IV.4

Major regional flows in world exports of agricultural products, 2001

(Billion dollars and percentage)

	Value	Annual percentage change		
	2001	1990-01	2000	2001
Intra-Western Europe	172.8	2	-5	-2
Intra-Asia	60.5	4	6	-2
North America to Asia	34.0	1	11	-6
Intra-North America	33.6	6	5	1
Latin America to Western Europe	17.7	3	-4	0
Latin America to North America	17.1	5	4	-7

Table IV.5

Share of agricultural products in trade in total merchandise and in primary products by region, 2001

(Percentage)

	Exports	Imports
Share of agricultural products in total merchandise		
World	9.1	9.1
North America	10.5	6.0
Latin America	18.1	9.3
Western Europe	9.2	9.9
C./E. Europe/Baltic States/CIS	8.7	10.5
Africa	14.7	15.3
Middle East	3.3	13.4
Asia	6.7	9.7
Share of agricultural products in primary products		
World	40.9	40.9
North America	58.3	32.7
Latin America	45.6	45.7
Western Europe	56.0	46.6
C./E. Europe/Baltic States/CIS	21.0	43.1
Africa	20.5	56.9
Middle East	4.3	62.2
Asia	46.7	35.0

Chart IV.3

Regional shares in world trade in agricultural products, 2001

(Percentage)

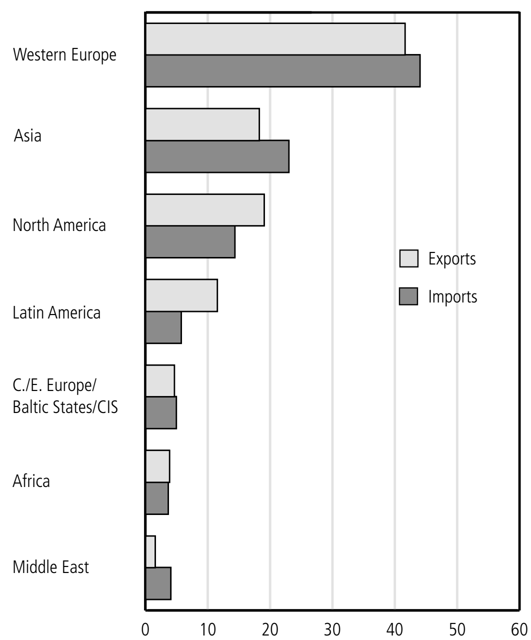


Table IV.6

Exports of agricultural products by region, 2001

(Billion dollars and percentage)

	Value	Share in: Region's exports		Share in: World exports		Annual percentage change		
	2001	1990	2001	1990	2001	1990-01	2000	2001
World	547.5	-	-	100.0	100.0	3	1	-1
Western Europe								
World	227.8	100.0	100.0	45.2	41.6	2	-4	-2
Western Europe	172.8	78.2	75.8	35.3	31.6	2	-5	-2
Asia	13.6	4.8	6.0	2.2	2.5	4	1	-6
North America	12.3	4.6	5.4	2.1	2.2	3	0	0
C./E. Europe/Baltic States/CIS	11.1	3.1	4.9	1.4	2.0	6	-3	14
Africa	7.7	4.1	3.4	1.8	1.4	0	3	-1
Middle East	5.6	3.2	2.4	1.4	1.0	-1	-3	-10
Latin America	3.5	1.6	1.5	0.7	0.6	1	5	-4
North America								
World	103.8	100.0	100.0	19.7	19.0	2	8	-3
Asia	34.0	38.7	32.8	7.6	6.2	1	11	-6
North America	33.6	21.3	32.4	4.2	6.1	6	5	1
Latin America	14.9	8.4	14.3	1.7	2.7	7	8	6
Western Europe	13.8	20.4	13.3	4.0	2.5	-2	6	-7
Africa	2.9	3.2	2.8	0.6	0.5	1	4	-8
Middle East	2.8	3.3	2.7	0.6	0.5	0	13	-12
C./E. Europe/Baltic States/CIS	1.6	4.4	1.5	0.9	0.3	-7	9	14
Asia								
World	99.7	100.0	100.0	17.4	18.2	3	5	-1
Asia	60.5	56.8	60.7	9.9	11.0	4	6	-2
Western Europe	14.1	17.2	14.1	3.0	2.6	1	-1	-4
North America	13.4	11.4	13.4	2.0	2.4	5	11	-3
Middle East	4.7	5.1	4.7	0.9	0.9	2	7	3
Africa	3.1	2.7	3.1	0.5	0.6	4	-3	6
C./E. Europe/Baltic States/CIS	2.0	5.0	2.0	0.9	0.4	-5	7	21
Latin America	1.5	1.5	1.5	0.3	0.3	3	8	9
Latin America								
World	62.7	100.0	100.0	9.6	11.5	4	1	2
Western Europe	17.7	33.5	28.2	3.2	3.2	3	-4	0
North America	17.1	26.2	27.2	2.5	3.1	5	4	-7
Latin America	10.8	11.3	17.2	1.1	2.0	8	6	-2
Asia	9.6	10.1	15.4	1.0	1.8	8	7	11
Middle East	2.8	3.1	4.5	0.3	0.5	8	0	37
Africa	2.2	2.5	3.5	0.2	0.4	7	-4	35
C./E. Europe/Baltic States/CIS	2.2	13.2	3.5	1.3	0.4	-8	-23	55
Africa								
World	20.7	100.0	100.0	4.0	3.8	2	-4	0
Western Europe	10.7	61.2	51.8	2.4	2.0	1	-8	2
Asia	3.9	15.1	18.7	0.6	0.7	4	5	-2
Africa	2.8	11.8	13.5	0.5	0.5	3	1	-2
Middle East	1.3	2.3	6.2	0.1	0.2	12	11	-1
North America	1.0	5.3	4.7	0.2	0.2	1	2	-6
C./E. Europe/Baltic States/CIS	0.6	3.5	3.0	0.1	0.1	1	-20	35
Latin America	0.2	0.4	0.9	0.0	0.0	11	-5	-37
C./E. Europe/Baltic States/CIS a								
World	24.8	100.0	100.0	3.0	4.5	…	4	8
Western Europe	10.1	63.8	40.6	1.9	1.8	2	5	5
C./E. Europe/Baltic States/CIS	8.6	14.1	34.7	0.4	1.6	…	11	6
Asia	3.5	12.1	13.9	0.4	0.6	8	2	2
Middle East	0.7	1.6	2.7	0.0	0.1	12	-14	9
North America	0.7	2.8	2.7	0.1	0.1	6	-21	25
Africa	0.6	2.7	2.3	0.1	0.1	5	6	10
Latin America	0.1	2.7	0.5	0.1	0.0	-8	19	32
Middle East								
World	7.9	100.0	100.0	1.1	1.4	5	1	5
Middle East	4.0	25.5	50.5	0.3	0.7	12	10	13
Western Europe	1.8	46.4	22.8	0.5	0.3	-2	-7	-7
Asia	0.6	6.1	7.9	0.1	0.1	7	-5	-8
All other regions	1.0	18.5	12.2	0.2	0.2	1	-1	6

a Includes the intra trade of the Baltic States and the CIS beginning with 1996.

Table IV.7

Imports of agricultural products of selected economies by region and supplier, 2001

(Million dollars and percentage)

	Canada a						United States				
	Value	Share	Annual percentage change				Value	Share	Annual percentage change		
	2001	2001	1990-01	2000	2001		2001	2001	1990-01	2000	2001
Region						Region					
World	15551	100.0	5	7	2	World	68400	100.0	5	5	-1
North America	10107	65.0	6	10	2	North America	21838	31.9	7	3	1
Western Europe	1751	11.3	3	0	1	Latin America	18228	26.6	4	3	-3
Asia	1722	11.1	5	4	9	Asia	13917	20.3	5	11	-2
Latin America	1576	10.1	4	5	1	Western Europe	12230	17.9	4	3	-1
Africa	187	1.2	3	-12	-12	Africa	1110	1.6	3	7	-6
C./E. Europe/						C./E. Europe/					
Baltic States/CIS	140	0.9	13	-2	-8	Baltic States/CIS	808	1.2	8	1	11
Middle East	39	0.3	3	24	-7	Middle East	270	0.4	8	-1	19
Suppliers						Suppliers					
United States	10103	65.0	6	10	2	Canada	21803	31.9	7	3	1
European Union (15)	1561	10.0	3	1	-1	European Union (15)	11320	16.5	5	4	0
Australia	348	2.2	1	-1	25	Mexico	6679	9.8	31	5	2
Thailand	310	2.0	10	0	3	Thailand	2513	3.7	7	15	-10
Brazil	309	2.0	4	-12	1	Chile	2212	3.2	9	15	1
Above 5	12631	81.2	5	7	2	Above 5	44527	65.1	8	5	0
Mexico	296	1.9	6	6	6	Brazil	2105	3.1	-1	-3	-8
New Zealand	265	1.7	5	2	47	Australia	1933	2.8	3	23	10
China	236	1.5	7	22	4	Netherlands	1888	2.8	6	12	3
Chile	200	1.3	5	12	3	China	1695	2.5	8	17	7
Netherlands	171	1.1	3	11	5	New Zealand	1454	2.1	4	13	5
Colombia	132	0.8	4	12	-19	Indonesia	1399	2.0	4	0	-11
Indonesia	113	0.7	7	-7	1	Colombia	1125	1.6	1	-3	-15
Costa Rica	97	0.6	8	13	9	Ecuador	1051	1.5	1	-25	8
Argentina	93	0.6	8	11	-19	Costa Rica	1050	1.5	7	0	-2
Ecuador	79	0.5	-4	-17	3	India	1008	1.5	9	4	-11
Guatemala	79	0.5	9	42	-23	Argentina	768	1.1	3	-2	-8
India	78	0.5	10	6	-17	Guatemala	735	1.1	2	2	-11
Peru	75	0.5	19	22	34	Philippines	685	1.0	1	-2	-5
South Africa	73	0.5	8	-7	-15	Viet Nam	684	1.0	-	69	26
Uruguay	65	0.4	37	50	27	Japan	637	0.9	3	1	-9
Norway	60	0.4	17	-2	22	Taipei, Chinese	500	0.7	1	-4	-2
Viet Nam	58	0.4	15	67	5	Honduras	480	0.7	2	46	-2
Korea, Rep. of	53	0.3	6	14	8	Dominican Republic	475	0.7	2	4	3
Japan	47	0.3	-1	-2	-13	Korea, Rep. of	426	0.6	5	24	3
Russian Fed.	46	0.3	-	-24	-12	Malaysia	367	0.5	-2	1	-24
Philippines	44	0.3	3	0	-2	Turkey	361	0.5	1	-28	32
Taipei, Chinese	44	0.3	6	7	0	Russian Fed.	358	0.5	-	-13	-4
Malaysia	43	0.3	-4	3	-31	Peru	340	0.5	6	-8	7
Morocco	37	0.2	4	-19	-14	Côte d'Ivoire	255	0.4	3	-8	-14
Switzerland	37	0.2	-1	0	-3	Nicaragua	210	0.3	27	37	-14
Cuba	34	0.2	-10	-16	26	South Africa	203	0.3	8	11	-21
Hong Kong, China	33	0.2	1	3	-6	Norway	178	0.3	0	-4	-18
Côte d'Ivoire	32	0.2	5	-12	-16	Iceland	173	0.3	1	-20	-18
Iceland	30	0.2	18	-6	-33	Venezuela	162	0.2	2	4	-34
Estonia	30	0.2	-	34	-30	Panama	160	0.2	4	-21	1
Turkey	25	0.2	2	-12	9	Israel	159	0.2	5	-7	13
Jamaica	21	0.1	4	5	-9	Switzerland	146	0.2	2	40	-37
Iran, Islamic Rep. of	15	0.1	5	18	-25	El salvador	116	0.2	-1	47	-41
Singapore	14	0.1	-5	-25	17	Singapore	113	0.2	-3	-21	-19
Lithuania	10	0.1	-	-33	-29	Bangladesh	98	0.1	4	28	-36
Above 40	15396	99.0	5	7	2	Above 40	68024	99.5	6	5	-1

a Imports are valued f.o.b.

Table IV.7 *(continued)*

Imports of agricultural products of selected economies by region and supplier, 2001

(Million dollars and percentage)

European Union (15)	Value	Share	Annual percentage change		
	2001	2001	1990-01	2000	2001
Region					
World	235511	100.0	1	-4	-2
Western Europe	163988	69.6	2	-5	-2
Latin America	19960	8.5	1	0	1
Asia	15275	6.5	1	0	-2
North America	13232	5.6	-2	5	-10
Africa	11471	4.9	0	-10	3
C./E. Europe/ Baltic States/CIS	9314	4.0	3	2	5
Middle East	1650	0.7	-2	4	-3
Suppliers					
European Union (15)	155728	66.1	2	-5	-2
United states	9970	4.2	-2	2	-8
Brazil	8083	3.4	3	10	10
Argentina	3778	1.6	0	-6	-1
Canada	3079	1.3	-2	15	-17
Above 5	180638	76.7	1	-4	-3
Norway	2507	1.1	0	-6	-10
China	2356	1.0	-	10	4
Australia	2102	0.9	1	4	11
Turkey	2094	0.9	3	-16	10
Russian Fed.	2030	0.9	-1	15	-1
New Zealand	1860	0.8	0	-9	10
South Africa	1825	0.8	0	-3	14
Poland	1754	0.7	-1	-1	9
Thailand	1714	0.7	0	-1	-6
Indonesia	1677	0.7	2	3	-14
Côte d'Ivoire	1641	0.7	-1	-21	3
Chile	1580	0.7	2	1	7
Switzerland	1544	0.7	0	-3	-2
Hungary	1327	0.6	0	-6	6
Malaysia	1320	0.6	-3	-4	-7
India	1279	0.5	4	5	-8
Morocco	1153	0.5	0	-6	1
Colombia	963	0.4	-3	-13	-12
Czech Rep.	945	0.4	2	-1	0
Iceland	934	0.4	-1	-9	4
Israel	810	0.3	-3	-1	-3
Ecuador	803	0.3	6	-20	6
Cameroon	796	0.3	1	-4	0
Costa Rica	778	0.3	2	-7	-4
Kenya	679	0.3	1	-10	0
Latvia	617	0.3	-	7	-6
Peru	590	0.3	6	9	0
Ukraine	528	0.2	-	19	62
Ghana	496	0.2	2	-21	3
Zimbabwe	478	0.2	3	-17	6
Mexico	455	0.2	3	3	1
Viet Nam	432	0.2	18	-7	-10
Faeroe Islands	421	0.2	1	-7	18
Philippines	412	0.2	-2	-13	2
Japan	405	0.2	-1	2	-4
Above 40	221943	94.2	1	-4	-2

Japan	Value	Share	Annual percentage change		
	2001	2001	1990-01	2000	2001
Region					
World	56940	100.0	1	4	-8
Asia	22377	39.3	1	5	-8
North America	20890	36.7	0	4	-10
Western Europe	6390	11.2	3	3	-7
Latin America	3956	6.9	4	0	-9
C./E. Europe/ Baltic States/CIS	1909	3.4	5	3	-9
Africa	1326	2.3	0	0	-5
Middle East	91	0.2	1	1	-27
Suppliers					
United States	16293	28.6	-1	3	-9
China	6915	12.1	9	13	-2
European Union (15)	5517	9.7	3	4	-7
Canada	4533	8.0	1	11	-12
Australia	3804	6.7	1	5	-6
Above 5	37062	65.1	1	6	-7
Thailand	2776	4.9	3	6	-2
Russian Fed.	1662	2.9	-	3	-12
Korea, Rep. of	1592	2.8	0	-10	-18
Indonesia	1503	2.6	2	4	-6
Chile	1302	2.3	7	6	-7
New Zealand	1140	2.0	0	5	-7
Brazil	1068	1.9	2	3	-11
Taipei, Chinese	1049	1.8	-7	0	-15
Malaysia	753	1.3	-9	-5	-25
Philippines	692	1.2	-1	-1	-13
India	631	1.1	3	10	-28
Norway	620	1.1	9	-11	-4
Viet Nam	608	1.1	13	16	-1
South Africa	554	1.0	2	9	19
Mexico	433	0.8	8	5	-3
Singapore	268	0.5	2	9	-10
Morocco	260	0.5	2	5	-13
Argentina	236	0.4	-2	-22	-4
Peru	187	0.3	11	13	67
Ecuador	176	0.3	5	-9	-19
Colombia	160	0.3	1	5	-29
Korea, Dem. People's Rep. (	115	0.2	0	32	-
Sri Lanka	104	0.2	7	76	-13
Iceland	99	0.2	1	4	-31
Papua New Guinea	87	0.2	-2	-16	-36
Guatemala	69	0.1	4	0	-19
Turkey	66	0.1	-2	-5	-13
Greenland	62	0.1	-6	-6	-35
Myanmar	57	0.1	8	18	-26
Panama	54	0.1	-1	142	86
Ethiopia	45	0.1	-	-8	-24
Ghana	45	0.1	-3	-26	0
Honduras	44	0.1	-5	-19	-59
Switzerland	44	0.1	-1	3	13
Mauritania	43	0.1	-8	-31	-46
Above 40	55666	97.8	1	4	-8

Table IV.8

Leading exporters and importers of agricultural products, 2001

(Billion dollars and percentage)

	Value	Share in world exports/imports			Annual percentage change			
	2001	1980	1990	2001	1990-01	1999	2000	2001
Exporters								
European Union (15)	213.53	32.8	42.4	39.0	2	-3	-4	-2
Extra-exports	57.81	10.3	10.9	10.6	2	-5	0	-2
United States	70.02	17.0	14.3	12.8	2	-6	8	-2
Canada	33.57	5.0	5.4	6.1	4	4	7	-3
Brazil	18.43	3.4	2.4	3.4	6	-6	-3	19
China	16.63	1.4	2.4	3.0	5	-1	15	1
Australia	16.56	3.3	2.8	3.0	3	5	8	1
Argentina	12.20	1.9	1.8	2.2	5	-14	0	2
Thailand	12.06	1.2	1.9	2.2	4	2	4	-2
Mexico	9.07	0.8	0.8	1.7	9	0	12	0
Russian Fed. a	8.17	-	-	1.5	-	1	19	9
New Zealand	7.97	1.3	1.4	1.5	3	1	4	4
Malaysia	7.19	2.0	1.8	1.3	0	-3	-13	-10
Indonesia	7.02	1.6	1.0	1.3	5	-2	3	-10
Chile	6.97	0.4	0.7	1.3	9	6	8	9
India b	6.41	0.8	0.8	1.2	6	-6	10	...
Above 15	445.80	72.8	80.0	81.4	-	-	-	-
Importers								
European Union (15)	235.51	42.9	47.1	39.7	1	-4	-4	-2
Extra-imports	79.78	21.2	17.5	13.5	0	-6	-2	-1
United States	68.40	8.7	9.0	11.5	5	6	5	-1
Japan	56.94	9.6	11.4	9.6	1	6	4	-8
China	20.12	1.9	1.8	3.4	9	10	41	3
Canada c	15.55	1.8	2.0	2.6	5	2	7	2
Mexico	12.79	1.2	1.2	2.2	8	4	...	11
Korea, Rep. of	12.50	1.5	2.2	2.1	3	19	16	-3
Russian Fed. a	11.40	-	-	1.9		-25	-5	17
Hong Kong, China	11.06	-	-	-	3	-11	4	-6
retained imports	6.43	1.0	1.0	1.1	3	-10	4	-1
Taipei, Chinese	6.99	1.1	1.4	1.2	1	0	1	-11
Switzerland	5.65	1.2	1.3	1.0	0	-1	-4	-3
Indonesia	5.35	0.6	0.5	0.9	9	16	5	-7
Saudi Arabia	5.01	1.5	0.8	0.8	3	2	13	-12
Malaysia	4.83	0.5	0.5	0.8	7	8	3	5
Thailand	4.83	0.3	0.7	0.8	4	6	13	8
Above 15	472.32	73.6	81.0	79.6	-	-	-	-

a Includes Secretariat estimates.

b 2000 instead of 2001.

c Imports are valued f.o.b.

