

PAPER MONEY COLLAPSE

SECOND EDITION

The FOLLY of
ELASTIC MONEY

DETLEV S. SCHLICHTER

Foreword by THOMAS MAYER

WILEY

Paper Money Collapse

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Second Edition

The Folly of Elastic Money

Detlev S. Schlichter

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To my parents.

The evils of this deluge of paper money are not to be removed until our citizens are generally and radically instructed in their cause and consequences, and silence by their authority the interested clamors and sophistry of speculating, shaving, and banking institutions. Till then, we must be content to return quo ad hoc to the savage state, to recur to barter in the exchange of our property for want of a stable common means of value, that now in use being less fixed than the beads and wampum of the Indian, and to deliver up our citizens, their property and their labor, passive victims to the swindling tricks of bankers and mountebankers.

—Thomas Jefferson to John Adams, March 1819

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Foreword

Joseph Schumpeter is well known for his brilliant analysis of the role of the entrepreneur in the capitalist economy. Perhaps this is why the British magazine *The Economist* has labeled its weekly column on entrepreneurship after him. Many readers will be familiar with Schumpeter's formula of "creative destruction" as the driver of progress in a capitalist economy. Less well known may be that Schumpeter forecast the downfall of capitalism, and that he blamed our monetary system for this.

In the war year of 1942, Schumpeter published his seminal work entitled *Capitalism, Socialism, and Democracy*.¹ There, he described capitalism as the brute force that creates economic progress. The fundamental drivers that keep the capitalist machine going are the new consumer goods, the new production and transportation technologies, the new markets, and the new forms of industrial organization, which the capitalist company creates. The economy is continually revolutionized from within. The process of creative destruction is at the heart of capitalism. The creation of credit and money out of nothing is the adrenaline that carries creative destruction forward. Schumpeter says that the issuance of new means of payments corresponds to the commands of the

central planning office of the socialist state, because companies lack their own means of payment, and there are no savings at the beginning of the investment process. The banking sector has a central role to generate growth in a capitalist economy. The ability of banks to create credit and money out of nothing is crucial for the funding of new entrepreneurial activities spontaneously. All that is needed is the decision of the bank to extend credit, and investment can begin, as if the central planning bureau in socialism had given the green light.

But the extension of credit can be faulty. Too many or the wrong entrepreneurial activities can be started. The result is financial crisis, recession, or even depression. But this is part of the capitalist process. A financial crisis where credits have to be written off because investments have failed is concentrated creative destruction. However, creative destruction is not only the engine for growth and expansion in the capitalist system; creative destruction in the end destroys capitalism itself, because society sets out to tame raw capitalism. Schumpeter expects the hollowing out of creative entrepreneurship by the rise of the managers, bureaucrats, and intellectuals in the companies and in society. With this, the entrepreneur loses his intellectual leadership and the economic structure transforms toward some sort of bureaucratic socialism. In that event, Schumpeter says, capitalism needs a policeman and a protector that regulates, protects, and exploits him: the state.

In this book, Detlev Schlichter shows how the elastic money system, the ability to create credit and money out of nothing, leads to economic instability and eventually its self-destruction. In this regard, he is in agreement with Schumpeter. Schlichter sees our money system ending in an inflationary meltdown. However, Schumpeter not only forecast but also welcomed the transition of capitalism to bureaucratic socialism as a way to tame capitalism and to create economic stability. He even thought that bureaucratic socialism was compatible with democracy. As long as politicians competed in the political market for votes, there was freedom of opinion and majority rule. Today, we know better. Socialism is a rotten economic system and incompatible with democracy. Schumpeter's compatriots and contemporaries, Ludwig von Mises and Friedrich August von Hayek, saw this much more clearly. Socialism was a failure, and it did fail. Prosperity needs economic and political freedom of individuals. Only they have the information

needed for sensible economic decisions. No central planner can obtain this information, however sophisticated his instrument kit may be. It is the ideas of these other Austrian economists on which Schlichter builds his case for “inelastic money.” Only money that cannot be created out of nothing by the planners residing in central banks and their helpers in the commercial banks can protect us from the boom-bust cycles of the elastic money economy. Will inelastic money stifle innovation and growth? Hardly. Schumpeter gave too much credit to bankers for driving the capitalist economy. Bankers surely need entrepreneurs to extend credit for productive investment, but entrepreneurs do not need bankers. They can also go to the capital markets to seek funding for new projects. Credit need not be created out of nothing. In the capital markets, savings are readily available to be invested in rewarding projects. Capital markets are at heart intermediaries between savers and investors and not, like banks, creators of credit and money out of nothing.