Table IV.9

Exports of agricultural products of selected economies, 1990-01

(Million dollars and percentage)

	Value					Share in economy's total merchandise exports	
	1990	1995	1999	2000	2001	1990	2001 a
World	414610	583000	547960	552240	547460	12.2	9.1
Argentina	7482	11349	11968	11933	12199	60.6	45.8
Australia	11628	14717	15292	16446	16563	29.3	26.1
Bangladesh	329	446	386	418	503	19.7	7.7
Belize	99	131	143	...	...	91.7	86.3
Bolivia	245	328	395	457	428	26.5	33.3
Brazil	9779	15673	15980	15467	18431	31.1	31.7
Bulgaria	...	1304	736	605	600	...	11.8
Cameroon	723	839	816	659	666	36.1	38.1
Canada	22339	32214	32599	34789	33574	17.5	12.9
Chile	2779	5922	5917	6399	6966	33.2	39.9
China	10060	14997	14209	16384	16626	16.2	6.2
Colombia	2514	3695	3341	3121	2884	37.2	23.5
Costa Rica	927	1848	1951	1812	1668	64.0	33.3
Côte d'Ivoire	2374	2793	2800	2308	...	77.3	59.4
Czech Rep.	-	2072	1773	1901	1942	-	5.8
Ecuador	1236	2389	2579	1948	2219	45.5	49.4
Egypt	669	552	591	...	635	19.2	15.4
El Salvador	237	574	497	577	433	40.8	15.1
Ethiopia	...	362	409	406	...	...	84.2
European Union (15)	175847	238990	227014	218592	213533	11.7	9.3
Intra-exports	130571	174404	167995	159636	155728	13.3	11.0
Extra-exports	45276	64586	59019	58956	57805	8.6	6.6
Guatemala	849	1342	1517	1622	1337	73.0	54.2
Honduras	680	813	595	767	691	81.8	52.4
Hong Kong, China	4556	7451	5531	5693	5032	5.5	2.6
domestic exports	821	881	424	454	402	2.8	2.0
re-exports	3735	6570	5107	5240	4630	7.0	2.7
Hungary	2558	3054	2502	2445	2747	25.6	9.0
Iceland	1274	1371	1411	1257	1306	80.0	65.6
India	3506	6322	5835	6405	...	19.5	15.1
Indonesia	4154	8197	7544	7764	7024	16.2	12.5
Israel	1327	1358	1264	1182	1094	11.0	3.8
Japan	3299	4656	4212	4395	5147	1.1	1.3
Kenya	559	1158	1089	1062	...	54.2	61.3
Korea, Rep. of	2985	4448	4228	4298	3948	4.6	2.6
Madagascar	224	346	294	412	456	70.2	61.6
Malaysia	7495	11571	9214	8015	7190	25.4	8.2
Mauritius	396	456	388	283	389	33.2	25.6
Mexico	3466	7189	8145	9100	9073	8.5	5.7
Morocco	1228	1643	1699	1745	1560	28.8	21.9
New Zealand	5966	8306	7330	7641	7972	63.5	58.1
Nicaragua	295	389	431	547	428	89.5	70.7
Norway	3077	4120	4560	4244	4084	9.0	7.1
Pakistan	1081	1272	1205	1234	1160	19.2	12.5
Paraguay	863	738	624	699	824	90.0	83.4
Peru	813	1701	1578	1911	1880	25.2	26.5
Philippines	1683	2457	1778	2026	1958	20.7	6.1
Poland	2268	3036	3022	3050	3392	15.8	9.4
Romania	184	783	885	828	916	3.7	8.0
Russian Fed. b	-	3534	6251	7467	8174	-	7.9
Singapore	4095	5949	3862	3723	3303	7.8	2.7
domestic exports	1182	1578	1189	1202	1155	3.4	1.7
re-exports	2912	4371	2673	2521	2148	16.3	3.9
South Africa	2881	3433	3540	3060	3109	12.2	10.6
Sri Lanka	758	941	1031	1093	1014	39.7	21.1
Sudan	367	502	456	...	...	98.1	58.5
Switzerland	2244	3032	2563	2571	2496	3.5	3.0
Taipei, Chinese	3732	5640	3011	3512	3205	5.6	2.6
Thailand	7786	13911	11762	12242	12057	33.8	18.5
Tunisia	418	570	685	548	575	11.8	8.7
Turkey	3300	4541	4442	3828	4318	25.5	13.8
United States	59404	80435	65941	71408	70017	15.1	9.6
Uruguay	1025	1244	1344	1278	1132	60.6	54.9
Zimbabwe	754	926	1141	1146	...	43.7	59.6

a Or nearest year.

b Includes Secretariat estimates.

Table IV.10

Imports of agricultural products of selected economies, 1990-01

(Million dollars and percentage)

	Value					Share in economy's total merchandise imports	
	1990	1995	1999	2000	2001	1990	2001 a
Algeria	2766	3518	2750	2815	...	28.3	30.8
Argentina	326	1509	1639	1597	1471	8.0	7.2
Australia b	2707	3794	3928	4234	3558	6.8	5.9
Bangladesh	835	1124	2215	1446	1263	23.1	15.0
Belarus	-	...	1003	1226	...	-	14.2
Brazil	2691	7218	5130	5163	4230	11.9	7.3
Cameroon	315	215	276	294	308	22.5	16.6
Canada b	9009	12204	14281	15272	15551	7.7	7.0
Chile	461	1252	1360	1421	1376	5.9	8.0
China	7855	16099	13853	19544	20125	14.7	8.3
Colombia	593	1657	1615	1736	1792	10.6	14.0
Croatia	-	1017	766	777	948	-	11.8
Cyprus	405	802	747	754	688	15.8	17.5
Czech Rep. b	-	2367	2237	2240	2397	-	6.6
Egypt	4793	4160	4350	...	3902	38.6	30.6
El Salvador	158	441	652	692	743	12.5	14.8
European Union (15)	208502	267194	249783	240170	235511	13.4	10.1
Intra-imports c	130913					13.3	
Extra-imports	77589	92789	81788	80534	79783	13.5	8.7
Ghana	...	...	433	444	634	...	20.9
Guatemala	196	440	640	673	860	11.9	15.3
Honduras	108	237	459	511	526	11.5	18.0
Hong Kong, China	8325	13798	11319	11728	11063	9.8	5.5
retained imports	4591	7228	6212	6488	6433	14.6	20.6
Hungary	1158	1362	1343	1424	1519	11.2	4.5
India	1721	3003	4862	3351	...	7.3	6.5
Indonesia	2126	6103	5476	5727	5350	9.7	17.3
Iran, Islamic Rep. of d	...	...	2933	2943	2929	...	16.7
Israel	1565	2307	2288	2288	2302	9.3	6.6
Jamaica	314	442	555	544	...	16.3	16.9
Japan	50460	74772	59750	62185	56940	21.4	16.3
Jordan	709	839	865	942	954	27.3	19.7
Korea, Rep. of	9530	14727	11084	12837	12504	13.6	8.9
Kuwait	589	1296	1354	1263	...	14.8	17.6
Lebanon	...	...	1310	1210	1362	...	18.7
Madagascar	71	99	96	140	150	11.0	15.3
Malaysia	2404	4631	4455	4610	4830	8.2	6.5
Mauritius	255	395	363	346	362	15.8	18.2
Mexico e	5374	6250	9972	11565	12795	12.3	6.7
Morocco	1096	2210	1802	1941	1925	15.8	17.6
Nepal	126	157	271	240	...	18.7	15.2
Norway	2090	3106	3128	2956	3010	7.7	9.3
Oman	506	876	1088	1158	1383	18.9	23.9
Pakistan	1568	2687	2269	1882	1682	21.2	15.8
Peru	668	1171	1145	998	1113	25.4	15.2
Philippines	1665	2994	3219	3104	3087	12.8	9.8
Poland	1253	3727	4133	3940	4141	10.8	8.2
Romania	1249	1109	933	1093	1401	16.4	9.0
Russian Fed. d	-	12702	10280	9747	11402	-	21.2
Saudi Arabia	3487	4861	5030	5663	5011	14.5	16.0
Senegal	494	425	496	394	497	40.6	32.9
Singapore	4698	6810	4985	4890	4677	7.7	4.0
retained imports	1786	2439	2312	2369	2529	4.2	4.2
Slovak Rep. b	-	974	930	953	1086	-	7.4
South Africa b	1219	2404	1667	1650	1465	7.3	5.8
Sri Lanka	549	962	879	934	873	20.4	14.7
Switzerland	5920	6770	6071	5807	5655	8.5	6.7
Syrian Arab Republic	791	942	883	850	...	32.9	22.3
Taipei, Chinese	6203	9995	7779	7888	6985	11.3	6.5
Thailand	3227	5575	3962	4473	4826	9.8	7.8
Tunisia	819	1322	929	968	1058	14.9	11.1
Turkey	2806	4493	3398	4133	3062	12.6	7.5
United Arab Emirates d	1773	2083	2729	3030	...	15.8	7.9
United States	39966	53056	66138	69115	68400	7.7	5.8
Venezuela b	986	2026	1938	1970	2105	14.9	12.8
Zimbabwe b	116	209	222	...	...	6.3	10.5

a Or nearest year.
b Imports are valued f.o.b.
c See the Technical Notes for information on intra-EU imports.
d Includes Secretariat estimates.
e Beginning with 2000 imports are valued c.i.f.

3. Mining Products

Table IV.11

World trade in mining products, 2001

(Billion dollars and percentage)

Value	790
Annual percentage change	
1980-85	-5
1985-90	3
1990-01	4
2000	46
2001	-8
Share in world merchandise trade	13.2
Share in world exports of primary products	59.1

Table IV.12

Major regional flows in world exports of mining products, 2001

(Billion dollars and percentage)

	Value	Annual percentage change		
	2001	1990-01	2000	2001
Intra-Western Europe	140.5	4	39	-6
Middle East to Asia	101.9	7	55	-12
Intra-Asia	93.0	5	40	-6
Intra-North America	50.7	8	67	0
C./E. Europe/Baltic States/CIS to Western Europe	47.1	5	57	-1
Africa to Western Europe	37.9	1	51	-7

Table IV.13

Share of mining products in trade in total merchandise and in primary products by region, 2001

(Percentage)

	Exports	Imports
Share of mining products in total merchandise		
World	13.2	13.2
North America	7.5	12.3
Latin America	21.5	11.0
Western Europe	7.2	11.4
C./E. Europe/Baltic States/CIS	32.6	13.9
Africa	57.0	11.6
Middle East	73.8	8.1
Asia	7.6	18.0
Share of mining products in primary products		
World	59.1	59.1
North America	41.7	67.3
Latin America	54.4	54.3
Western Europe	44.0	53.4
C./E. Europe/Baltic States/CIS	79.0	56.9
Africa	79.5	43.1
Middle East	95.7	37.8
Asia	53.3	65.0

Chart IV.4

Regional shares in world trade in mining products, 2001

(Percentage)

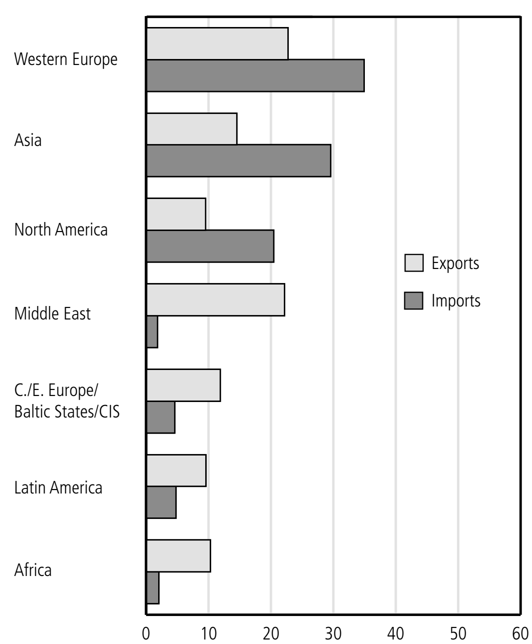


Table IV.14

Exports of mining products by region, 2001

(Billion dollars and percentage)

	Value	Share in: Region's exports		Share in: World exports		Annual percentage change		
	2001	1990	2001	1990	2001	1990-01	2000	2001
World	790.4	-	-	100.0	100.0	4	46	-8
Western Europe								
World	179.2	100.0	100.0	24.2	22.7	4	40	-8
Western Europe	140.5	80.0	78.4	19.4	17.8	4	39	-6
North America	19.0	8.6	10.6	2.1	2.4	6	73	-15
Asia	5.9	2.9	3.3	0.7	0.7	5	18	-16
C./E. Europe/Baltic States/CIS	4.8	1.7	2.7	0.4	0.6	8	15	9
Africa	2.7	1.7	1.5	0.4	0.3	3	55	-14
Middle East	1.6	1.2	0.9	0.3	0.2	1	32	-20
Latin America	1.4	0.5	0.8	0.1	0.2	9	15	-2
Middle East								
World	174.8	100.0	100.0	23.1	22.1	4	54	-12
Asia	101.9	45.2	58.3	10.4	12.9	7	55	-12
Western Europe	23.8	24.9	13.6	5.8	3.0	-2	52	-25
North America	23.6	14.0	13.5	3.2	3.0	4	67	-5
Africa	6.7	3.2	3.8	0.7	0.8	6	51	-14
Middle East	5.5	3.4	3.1	0.8	0.7	3	49	-1
Latin America	1.7	4.3	1.0	1.0	0.2	-9	45	-8
C./E. Europe/Baltic States/CIS	0.2	1.4	0.1	0.3	0.0	-18	-13	7
Asia								
World	113.8	100.0	100.0	13.5	14.4	5	38	-5
Asia	93.0	79.6	81.7	10.7	11.8	5	40	-6
Western Europe	8.2	6.9	7.2	0.9	1.0	6	25	9
North America	6.5	8.9	5.8	1.2	0.8	1	36	-13
Latin America	2.2	1.0	1.9	0.1	0.3	12	43	14
All other regions	2.4	1.9	2.1	0.3	0.3	6	25	8
C./E. Europe/Baltic States/CIS a								
World	93.1	100.0	100.0	8.0 ǀ	11.8	...	56	-4
Western Europe	47.1	67.7	50.7	5.4	6.0	5	57	-1
C./E. Europe/Baltic States/CIS	29.2	17.6 ǀ	31.4	1.4 ǀ	3.7	...	50	-5
Asia	4.8	8.4	5.2	0.7	0.6	4	69	-12
Latin America	3.8	2.1	4.1	0.2	0.5	15	89	-19
Middle East	3.4	0.9	3.6	0.1	0.4	23	360	21
All other regions	3.5	3.2	3.8	0.3	0.4	10	17	-28
Africa								
World	80.5	100.0	100.0	11.5	10.2	3	50	-8
Western Europe	37.9	61.5	47.0	7.0	4.8	1	51	-7
North America	20.0	24.7	24.8	2.8	2.5	3	66	-12
Asia	12.5	5.9	15.6	0.7	1.6	13	42	-15
Latin America	4.3	2.3	5.4	0.3	0.5	12	46	17
Africa	3.5	3.2	4.4	0.4	0.4	6	35	-11
All other regions	0.7	1.9	0.9	0.2	0.1	-4	19	-4
Latin America								
World	74.7	100.0	100.0	10.0	9.4	4	45	-11
North America	37.7	47.2	50.5	4.7	4.8	5	56	-15
Latin America	16.3	12.7	21.8	1.3	2.1	9	40	-10
Western Europe	10.4	20.7	13.9	2.1	1.3	0	22	-5
Asia	7.6	11.6	10.1	1.2	1.0	3	30	1
All other regions	1.2	3.7	1.6	0.4	0.2	-4	35	-8
North America								
World	74.4	100.0	100.0	9.7	9.4	4	44	-2
North America	50.7	44.3	68.2	4.3	6.4	8	67	0
Western Europe	8.0	20.0	10.8	1.9	1.0	-2	-15	9
Asia	7.7	25.9	10.3	2.5	1.0	-4	16	-9
Latin America	7.1	7.7	9.6	0.8	0.9	6	49	-18
All other regions	0.8	2.0	1.1	0.2	0.1	-1	21	-18

a Includes the intra trade of the Baltic States and the CIS beginning with 1996.

3.1 Fuels

Table IV.15

World trade in fuels, 2001

(Billion dollars and percentage)

Value	616
Annual percentage change	
1980-85	-5
1985-90	0
1990-01	5
2000	57
2001	-8
Share in world merchandise trade	10.3
Share in world exports of primary products	46.0

Table IV.16

Major regional flows in world exports of fuels, 2001

(Billion dollars and percentage)

	Value	Annual percentage change		
	2001	1990-01	2000	2001
Middle East to Asia	100.4	7	56	-12
Intra-Western Europe	96.1	5	55	-6
Intra-Asia	66.0	5	50	-7
Intra-North America	39.2	11	101	3
C./E. Europe/Baltic States/CIS to Western Europe	36.0	4	76	2
Africa to Western Europe	34.5	2	57	-8

Table IV.17
Share of fuels in trade in total merchandise and in primary products by region, 2001
(Percentage)

	Exports	Imports
Share of fuels in total merchandise		
World	10.3	10.3
North America	5.0	10.1
Latin America	15.6	9.2
Western Europe	4.8	8.2
C./E. Europe/Baltic States/CIS	25.2	11.2
Africa	50.7	10.0
Middle East	72.3	6.3
Asia	5.2	14.1
Share of fuels in primary products		
World	46.0	46.0
North America	27.8	55.5
Latin America	39.3	45.6
Western Europe	29.5	38.7
C./E. Europe/Baltic States/CIS	61.1	45.7
Africa	70.7	37.0
Middle East	93.8	29.5
Asia	36.3	50.8

Chart IV.5
Regional shares in world trade in fuels, 2001
(Percentage)

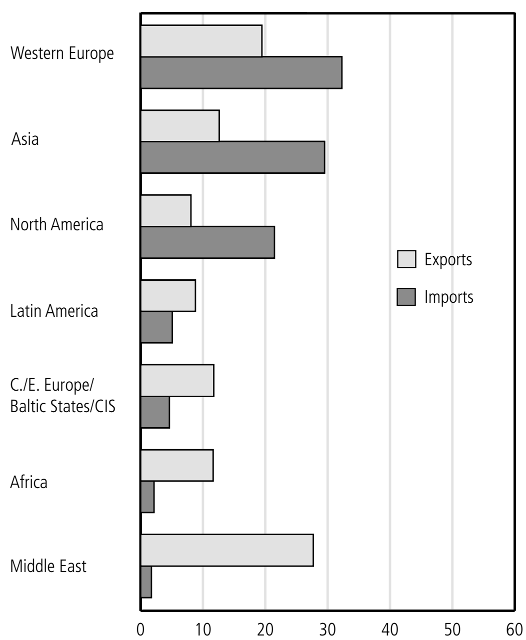


Table IV.18

Imports of fuels of selected economies by region and supplier, 2001

(Million dollars and percentage)

	Value	Share	Annual percentage change			Value	Share	Annual percentage change	
	2001	2001	2000	2001		2001	2001	2000	2001
		Canada a					United States		
Region					Region				
World	12381	100.0	75	-1	World	129014	100.0	76	-8
Western Europe	5429	43.9	75	-9	Latin America	35166	27.3	69	-17
North America	3438	27.8	76	30	North America	34713	26.9	81	9
Latin America	1235	10.0	34	-1	Middle East	23082	17.9	69	-5
Middle East	1110	9.0	168	4	Africa	18658	14.5	88	-13
Africa	976	7.9	82	-20	Western Europe	11712	9.1	91	-11
Asia	142	1.2	261	-29	Asia	4194	3.3	62	-12
C./E. Europe/					C./E. Europe/				
Baltic States/CIS	50	0.4	-27	-60	Baltic States/CIS	1490	1.2	67	-12
Suppliers					Suppliers				
United States	3438	27.8	76	30	Canada	34709	26.9	81	9
European Union (15)	3363	27.2	68	3	Venezuela	14218	11.0	73	-19
Norway	2055	16.6	82	-24	Saudi Arabia	13604	10.5	73	-4
Venezuela	798	6.4	38	-9	Mexico	10469	8.1	77	-20
Algeria	738	6.0	90	-11	Nigeria	9147	7.1	139	-17
Iraq	564	4.6	318	22	European Union (15)	7942	6.2	100	-11
Saudi Arabia	451	3.6	105	-16	Iraq	6298	4.9	44	-3
Mexico	278	2.2	49	4	Norway	3621	2.8	74	-12
Nigeria	133	1.1	56	-56	Colombia	3429	2.7	17	-20
Colombia	108	0.9	43	194	Angola	3270	2.5	46	-13
Above 10	11925	96.3	-	-	Above 10	106707	82.7	-	-
		European Union (15)					Japan		
Region					Region				
World	187702	100.0	60	-6	World	70226	100.0	55	-9
Western Europe	82107	43.7	55	-5	Middle East	42630	60.7	66	-10
Africa	31121	16.6	75	-8	Asia	24809	35.3	48	-7
C./E. Europe/					North America	1365	1.9	1	-23
Baltic States/CIS	29334	15.6	66	6	Africa	697	1.0	19	1
Middle East	24221	12.9	69	-23	C./E. Europe/				
Latin America	4363	2.3	59	-2	Baltic States/CIS	379	0.5	32	39
Asia	2668	1.4	14	34	Latin America	256	0.4	8	-45
North America	2504	1.3	15	4	Western Europe	87	0.1	-54	-18
Suppliers					Suppliers				
European Union (15)	58953	31.4	49	-5	United Arab Emirates	12618	18.0	69	-14
Russian Fed.	21976	11.7	68	4	Saudi Arabia	11977	17.1	73	-14
Norway	21612	11.5	74	-9	Indonesia	7092	10.1	47	-15
Algeria	9788	5.2	83	-11	Australia	6341	9.0	26	5
Libyan Arab Jamahiriya	9782	5.2	64	-16	Qatar	5987	8.5	70	2
Saudi Arabia	9578	5.1	78	-24	Iran, Islamic Rep. of	4948	7.0	73	-6
Nigeria	5133	2.7	126	-6	Kuwait	4418	6.3	66	-11
Iran, Islamic Rep. of	4992	2.7	65	-25	Malaysia	3356	4.8	53	2
Syrian Arab Republic	3280	1.7	41	19	Korea, Rep. of	2993	4.3	74	-12
Iraq	3101	1.7	48	-47	Oman	2345	3.3	21	16
Above 10	148195	79.0	-	-	Above 10	62077	88.4	-	-

a Imports are valued f.o.b.

Table IV.19

Imports of fuels of selected economies, 1990-01

(Million dollars and percentage)

	Value					Share in economy's total merchandise imports	
	1990	1995	1999	2000	2001	1990	2001 a
Argentina	333	844	676	910	798	8.2	3.9
Australia b	2170	2883	3814	5898	5106	5.4	8.5
Bahrain	1827	1385	1171	2108	...	49.2	45.5
Bangladesh	566	421	480	738	969	15.6	11.5
Belarus	-	...	1526	2585	...	-	29.9
Brazil	6045	6491	5846	8872	8416	26.8	14.4
Bulgaria	...	1531	1191	1741	1605	...	22.2
Canada b	7313	5948	7151	12481	12381	6.3	5.6
Chile	1099	1334	1861	3014	2730	14.2	15.8
China	1259	5127	8912	20637	17466	2.4	7.2
Costa Rica	219	273	324	486	...	11.0	7.6
Côte d'Ivoire	...	474	536	838	...	...	33.0
Croatia	-	871	859	1145	1174	-	14.6
Cyprus	270	286	315	491	471	10.5	12.0
Czech Rep. b	-	1964	1886	3089	3308	-	9.1
El Salvador	140	241	358	595	502	11.0	10.0
European Union (15)	139379	122190	125126	199942	187702	8.9	8.0
Intra-imports c	37430					3.8	
Extra-imports	101949	84700	83423	137704	128749	17.7	14.1
Ghana	...	...	532	629	716	...	23.6
Guatemala	278	410	447	620	763	16.8	13.6
Honduras	153	199	246	382	400	16.3	13.7
Hong Kong, China	1996	3705	3681	4533	4038	2.4	2.0
retained imports	1567	2126	3131	4102	3692	5.0	11.8
Hungary	1470	1805	1715	2690	2768	14.2	8.2
India	6495	8661	14343	17643	...	27.5	34.4
Indonesia	1937	3007	3726	6071	5523	8.9	17.8
Israel	1354	1673	2142	3587	3496	8.1	10.0
Jamaica	380	351	380	586	...	19.7	18.2
Japan	57453	53916	49885	77425	70226	24.4	20.1
Jordan	471	477	450	194	699	18.1	14.4
Kenya	424	413	439	642	...	19.1	20.7
Korea, Rep. of	11023	19013	22875	38077	34069	15.8	24.1
Latvia	-	385	315	392	373	-	10.7
Lebanon	...	...	555	1029	1293	...	17.7
Lithuania	-	708	713	1185	1275	-	20.3
Malaysia	1487	1736	1968	3940	3867	5.1	5.2
Mauritius	132	138	161	244	223	8.2	11.2
Mexico d	1125	1502	3089	5516	5524	2.6	2.9
Morocco	1168	1173	1324	2039	1936	16.9	17.7
Nepal	50	123	144	236	...	7.5	15.0
New Zealand	727	744	880	1446	1128	7.6	8.5
Nicaragua	121	181	142	307	308	18.9	17.3
Norway	1178	947	1033	1193	1339	4.3	4.1
Pakistan	1529	1890	2098	3598	2918	20.6	27.5
Panama	244	342	408	628	...	15.9	18.6
Paraguay	192	205	220	297	351	14.2	16.4
Peru	327	664	660	1156	970	12.4	13.3
Philippines	1943	2623	2575	4095	3586	14.9	11.4
Poland	2533	2651	3281	5308	5082	21.9	10.1
Romania	2906	2195	1067	1583	1871	38.2	12.0
Singapore	9632	10030	10080	16219	14594	15.8	12.6
retained imports	9545	9934	9966	16106	14172	22.3	23.5
Slovak Rep. b	-	1535	1457	2236	2247	-	15.2
South Africa b	...	2225	2438	3826	3736	...	14.7
Sri Lanka	333	364	306	551	447	12.4	7.5
Switzerland	3155	2317	2390	3822	3855	4.5	4.6
Taipei, Chinese	5953	7142	8170	13074	11848	10.9	11.0
Thailand	3084	4775	4830	7549	7474	9.3	12.0
Tunisia	493	572	556	902	913	8.9	9.6
Turkey	4622	4619	5375	7515	6576	20.7	16.2
Ukraine e	-	...	5305	5653	...	-	40.5
United States	68741	62984	79273	139622	129014	13.3	10.9
Zimbabwe b	288	239	245	...	...	15.6	11.5

a Or nearest year.
b Imports are valued f.o.b.
c See the Technical Notes for information on intra-EU imports.
d Beginning with 2000 imports are valued c.i.f.
e Includes Secretariat estimates.

4. Manufactures

Table IV.20

World trade in manufactures, 2001

(Billion dollars and percentage)

Value	4477
Annual percentage change	
1980-85	2
1985-90	15
1990-01	6
2000	10
2001	-4
Share in world merchandise trade	74.8

Table IV.21

Major regional flows in world exports of manufactures, 2001

(Billion dollars and percentage)

	Value	Annual percentage change		
	2001	1990-01	2000	2001
Intra-Western Europe	1312.0	3	1	-3
Intra-Asia	551.2	9	25	-12
Asia to North America	349.0	6	15	-12
Intra-North America	283.5	7	9	-9
Asia to Western Europe	224.7	5	12	-11
Western Europe to North America	221.1	7	8	0

Table IV.22

Share of manufactures in total merchandise trade by region, 2001

(Percentage)

	Exports	Imports
World	74.8	74.8
North America	77.0	79.2
Latin America	59.9	77.3
Western Europe	80.9	75.6
C./E. Europe/Baltic States/CIS	56.4	74.7
Africa	25.3	70.8
Middle East	21.8	75.2
Asia	83.3	70.0

Chart IV.6

Regional shares in world trade in manufactures, 2001

(Percentage)

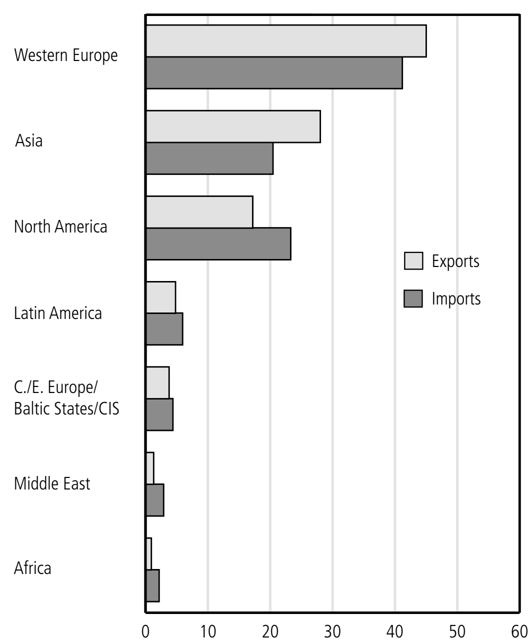


Table IV.23

Exports of manufactures by region, 2001

(Billion dollars and percentage)

		Share in						
	Value	Region's exports		World exports		Annual percentage change		
	2001	1990	2001	1990	2001	1990-01	2000	2001
World	4476.9	-	-	100.0	100.0	6	10	-4
Western Europe								
World	2009.6	100.0	100.0	54.2	44.9	4	3	-1
Western Europe	1312.0	70.6	65.3	38.3	29.3	3	1	-3
North America	221.1	8.3	11.0	4.5	4.9	7	8	0
Asia	172.8	8.2	8.6	4.4	3.9	5	11	1
C./E. Europe/Baltic States/CIS	129.8	4.1	6.5	2.2	2.9	8	10	12
Middle East	56.7	2.8	2.8	1.5	1.3	4	4	8
Latin America	52.2	2.0	2.6	1.1	1.2	7	5	0
Africa	51.7	3.4	2.6	1.8	1.2	2	-5	5
Asia								
World	1247.9	100.0	100.0	24.4	27.9	7	18	-10
Asia	551.2	36.0	44.2	8.8	12.3	9	25	-12
North America	349.0	33.0	28.0	8.1	7.8	6	15	-12
Western Europe	224.7	22.0	18.0	5.4	5.0	5	12	-11
Middle East	37.2	2.9	3.0	0.7	0.8	7	15	5
Latin America	36.3	2.0	2.9	0.5	0.8	11	23	-6
Africa	18.9	1.4	1.5	0.3	0.4	8	4	6
C./E. Europe/Baltic States/CIS	14.5	1.5	1.2	0.4	0.3	5	22	10
North America								
World	763.3	100.0	100.0	15.2	17.0	7	12	-7
North America	283.5	35.9	37.1	5.5	6.3	7	9	-9
Asia	159.2	23.1	20.9	3.5	3.6	6	19	-11
Western Europe	155.1	25.1	20.3	3.8	3.5	5	10	-4
Latin America	134.7	11.7	17.7	1.8	3.0	11	20	-7
Middle East	16.1	2.3	2.1	0.3	0.4	6	-10	3
All other regions	14.6	1.9	1.9	0.3	0.3	7	9	19
Latin America								
World	207.8	100.0	100.0	2.3	4.6	13	19	-2
North America	156.1	59.7	75.1	1.4	3.5	15	20	-2
Latin America	32.1	16.6	15.4	0.4	0.7	12	17	2
Western Europe	12.4	13.2	6.0	0.3	0.3	5	9	-5
Asia	5.0	7.4	2.4	0.2	0.1	2	8	-1
All other regions	1.8	3.1	0.9	0.1	0.0	1	14	11
C./E. Europe/Baltic States/CIS a								
World	161.0	100.0	100.0	2.1 I	3.6	...	17	11
Western Europe	98.0	43.5	60.9	0.9	2.2	15	18	11
C./E. Europe/Baltic States/CIS	37.5	32.0 I	23.3	0.7 I	0.8	...	19	14
Asia	9.1	12.3	5.6	0.3	0.2	4	5	0
North America	7.6	2.4	4.7	0.0	0.2	18	27	8
Middle East	2.9	3.4	1.8	0.1	0.1	5	24	4
Africa	1.9	2.9	1.2	0.1	0.0	3	-5	8
Latin America	1.8	3.5	1.1	0.1	0.0	1	23	-4
Middle East								
World	51.5	100.0	100.0	0.9	1.2	9	14	-1
North America	14.0	16.4	27.2	0.1	0.3	14	33	-6
Western Europe	12.8	32.4	24.8	0.3	0.3	6	4	-7
Asia	8.7	19.6	16.9	0.2	0.2	7	2	4
Middle East	8.1	17.9	15.7	0.2	0.2	7	21	12
Africa	2.2	2.6	4.3	0.0	0.0	14	17	-2
All other regions	2.3	7.5	4.5	0.1	0.1	4	11	6
Africa								
World	35.7	100.0	100.0	0.9	0.8	5	10	2
Western Europe	21.7	62.1	60.7	0.5	0.5	5	12	2
Africa	4.9	11.6	13.8	0.1	0.1	7	-1	-3
North America	3.8	5.9	10.7	0.1	0.1	11	22	11
Asia	3.0	10.5	8.4	0.1	0.1	3	4	-3
All other regions	1.9	9.4	5.3	0.1	0.0	0	21	3

a Includes the intra trade of the Baltic States and the CIS beginning with 1996.

Table IV.24

Trade in manufactures of the United States, the European Union and Japan by region, 2001

(Billion dollars and percentage)

Exports							Imports					
Value	Share		Annual percentage change				Value	Share		Annual percentage change		
2001	1990	2001	1990-01	2000	2001		2001	1990	2001	1990-01	2000	2001
						United States						
602.4	100.0	100.0	7	13	-7	World	905.5	100.0	100.0	8	15	-6
138.6	23.4	23.0	7	7	-10	North America	139.6	16.4	15.4	8	9	-9
132.1	14.2	21.9	11	20	-7	Latin America	137.9	8.2	15.2	15	19	-1
147.9	29.9	24.6	5	9	-4	Western Europe	202.9	24.1	22.4	8	11	0
4.9	0.4	0.8	13	7	14	C./E. Europe/ Baltic States/CIS	9.7	0.3	1.1	22	43	-1
9.1	1.8	1.5	5	12	25	Africa	4.4	0.3	0.5	13	20	13
15.5	2.7	2.6	6	-11	3	Middle East	14.1	0.9	1.6	14	36	-6
154.1	27.6	25.6	6	18	-11	Asia	396.9	49.7	43.8	7	16	-10
						European Union (15)						
1881.9	100.0	100.0	4	3	-1	World	1760.9	100.0	100.0	4	4	-3
206.5	8.4	11.0	7	8	1	North America	164.3	8.7	9.3	5	8	-5
49.1	1.9	2.6	7	5	0	Latin America	14.9	0.8	0.8	5	23	-11
1231.0	71.1	65.4	3	1	-3	Western Europe	1201.6	74.5	68.2	3	1	-3
123.2	4.0	6.5	9	10	12	C./E. Europe/ Baltic States/CIS	88.2	1.8	5.0	14	13	10
49.1	3.4	2.6	2	-4	5	Africa	23.0	0.9	1.3	7	5	7
51.8	2.7	2.8	4	5	9	Middle East	13.2	0.6	0.7	7	15	-5
159.3	7.9	8.5	5	11	0	Asia	245.1	12.3	13.9	5	11	-9
						Japan						
373.7	100.0	100.0	3	14	-17	World	197.5	100.0	100.0	6	20	-7
122.0	34.5	32.6	2	11	-15	North America	45.5	30.5	23.0	4	10	-13
15.9	3.4	4.2	5	8	-16	Latin America	1.9	1.5	0.9	2	52	-11
64.6	22.5	17.3	0	4	-18	Western Europe	40.7	34.7	20.6	1	9	-4
2.4	1.1	0.6	-2	25	-3	C./E. Europe/ Baltic States/CIS	1.0	0.7	0.5	3	43	7
4.2	1.9	1.1	-2	-8	-12	Africa	0.7	0.4	0.3	5	40	16
10.4	3.2	2.8	1	-2	8	Middle East	1.2	1.2	0.6	0	4	-5
154.3	33.3	41.3	5	25	-19	Asia	106.6	31.0	54.0	12	29	-6

Table IV.25

Imports of manufactures of selected economies by region and supplier, 2001

(Million dollars and percentage)

	Canada a			
	Value	Share	Annual percentage change	
	2001	2001	2000	2001
Region				
World	182385	100.0	9	-9
North America	120688	66.2	6	-10
Asia	28827	15.8	19	-11
Western Europe	20308	11.1	8	-1
Latin America	8352	4.6	28	-3
C./E. Europe/ Baltic States/CIS	695	0.4	43	-11
Middle East	471	0.3	58	-19
Africa	224	0.1	4	-32
Suppliers				
United States	120688	66.2	6	-10
European Union (15)	19131	10.5	8	0
Japan	9334	5.1	10	-16
China	7854	4.3	27	8
Mexico	7200	3.9	27	-4
Above 5	164207	90.0	8	-9
Korea, Rep. of	2837	1.6	45	-15
Taipei, Chinese	2782	1.5	8	-15
Malaysia	1166	0.6	22	-27
Switzerland	842	0.5	9	0
Thailand	771	0.4	15	-6
Hong Kong, China	752	0.4	11	-20
Singapore	716	0.4	13	-21
India	652	0.4	25	-11
Brazil	627	0.3	27	3
Philippines	581	0.3	37	-35
Indonesia	481	0.3	3	6
Israel	368	0.3	35	-3
Australia	252	0.2	18	1
Pakistan	169	0.1	12	-3
Turkey	165	0.1	18	0
Poland	162	0.1	51	4
South Africa	147	0.1	-22	-22
Bangladesh	119	0.1	20	5
Norway	117	0.1	11	-31
Russian Fed.	114	0.1	20	-32
Czech Rep.	103	0.1	27	-3
Hungary	98	0.1	71	0
Viet Nam	94	0.1	-12	9
Trinidad and Tobago	92	0.1	112	168
Argentina	89	0.1	81	-4
New Zealand	71	0.0	136	-58
Sri Lanka	68	0.0	58	-18
Romania	56	0.0	3	-17
Dominican Republic	52	0.0	11	-7
Saudi Arabia	52	0.0	193	-31
Macao, China	50	0.0	19	8
Venezuela	43	0.0	166	3
Honduras	38	0.0	-4	29
Chile	37	0.0	53	21
Myanmar	30	0.0	157	-7
Above 40	179002	98.1	-	-

	United States			
	Value	Share	Annual percentage change	
	2001	2001	2000	2001
Region				
World	905511	100.0	15	-6
Asia	396944	43.8	16	-10
Western Europe	202871	22.4	11	0
North America	139618	15.4	9	-9
Latin America	137941	15.2	19	-1
Middle East	14051	1.6	36	-6
C./E. Europe/ Baltic States/CIS	9720	1.1	43	-1
Africa	4359	0.5	20	13
Suppliers				
European Union (15)	189623	20.9	11	0
Canada	139612	15.4	9	-9
Japan	124010	13.7	12	-14
Mexico	108412	12.0	21	-2
China	105418	11.6	22	2
Above 5	667075	73.7	14	-5
Korea, Rep. of	34438	3.8	28	-13
Taipei, Chinese	32898	3.6	15	-19
Malaysia	21764	2.4	19	-12
Singapore	13783	1.5	4	-22
Thailand	12707	1.4	15	-11
Israel	11286	1.2	33	-8
Philippines	10763	1.2	14	-20
Brazil	10574	1.2	22	10
Hong Kong, China	9299	1.0	8	-16
India	8865	1.0	18	-9
Indonesia	8767	1.0	12	-1
Switzerland	8354	0.9	6	-10
Dominican Republic	3650	0.4	2	-6
Hungary	2911	0.3	46	9
Australia	2800	0.3	14	4
Russian Fed.	2704	0.3	46	2
Turkey	2660	0.3	33	-2
Honduras	2648	0.3	10	0
Bangladesh	2398	0.3	27	-2
Pakistan	2352	0.3	25	4
South Africa	2210	0.2	25	16
Sri Lanka	2051	0.2	15	-1
Costa Rica	1924	0.2	-14	-25
Guatemala	1852	0.2	18	7
El Salvador	1796	0.2	20	2
Norway	1334	0.1	-5	8
Macao, China	1254	0.1	13	-5
Venezuela	1231	0.1	26	-6
Colombia	1118	0.1	9	-10
Czech Rep.	1066	0.1	43	2
Argentina	1036	0.1	14	-4
Cambodia	1014	0.1	39	16
Trinidad and Tobago	980	0.1	42	23
New Zealand	786	0.1	34	5
Poland	775	0.1	26	-9
Above 40	893121	98.6	-	-

Table IV.25 *(continued)*

Imports of manufactures of selected economies by region and supplier, 2001

(Million dollars and percentage)

European Union (15)	Value	Share	Annual percentage change		Japan	Value	Share	Annual percentage change	
	2001	2001	2000	2001		2001	2001	2000	2001
Region					Region				
World	1760943	100.0	4	-3	World	197510	100.0	20	-7
Western Europe	1201572	68.2	1	-3	Asia	106641	54.0	29	-6
Asia	245128	13.9	11	-9	North America	45469	23.0	10	-13
North America	164267	9.3	8	-5	Western Europe	40666	20.6	9	-4
C./E. Europe/					Latin America	1851	0.9	52	-11
Baltic States/CIS	88182	5.0	13	10	Middle East	1174	0.6	4	-5
Africa	23028	1.3	5	7	C./E. Europe/				
Latin America	14888	0.8	23	-11	Baltic States/CIS	1025	0.5	43	7
Middle East	13205	0.7	15	-5	Africa	683	0.3	40	16
Suppliers					Suppliers				
European Union (15)	1121527	63.7	1	-3	China	47431	24.0	30	7
United States	153115	8.7	7	-5	United States	43633	22.1	9	-14
Japan	65837	3.7	5	-16	European Union (15)	37130	18.8	10	-4
China	63332	3.6	23	4	Taipei, Chinese	12301	6.2	45	-22
Switzerland	46637	2.6	-3	-4	Korea, Rep. of	12040	6.1	26	-17
Above 5	1450448	82.4	2	-4	Above 5	152534	77.2	19	-7
Taipei, Chinese	20889	1.2	15	-11	Malaysia	8312	4.2	33	-14
Czech Rep.	20385	1.2	12	14	Thailand	6896	3.5	24	-2
Hungary	19462	1.1	9	7	Philippines	5158	2.6	41	-8
Poland	19398	1.1	17	11	Indonesia	4707	2.4	16	-2
Korea, Rep. of	18751	1.1	18	-17	Singapore	4345	2.2	20	-16
Turkey	15157	0.9	3	12	Switzerland	3122	1.6	4	1
Singapore	11188	0.6	6	-17	Canada	1835	0.9	20	-8
Malaysia	10911	0.6	5	-12	Viet Nam	1486	0.8	36	6
Canada	9946	0.6	20	-5	Hong Kong, China	1169	0.6	-5	-14
India	9750	0.6	7	1	Mexico	1109	0.6	81	-7
Thailand	8923	0.5	11	-6	India	988	0.5	8	-8
Hong Kong, China	8650	0.5	-6	-15	Israel	767	0.4	-1	-7
Norway	8607	0.5	-2	-3	Australia	668	0.3	1	-17
Romania	7453	0.4	16	20	South Africa	577	0.3	47	21
Israel	7072	0.4	14	-9	New Zealand	447	0.2	26	-3
Indonesia	6797	0.4	10	-8	Brazil	378	0.2	17	-26
Slovak Rep.	6516	0.4	-1	15	Norway	299	0.2	-9	-1
South Africa	6424	0.4	30	3	Hungary	288	0.1	31	-14
Russian Fed.	5709	0.3	18	-1	Saudi Arabia	273	0.1	18	1
Brazil	5582	0.3	22	-12	Russian Fed.	175	0.1	9	9
Slovenia	5248	0.3	0	1	Slovak Rep.	167	0.1	523	35
Philippines	5058	0.3	4	-10	Pakistan	160	0.1	-22	-18
Tunisia	4676	0.3	0	11	Costa Rica	140	0.1	188	-11
Mexico	4357	0.2	22	6	Czech Rep.	140	0.1	75	19
Morocco	3852	0.2	-10	2	Sri Lanka	93	0.0	6	-6
Viet Nam	3462	0.2	14	8	Bangladesh	90	0.0	25	10
Bangladesh	2798	0.2	25	5	Korea, Dem. People's Rep. of	83	0.0	25	-24
Australia	2558	0.1	12	-8	Kazakhstan	82	0.0	33	19
Bulgaria	2313	0.1	13	19	Turkey	65	0.0	29	9
Pakistan	2223	0.1	1	4	Chile	65	0.0	33	15
Saudi Arabia	1959	0.1	23	-2	New Caledonia	61	0.0	45	-2
Estonia	1916	0.1	52	-7	Cambodia	61	0.0	90	36
Croatia	1733	0.1	-1	7	Poland	54	0.0	21	58
Ukraine	1616	0.1	13	9	Jordan	48	0.0	20	-38
United Arab Emirates	1418	0.1	-1	2	Romania	42	0.0	15	17
Above 40	1723204	97.9	-	-	Above 40	196886	99.7	-	-

a Imports are valued f.o.b.