The idea of inelastic money has few followers at present. The reaction of politicians and populations to the financial crisis has been along the lines predicted by Schumpeter: more bureaucratic socialism. But as Schlichter argues, “If we want a well-functioning economy we need free markets, and free markets require individual liberty, private property, and sound money.”² Thus, sound money is also highly political: “It belongs in the same class with political constitutions and bills of rights.”³ I hope this book will have many readers who carry this message to our politicians and functionaries in central banks.

Thomas Mayer
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at Goethe University Frankfurt

Notes

1. Joseph A. Schumpeter, *Capitalism, Socialism, and Democracy* (New York/London: Harper and Brothers, 1942).
2. See Epilogue, p. TK.
3. Ludwig von Mises, *The Theory of Money and Credit* (New Haven, CT: Yale University Press, 1953), Chapter 21, quoted by Schlichter in Epilogue, p. 307.

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Thanks to my family for their love and support.

Prologue

Contra the Mainstream Consensus—What This Book Is About

This book presents an economic argument. It attempts to demonstrate that the present consensus on money and monetary policy is wrong, and that monetary policies that broadly reflect this consensus must, contrary to the intentions of policy makers and the expectations of large parts of the public, further destabilize the economy.

After the financial crisis in 2007 and 2008, unprecedented monetary policies were implemented globally, and a public debate about these policies has ensued. The reader may therefore wonder if a true monetary policy consensus still exists. Yet almost all discussions in the media, in financial markets, in policy circles, and, as far as I can tell, in academia, still consider certain fundamental aspects of our monetary system unchallengeable and beyond serious criticism. A clearly

delineated intellectual common ground exists beyond which accepted, enlightened, and sophisticated debate is believed to cease. That is what I call the mainstream consensus. I will try to give a short and fair representation of this consensus first, then outline briefly why this consensus is wrong, and how I will demonstrate this.

The Ruling Mainstream Consensus on Money

Today's mainstream view on money holds that the abandonment of a system of hard money, of money with a fairly inflexible supply, such as a gold standard, and the implementation in its place of a system of essentially elastic money, that is, a paper money system under political supervision that can inject new money into the economy more easily, has constituted progress. It is almost universally believed that the elastic monetary system avoids certain rigidities of the gold standard, that it allows for active monetary policy and better crisis management in economic emergencies, and that it thus can, if handled correctly, help avoid depressions and guarantee a higher degree of stability.

At this point I should clarify a few terms that will appear throughout the book. I will use synonymously the terms *hard money system*, *commodity money system*, and *inelastic money system*. In the context of this analysis, they broadly mean the same thing. The gold standard is the prime example of such a system, even if historically the commodity of choice was often silver, and even if we should really distinguish between different possible commodity money arrangements. But in order to have a meaningful discussion about fairly complex phenomena, we need to deal in prototypes. I will contrast two prototypes of monetary systems in this book, and one of these prototypes is the hard money/commodity money/inelastic money system. This is the "old" system, the historic norm. The characteristic feature here is that the supply of money, at least at its core, is fairly inflexible, as it is tied to some commodity (or other entity), the supply of which is fixed, at least in the short run, and in any case outside the control of banks and of monetary authorities. Since the advent of banking more than 300 years ago, no monetary system has been entirely inelastic, as banks have always been in the business of issuing certain forms of money on top of the supply of the core monetary

asset, even when that core asset was gold or silver. We will later see how banks do this. But even then, the money supply was still fairly inelastic, as it was ultimately constrained via a link to a commodity that no authority—no central bank and no private bank—could create at will. We may also call such a system an apolitical monetary system, because the scope for any form of monetary policy, for any use of money as a tool to other, political, ends is severely restricted.