Table IV.26

Leading exporters and importers of manufactures, 2001

(Billion dollars and percentage)

	Value	Share in world exports/imports			Annual percentage change			
	2001	1980	1990	2001	1990-01	1999	2000	2001
Exporters								
European Union (15)	1881.9	50.7	50.3	42.0	4	0	3	-1
Extra-exports	760.4	21.3	18.1	17.0	5	-2	7	2
United States	602.4	13.0	12.1	13.5	7	3	13	-7
Japan	373.7	11.2	11.5	8.3	3	8	14	-17
China a	235.8	0.8	1.9	5.3	16	7	28	7
Hong Kong, China	182.0	-	-	-	8	1	17	-5
domestic exports	18.8	1.2	1.1	0.4	-3	-9	6	-15
re-exports	163.2	-	-	-	12	3	18	-4
Canada	161.0	2.7	3.1	3.6	7	13	10	-8
Korea, Rep. of	135.5	1.4	2.5	3.0	8	13	20	-13
Mexico a	134.8	0.4	1.1	3.0	16	16	20	-3
Taipei, Chinese	116.4	1.6	2.6	2.6	6	8	22	-18
Singapore	102.6	0.8	1.6	2.3	10	6	19	-13
domestic exports	52.0	0.4	1.0	1.2	8	8	10	-18
re-exports	50.6	0.3	0.6	1.1	12	3	33	-7
Switzerland	75.8	2.4	2.5	1.7	2	1	0	3
Malaysia a	70.4	0.2	0.7	1.6	15	18	16	-11
Thailand	48.3	0.1	0.6	1.1	11	10	20	-7
India b	33.7	0.4	0.5	0.7	10	15	16	…
Indonesia	31.5	0.0	0.4	0.7	12	22	34	-11
Above 15	4022.6	87.2	92.5	89.8	-	-	-	-
Importers								
European Union (15)	1760.9	41.0	45.9	37.8	4	2	4	-3
Extra-imports	639.4	12.2	14.3	13.7	6	5	9	-4
United States	905.5	11.2	15.4	19.4	8	11	15	-6
Japan	197.5	2.3	4.1	4.2	6	12	20	-7
China a	189.9	1.1	1.7	4.1	15	17	28	12
Hong Kong, China	182.5	-	-	-	9	-2	20	-5
retained imports	19.3	1.1	0.9	0.4	-1	-29	30	-13
Canada c	182.4	3.7	3.8	3.9	6	8	9	-9
Mexico a	167.3	1.5	1.3	3.6	16	18	…	1
Singapore	93.2	1.2	1.8	2.0	7	8	19	-15
retained imports	42.6	0.8	1.2	0.9	3	13	7	-23
Korea, Rep. of	84.6	0.9	1.8	1.8	6	37	32	-14
Taipei, Chinese	81.8	0.9	1.5	1.8	8	10	27	-26
Switzerland	69.0	2.3	2.4	1.5	2	2	1	0
Malaysia a	59.9	0.6	0.9	1.3	9	12	25	-12
Australia c	49.3	1.3	1.3	1.1	4	8	6	-16
Thailand	46.6	0.4	1.0	1.0	6	18	20	0
Brazil	44.1	0.9	0.5	0.9	12	-16	10	3
Above 15	3951.5	70.4	84.4	84.7	-	-	-	-

a Includes significant shipments through processing zones.
b 2000 instead of 2001.
c Imports are valued f.o.b.

Table IV.27

Exports of manufactures of selected economies, 1990-01

(Billion dollars and percentage)

	Value					Share in economy's total merchandise exports	
	1990	1995	1999	2000	2001	1990	2001 a
World	2391.00	3702.00	4260.00	4685.00	4477.00	70.4	74.8
Argentina	3.57	7.10	7.39	8.49	8.64	28.9	32.4
Australia	6.90	14.27	14.94	15.16	14.52	17.4	22.9
Bangladesh	1.21	2.90	4.58	5.20	6.32	72.2	96.8
Belarus	-	...	4.43	4.88	...	-	66.5
Brazil	16.14	24.58	25.51	31.80	31.11	51.4	53.4
Bulgaria	...	3.10	2.39	2.82	3.15	...	61.6
Canada	73.31	118.22	159.03	175.64	161.05	57.4	62.0
Chile	0.83	1.86	2.47	2.79	3.18	9.9	18.3
China b	44.31	124.84	172.06	219.86	235.82	71.4	88.6
Colombia	1.70	3.49	3.44	4.26	4.84	25.1	39.5
Costa Rica b	0.39	1.69	4.84	4.17	3.45	27.0	68.8
Croatia	-	3.42	3.24	3.21	3.41	-	73.2
Czech Rep. b	-	17.73	23.09	25.55	29.77	-	89.1
Dominican Republic b, d	1.51	3.06	4.32	4.85	4.47	69.4	83.7
Egypt	1.47	1.39	1.30	...	1.36	42.4	32.9
El Salvador b	0.33	1.05	1.93	2.25	2.32	56.2	80.9
Estonia	-	1.18	1.77	2.48	2.55	-	77.1
European Union (15)	1203.33	1667.64	1846.03	1901.18	1881.91	79.8	82.2
Intra-exports	771.74	1027.52	1147.34	1154.71	1121.53	78.8	79.1
Extra-exports	431.60	640.12	698.69	746.47	760.38	81.6	87.2
Hong Kong, China	75.64	160.77	164.70	192.50	181.97	91.8	95.2
domestic exports	27.41	28.02	20.89	22.14	18.79	94.5	92.7
re-exports	48.23	132.75	143.82	170.35	163.18	90.3	95.5
Hungary b	6.28	8.70	21.58	24.49	26.39	62.8	86.5
India c	12.52	23.21	29.02	33.71	...	69.7	79.5
Indonesia	9.04	22.96	26.20	35.24	31.52	35.2	56.0
Israel c	10.43	16.96	24.06	29.55	27.46	86.3	94.6
Japan	275.13	421.62	393.14	449.69	373.68	95.7	92.6
Jordan	0.59	0.97	1.14	0.95	1.59	55.7	69.4
Korea, Rep. of	60.60	114.40	128.67	154.90	135.46	93.2	90.0
Lithuania	-	1.56	1.96	2.29	2.68	-	58.4
Macao, China	1.67	1.94	2.14	2.48	2.24	98.2	97.4
Malaysia b	15.82	55.09	67.84	78.93	70.42	53.7	80.1
Malta	1.04	1.83	1.85	2.25	1.77	91.9	92.1
Mauritius	0.80	1.08	1.17	1.20	1.13	67.3	74.2
Mexico b	26.85	61.64	115.98	138.65	134.82	66.0	85.0
Morocco b	2.21	2.43	4.90	4.76	4.67	51.8	65.6
New Zealand	2.39	4.20	3.97	3.99	4.23	25.4	30.8
Norway	11.13	13.67	14.39	13.27	13.60	32.7	23.5
Pakistan	4.39	6.77	7.06	7.80	7.86	78.2	85.0
Philippines b	5.66	13.78	32.23	34.77	29.24	69.7	91.0
Poland	8.47	16.27	21.54	25.32	29.09	59.1	80.6
Romania	3.60	6.12	6.65	7.95	8.99	72.6	79.0
Russian Fed. d	-	21.68	20.27	25.42	25.18	-	24.4
Saudi Arabia	3.66	5.70	5.09	5.96	7.48	8.2	11.0
Singapore	37.55	99.04	98.54	117.68	102.61	71.2	84.3
domestic exports	23.26	57.87	57.68	63.28	52.02	66.8	78.6
re-exports	14.28	41.16	40.87	54.40	50.59	79.8	91.0
Slovak Rep.	-	6.98	8.69	9.92	10.58	-	83.7
Slovenia	-	7.44	7.71	7.83	7.78	-	84.1
South Africa c	...	12.09	18.93	20.23	19.21	...	65.6
Sri Lanka	1.02	2.79	3.35	4.14	3.64	53.2	75.5
Switzerland	59.59	76.10	74.07	73.88	75.81	93.4	92.4
Taipei, Chinese	62.05	104.88	115.68	141.43	116.41	92.5	95.0
Thailand	14.58	41.22	43.15	51.76	48.25	63.2	74.1
Tunisia	2.42	4.35	4.61	4.50	5.42	68.6	82.0
Turkey	8.78	16.04	21.02	22.31	25.23	67.7	80.9
Ukraine d	-	...	7.39	9.38	...	-	64.3
United Arab Emirates d	2.86	6.00	6.49	7.46	...	12.1	17.1
United States	290.49	450.28	575.33	648.91	602.37	73.8	82.4

a Or nearest year.

b Includes significant exports from processing zones.

c Includes significant exports of diamonds. For the most recent year, the share of diamonds in exports of manufactures was 22 per cent for India, 32 per cent for Israel and 13 per cent for South Africa.

d Includes Secretariat estimates.

Table IV.28

Imports of manufactures of selected economies, 1990-01

(Billion dollars and percentage)

	Value					Share in economy's total merchandise imports	
	1990	1995	1999	2000	2001	1990	2001 a
Algeria	6.66	6.97	6.15	6.10	...	68.1	66.6
Argentina	3.10	17.20	22.59	22.00	17.45	76.0	85.9
Australia b	31.61	49.14	55.47	58.93	49.34	78.9	82.0
Bangladesh	1.92	3.76	4.57	4.88	5.69	53.0	67.8
Belarus	-	…	3.77	4.24	…	-	49.0
Brazil	12.62	38.18	39.24	43.00	44.10	56.0	75.7
Bulgaria	...	3.01	3.55	3.83	4.68	...	64.7
Canada b	92.90	135.70	183.52	200.75	182.38	79.7	82.4
Chile	5.29	11.80	10.41	11.86	11.80	68.4	68.5
China c	42.39	103.41	132.77	169.88	189.92	79.5	78.0
Colombia	4.28	10.78	8.41	9.19	10.40	76.5	81.0
Costa Rica c	1.50	3.54	5.58	5.45	5.66	75.3	86.2
Croatia	-	5.00	5.70	5.78	6.71	-	83.4
Cyprus	1.81	2.41	2.41	2.49	2.55	70.5	64.9
Czech Rep. b, c	-	19.68	23.00	25.59	29.50	-	80.9
Dominican Republic b, c, d	2.04	3.81	5.81	6.68	6.16	67.8	70.1
Ecuador	1.51	3.43	2.25	2.63	4.27	81.2	80.6
Egypt	6.99	7.11	9.39	...	6.97	56.3	54.6
El Salvador c	0.82	2.38	2.74	3.25	3.39	64.8	67.4
Estonia	-	1.80	2.72	3.45	3.43	-	79.7
European Union (15)	1121.53	1504.60	1756.36	1819.33	1760.94	72.0	75.4
Intra-imports e	772.63					78.7	
Extra-imports	348.89	477.07	609.02	664.62	639.42	60.5	70.0
Guatemala	1.14	2.40	3.41	3.52	3.89	69.0	69.3
Hong Kong, China	70.53	170.56	161.03	192.66	182.53	83.2	90.4
retained imports	22.30	37.81	17.21	22.31	19.35	71.2	62.0
Hungary c	7.27	11.63	24.25	27.08	28.36	70.3	84.2
India f	12.17	19.31	22.79	22.57	...	51.6	44.0
Indonesia	16.64	29.57	13.89	20.48	18.91	76.2	61.1
Iran, Islamic Rep. of d	13.64	8.84	9.16	9.96	11.76	67.1	67.2
Israel f	11.68	23.15	25.87	29.04	27.07	69.5	77.1
Japan	99.95	177.91	177.67	212.67	197.51	42.5	56.6
Jordan	1.34	2.24	2.25	2.65	3.02	51.6	62.3
Kazakhstan	-	...	2.82	3.80	4.78	-	75.2
Korea, Rep. of	44.10	89.85	74.52	98.16	84.64	63.1	60.0
Kuwait	2.61	6.29	5.95	5.95	...	65.6	83.1
Lebanon	...	...	3.82	3.48	4.23	...	58.0
Lithuania	-	2.11	3.23	3.31	4.04	-	64.3
Malaysia c	22.87	64.42	54.33	68.13	59.95	78.2	80.9
Mauritius	1.28	1.44	1.72	1.46	1.38	79.2	69.3
Mexico c, g	32.49	58.08	125.36	165.01	167.26	74.6	87.9
Morocco c	4.22	4.81	7.41	7.25	6.87	61.0	62.7
New Zealand	7.56	11.50	11.75	10.81	10.49	79.6	78.6
Norway	21.40	25.96	27.57	27.48	25.48	78.6	78.7
Oman	1.81	2.90	3.23	3.46	3.93	67.3	67.8
Pakistan	3.99	6.63	5.21	5.09	5.05	53.8	47.6
Peru	1.61	5.69	4.98	5.21	5.19	61.2	70.9
Philippines c	8.96	21.94	25.77	25.64	23.76	68.7	75.8
Poland	7.26	21.61	37.17	38.25	39.60	62.8	78.8
Romania	2.95	6.48	8.13	9.82	11.63	38.8	74.8
Russian Fed. d	-	28.45	26.14	30.40	37.71	-	70.0
Saudi Arabia	18.23	20.67	20.47	22.05	23.29	75.7	74.6
Singapore	44.42	103.32	92.41	109.78	93.18	73.1	80.3
retained imports	30.13	62.15	51.55	55.39	42.59	70.3	70.5
Slovak Rep. b	-	5.75	8.48	9.09	10.88	-	73.7
Slovenia	-	7.00	8.01	7.68	8.28	-	81.7
South Africa b	13.43	20.81	18.29	19.14	17.96	80.2	70.6
Sri Lanka	1.71	3.51	4.07	4.90	4.14	63.5	69.9
Switzerland	58.01	68.29	68.09	69.01	68.99	83.3	82.1
Taipei, Chinese	36.77	76.85	87.27	110.62	81.81	67.1	76.3
Thailand	24.83	56.70	38.89	46.57	46.58	75.1	75.1
Tunisia	3.91	5.75	6.65	6.46	7.28	70.9	76.7
Turkey	13.63	24.41	29.93	38.16	27.11	61.1	66.8
Ukraine d	-	...	5.51	6.97	...	-	49.9
United Arab Emirates d	8.87	18.31	17.02	18.78	...	79.2	49.2
United States	375.65	607.82	842.84	968.21	905.51	72.7	76.7
Venezuela b	5.05	8.24	11.02	11.81	13.36	76.5	81.3

a Or nearest year.
b Imports are valued f.o.b.
c Includes significant imports into processing zones.
d Includes Secretariat estimates.
e See the Technical Notes for information on intra-EU imports.
f Includes significant imports of diamonds. For the most recent year, the share of diamonds in total imports of manufactures was 23 per cent for India and 23 per cent for Israel.
g Beginning with 2000 imports are valued c.i.f.

4.1 Iron and Steel

Table IV.29

World trade in iron and steel, 2001

(Billion dollars and percentage)

Value	130
Annual percentage change	
1980-85	-2
1985-90	9
1990-01	2
2000	14
2001	-8
Share in world merchandise trade	2.2
Share in world exports of manufactures	2.9

Table IV.30

Major regional flows in world exports of iron and steel, 2001

(Billion dollars and percentage)

	Value	Annual percentage change		
	2001	1990-01	2000	2001
Intra-Western Europe	46.0	0	8	-8
Intra-Asia	20.1	4	18	-15
C./E. Europe/Baltic States/CIS to Western Europe	6.5	7	35	3
Intra-North America	5.4	6	13	-13
Intra-C./E. Europe/Baltic States/CIS	4.6	15	34	8
Western Europe to North America	4.5	0	26	-18

Table IV.31

Share of iron and steel in trade in total merchandise and in manufactures by region, 2001

(Percentage)

	Exports	Imports
Share of iron and steel in total merchandise		
World	2.2	2.2
North America	0.9	1.4
Latin America	2.1	1.9
Western Europe	2.5	2.3
C./E. Europe/Baltic States/CIS	6.6	3.3
Africa	1.6	3.0
Middle East	0.5	3.3
Asia	2.0	2.2
Share of iron and steel in manufactures		
World	2.9	2.9
North America	1.1	1.7
Latin America	3.5	2.5
Western Europe	3.1	3.1
C./E. Europe/Baltic States/CIS	11.7	4.5
Africa	6.3	4.2
Middle East	2.2	4.4
Asia	2.3	3.2

Chart IV.7

Regional shares in world trade in iron and steel, 2001

(Percentage)

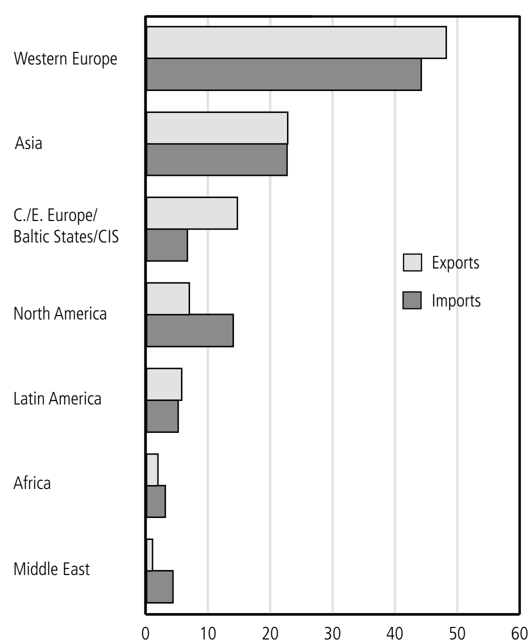


Table IV.32

Exports of iron and steel by principal region, 2001

(Billion dollars and percentage)

	Value	Share in				Annual percentage change		
		Region's exports		World exports				
	2001	1990	2001	1990	2001	1990-01	2000	2001
World	129.6	-	-	100.0	100.0	2	14	-8
Western Europe								
World	62.2	100.0	100.0	61.0	48.0	0	9	-6
Western Europe	46.0	74.9	73.9	45.7	35.5	0	8	-8
North America	4.5	6.8	7.2	4.1	3.5	0	26	-18
C./E. Europe/Baltic States/CIS	3.6	3.5	5.8	2.2	2.8	4	9	15
Asia	3.2	5.8	5.2	3.5	2.5	-1	12	7
Middle East	1.8	3.6	2.9	2.2	1.4	-2	2	12
Africa	1.7	3.7	2.7	2.2	1.3	-3	-3	18
Latin America	1.2	1.7	2.0	1.1	0.9	1	4	2
Asia								
World	29.2	100.0	100.0	19.5	22.6	3	18	-16
Asia	20.1	63.8	68.7	12.5	15.5	4	18	-15
North America	3.7	17.7	12.7	3.5	2.9	0	12	-29
Western Europe	2.0	4.9	6.8	1.0	1.5	6	33	-21
Middle East	1.5	5.7	5.2	1.1	1.2	2	1	21
Latin America	0.9	2.2	3.2	0.4	0.7	7	27	-12
All other regions	0.7	3.8	2.3	0.7	0.5	-1	-2	6
Japan								
World	13.5	100.0	100.0	11.8	10.5	1	10	-9
Asia	9.7	60.5	71.5	7.2	7.5	2	15	-13
North America	1.5	19.3	11.1	2.3	1.2	-4	-6	-9
Western Europe	0.8	5.2	5.6	0.6	0.6	1	1	21
Middle East	0.7	6.2	5.4	0.7	0.6	-1	-15	38
Latin America	0.6	3.1	4.4	0.4	0.5	4	27	-9
All other regions	0.3	5.7	2.1	0.7	0.2	-8	-9	-1
Other economies in Asia								
World	15.7	100.0	100.0	7.7	12.1	6	24	-22
Asia	10.4	69.0	66.3	5.3	8.0	6	20	-17
North America	2.2	15.2	14.1	1.2	1.7	5	24	-38
Western Europe	1.2	4.3	7.8	0.3	0.9	12	48	-35
Middle East	0.8	4.9	5.1	0.4	0.6	7	18	10
All other regions	0.7	1.7	4.7	0.1	0.6	16	16	-5
C./E. Europe/Baltic States/CIS a								
World	18.8	100.0	100.0	6.0 I	14.5	...	24	1
Western Europe	6.5	46.7	34.5	2.8	5.0	7	35	3
C./E. Europe/Baltic States/CIS	4.6	14.8 I	24.4	0.9 I	3.5	...	34	8
Asia	3.6	26.3	19.0	1.6	2.8	7	2	-8
Middle East	1.0	5.0	5.5	0.3	0.8	11	49	1
All other regions	2.3	7.0	12.1	0.4	1.7	16	30	-19

a Includes the intra trade of the Baltic States and the CIS beginning with 1996.

Table IV.33

Iron and steel imports of the European Union and the United States by region and supplier, 2001

(Million dollars and percentage)

	European Union (15)					United States			
	Value	Share	Annual percentage change			Value	Share	Annual percentage change	
	2001	2001	2000	2001		2001	2001	2000	2001
Region					Region				
World	52699	100.0	11	-8	World	14995	100.0	18	-22
Western Europe	42873	81.4	8	-8	Western Europe	4362	29.1	19	-16
C./E. Europe/ Baltic States/CIS	4726	9.0	24	0	Asia	3811	25.4	16	-27
Asia	1944	3.7	34	-19	Latin America	2939	19.6	15	-17
Latin America	1116	2.1	35	-19	North America	2518	16.8	9	-14
Africa	1123	2.1	30	-6	C./E. Europe/ Baltic States/CIS	943	6.3	40	-45
North America	725	1.4	9	1	Africa	383	2.6	18	-34
Middle East	120	0.2	149	-31	Middle East	39	0.3	96	-20
Suppliers					Suppliers				
European Union (15)	40161	76.2	8	-8	European Union (15)	4003	26.7	19	-16
Russian Fed.	1178	2.2	56	-16	Canada	2518	16.8	9	-14
Turkey	810	1.5	16	11	Japan	1387	9.2	-15	-8
South Africa	783	1.5	30	-9	Brazil	1196	8.0	23	-16
Czech Rep.	733	1.4	8	4	Mexico	1077	7.2	5	-19
Above 5	43666	82.9	9	-8	Above 5	10181	67.9	10	-15
Switzerland	729	1.4	8	-8	Korea, Rep. of	918	6.1	7	-19
Norway	699	1.3	-7	-7	China	490	3.3	67	-29
Poland	684	1.3	30	-4	Russian Fed.	442	2.9	25	-19
United States	635	1.2	13	1	Taipei, Chinese	384	2.6	43	-45
Ukraine	496	0.9	-2	30	South Africa	338	2.3	20	-36
Japan	486	0.9	5	15	Venezuela	305	2.0	26	-12
Slovak Rep.	453	0.9	13	18	Turkey	227	1.5	62	7
Brazil	448	0.9	25	-31	Australia	193	1.3	11	-25
Korea, Rep. of	367	0.7	20	-20	India	179	1.2	107	-58
Bulgaria	341	0.6	23	15	Ukraine	162	1.1	93	-67
Romania	308	0.6	9	0	Argentina	159	1.1	18	-15
China	269	0.5	67	-29	Trinidad and Tobago	118	0.8	-11	34
Hungary	226	0.4	19	-15	Thailand	86	0.6	113	-60
Slovenia	186	0.4	10	-1	Romania	80	0.5	22	-40
Taipei, Chinese	186	0.4	37	-39	Malaysia	70	0.5	65	-1
Argentina	174	0.3	40	6	Norway	69	0.5	4	-43
Colombia	168	0.3	55	-5	Czech Rep.	65	0.4	79	51
India	162	0.3	21	-33	Indonesia	47	0.3	-3	-63
Venezuela	141	0.3	-14	53	Kazakhstan	46	0.3	43	-75
Kazakhstan	140	0.3	22	-6	Poland	42	0.3	113	-58
Australia	136	0.3	15	15	Moldova, Rep. of	40	0.3	8	-52
TFYR Macedonia	130	0.2	51	-15	Colombia	39	0.3	96	-17
Indonesia	123	0.2	69	11	Switzerland	36	0.2	-24	-32
Egypt	108	0.2	230	24	Dominican Republic	32	0.2	59	-56
New Caledonia	105	0.2	66	-25	Egypt	26	0.2	71	117
Above 30	51566	97.9	-	-	Above 30	14716	98.1	-	-

Table IV.34

Leading exporters and importers of iron and steel, 2001

(Billion dollars and percentage)

	Value	Share in world exports/imports			Annual percentage change			
	2001	1980	1990	2001	1990-01	1999	2000	2001
Exporters								
European Union (15)	57.87	52.9	57.0	44.7	0	-16	9	-7
Extra-exports	17.71	22.0	17.5	13.7	0	-20	13	-2
Japan	13.54	20.4	11.8	10.5	1	-9	10	-9
Russian Fed. a	6.00	-	-	4.6	-	-15	33	-10
United States	5.97	4.2	3.3	4.6	5	-10	16	-6
Korea, Rep. of	5.83	2.2	3.4	4.5	4	-18	13	-13
Ukraine a, b	4.88	-	-	3.5	-	-14	30	…
Taipei, Chinese	3.77	0.4	0.8	2.9	14	11	30	-18
China c	3.15	…	1.2	2.4	9	-19	65	-28
Brazil	3.14	1.1	3.4	2.4	-1	-15	17	-14
Canada	2.80	2.3	1.9	2.2	3	-8	11	-13
Turkey	2.47	0.0	1.4	1.9	5	-5	6	34
South Africa	2.18	1.6	2.0	1.7	0	-5	19	-21
Hong Kong, China	1.49	-	-	-	9	-18	4	-21
domestic exports	0.01	0.0	0.0	0.0	-12	-20	-18	-42
re-exports	1.48	-	-	-	10	-18	4	-21
Czech Rep. c	1.41	-	-	1.1	-	-21	6	15
India b	1.37	0.1	0.2	1.0	19	25	35	…
Above 15	114.37	85.3	86.6	87.9	-	-	-	-
Importers								
European Union (15)	52.70	36.4	45.2	37.2	0	-16	11	-8
Extra-imports	12.54	6.2	7.6	8.8	4	-21	23	-6
United States	14.99	10.1	9.5	10.6	3	-21	18	-22
China c	10.75	…	2.5	7.6	13	15	29	11
Korea, Rep. of	4.42	1.2	2.9	3.1	3	42	33	-17
Canada d	4.12	1.6	2.0	2.9	6	-10	24	-22
Mexico c	3.81	2.2	1.0	2.7	12	-7	…	-11
Taipei, Chinese	3.00	1.4	2.5	2.1	0	-4	11	-36
Japan	2.78	1.1	4.1	2.0	-4	-8	24	-24
Thailand	2.58	0.6	2.4	1.8	0	40	3	-7
Hong Kong, China	2.52	-	-	-	5	-15	6	-21
retained imports	1.04	0.8	0.8	0.7	1	-10	9	-21
Malaysia c	2.19	0.8	1.3	1.5	4	25	-1	3
Turkey	1.78	0.4	1.1	1.3	3	-30	53	-26
Russian Fed. a	1.71	-	-	1.2	-	-30	31	-2
Iran, Islamic Rep. of a, b	1.60	…	…	1.0	…	-9	36	…
Poland	1.60	1.5	0.3	1.1	15	-14	14	11
Above 15	109.08	59.4	75.6	76.9	-	-	-	-

a Includes Secretariat estimates.
b 2000 instead of 2001.
c Includes significant shipments through processing zones.
d Imports are valued f.o.b.

4.2 Chemicals

Table IV.35

World trade in chemicals, 2001

(Billion dollars and percentage)

Value	595
Annual percentage change	
1980-85	1
1985-90	14
1990-01	7
2000	9
2001	2
Share in world merchandise trade	9.9
Share in world exports of manufactures	13.3

Table IV.36

Major regional flows in world exports of chemicals, 2001

(Billion dollars and percentage)

	Value	Annual percentage change		
	2001	1990-01	2000	2001
Intra-Western Europe	229.5	5	3	3
Intra-Asia	60.9	10	24	-8
Western Europe to North America	40.8	11	10	7
Intra-North America	28.4	9	12	0
Western Europe to Asia	28.3	4	4	-1
North America to Western Europe	25.8	7	15	3

Table IV.37

Share of chemicals in trade in total merchandise and in manufactures by region, 2001

(Percentage)

	Exports	Imports
Share of chemicals in total merchandise		
World	9.9	9.9
North America	9.8	7.0
Latin America	4.8	11.9
Western Europe	14.0	11.7
C./E. Europe/Baltic States/CIS	6.9	11.0
Africa	3.6	10.7
Middle East	6.0	8.5
Asia	6.4	9.2
Share of chemicals in manufactures		
World	13.3	13.3
North America	12.7	8.8
Latin America	8.0	15.4
Western Europe	17.3	15.4
C./E. Europe/Baltic States/CIS	12.2	14.8
Africa	14.2	15.1
Middle East	27.4	11.3
Asia	7.6	13.1

Chart IV.8

Regional shares in world trade in chemicals, 2001

(Percentage)

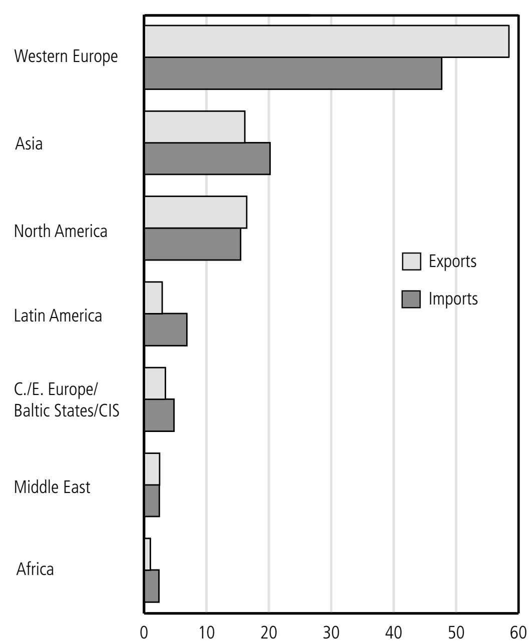


Table IV.38

Exports of chemicals by principal region, 2001

(Billion dollars and percentage)

	Value	Share in				Annual percentage change		
		Region's exports		World exports				
	2001	1990	2001	1990	2001	1990-01	2000	2001
World	595.4	-	-	100.0	100.0	7	9	2
Western Europe								
World	347.4	100.0	100.0	65.0	58.4	6	4	4
Western Europe	229.5	70.2	66.0	45.7	38.5	5	3	3
North America	40.8	6.5	11.7	4.2	6.8	11	10	7
Asia	28.3	9.2	8.2	6.0	4.8	4	4	-1
C./E. Europe/Baltic States/CIS	19.0	4.0	5.5	2.6	3.2	8	10	13
Latin America	10.1	2.6	2.9	1.7	1.7	7	3	7
Middle East	7.9	2.9	2.3	1.9	1.3	3	0	6
Africa	7.9	3.5	2.3	2.3	1.3	1	-4	4
North America								
World	97.3	100.0	100.0	15.6	16.3	7	15	0
North America	28.4	23.2	29.2	3.6	4.8	9	12	0
Western Europe	25.8	27.0	26.5	4.2	4.3	7	15	3
Asia	22.3	32.2	22.9	5.0	3.7	4	14	-6
Latin America	17.6	14.0	18.1	2.2	3.0	10	20	-1
All other regions	3.1	3.6	3.2	0.6	0.5	6	18	21
Asia								
World	95.2	100.0	100.0	11.4	16.0	10	19	-5
Asia	60.9	62.0	63.9	7.1	10.2	10	24	-8
Western Europe	13.6	16.1	14.3	1.8	2.3	9	5	0
North America	12.6	13.2	13.3	1.5	2.1	10	12	-2
Latin America	2.5	1.2	2.6	0.1	0.4	18	25	3
Middle East	2.0	1.8	2.1	0.2	0.3	12	17	1
Africa	1.9	1.3	2.0	0.1	0.3	14	14	9
C./E. Europe/Baltic States/CIS	1.1	3.0	1.2	0.3	0.2	1	41	12
Japan								
World	30.6	100.0	100.0	5.3	5.1	6	14	-13
Asia	18.1	57.0	59.1	3.0	3.0	7	20	-15
North America	6.4	16.4	20.9	0.9	1.1	9	10	-12
Western Europe	5.3	20.3	17.2	1.1	0.9	5	2	-4
Latin America	0.5	1.6	1.6	0.1	0.1	6	5	-12
All other regions	0.4	4.7	1.3	0.2	0.1	-5	3	-7
Other economies in Asia								
World	64.6	100.0	100.0	6.1	10.9	12	22	-1
Asia	42.8	66.5	66.2	4.0	7.2	12	26	-5
Western Europe	8.3	12.3	12.9	0.7	1.4	13	7	4
North America	6.2	10.3	9.7	0.6	1.0	12	15	12
Latin America	2.0	0.9	3.1	0.1	0.3	25	32	8
Middle East	1.8	1.9	2.7	0.1	0.3	16	21	2
Africa	1.8	1.7	2.7	0.1	0.3	17	14	12
C./E. Europe/Baltic States/CIS	1.0	3.8	1.6	0.2	0.2	4	44	13

Table IV.39

Leading exporters and importers of chemicals, 2001

(Billion dollars and percentage)

	Value	Share in world exports/imports			Annual percentage change			
	2001	1980	1990	2001	1990-01	1999	2000	2001
Exporters								
European Union (15)	316.36	58.4	59.0	53.1	6	2	4	3
Extra-exports	125.59	23.3	21.1	21.1	7	6	5	5
United States	82.30	14.8	13.3	13.8	7	4	15	0
Japan	30.62	4.7	5.3	5.1	6	13	14	-13
Switzerland	25.60	4.0	4.6	4.3	6	4	-5	15
Canada	14.99	2.5	2.2	2.5	8	6	15	1
China a	13.35	0.8	1.3	2.2	12	1	17	10
Korea, Rep. of	12.52	0.5	0.8	2.1	16	5	28	-9
Singapore	9.88	0.5	1.1	1.7	10	28	6	3
domestic exports	6.77	0.2	0.7	1.1	12	43	1	8
re-exports	3.11	0.3	0.4	0.5	8	4	15	-7
Hong Kong, China	9.26	-	-	-	7	-1	11	-11
domestic exports	0.70	0.1	0.3	0.1	-2	-16	11	-13
re-exports	8.56	-	-	-	8	0	12	-11
Taipei, Chinese	8.78	0.4	0.9	1.5	11	13	30	-5
Russian Fed. b	5.67	-	-	1.0	-	-1	30	1
Mexico a	5.46	0.4	0.7	0.9	9	4	19	1
Saudi Arabia	4.69	0.1	0.8	0.8	6	-10	25	11
India c	4.36	0.2	0.4	0.7	13	18	18	...
Israel	4.16	0.6	0.6	0.7	8	5	14	3
Above 15	539.45	87.8	91.6	90.6	-	-	-	-
Importers								
European Union (15)	259.18	46.4	50.6	41.8	5	0	4	3
Extra-imports	68.42	11.6	12.0	11.0	6	1	5	4
United States	81.13	6.2	7.7	13.1	12	14	18	7
China a	32.10	2.0	2.2	5.2	15	19	26	6
Japan	25.19	4.1	5.0	4.1	5	11	14	-3
Canada d	20.51	2.2	2.5	3.3	9	9	9	2
Mexico a	16.54	1.5	1.2	2.7	15	16	...	2
Switzerland	16.18	2.5	2.6	2.6	6	4	2	18
Korea, Rep. of	12.94	1.3	2.4	2.1	5	22	19	-4
Taipei, Chinese	12.17	1.3	2.3	2.0	5	7	23	-22
Hong Kong, China	11.53	-	-	-	6	-2	16	-14
retained imports	2.97	0.7	0.9	0.5	1	-7	28	-22
Brazil	10.75	2.4	1.1	1.7	11	-3	9	2
Poland	7.34	1.0	0.3	1.2	20	3	5	6
Australia d	7.33	1.2	1.2	1.2	7	9	7	-9
Singapore	6.82	0.9	1.5	1.1	3	7	16	-12
retained imports	3.71	0.6	1.1	0.6	1	10	17	-15
Thailand	6.66	0.7	1.1	1.1	6	16	20	-2
Above 15	517.80	74.4	82.6	83.6	-	-	-	-

a Includes significant shipments through processing zones.
b Includes Secretariat estimates.
c 2000 instead of 2001.
d Imports are valued f.o.b.