I will juxtapose this “old” system against the modern monetary system for which I will use the following terms synonymously: soft money system/paper money system/elastic money system. This is now the dominant monetary arrangement globally, and the present consensus claims it is the better of the two. Just as any inelastic money system does not have to be based on gold, so an elastic money system does not have to be based on paper. In fact, most of today’s money exists only as electronic book entries on computers at banks and central banks and is not even printed on paper. But the defining feature here is that the supply of money is flexible. In such a system, designated money producers exist that can produce new money at practically no cost and without limit, and then inject this new money into the economy. Banks play again an important role in this process and their ability to create money is greatly enhanced compared to the older, more inflexible commodity money system. But, crucially, their ability to create money still is not unlimited. That privilege is reserved for the state central banks, which, at least conceptually, control the entire money creation process, and which can, in extremis, inject new money in unlimited quantities. As we will see in the course of our investigation, full paper money systems are always state-run or state-backed monetary systems. They are thus always political systems or fiat money systems. *Fiat* here means “by decree of the state.”

Back to the mainstream consensus. That a paper money system comes with at least one strong health warning is certainly acknowledged by the consensus. In a system in which some entity can produce money at no cost and without limit is always at risk of producing too much money and thus creating inflation, which means a persistent loss of money’s purchasing power, or, what is the same thing, a general trend of rising money-prices for goods and services.¹ Inflation as major economic problems, and certainly devastating

hyperinflations that cause economic chaos, are conceptually impossible in hard money systems. It is no surprise that all recorded currency collapses occurred exclusively in complete paper money systems. In fact, as we will see in a short historical overview, paper money systems have been tried periodically since the Chinese introduced the first such systems 900 years ago, and they have—until recently—either ended in inflation, economic chaos, and currency disaster, or, before that could happen, the authorities managed a voluntary return to hard commodity money.

If the purpose of this book were to simply point to the risk of inflation, as a naïve interpretation of the title could suggest, it would end right here, and it would not constitute much of an attack on the consensus. The fact that in paper money systems too much money can be created and often has been created is hardly controversial. The consensus fully accepts this. While high inflation is a risk, the consensus maintains it is one worth taking, as there are other benefits to be had from elastic money, among them moderate inflation.

While high inflation and certainly hyperinflation are to be avoided, some moderate inflation is today widely considered to be good for the economy. An economy, so the consensus, functions more smoothly if prices on average continue to appreciate at a moderate pace. The opposite phenomenon of falling prices on trend, deflation, is now considered an economic evil, and even a moderate or very moderate deflation is to be avoided.

But here the consensus faces a problem. One of the key features of the capitalist economy happens to be that it makes things cheaper over time. The free market leads to rising productivity, meaning a better, more efficient use of presently available resources and thus a greater supply of future resources. (How the “market” does this we will see later, but we can already mention the fundamental origins of rising productivity: increased division of labor and the accumulation of productive capital. Technological innovation plays a role, too, but without capital investment most new technologies would remain in the realm of the inventor’s imagination.) Under capitalism, things become more affordable over time. People become wealthier. We can see this in all capitalist economies when we measure the affordability of things not in terms of paper money outlays but in terms of something like

hours worked at the average pay. Today, in most societies, the “average” worker will work fewer hours to afford a new refrigerator or new TV than 20 or 30 years ago (and he or she will get a much better version of the product, too). Admittedly, this process may be slow and the fall in prices—the rise in affordability—moderate, but it is still a powerful trend. So if the consensus maintains that moderately rising prices are a good thing (a notion we will put to the test as well), it has to face up to the fact that, if left on its own, the free market will produce the opposite over time. Moderate deflation is the norm in capitalist economies, not the moderate inflation that the consensus claims to be superior.