4.3 Office Machines and Telecom Equipment

Table IV.40

World trade in office machines and telecom equipment, 2001

(Billion dollars and percentage)

Value	828
Annual percentage change	
1980-85	9
1985-90	18
1990-01	10
2000	22
2001	-14
Share in world merchandise trade	13.8
Share in world exports of manufactures	18.5

Table IV.41

Major regional flows in world exports of office machines and telecom equipment, 2001

(Billion dollars and percentage)

	Value	Annual percentage change		
	2001	1990-01	2000	2001
Intra-Asia	183.7	15	33	-15
Intra-Western Europe	171.1	8	12	-11
Asia to North America	103.8	6	16	-21
Asia to Western Europe	74.8	7	19	-16
North America to Asia	51.2	9	26	-20
Latin America to North America	35.3	20	28	3

Table IV.42

Share of office machines and telecom equipment in trade in total merchandise and in manufactures by region, 2001

(Percentage)

	Exports	Imports
Share in total merchandise		
World	13.8	13.8
North America	14.1	14.2
Latin America	11.3	11.8
Western Europe	10.0	11.9
C./E. Europe/Baltic States/CIS	4.5	8.0
Africa	0.7	6.2
Middle East	2.3	7.4
Asia	25.5	20.4
Australia, Japan and New Zealand	17.5	15.0
Other Asia	29.3	22.7
Share in manufactures		
World	18.5	18.5
North America	18.3	18.0
Latin America	18.8	15.3
Western Europe	12.3	15.8
C./E. Europe/Baltic States/CIS	8.0	10.7
Africa	2.6	8.8
Middle East	10.4	9.8
Asia	30.6	29.2
Australia, Japan and New Zealand	21.5	24.1
Other Asia	34.8	31.0

Chart IV.9

Regional shares in world trade in office machines and telecom equipment, 2001

(Percentage)

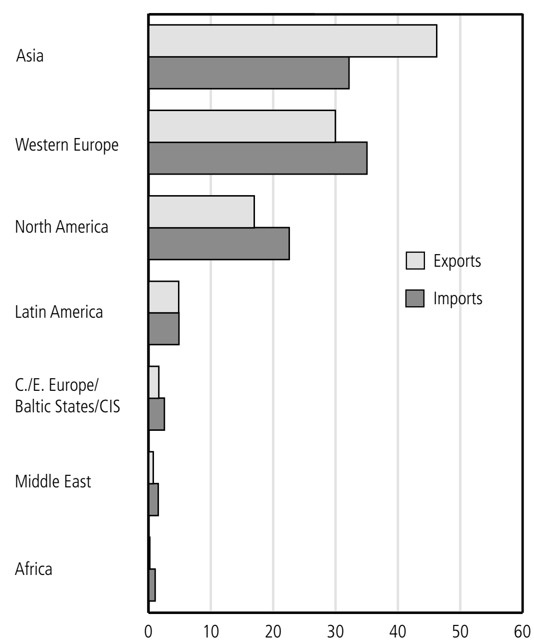


Table IV.43

Exports of office machines and telecom equipment by principal region, 2001

(Billion dollars and percentage)

	Value	Share in				Annual percentage change		
		Region's exports		World exports				
	2001	1990	2001	1990	2001	1990-01	2000	2001
World	827.5	-	-	100.0	100.0	10	22	-14
Asia								
World	382.2	100.0	100.0	45.9	46.2	10	25	-16
Asia	183.7	29.8	48.1	13.7	22.2	15	33	-15
North America	103.8	37.9	27.2	17.4	12.5	6	16	-21
Western Europe	74.8	27.3	19.6	12.5	9.0	7	19	-16
Latin America	7.3	1.9	1.9	0.9	0.9	10	24	-12
Middle East	3.9	1.2	1.0	0.5	0.5	9	30	12
C./E. Europe/Baltic States/CIS	2.8	0.9	0.7	0.4	0.3	7	38	17
Africa	1.5	0.6	0.4	0.3	0.2	6	0	-1
Japan								
World	82.6	100.0	100.0	22.4	10.0	2	18	-24
Asia	37.1	26.7	45.0	6.0	4.5	7	28	-22
North America	25.1	38.8	30.3	8.7	3.0	0	10	-27
Western Europe	17.8	29.5	21.6	6.6	2.2	-1	16	-23
All other regions	2.6	5.0	3.1	1.1	0.3	-2	10	-19
Other economies in Asia								
World	299.6	100.0	100.0	23.5	36.2	14	27	-13
Asia	146.6	32.7	48.9	7.7	17.7	18	34	-13
North America	78.8	37.1	26.3	8.7	9.5	11	19	-19
Western Europe	57.0	25.1	19.0	5.9	6.9	11	21	-13
All other regions	13.0	4.2	4.3	1.0	1.6	15	29	3
Western Europe								
World	247.6	100.0	100.0	32.0	29.9	9	15	-10
Western Europe	171.1	76.2	69.1	24.4	20.7	8	12	-11
Asia	28.0	6.5	11.3	2.1	3.4	15	30	-9
North America	16.6	6.7	6.7	2.1	2.0	9	18	-13
C./E. Europe/Baltic States/CIS	14.8	3.3	6.0	1.1	1.8	15	28	4
Middle East	6.0	1.8	2.4	0.6	0.7	12	25	14
Africa	5.1	2.7	2.1	0.9	0.6	6	10	-8
Latin America	3.9	1.6	1.6	0.5	0.5	9	23	-10
North America								
World	139.5	100.0	100.0	19.2	16.9	8	25	-20
Asia	51.2	33.7	36.7	6.5	6.2	9	26	-20
Western Europe	29.6	32.6	21.2	6.3	3.6	4	17	-15
North America	28.1	21.4	20.2	4.1	3.4	8	31	-30
Latin America	26.9	9.5	19.3	1.8	3.3	16	27	-12
All other regions	3.7	2.8	2.7	0.5	0.4	8	9	-8

Table IV.44

Imports of office machines and telecom equipment of selected economies by region and supplier, 2001

(Million dollars and percentage)

	Canada a					United States			
	Value	Share	Annual percentage change			Value	Share	Annual percentage change	
	2001	2001	2000	2001		2001	2001	2000	2001
Region					Region				
World	23359	100.0	22	-23	World	172835	100.0	22	-20
North America	10331	44.2	16	-26	Asia	119016	68.9	18	-22
Asia	7925	33.9	21	-23	Latin America	29428	17.0	28	1
Latin America	1901	8.1	37	-5	Western Europe	12370	7.2	17	-14
Western Europe	1124	4.8	45	-47	North America	9314	5.4	51	-41
Middle East	85	0.4	62	12	Middle East	1476	0.9	87	-28
C./E. Europe/					C./E. Europe/				
Baltic States/CIS	67	0.1	136	20	Baltic States/CIS	1126	0.7	20	-27
Africa	12	0.0	31	-50	Africa	105	0.1	18	-38
Suppliers					Suppliers				
United States	10331	44.2	16	-26	Mexico	27698	16.0	32	2
Japan	2003	8.6	13	-29	Japan	25051	14.5	12	-32
Mexico	1826	7.8	41	-5	China	22272	12.9	32	-1
China	1413	6.0	45	9	Malaysia	17418	10.1	22	-14
Taipei, Chinese	1188	5.1	1	-21	Taipei, Chinese	14875	8.6	20	-22
Above 5	16760	71.7	18	-22	Above 5	92439	53.5	22	-14
European Union (15)	1079	4.6	45	-47	Korea, Rep. of	14441	8.4	33	-29
Korea, Rep. of	901	3.9	45	-24	European Union (15)	11580	6.7	17	-14
Malaysia	846	3.6	27	-32	Singapore	10563	6.1	2	-27
Singapore	538	2.3	13	-25	Canada	9314	5.4	51	-41
Philippines	381	1.6	38	-43	Philippines	6367	3.7	17	-27
Thailand	375	1.6	18	-9	Thailand	4548	2.6	9	-22
Hong Kong, China	138	0.6	25	-47	Indonesia	2071	1.2	10	-1
Indonesia	107	0.5	9	11	Israel	1469	0.8	88	-28
Israel	84	0.4	65	12	Brazil	1227	0.7	91	66
Brazil	62	0.3	-17	-11	Hong Kong, China	1170	0.7	9	-36
Hungary	43	0.2	101	10	Hungary	961	0.6	16	-31
Switzerland	24	0.1	54	-28	Costa Rica	453	0.3	-32	-57
Australia	22	0.1	47	-25	Switzerland	338	0.2	-5	-14
Estonia	16	0.1	-	61	Malta	289	0.2	60	-23
Norway	15	0.1	4	-12	Norway	155	0.1	-3	4
Above 20	21393	91.6	-	-	Above 20	157385	91.1	-	-

Table IV.44 *(continued)*

Imports of office machines and telecom equipment of selected economies by region and supplier, 2001

(Million dollars and percentage)

	European Union (15)					Japan			
	Value	Share	Annual percentage change			Value	Share	Annual percentage change	
	2001	2001	2000	2001		2001	2001	2000	2001
Region					Region				
World	285536	100.0	16	-12	World	52477	100.0	38	-14
Western Europe	159831	56.0	12	-11	Asia	35815	68.2	46	-11
Asia	75306	26.4	18	-14	North America	11821	22.5	20	-19
North America	30856	10.8	20	-16	Western Europe	3853	7.3	34	-19
C./E. Europe/					Latin America	658	1.3	120	-10
Baltic States/CIS	9309	3.3	38	10	C./E. Europe/				
Middle East	1698	0.6	30	-13	Baltic States/CIS	204	0.4	28	-13
Latin America	1680	0.6	39	-31	Middle East	120	0.2	-21	-9
Africa	503	0.2	-23	0	Africa	6	0.0	48	-56
Suppliers					Suppliers				
European Union (15)	156587	54.8	12	-11	United States	11388	21.7	19	-20
United States	28910	10.1	17	-15	China	8117	15.5	51	-14
Japan	17264	6.0	13	-24	Taipei, Chinese	6889	13.1	66	-27
China	14933	5.2	45	12	Malaysia	5313	10.1	41	-17
Taipei, Chinese	11337	4.0	25	-10	Korea, Rep. of	5140	9.8	42	-20
Above 5	229031	80.2	15	-11	Above 5	36847	70.2	54	-14
Korea, Rep. of	7242	2.5	34	-24	European Union (15)	3761	7.2	35	-19
Malaysia	7184	2.5	2	-14	Philippines	3542	6.8	54	-10
Singapore	7109	2.5	8	-25	Singapore	3051	5.8	26	-19
Hungary	5010	1.8	24	5	Thailand	2278	4.3	38	-8
Philippines	3712	1.3	5	-9	Indonesia	1006	1.9	37	19
Thailand	2705	0.9	13	-14	Mexico	500	1.0	-4	-8
Hong Kong, China	2257	0.8	-5	-24	Canada	432	0.8	81	-15
Canada	1944	0.7	71	-28	Hong Kong, China	421	0.8	97	1
Czech Rep.	1713	0.6	66	94	Hungary	182	0.3	23	-16
Switzerland	1372	0.5	7	-16	Costa Rica	132	0.3	219	-13
Israel	1332	0.5	41	-18	Israel	118	0.2	-22	-9
Mexico	1295	0.5	64	18	Switzerland	71	0.1	22	-22
Indonesia	1125	0.4	27	-5	Brazil	24	0.0	4990	-63
Poland	1037	0.4	2	14	Australia	24	0.0	-22	-56
Turkey	903	0.3	21	4	Viet Nam	23	0.0	57	-18
Above 20	274971	96.3	-	-	Above 20	52413	99.9	-	-

a Imports are valued f.o.b.

Table IV.45

Leading exporters and importers of office machines and telecom equipment, 2001

(Billion dollars and percentage)

	Value	Share in world exports/imports			Annual percentage change			
	2001	1980	1990	2001	1990-01	1999	2000	2001
Exporters								
European Union (15)	241.76	35.9	31.1	29.2	9	8	15	-10
Extra-exports	85.17	12.4	9.1	10.3	11	7	22	-9
United States	126.69	19.5	17.3	15.3	8	10	22	-17
Japan	82.60	21.1	22.4	10.0	2	7	18	-24
Singapore	61.78	3.2	6.4	7.5	11	5	22	-16
domestic exports	31.80	2.5	4.9	3.8	7	5	8	-23
re-exports	29.98	0.7	1.5	3.6	19	6	47	-7
China a	52.26	0.1	1.0	6.3	29	19	44	20
Hong Kong, China	50.16	-	-	-	13	5	30	0
domestic exports	3.02	2.0	1.6	0.4	-4	-16	11	-24
re-exports	47.14	-	-	-	17	8	32	2
Taipei, Chinese	45.83	3.2	4.7	5.5	11	16	30	-21
Malaysia a	44.87	1.4	2.7	5.4	17	28	18	-14
Korea, Rep. of	44.18	2.0	4.8	5.3	11	35	37	-25
Mexico a	34.38	0.1	1.5	4.2	20	22	29	1
Philippines a	20.75	0.8	0.6	2.5	25	29	5	-17
Thailand	16.21	0.0	1.2	2.0	15	7	23	-13
Canada	12.84	2.0	1.9	1.6	8	8	47	-38
Hungary a	6.80	0.5	0.2	0.8	27	28	31	-5
Indonesia	5.94	0.1	0.0	0.7	42	26	145	-18
Above 15	799.92	91.8	97.6	96.7	-	-	-	-
Importers								
European Union (15)	285.54	41.5	42.3	33.5	8	8	16	-12
Extra-imports	128.95	20.1	21.9	15.1	6	8	22	-13
United States	172.84	15.9	21.1	20.3	10	13	22	-20
Hong Kong, China	57.47	-	-	-	15	1	36	-3
retained imports	10.33	1.7	1.4	1.2	8	-18	52	-22
Japan	52.48	2.6	3.7	6.2	15	21	38	-14
China a	49.56	0.6	1.3	5.8	26	38	46	12
Singapore	44.20	2.6	4.5	5.2	11	14	28	-18
retained imports	14.22	1.9	2.9	1.7	4	24	7	-35
Mexico a	32.83	0.9	1.5	3.9	19	26	...	10
Taipei, Chinese	29.12	1.4	2.5	3.4	13	23	33	-25
Malaysia a	27.64	1.6	1.9	3.2	15	16	28	-15
Korea, Rep. of	26.33	1.3	2.6	3.1	12	49	38	-23
Canada b	23.36	4.1	3.5	2.7	8	10	22	-23
Thailand	13.40	0.2	1.1	1.6	13	21	44	-5
Philippines a	11.26	0.8	0.7	1.3	17	4	-5	-6
Australia b	8.23	1.5	1.4	1.0	6	19	17	-24
Brazil	7.18	0.7	0.5	0.8	15	-5	33	-9
Above 15	794.29	77.5	90.0	93.2	-	-	-	-

a Includes significant shipments through processing zones.
b Imports are valued f.o.b.

Table IV.46

Exports of office machines and telecom equipment of selected economies, 1990-01

(Million dollars and percentage)

	Value					Share in economy's total merchandise exports	
	1990	1995	1999	2000	2001	1990	2001 a
World	298540	604110	786310	959630	827530	8.8	13.8
Australia	738	1882	1617	1781	1658	1.9	2.6
Brazil	692	749	1345	2376	2397	2.2	4.1
Canada	5622	11544	14040	20631	12843	4.4	4.9
China b	3126	14506	30139	43498	52263	5.0	19.6
Costa Rica b	0	…	2576	1688	...	0.0	28.8
Czech Rep. b	-	481	690	1280	2451	-	7.3
European Union (15)	92894	163917	232558	268413	241759	6.2	10.6
Intra-exports	65803	109031	156323	175117	156587	6.7	11.0
Extra-exports	27091	54886	76235	93296	85172	5.1	9.8
Hong Kong, China	12886	34051	38418	50066	50158	15.6	26.3
domestic exports	4772	5935	3610	3997	3020	16.5	14.9
re-exports	8114	28116	34808	46069	47138	15.2	27.6
Hungary b	505	537	5432	7132	6799	5.1	22.3
Indonesia	124	2281	2976	7280	5937	0.5	10.5
Israel	1226	2369	4880	6939	5816	10.2	20.0
Japan	67007	106611	91372	108179	82604	23.3	20.5
Korea, Rep. of	14339	33217	42918	58686	44184	22.1	29.4
Lithuania	-	115	129	181	224	-	4.9
Malaysia b	8207	32721	44268	52382	44869	27.9	51.0
Malta	472	1064	1059	1556	1057	41.7	55.2
Mexico b	4535	11616	26485	34042	34376	11.1	21.7
Morocco b	114	252	534	506	449	2.7	6.3
Norway	655	955	1162	1142	1186	1.9	2.1
Philippines b	1835	7564	24040	25138	20750	22.6	64.6
Poland	342	406	1141	1271	1590	2.4	4.4
Romania	33	21	148	513	594	0.7	5.2
Singapore	19235	60322	60601	73820	61782	36.5	50.7
domestic exports	14685	40318	38615	41523	31798	42.2	48.1
re-exports	4549	20004	21986	32297	29984	25.4	53.9
Slovak Rep.	-	109	334	365	453	-	3.6
Slovenia	-	139	129	168	522	-	5.6
Switzerland	1520	2257	2730	2967	2604	2.4	3.2
Taipei, Chinese	14105	32568	44769	58074	45833	21.0	37.4
Thailand	3520	11660	15240	18681	16214	15.3	24.9
Turkey	259	255	821	1008	1040	2.0	3.3
United States	51658	97990	125664	153399	126689	13.1	17.3

a Or nearest year.
b Includes significant exports from processing zones.

Table IV.47

Imports of office machines and telecom equipment of selected economies, 1990-01

(Million dollars and percentage)

	Value					Share in economy's total merchandise imports	
	1990	1995	1999	2000	2001	1990	2001 a
Algeria	253	586	450	444	...	2.6	4.8
Argentina	305	1919	2899	3568	2234	7.5	11.0
Australia b	4262	8123	9241	10771	8229	10.6	13.7
Brazil	1514	5230	5922	7900	7181	6.7	12.3
Canada b	10475	19815	24884	30418	23359	9.0	10.6
Chile	456	1076	1553	1681	1477	5.9	8.6
China c	4058	14352	30489	44427	49565	7.6	20.3
Colombia	364	1343	1026	1048	1207	6.5	9.4
Costa Rica c	84	170	686	977	...	4.2	15.3
Croatia	-	400	349	418	600	-	7.5
Czech Rep. b, c	-	1948	2153	2790	3350	-	9.2
Ecuador	57	156	175	200	425	3.1	8.0
Egypt	226	368	712	...	606	1.8	4.7
European Union (15)	127230	198660	278905	324098	285536	8.2	12.2
Intra-imports d	61513					6.3	
Extra-imports	65717	89629	122582	148981	128949	11.4	14.1
Guatemala	61	158	384	419	400	3.7	7.1
Hong Kong, China	12326	40214	43554	59370	57466	14.5	28.4
retained imports	4212	12098	8746	13301	10328	13.4	33.1
Hungary c	670	1015	4434	6034	6380	6.5	18.9
India	662	1199	2077	...	...	2.8	4.4
Indonesia	892	1725	413	705	784	4.1	2.5
Iran, Islamic Rep. of	...	...	478	530	...	...	3.7
Israel	939	2556	3594	4894	4110	5.6	11.7
Japan	11259	37678	44060	60866	52477	4.8	15.0
Jordan	56	106	130	201	357	2.1	7.4
Kazakhstan	-	...	208	261	339	-	5.3
Korea, Rep. of	7741	16467	24729	34012	26328	11.1	18.7
Kuwait	128	341	438	...	...	3.2	5.7
Lebanon	...	...	267	254	353	...	4.8
Lithuania	-	151	244	267	351	-	5.6
Macao, China	64	113	81	104	182	4.1	7.6
Malaysia c	5744	22164	25233	32405	27641	19.6	37.3
Malta	488	964	993	1422	866	24.8	33.4
Mexico c, e	4640	9563	21362	29826	32832	10.7	17.2
Morocco c	306	240	905	1212	...	4.4	10.5
New Zealand	905	1515	1514	1618	1270	9.5	9.5
Norway	1732	2968	3251	3352	3225	6.4	10.0
Pakistan	236	308	299	372	391	3.2	3.7
Panama	65	143	283	244	...	4.2	7.2
Paraguay	320	585	211	224	183	23.7	8.5
Peru	100	687	603	656	685	3.8	9.4
Philippines c	2044	6788	12591	11982	11259	15.7	35.9
Poland	784	1816	4170	4559	4053	6.8	8.1
Romania	211	523	769	1257	1381	2.8	8.9
Russian Fed. f	-	...	2537	2954	4647	-	8.6
Saudi Arabia	811	1203	1398	1242	1327	3.4	4.3
Singapore	13392	43769	42281	54107	44201	22.0	38.1
retained imports	8842	23765	20295	21810	14217	20.6	23.5
Slovak Rep. b	-	565	693	746	929	-	6.3
Slovenia	-	449	591	556	205	-	2.0
South Africa b	...	2693	3255	3364	2967	...	11.7
Switzerland	4797	6521	7604	8206	7152	6.9	8.5
Taipei, Chinese	7438	18766	29173	38721	29118	13.6	27.1
Thailand	3421	10368	9752	14055	13398	10.4	21.6
Tunisia	149	256	289	318	373	2.7	3.9
Turkey	1234	1677	4325	5522	2383	5.5	5.9
United Arab Emirates f	717	2042	2430	3240	...	6.4	8.5
United States	63365	139927	176840	215544	172835	12.3	14.6
Venezuela b	367	682	1133	1189	1201	5.6	7.3
Zimbabwe b	59	131	123	...	...	3.2	5.8

a Or nearest year.
b Imports are valued f.o.b.
c Includes significant imports into processing zones.
d See the Technical Notes for information on intra-EU imports.
e Beginning with 2000 imports are valued c.i.f.
f Includes Secretariat estimates.