It follows, and I think the consensus economist agrees with this, that persistent moderate inflation can only be had if sufficient quantities of new money are constantly being created and brought into circulation. *Sufficient* here means that the supply of money must be expanded fast enough so that the price-rising effects of the new money offset the price-lowering effects of improving productivity. For prices to rise, money has to lose its purchasing power faster than the competitive economy can become more productive and make things cheaper.

And here, the consensus finds itself in opposition to market forces in another way: In a free market there is simply no process by which this could be accomplished. I have already mentioned that private banks have always managed to issue new forms of money and bring them into circulation, even when money proper was gold or silver. In an elastic monetary system, the ability of banks to do this is greatly enhanced. But, still, there are no market mechanisms by which the banks could be encouraged and directed to create precisely the quantities of money that deliver the desired overall moderate price rises.² A political authority will have to guide them in order to achieve this. From this follows that the belief in the benefit of constant moderate inflation requires a further belief in the desirability of monetary policy, of a systematic influencing and directing of key monetary processes by a central authority. The present money consensus is thus characterized by a belief in the desirability—or even inevitability—of central banking. (Please note that this is not yet a critique of the consensus, just a logical deduction from its key premises. I expect most mainstream economists would have to agree with this description.)

While one advantage of the paper money economy is the ability of a central authority to implement ongoing moderate inflation, and thus beneficial inflation, another advantage, so the consensus is that in the case of emergencies, such as severe recessions or depressions, or bank runs and financial panics, the central bank can stabilize the system by keeping interest rates low or lowering them further, by accelerating the production of money and by producing—in theory—unlimited amounts of new money. This can sustain “aggregate demand,” and keep the banks liquid and the economy from correcting. Furthermore, the mere knowledge that the central bank has these powers and is willing to use them may sustain public confidence in the system, which by itself should further enhance financial stability.

We conclude that it is today widely believed that the appropriate monetary arrangement for a modern economy is one that allows for the constant expansion of the money supply at adjustable speeds and under the supervision and control of a state institution, the central bank, to target ongoing but moderate monetary debasement at normal times, and more aggressive money injections and a depression of interest rates at times of economic difficulties. This is a system in which central banks play the role of lender of last resort to the private banks, which means that central banks have a mandate to keep banks liquid (at least under certain conditions, which are defined politically and thus often purely nominal in practice), even when the private market would no longer do this. These are advantages of an elastic monetary system under government control that an inelastic monetary system does not offer, and these advantages are believed to be worth the price of living with the theoretical possibility of high inflation and currency collapse, although this risk may in practice, with appropriate institutional arrangements, and under prudent central bankers, be remote.

I believe this description of the consensus to be correct and fair. Of course, many who participate in policy debates in financial markets, in the media, or in policy circles may never articulate it in those terms, or, in fact, never articulate their belief system at all. It is precisely the hallmark of an established consensus that it is the *basis* of debate and hardly ever the *topic* of debate. This belief system is thus an intellectual tool with which analysts analyze monetary phenomena. The belief system itself is beyond reproach. In my 19 years as a professional trader and

portfolio manager in the financial industry, this consensus informed almost all macroeconomic research and all discussion on what policy makers can, should, and will do.

The Growth-versus-Inflation Trade-Off

It is maybe not surprising that most people now assume that a simple trade-off exists between the growth-stimulating effects of money injections, which are considered to be generally good, and the inflation-boosting effects of money injections, which are usually bad, although at times they are considered good as well. They are deemed “good” when inflation is too low (remember the mainstream’s belief that moderate inflation is a good thing and even moderate deflation an evil), but they are bad when inflation is too high. Therefore, the idea seems to have taken hold that injections of new money are, as a general rule, a good thing, as they help avoid deflation, encourage banks to lend, and thus aid economic growth in general, and that the only constraining factor to this positive prospect is the risk of inflation. As long as the provision of new money by the central bank does not lead to uncomfortably high inflation, money creation is believed to be at least harmless and at best beneficial to economic performance. This has become an important part of today’s mainstream consensus on money and monetary policy.

The recent debates about the more aggressive interventions by central banks after the 2007–2008 financial crisis, and in particular the increased speed of “base money” production by central banks (“quantitative easing”), are a case in point. The criticism that carries the most weight in the public discussion and is often considered the only really substantive and admissible criticism is that this policy carries the risk of imminent inflation. The strongest argument against this criticism seems to be that there is no inflation or very little inflation at present, so why not enjoy the growth-boosting effects of “easy” monetary policy?

On the margin, this has begun to change a bit recently. Other criticisms of quantitative easing are now being articulated, such as that it creates moral hazard, that it furthers income inequality, or that it is

liable to blow new asset price “bubbles” and thus sets the stage for another financial crisis. It is noteworthy, however, that these adverse effects of money creation enter the debate only now that policy has reached extreme levels. As I will show with the following analysis, these effects are necessarily at work at any rate of central bank money creation, even when a more conventional policy is being conducted. As we will see, any form of ongoing monetary expansion must lead to a range of distortions, and as these distortions accumulate over time, they will destabilize the economy more broadly. Inflation is not the only and probably not the most sinister effect of ongoing money production. A complete and accurate theory of money is needed to fully illustrate these effects, and such a theory will reveal today’s consensus on money to be flawed, incoherent, and inconsistent.

It is important to stress that this book is not predominantly a critique of recent policy initiatives, such as “quantitative easing.” The recent crisis as a specific historical event is not the main topic of this book, although it will feature prominently in the final chapters. In the course of the argument, I will try to show that crises such as the one that occurred in 2007–2008 are inevitable in a system of elastic money, and we will also see that recent policy initiatives, including quantitative easing, are counterproductive, as they must lead to more deformations and more instability. But in the context of this book, these events and policy initiatives function mainly as illustrations of my more general case against the mainstream consensus.

What This Book Shows

This book aims to show that the consensus is wrong. Today’s mainstream view on money is logically incoherent because it is in fundamental conflict with essential aspects of money and money’s role in a market economy. Even a carefully controlled elastic money system, that is, one that operates according to the best intentions and the best designs of today’s mainstream economists and that avoids any obvious policy errors, will not enhance economic stability. Instead, the ongoing injections of new money must systematically distort market signals and cause misuse of resources, mispricing of assets, and misallocation of capital. In fact, such

a system is unsustainable in the long run. It is bound to generate larger and larger crises and is likely to end in total collapse.

We will see that, contrary to widely accepted beliefs today, a growing supply of money is not a necessary condition for a growing economy. Money is the medium of exchange, and no society is richer in goods and services or can produce more goods and service or more easily exchange goods and services, if it has a larger *quantity* of the medium of exchange. As long as we allow prices to be reasonably flexible, there can never be a shortage of money. If we had a smaller stock of money, prices would be lower—that is all. As surprising as this may at first appear to many readers, it is indeed in the very nature of a medium of exchange that *any* quantity of it—within reasonable limits—is sufficient, that is, can facilitate any number of economic transactions and is indeed optimal.

We will also see that injecting new money into the economy can never mean just “greasing” the economic machinery. It can never enhance all economic activity evenly or “stimulate” the economy in some all-encompassing, general way. Every injection of new money must lead to changes in relative prices, to changes in resource use, to a redirection of economic activity from some areas to others, and change income and wealth distribution. Inflows of new money inevitably change the economy and must create winners and losers. This may, of course, be said of many other economic phenomena as well. Sudden changes in consumer tastes or technological inventions will also change the composition and the direction of economic activity, and they may create winners and losers, too, but—and this is important—only in the very short term. As the economy adapts to these changes and digests them, the overall level of want-satisfaction in the economy rises. As more needs are satisfied (the new tastes) or satisfied more easily (through new technologies), society overall becomes more prosperous. We will see that this is decidedly *not* the case with the changes that result from money expansion. They do not enhance wealth in aggregate, and they redistribute wealth arbitrarily.