4.4 Automotive Products

Table IV.48

World trade in automotive products, 2001

(Billion dollars and percentage)

Value	565
Annual percentage change	
1980-85	5
1985-90	14
1990-01	5
2000	4
2001	-2
Share in world merchandise trade	9.4
Share in world exports of manufactures	12.6

Table IV.49

Major regional flows in world exports of automotive products, 2001

(Billion dollars and percentage)

	Value	Annual percentage change		
	2001	1990-01	2000	2001
Intra-Western Europe	199.2	4	-4	-2
Intra-North America	87.7	6	0	-10
Asia to North America	53.4	4	13	-4
Latin America to North America	31.0	18	23	2
Western Europe to North America	28.5	6	0	3
Intra-Asia	19.6	4	27	-10

Table IV.50

Share of automotive products in trade in total merchandise and in manufactures by region, 2001

(Percentage)

	Exports	Imports
Share of automotive products in total merchandise		
World	9.4	9.4
North America	11.9	15.4
Latin America	11.3	9.8
Western Europe	11.1	10.0
C./E. Europe/Baltic States/CIS	7.1	8.6
Africa	1.4	8.3
Middle East	0.8	10.2
Asia	7.2	3.0
Australia, Japan and New Zealand	17.2	4.7
Other Asia	2.4	2.2
Share of automotive products in manufactures		
World	12.6	12.6
North America	15.5	19.4
Latin America	18.9	12.7
Western Europe	13.7	13.2
C./E. Europe/Baltic States/CIS	12.6	11.5
Africa	5.4	11.7
Middle East	3.5	13.5
Asia	8.6	4.2
Australia, Japan and New Zealand	21.0	7.5
Other Asia	2.9	3.1

Chart IV.10

Regional shares in world trade in automotive products, 2001

(Percentage)

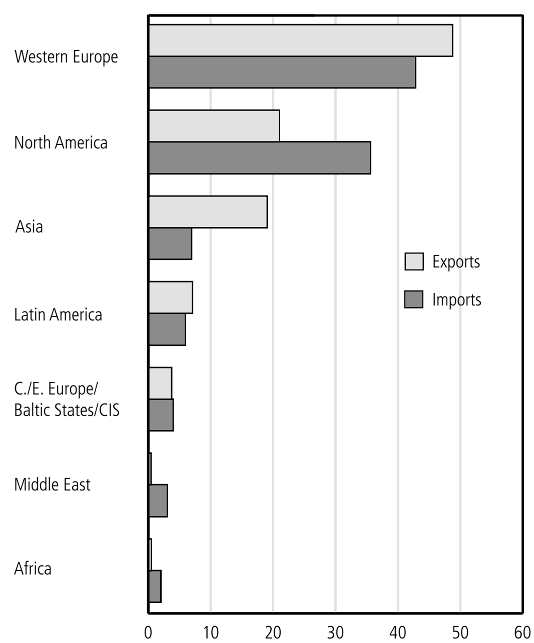


Table IV.51

Exports of automotive products by principal region, 2001

(Billion dollars and percentage)

	Value	Share in				Annual percentage change		
		Region's exports		World exports				
	2001	1990	2001	1990	2001	1990-01	2000	2001
World	564.6	-	-	100.0	100.0	5	4	-2
Western Europe								
World	275.6	100.0	100.0	54.4	48.8	4	-1	0
Western Europe	199.2	78.2	72.3	42.6	35.3	4	-4	-2
North America	28.5	8.9	10.3	4.9	5.0	6	0	3
C./E. Europe/Baltic States/CIS	16.6	1.3	6.0	0.7	2.9	20	14	16
Asia	13.1	5.7	4.7	3.1	2.3	3	14	5
Africa	6.5	3.1	2.4	1.7	1.2	2	4	22
Latin America	6.1	1.1	2.2	0.6	1.1	11	4	6
Middle East	5.3	1.5	1.9	0.8	0.9	7	28	18
North America								
World	118.4	100.0	100.0	19.1	21.0	6	4	-7
North America	87.7	77.6	74.1	14.8	15.5	6	0	-10
Latin America	15.5	7.7	13.1	1.5	2.8	11	36	-3
Western Europe	7.8	6.3	6.6	1.2	1.4	7	-7	14
Asia	4.7	5.9	3.9	1.1	0.8	2	23	-17
All other regions	2.7	2.5	2.3	0.5	0.5	5	15	27
Asia								
World	107.2	100.0	100.0	22.4	19.0	4	9	-6
North America	53.4	51.1	49.8	11.5	9.5	4	13	-4
Asia	19.6	17.8	18.2	4.0	3.5	4	27	-10
Western Europe	16.9	21.4	15.7	4.8	3.0	1	-10	-15
Middle East	8.1	4.1	7.5	0.9	1.4	10	11	15
Latin America	5.2	2.4	4.8	0.5	0.9	10	23	-6
Africa	2.5	2.5	2.3	0.6	0.4	3	-5	-13
C./E. Europe/Baltic States/CIS	1.1	0.3	1.1	0.1	0.2	16	-27	-14
Japan								
World	80.2	100.0	100.0	20.8	14.2	2	6	-9
North America	43.9	51.5	54.8	10.7	7.8	2	9	-7
Asia	13.3	16.9	16.5	3.5	2.3	2	23	-12
Western Europe	11.8	22.1	14.7	4.6	2.1	-2	-13	-20
Middle East	5.4	4.2	6.7	0.9	1.0	6	3	16
Latin America	3.6	2.5	4.5	0.5	0.6	8	14	-7
Africa	1.6	2.5	1.9	0.5	0.3	-1	-4	-17
C./E. Europe/Baltic States/CIS	0.6	0.3	0.8	0.1	0.1	12	19	-13
Latin America								
World	39.3	100.0	100.0	2.3	7.0	17	19	3
North America	31.0	70.5	78.9	1.6	5.5	18	23	2
Latin America	6.0	12.7	15.4	0.3	1.1	19	29	3
Western Europe	1.6	14.3	4.1	0.3	0.3	4	-35	-8
All other regions	0.6	2.5	1.6	0.1	0.1	12	11	89

Table IV.52

Imports of automotive products of selected economies by region and supplier, 2001

(Million dollars and percentage)

Canada a	Value 2001	Share 2001	Annual percentage change 2000	Annual percentage change 2001
Region				
World	41946	100.0	2	-9
North America	33342	79.5	-1	-11
Asia	4185	10.0	12	0
Latin America	2642	6.3	41	-2
Western Europe	1607	3.8	5	-5
All other regions	19	0.0	14	-3
Suppliers				
United States	33342	79.5	-1	-11
Japan	3294	7.9	7	-6
Mexico	2461	5.9	40	-5
European Union (15)	1591	3.8	6	-5
Korea, Rep. of	711	1.7	52	38
Above 5	41397	98.7	-	-

United States	Value 2001	Share 2001	Annual percentage change 2000	Annual percentage change 2001
Region				
World	165157	100.0	9	-3
North America	52858	32.0	-1	-10
Asia	52081	31.5	15	-1
Western Europe	29642	17.9	6	2
Latin America	29633	17.9	27	1
All other regions	943	0.6	64	60
Suppliers				
Canada	52858	32.0	-1	-10
Japan	42358	25.6	11	-5
European Union (15)	29451	17.8	6	2
Mexico	28342	17.2	28	0
Korea, Rep. of	7102	4.3	61	28
Above 5	160110	96.9	-	-

European Union (15)	Value 2001	Share 2001	Annual percentage change 2000	Annual percentage change 2001
Region				
World	229209	100.0	-5	-1
Western Europe	188420	82.2	-5	-1
Asia	16975	7.4	-11	-13
C./E. Europe/ Baltic States/CIS	14801	6.5	16	12
North America	6114	2.7	-7	10
Latin America	1642	0.7	-9	-4
All other regions	1215	0.5	-8	16
Suppliers				
European Union (15)	184390	80.4	-6	-1
Japan	12349	5.4	-12	-16
United States	5849	2.6	-6	11
Hungary	4970	2.2	0	13
Czech Rep.	4189	1.8	20	8
Above 5	211747	92.4	-	-

Mexico	Value 2001	Share 2001	Annual percentage change 2000	Annual percentage change 2001
Region				
World	20962	100.0	56	-6
North America	15633	74.6	48	-11
Western Europe	2784	13.3	55	23
Asia	1295	6.2	189	-3
Latin America	1227	5.9	130	22
All other regions	13	0.1	171	68
Suppliers				
United States	14542	69.4	47	-13
European Union (15)	2758	13.2	54	23
Canada	1091	5.2	58	8
Brazil	1039	5.0	129	25
Japan	1021	4.9	197	-12
Above 5	20451	97.6	-	-

a Imports are valued f.o.b.

Table IV.53

Leading exporters and importers of automotive products, 2001

(Billion dollars and percentage)

	Value	Share in world exports/imports			Annual percentage change			
	2001	1980	1990	2001	1990-01	1999	2000	2001
Exporters								
European Union (15)	270.90	52.8	53.8	48.0	4	1	-1	0
Extra-exports	86.51	19.5	14.3	15.3	6	-3	9	4
Japan	80.17	19.8	20.8	14.2	2	7	6	-9
United States	63.42	11.9	10.2	11.2	6	3	7	-6
Canada	54.97	6.9	8.9	9.7	6	24	0	-9
Mexico a	30.68	0.3	1.5	5.4	19	20	18	0
Korea, Rep. of	15.43	0.1	0.7	2.7	19	15	17	2
Czech Rep. a	5.45	-	-	1.0	-	22	13	17
Hungary a	5.32	0.6	0.2	0.9	21	23	1	12
Brazil	4.82	1.1	0.6	0.9	8	-26	21	3
Poland	4.23	0.6	0.1	0.7	25	20	80	6
Thailand	2.66	0.0	0.0	0.5	34	69	37	11
Turkey	2.29	0.0	0.0	0.4	28	80	5	51
Australia	2.27	0.2	0.2	0.4	11	33	19	5
Slovak Rep.	2.27	-	-	0.4	-	-3	27	-5
Argentina	2.06	0.1	0.1	0.4	24	-43	17	-2
Above 15	546.93	94.5	97.2	96.9	-	-	-	-
Importers								
European Union (15)	229.21	37.5	46.9	39.5	4	4	-5	-1
Extra-imports	44.82	5.3	7.3	7.7	6	13	-3	0
United States	165.16	20.3	24.7	28.5	7	20	9	-3
Canada b	41.95	8.7	7.7	7.2	5	13	2	-9
Mexico a	20.96	1.8	1.6	3.6	13	22	...	-6
Japan	9.22	0.5	2.3	1.6	2	10	16	-7
Australia b	7.19	1.3	1.2	1.2	6	8	10	-16
Switzerland	6.54	1.8	1.9	1.1	1	6	-3	3
China a	4.91	0.6	...	0.8	...	23	50	29
Saudi Arabia	4.84	2.7	0.9	0.8	5	-4	48	27
Poland	4.69	0.9	0.1	0.8	25	2	-10	7
Brazil	4.27	0.3	0.2	0.7	21	-36	5	-1
Russian Fed.	3.34	-	-	0.6	-	-50	26	43
Czech Rep. a, b	3.05	-	-	0.5	-	15	9	21
United Arab Emirates c	2.80	0.4	0.3	0.5	11	-14	12	...
Norway	2.59	0.6	0.4	0.4	6	-14	-4	0
Above 15	510.71	77.1	88.5	88.1	-	-	-	-

a Includes significant shipments through processing zones.
b Imports are valued f.o.b.
c 2000 instead of 2001.

Table IV.54

Exports of automotive products of selected economies, 1990-01

(Million dollars and percentage)

	Value					Share in economy's total merchandise exports	
	1990	1995	1999	2000	2001	1990	2001 a
World	318960	456420	556460	576750	564560	9.4	9.4
Argentina	200	1374	1806	2105	2061	1.6	7.7
Australia	719	1053	1809	2151	2268	1.8	3.6
Belarus	-	...	662	740	...	-	10.1
Brazil	2034	2955	3868	4682	4819	6.5	8.3
Canada	28442	43064	60531	60656	54971	22.3	21.2
China b	...	621	1040	1581	1892	...	0.7
Colombia	6	83	75	226	433	0.1	3.5
Czech Rep. b	-	1509	4120	4665	5448	-	16.3
European Union (15)	171579	235523	274123	270116	270896	11.4	11.8
Intra-exports	125828	166324	197869	186735	184390	12.8	13.0
Extra-exports	45751	69199	76254	83381	86506	8.6	9.9
Hong Kong, China	354	1147	745	764	920	0.4	0.5
domestic exports	27	10	25	23	14	0.1	0.1
re-exports	328	1137	720	741	906	0.6	0.5
Hungary b	648	659	4715	4765	5323	6.5	17.5
India	198	568	463	...	...	1.1	1.3
Japan	66230	80680	82733	88082	80169	23.0	19.9
Korea, Rep. of	2301	9166	13035	15194	15428	3.5	10.3
Mexico b	4708	14258	26039	30655	30677	11.6	19.3
Norway	305	469	469	459	493	0.9	0.9
Oman	119	459	512	605	...	2.2	5.6
Philippines b	23	218	456	583	634	0.3	2.0
Poland	374	996	2211	3973	4228	2.6	11.7
Romania	354	153	161	195	229	7.1	2.0
Russian Fed. c	-	...	723	1050	1039	-	1.0
Singapore	348	886	633	678	649	0.7	0.5
domestic exports	82	106	92	90	91	0.2	0.1
re-exports	266	780	541	588	558	1.5	1.0
Slovak Rep.	-	344	1880	2394	2267	-	17.9
Slovenia	-	970	1120	1075	1202	-	13.0
South Africa	...	730	1546	1708	1485	...	5.1
Switzerland	591	716	856	788	896	0.9	1.1
Taipei, Chinese	829	1674	1894	2226	1780	1.2	1.5
Thailand	108	486	1758	2401	2658	0.5	4.1
Turkey	153	642	1438	1517	2291	1.2	7.3
United States	32547	52505	62923	67195	63421	8.3	8.7

a Or nearest year.
b Includes significant exports from processing zones.
c Includes Secretariat estimates.

Table IV.55

Imports of automotive products of selected economies, 1990-01

(Million dollars and percentage)

	Value					Share in economy's total merchandise imports	
	1990	1995	1999	2000	2001	1990	2001 a
Algeria	658	477	686	615	...	6.7	6.7
Argentina	183	2309	3072	2834	1968	4.5	9.7
Australia b	3794	6173	7783	8550	7192	9.5	12.0
Brazil	532	5968	4097	4314	4265	2.4	7.3
Canada b	24640	33471	45252	46276	41946	21.1	19.0
Chile	579	1780	973	1507	1337	7.5	7.8
China c	...	2609	2538	3798	4912	...	2.0
Colombia	416	1111	435	590	725	7.4	5.6
Croatia	-	422	791	831	907	-	11.3
Cyprus	281	355	361	406	432	10.9	11.0
Czech Rep. b, c	-	1461	2310	2525	3053	-	8.4
Ecuador	157	693	186	184	612	8.5	11.6
Egypt	416	634	590	...	356	3.3	2.8
European Union (15)	150825	194033	243794	231404	229209	9.7	9.8
Intra-imports d	127496					13.0	
Extra-imports	23329	27707	45925	44669	44819	4.0	4.9
Guatemala	117	453	478	481	551	7.1	9.8
Hong Kong, China	994	4394	1755	2195	2324	1.2	1.2
retained imports	666	3257	1035	1455	1418	2.1	4.5
Hungary c	715	931	2520	2481	2543	6.9	7.6
India	260	458	445	...	...	1.1	0.9
Indonesia	1523	3139	716	1870	1607	7.0	5.2
Iran, Islamic Rep. of	...	...	657	770	...	...	5.4
Israel	871	2304	1856	2298	2155	5.2	6.1
Japan	7315	11930	8597	9957	9220	3.1	2.6
Jordan	108	297	405	519	436	4.2	9.0
Kazakhstan	-	...	349	434	480	-	7.5
Korea, Rep. of	929	2218	1393	1773	1771	1.3	1.3
Kuwait	453	1003	1216	1305	...	11.4	18.2
Lebanon	...	...	602	535	610	...	8.4
Lithuania	-	226	276	339	579	-	9.2
Malaysia c	1312	2785	1351	1833	1811	4.5	2.4
Mexico c, e	5268	4400	14299	22247	20962	12.1	11.0
Morocco c	317	314	540	471	502	4.6	4.6
New Zealand	1012	1642	1685	1480	1529	10.6	11.5
Norway	1419	2433	2712	2597	2589	5.2	8.0
Oman	429	768	800	1109	...	16.0	22.0
Peru	176	866	546	510	455	6.7	6.2
Philippines c	537	1569	826	974	937	4.1	3.0
Poland	391	1693	4852	4365	4691	3.4	9.3
Qatar	202	...	290	...	429	11.9	14.3
Romania	409	312	240	429	604	5.4	3.9
Russian Fed. f	-	...	1852	2334	3337	-	6.2
Saudi Arabia	2839	2138	2579	3815	4844	11.8	15.5
Singapore	1418	2519	1554	2417	2145	2.3	1.8
retained imports	1152	1739	1013	1829	1587	2.7	2.6
Slovak Rep. b	-	447	1260	1412	1759	-	11.9
Slovenia	-	1326	1478	1214	1083	-	10.7
South Africa b	...	3061	1165	1455	1320	...	5.2
Switzerland	6048	6467	6542	6347	6541	8.7	7.8
Taipei, Chinese	2565	4495	2253	2675	1889	4.7	1.8
Thailand	2651	5184	1448	2084	2172	8.0	3.5
Tunisia	306	462	655	595	654	5.6	6.9
Turkey	1177	1730	3303	5831	1948	5.3	4.8
Ukraine f	-	...	338	462	...	-	3.3
United Arab Emirates f	991	1983	2498	2796	...	8.8	7.3
United States	79320	108016	155723	170195	165157	15.3	14.0
Venezuela b	426	1076	1106	1451	2279	6.5	13.9
Zimbabwe b	129	321	181	...	...	7.0	8.5

a Or nearest year.
b Imports are valued f.o.b.
c Includes significant imports into processing zones.
d See the Technical Notes for information on intra-EU imports.
e Beginning with 2000 imports are valued c.i.f.
f Includes Secretariat estimates.

4.5 Textiles

Table IV.56

World trade in textiles, 2001

(Billion dollars and percentage)

Value	147
Annual percentage change	
1980-85	-1
1985-90	15
1990-01	3
2000	6
2001	-5
Share in world merchandise trade	2.5
Share in world exports of manufactures	3.3

Table IV.57

Major regional flows in world exports of textiles, 2001

(Billion dollars and percentage)

	Value	Annual percentage change		
	2001	1990-01	2000	2001
Intra-Asia	37.0	5	13	-10
Intra-Western Europe	35.9	-2	-7	-7
Western Europe to C./E. Europe/Baltic States/CIS	8.1	12	3	8
Asia to Western Europe	8.0	3	10	-6
Asia to North America	7.5	6	12	-6
North America to Latin America	5.4	15	31	2

Table IV.58

Share of textiles in trade in total merchandise and in manufactures by region, 2001

(Percentage)

	Exports	Imports
Share of textiles in total merchandise		
World	2.5	2.5
North America	1.3	1.4
Latin America	1.2	3.3
Western Europe	2.3	2.1
C./E. Europe/Baltic States/CIS	1.8	4.3
Africa	1.0	5.7
Middle East	0.8	3.9
Asia	4.3	3.2
Australia, Japan and New Zealand	1.4	1.6
Other Asia	5.7	3.9
Share of textiles in manufactures		
World	3.3	3.3
North America	1.7	1.8
Latin America	1.9	4.3
Western Europe	2.8	2.7
C./E. Europe/Baltic States/CIS	3.3	5.8
Africa	4.1	8.0
Middle East	3.7	5.2
Asia	5.2	4.6
Australia, Japan and New Zealand	1.7	2.6
Other Asia	6.8	5.3

Chart IV.11

Regional shares in world trade in textiles, 2001

(Percentage)

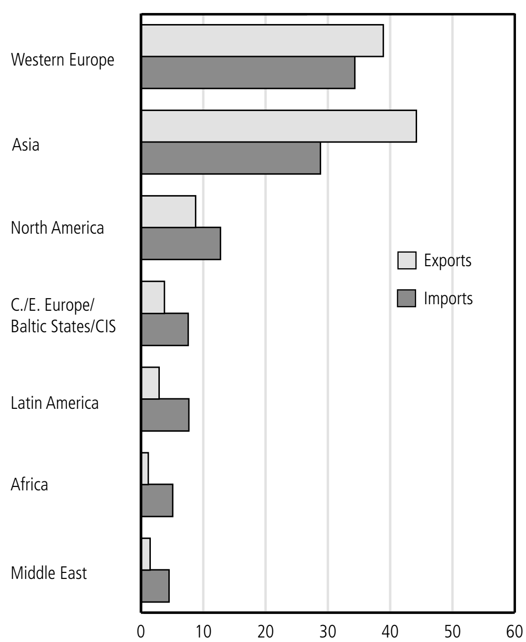


Table IV.59

Exports of textiles by principal region, 2001

(Billion dollars and percentage)

	Value	Share in				Annual percentage change		
		Region's exports		World exports				
	2001	1990	2001	1990	2001	1990-01	2000	2001
World	147.0	-	-	100.0	100.0	3	6	-5
Asia								
World	64.7	100.0	100.0	35.3	44.0	5	13	-7
Asia	37.0	57.9	57.1	20.4	25.1	5	13	-10
Western Europe	8.0	16.2	12.4	5.7	5.5	3	10	-6
North America	7.5	10.4	11.5	3.7	5.1	6	12	-6
Middle East	4.4	6.5	6.8	2.3	3.0	6	10	-1
Latin America	3.4	2.4	5.3	0.8	2.3	13	20	-8
Africa	3.2	2.9	4.9	1.0	2.2	11	16	13
C./E. Europe/Baltic States/CIS	1.2	2.5	1.8	0.9	0.8	2	24	13
Japan								
World	6.2	100.0	100.0	5.6	4.2	0	6	-12
Asia	4.7	60.3	76.7	3.4	3.2	3	10	-11
Western Europe	0.6	14.2	9.0	0.8	0.4	-4	-9	-16
North America	0.5	11.2	8.2	0.6	0.3	-2	4	-18
Middle East	0.3	9.5	4.3	0.5	0.2	-6	-7	-1
All other regions	0.1	4.7	1.7	0.3	0.1	-8	4	-4
Other economies in Asia								
World	58.5	100.0	100.0	29.7	39.8	6	13	-7
Asia	32.2	57.5	55.0	17.0	21.9	6	13	-10
Western Europe	7.5	16.6	12.8	4.9	5.1	3	12	-5
North America	7.0	10.2	11.9	3.0	4.7	7	13	-5
Middle East	4.1	5.9	7.1	1.8	2.8	8	12	-1
Latin America	3.4	2.6	5.8	0.8	2.3	14	21	-8
Africa	3.2	3.1	5.4	0.9	2.1	11	17	13
C./E. Europe/Baltic States/CIS	1.2	2.5	2.0	0.8	0.8	4	23	14
Western Europe								
World	56.9	100.0	100.0	53.1	38.7	0	-4	-3
Western Europe	35.9	78.1	63.0	41.5	24.4	-2	-7	-7
C./E. Europe/Baltic States/CIS	8.1	4.2	14.2	2.3	5.5	12	3	8
Africa	3.6	4.5	6.3	2.4	2.4	3	-7	6
Asia	3.6	5.7	6.3	3.0	2.4	1	8	0
North America	3.4	4.5	6.0	2.4	2.3	3	7	-5
Middle East	1.3	2.2	2.2	1.1	0.9	1	-5	3
Latin America	0.8	0.7	1.4	0.4	0.5	7	9	-3
North America								
World	12.7	100.0	100.0	5.5	8.6	7	14	-4
Latin America	5.4	20.2	42.4	1.1	3.7	15	31	2
North America	4.6	28.8	36.3	1.6	3.1	10	5	-5
Western Europe	1.2	25.0	9.8	1.4	0.8	-1	6	-15
Asia	1.1	19.1	9.1	1.0	0.8	0	11	-13
Middle East	0.2	4.4	1.2	0.2	0.1	-4	-27	5
All other regions	0.1	2.3	2.3	0.1	0.1	0	-5	3

Table IV.60

Textile imports of selected economies by region and supplier, 2001

(Million dollars and percentage)

	Canada a			
	Value	Share	Annual percentage change	
	2001	2001	2000	2001
Region				
World	3811	100.0	3	-8
North America	2426	63.7	2	-9
Asia	797	20.9	8	-8
Western Europe	384	10.1	1	-4
Latin America	143	3.8	11	3
Middle East	24	0.6	4	-11
C./E. Europe/ Baltic States/CIS	15	0.4	6	-12
Africa	14	0.4	9	17
Suppliers				
United States	2426	63.7	2	-9
European Union (15)	337	8.8	-1	-4
China	250	6.6	25	2
Korea, Rep. of	114	3.0	10	-13
India	112	2.9	9	-4
Above 5	3239	85.0	3	-8
Mexico	87	2.3	9	0
Pakistan	84	2.2	9	-16
Taipei, Chinese	79	2.1	3	-24
Japan	40	1.1	-4	-6
Indonesia	38	1.0	-12	-18
Turkey	32	0.8	25	-2
Brazil	26	0.7	22	-3
Thailand	21	0.6	12	-4
Hong Kong, China	21	0.5	-21	-16
Israel	14	0.4	32	38
Bangladesh	12	0.3	11	74
Switzerland	10	0.3	8	-3
Iran, Islamic Rep. of	9	0.2	-15	-36
Malaysia	7	0.2	15	38
Egypt	7	0.2	21	22
Czech Rep.	7	0.2	23	2
Dominican Republic	7	0.2	79	-11
Colombia	7	0.2	81	80
Australia	6	0.2	-36	-32
South Africa	6	0.1	-9	23
Viet Nam	5	0.1	-47	-1
Chile	4	0.1	115	1
Haiti	4	0.1	-55	99
Uruguay	3	0.1	-13	-14
Norway	3	0.1	51	-17
Romania	2	0.1	-2	-26
Peru	2	0.1	-49	11
Philippines	2	0.1	32	-18
Sri Lanka	2	0.1	23	-35
New Zealand	2	0.0	-17	3
Nepal	2	0.0	54	0
Poland	2	0.0	10	-32
Russian Fed.	1	0.0	49	-5
United Arab Emirates	1	0.0	-	-
Saudi Arabia	1	0.0	-	-
Above 40	3793	99.5	-	-

	United States			
	Value	Share	Annual percentage change	
	2001	2001	2000	2001
Region				
World	15429	100.0	12	-4
Asia	7675	49.7	11	-3
Western Europe	3123	20.2	8	-7
North America	1929	12.5	9	0
Latin America	1909	12.4	17	-4
Middle East	453	2.9	76	8
Africa	174	1.1	19	6
C./E. Europe/ Baltic States/CIS	166	1.1	1	-12
Suppliers				
European Union (15)	2578	16.7	7	-7
Canada	1983	12.9	15	2
China	1929	12.5	9	0
Mexico	1516	9.8	17	-4
India	1132	7.3	14	-6
Above 5	9137	59.2	11	-3
Pakistan	1057	6.9	24	8
Korea, Rep. of	935	6.1	9	-5
Taipei, Chinese	761	4.9	-2	-5
Japan	515	3.3	6	-18
Turkey	445	2.9	18	-2
Thailand	350	2.3	17	-4
Israel	275	1.8	12	18
Hong Kong, China	216	1.4	6	-10
Brazil	193	1.3	31	-9
Indonesia	193	1.3	17	-6
Egypt	129	0.8	22	10
Bangladesh	121	0.8	10	16
Iran, Islamic Rep. of	117	0.8	-	-1
Sri Lanka	106	0.7	11	-14
Philippines	100	0.6	-8	-25
Switzerland	82	0.5	2	-14
Malaysia	66	0.4	12	-27
Dominican Republic	61	0.4	5	74
Australia	49	0.3	-12	18
Nepal	39	0.3	22	-6
Colombia	37	0.2	-8	-6
South Africa	35	0.2	12	5
El Salvador	33	0.2	0	1
Czech Rep.	32	0.2	1	-20
Uzbekistan	26	0.2	67	29
United Arab Emirates	20	0.1	60	-6
Romania	19	0.1	15	35
Bahrain	19	0.1	696	1
Poland	18	0.1	37	0
Cambodia	18	0.1	261	206
New Zealand	18	0.1	13	-19
Russian Fed.	17	0.1	-24	-42
Saudi Arabia	16	0.1	96	-23
Guatemala	14	0.1	5	4
Peru	14	0.1	26	-42
Above 40	15284	99.1	-	-

Table IV.60 *(continued)*

Textile imports of selected economies by region and supplier, 2001

(Million dollars and percentage)

European Union (15)	Value	Share	Annual percentage change	
	2001	2001	2000	2001
Region				
World	45620	100.0	-5	-6
Western Europe	32020	70.2	-7	-8
Asia	7807	17.1	3	-5
C./E. Europe/ Baltic States/CIS	2884	6.3	12	9
North America	1281	2.8	-3	-15
Africa	716	1.6	10	-3
Middle East	626	1.4	-3	-13
Latin America	240	0.5	-5	11
Suppliers				
European Union (15)	28545	62.6	-8	-9
Turkey	2005	4.4	0	6
China	1833	4.0	21	0
India	1763	3.9	2	-2
United States	1209	2.7	-2	-14
Above 5	35355	77.5	-6	-7
Switzerland	1039	2.3	-9	-6
Pakistan	995	2.2	-3	2
Czech Rep.	883	1.9	12	12
Korea, Rep. of	803	1.8	10	-7
Japan	587	1.3	-8	-14
Poland	587	1.3	12	8
Indonesia	518	1.1	-4	-8
Taipei, Chinese	464	1.0	-10	-18
Thailand	285	0.6	-10	-15
Hungary	273	0.6	6	5
Iran, Islamic Rep. of	252	0.6	-13	-19
Egypt	242	0.5	17	-18
Slovak Rep.	214	0.5	9	8
Slovenia	213	0.5	0	9
Tunisia	190	0.4	18	26
Israel	187	0.4	-8	-10
Romania	187	0.4	18	27
Estonia	134	0.3	27	7
Lithuania	130	0.3	1	-1
Bangladesh	126	0.3	14	6
Brazil	121	0.3	5	11
Russian Fed.	121	0.3	44	3
Malaysia	110	0.2	-17	1
Morocco	110	0.2	19	14
Norway	91	0.2	-9	-1
Bulgaria	86	0.2	-6	34
Nepal	78	0.2	-12	-23
Syrian Arab Republic	77	0.2	102	-3
Hong Kong, China	76	0.2	4	13
Latvia	74	0.2	2	-15
Canada	72	0.2	-8	-24
South Africa	66	0.1	-5	-12
Uzbekistan	63	0.1	26	14
Viet Nam	61	0.1	4	17
Croatia	58	0.1	4	1
Above 40	44928	98.5	-	-

Japan	Value	Share	Annual percentage change	
	2001	2001	2000	2001
Region				
World	4747	100.0	9	-4
Asia	3635	76.6	10	-3
Western Europe	723	15.2	1	-2
North America	305	6.4	9	-14
Latin America	30	0.6	0	-11
Middle East	28	0.6	3	-30
C./E. Europe/ Baltic States/CIS	16	0.3	18	-17
Africa	10	0.2	17	0
Suppliers				
China	2131	44.9	18	5
European Union (15)	667	14.1	0	-3
Korea, Rep. of	312	6.6	3	-22
Indonesia	304	6.4	3	-6
United States	296	6.2	9	-14
Above 5	3711	78.2	10	-2
Taipei, Chinese	237	5.0	8	-15
India	182	3.8	10	5
Pakistan	109	2.3	-28	-29
Thailand	109	2.3	7	-9
Viet Nam	92	1.9	20	-2
Malaysia	85	1.8	14	-8
Philippines	30	0.6	9	10
Switzerland	27	0.6	10	5
Iran, Islamic Rep. of	26	0.5	10	-29
Turkey	25	0.5	30	22
Brazil	16	0.3	-2	-13
Hong Kong, China	16	0.3	8	30
Bangladesh	10	0.2	13	-25
Canada	8	0.2	14	11
Uzbekistan	8	0.2	19	-32
Peru	7	0.2	36	22
Egypt	6	0.1	-9	-18
Mexico	6	0.1	19	-4
Australia	6	0.1	-9	-33
Macao, China	4	0.1	103	18
Malta	4	0.1	-	1129
South Africa	2	0.0	-22	44
Singapore	2	0.0	-4	-35
Sri Lanka	2	0.0	6	-22
Tanzania, United Rep. of	1	0.0	49	-17
Romania	1	0.0	-8	-15
Saudi Arabia	1	0.0	20	-31
Russian Fed.	1	0.0	27	9
Lithuania	1	0.0	250	72
Israel	1	0.0	-50	-55
Czech Rep.	1	0.0	-15	126
New Zealand	1	0.0	2	-40
Nepal	1	0.0	24	-14
Myanmar	1	0.0	5	-11
Belarus	1	0.0	-71	268
Above 40	4741	99.9	-	-

a Imports are valued f.o.b.

Table IV.61

Leading exporters and importers of textiles, 2001

(Billion dollars and percentage)

	Value	Share in world exports/imports			Annual percentage change			
	2001	1980	1990	2001	1990-01	1999	2000	2001
Exporters								
European Union (15)	50.54	49.4	48.7	34.4	0	-8	-4	-4
Extra-exports	22.00	15.0	14.5	15.0	3	-6	1	1
China a	16.83	4.6	6.9	11.4	8	2	24	4
Hong Kong, China	12.21	-	-	-	4	-6	10	-9
domestic exports	1.05	1.7	2.1	0.7	-6	-12	-4	-11
re-exports	11.16	-	-	-	6	-5	11	-9
Korea, Rep. of	10.94	4.0	5.8	7.4	5	3	9	-14
United States	10.49	6.8	4.8	7.1	7	3	15	-4
Taipei, Chinese	9.92	3.2	5.9	6.7	4	-2	9	-17
Japan	6.19	9.3	5.6	4.2	0	11	6	-12
India b	5.90	2.1	2.1	3.8	10	12	16	...
Pakistan	4.53	1.6	2.6	3.1	5	-1	6	0
Turkey	3.91	0.6	1.4	2.7	9	-2	6	6
Indonesia	3.20	0.1	1.2	2.2	9	28	16	-9
Canada	2.16	0.6	0.7	1.5	11	6	9	-2
Mexico a	2.09	0.2	0.7	1.4	10	13	12	-19
Thailand	1.89	0.6	0.9	1.3	7	3	8	-4
Switzerland	1.44	2.8	2.5	1.0	-5	-9	-7	-6
Above 15	131.07	87.5	91.7	89.0	-	-	-	-
Importers								
European Union (15)	45.62	46.5	46.7	29.2	-1	-9	-5	-6
Extra-imports	17.08	14.0	13.2	10.9	2	-7	2	-2
United States	15.43	4.5	6.2	9.9	8	6	12	-4
China a	12.57	1.9	4.9	8.0	8	0	16	-2
Hong Kong, China	12.18	-	-	-	2	-7	9	-11
retained imports	1.01	3.7	3.8	0.6	-12	-17	-4	-30
Mexico a	6.02	0.2	0.9	3.9	18	43	...	-3
Japan	4.75	2.9	3.8	3.0	1	4	9	-4
Canada c	3.81	2.3	2.2	2.4	5	-1	3	-8
Korea, Rep. of	3.07	0.7	1.8	2.0	4	35	12	-9
Poland	2.62	0.5	0.2	1.7	24	-7	-3	6
Romania	2.01	...	0.1	1.3	36	9	7	17
Turkey	1.91	0.1	0.5	1.2	12	-18	11	-10
United Arab Emirates b, d	1.81	0.8	0.9	1.1	6	-14	7	...
Thailand	1.54	0.3	0.8	1.0	5	16	21	-6
Bangladesh	1.53	0.2	0.4	1.0	12	-12	3	11
Morocco a	1.46	0.2	0.3	0.9	14	-3	-3	7
Above 15	105.15	64.9	73.7	67.2	-	-	-	-

a Includes significant shipments through processing zones.
b 2000 instead of 2001.
c Imports are valued f.o.b.
d Includes Secretariat estimates.

Table IV.62

Exports of textiles of selected economies, 1990-01

(Million dollars and percentage)

	Value					Share in economy's total merchandise exports	
	1990	1995	1999	2000	2001	1990	2001 a
World	104330	151580	146230	154740	146980	3.1	2.5
Argentina	158	292	237	257	222	1.3	0.8
Australia	152	383	389	347	290	0.4	0.5
Bangladesh	343	432	413	...	...	20.5	7.6
Belarus	-	...	345	410	...	-	5.6
Brazil	769	999	822	900	855	2.4	1.5
Bulgaria	...	173	120	121	137	...	2.7
Canada	687	1377	2032	2205	2163	0.5	0.8
Chile	33	85	98	116	116	0.4	0.7
China b	7219	13918	13043	16135	16826	11.6	6.3
Colombia	133	278	237	268	264	2.0	2.2
Croatia	-	124	82	87	85	-	1.8
Czech Rep. b	-	1323	1098	1218	1327	-	4.0
Egypt	554	570	355	...	290	15.9	7.0
European Union (15)	50795	62198	55365	52923	50542	3.4	2.2
Intra-exports	35672	40218	33912	31246	28545	3.6	2.0
Extra-exports	15123	21980	21453	21677	21997	2.9	2.5
Hong Kong, China	8213	13815	12271	13442	12214	10.0	6.4
domestic exports	2171	1814	1223	1176	1051	7.5	5.2
re-exports	6042	12001	11048	12266	11164	11.3	6.5
Hungary b	249	286	366	371	408	2.5	1.3
India	2180	4358	5086	5899	...	12.1	13.9
Indonesia	1241	2713	3019	3505	3202	4.8	5.7
Iran, Islamic Rep. of c	510	610	781	766	656	2.6	2.6
Israel	270	399	477	490	534	2.2	1.8
Japan	5859	7178	6598	7023	6186	2.0	1.5
Korea, Rep. of	6076	12313	11618	12710	10941	9.3	7.3
Latvia	-	119	107	105	118	-	5.9
Lithuania	-	163	221	212	208	-	4.5
Macao, China	136	169	228	272	278	8.0	12.1
Malaysia b	343	1129	1120	1270	1056	1.2	1.2
Mexico b	713	1283	2303	2571	2091	1.8	1.3
Morocco b	203	177	133	123	142	4.8	2.0
Nepal	82	166	175	182	...	40.4	22.7
Pakistan	2663	4256	4258	4532	4525	47.4	49.0
Peru	221	172	115	128	115	6.8	1.6
Philippines b	132	280	262	297	255	1.6	0.8
Poland	284	512	727	769	796	2.0	2.2
Romania	125	178	165	196	232	2.5	2.0
Russian Fed. c	-	374	390	495	454	-	0.4
Singapore	903	1496	853	907	731	1.7	0.6
domestic exports	141	263	249	293	251	0.4	0.4
re-exports	762	1233	604	614	480	4.3	0.9
Slovak Rep.	-	375	374	319	341	-	2.7
Slovenia	-	322	286	286	365	-	3.9
South Africa	167	238	235	240	233	0.7	0.8
Sri Lanka	25	164	206	...	...	1.3	4.5
Switzerland	2557	2267	1641	1533	1443	4.0	1.8
Taipei, Chinese	6128	11882	10906	11896	9917	9.1	8.1
Thailand	928	1937	1818	1960	1888	4.0	2.9
Tunisia	112	165	129	154	201	3.2	3.0
Turkey	1440	2527	3478	3672	3907	11.1	12.5
United States	5039	7372	9510	10961	10491	1.3	1.4
Uruguay	85	90	59	65	54	5.0	2.6

a Or nearest year.
b Includes significant exports from processing zones.
c Includes Secretariat estimates.

Table IV.63

Imports of textiles of selected economies, 1990-01

(Million dollars and percentage)

	Value					Share in economy's total merchandise imports	
	1990	1995	1999	2000	2001	1990	2001 a
Argentina	53	428	632	656	526	1.3	2.6
Australia b	1442	1790	1667	1635	1292	3.6	2.1
Bangladesh	452	1481	1342	1383	1531	12.5	18.2
Brazil	252	1362	898	1112	982	1.1	1.7
Bulgaria	...	299	417	505	...	...	7.8
Canada b	2325	3204	3996	4132	3811	2.0	1.7
Chile	203	479	381	431	383	2.6	2.2
China c	5292	10914	11079	12832	12573	9.9	5.2
Colombia	75	383	413	558	553	1.3	4.3
Croatia	-	210	160	249	355	-	4.4
Czech Rep. b, c	-	928	1122	1198	1269	-	3.5
Egypt	211	280	334	...	198	1.7	1.6
El Salvador c	111	224	286	364	367	8.8	7.3
European Union (15)	50370	57227	51037	48706	45620	3.2	2.0
Intra-imports d	36133					3.7	
Extra-imports	14237	17009	17125	17460	17075	2.5	1.9
Hong Kong, China	10182	16859	12562	13717	12177	12.0	6.0
retained imports	4140	4858	1514	1451	1014	13.2	3.2
Hungary c	270	888	1146	1078	1073	2.6	3.2
Indonesia	785	1308	866	1251	1088	3.6	3.5
Israel	474	820	758	759	675	2.8	1.9
Japan	4106	5985	4547	4939	4747	1.7	1.4
Jordan	107	128	113	172	304	4.1	6.3
Korea, Rep. of	1946	3959	3001	3359	3067	2.8	2.2
Kuwait	168	262	206	...	...	4.2	2.7
Latvia	-	62	111	132	147	-	4.2
Lithuania	-	189	361	363	380	-	6.1
Macao, China	619	698	803	902	841	40.2	35.2
Malaysia c	951	1535	1015	1115	936	3.3	1.3
Mauritius	350	442	417	411	368	21.6	18.5
Mexico c, e	992	1768	4899	6219	6022	2.3	3.2
Morocco c	361	399	1400	1364	1455	5.2	13.3
Nepal	42	70	120	138	...	6.3	8.8
New Zealand	396	480	400	370	334	4.2	2.5
Norway	554	616	546	509	493	2.0	1.5
Peru	17	148	139	165	176	0.6	2.4
Philippines c	910	1245	1238	1250	1153	7.0	3.7
Poland	245	2165	2544	2478	2615	2.1	5.2
Romania	67	933	1599	1715	2013	0.9	12.9
Russian Fed. f	-	691	985	1183	1256	-	2.3
Saudi Arabia	1312	1229	996	986	969	5.5	3.1
Singapore	1778	2109	1119	1275	1020	2.9	0.9
retained imports	1016	876	515	661	540	2.4	0.9
Slovak Rep. b	-	214	513	536	643	-	4.4
Slovenia	-	335	353	346	330	-	3.2
South Africa b	561	736	562	570	510	3.4	2.0
Sri Lanka	412	1144	1331	1483	1331	15.3	22.5
Switzerland	1849	1884	1467	1354	1291	2.7	1.5
Syrian Arab Republic	168	327	330	399	...	7.0	10.5
Taipei, Chinese	1013	1790	1477	1454	1039	1.8	1.0
Thailand	898	1534	1345	1631	1535	2.7	2.5
Tunisia	790	1289	1332	1207	1435	14.3	15.1
Turkey	567	1811	1907	2124	1910	2.5	4.7
Ukraine f	-	...	342	462	...	-	3.3
United Arab Emirates f	1009	2023	1697	1811	...	9.0	4.7
United States	6730	10441	14305	16008	15429	1.3	1.3
Uruguay	37	93	88	88	74	2.8	2.4
Venezuela b	112	273	250	286	294	1.7	1.8

a Or nearest year.
b Imports are valued f.o.b.
c Includes significant imports into processing zones.
d See the Technical Notes for information on intra-EU imports.
e Beginning with 2000 imports are valued c.i.f.
f Includes Secretariat estimates.

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