But it gets worse. In a modern economy, new money will be injected via the banking system and the wider financial system in a process that must distort interest rates, in particular depress them relative to where they would otherwise be. Interest rates, however, are

crucial relative prices (to be precise, they are the relationship between similar goods at different points in time) that coordinate savings with investment. We will see that ongoing money injections must systematically disrupt this coordination process. Rather than leading to some benign moderate inflation and a smoothly expanding economy, as the consensus believes, ongoing money injections must lead to the misallocation of capital, even though these misallocations may not be detectable as such for some time. Eventually, however, they will force the economy into a correction. A recession is then necessary to cleanse the economy of the various dislocations accumulated in the previous money-driven expansion. A liquidation of misallocations of capital will sooner or later be inevitable. We conclude that monetary expansion must lead to a boom-bust cycle.

And it gets worse still. In our modern fiat money system, the central banks are now freed from the shackles of the old hard money system (gold standard) and can always print more money and cut policy rates. Thus, they will usually attempt to short-circuit the recession—the market’s liquidation process—with accelerated money injections and lower interest rates. (Remember the consensus view that new money is damaging only if it instantly leads to higher inflation. As there is often some downward pressure on prices in a cyclical downturn, the central bank usually considers monetary stimulus harmless. Why not stimulate the economy with easy money when inflation is not a problem?) As a result of this new intervention, misallocations of capital may not get liquidated or not liquidated completely. These imbalances will be carried forward into the next cyclical and again money-induced upswing when new imbalances will be added to the old ones. Over time, the economy will necessarily become ever more distorted as a result of the accumulated misallocations of capital and misdirection of economic activity, and ever more money injections from the central bank and ever lower policy rates will be required to contain the market forces that would normally work toward the liquidation of these imbalances.

Ongoing moderate monetary expansion does not stabilize the economy but, slowly and surely, destabilizes it. Elastic money is not a remedy for recessions but the prime cause of recessions. Accelerated money printing and artificially low interest rates at times of recession are counterproductive because if they are effective at all, they must be

so to the extent that they abort the necessary cleansing process and move the economy further away from balance. At this point, it should become clear that the mainstream consensus lies in tatters.

I will also criticize the now widespread notion that the relative stability of some price level (usually a consumer price index) is a reliable indicator of underlying economic stability, and that, as long as this type of inflation is not uncomfortably high, the central bank has made no mistakes, and the economy is in some sort of monetary equilibrium. While on the topic of price-level stability, I will further show that fears of deflation are usually unwarranted. This applies in particular to the type of deflation we should expect over time in less elastic monetary systems. Such moderate, secular deflation has many advantages and is the normal corollary of a capitalist economy. The deflationary recession that is so feared today, however, is the inevitable consequence of a preceding credit boom. Such recessions can be avoided only if we abstain from easy monetary policy and from stimulating the economy with artificially low rates in the first place. Fighting the deflationary corrections through which the market liquidates misallocations of capital with even easier monetary policy is not a rational policy. Such a policy not only sabotages the required—if often painful—rebalancing of the economy; it must add new imbalances to the old ones.

My point is not that a system of inelastic money would guarantee perfect stability. I believe that any economy that uses money will be subject to certain instabilities, but elastic money can be shown to be much less stable and indeed disruptive of the market economy. It is important to remember that today's elastic monetary system is not the result of market forces but of political design. Paper money systems are creations of politics. The notion that such a system can—even theoretically and under the assumption that no major policy blunders occur—lead to a more stable economy is unsound. The opposite is the case. To show this is the main purpose of this book.

Understanding Our Fiat Money System

This is not a debate of purely academic relevance. If the analysis presented here is correct and the reigning mainstream consensus wrong,

then this has enormous consequences for our own financial system. This system is truly unique in that, for the first time in history, the entire world is on a paper standard. Nowhere is the production of money any longer restricted by a firm, institutional link to a commodity. Money production is everywhere a discretionary policy tool of the state or groups of states (monetary union in Europe). Money has become completely elastic. In its present form, the system came into being only as recently as August 15, 1971, when President Richard Nixon unilaterally closed the “gold window,” which meant the United States de facto defaulted on the promise to exchange physical gold for paper dollars at a fixed price.

Reinhard and Rogoff³ demonstrated that, since 1971, the number and intensity of banking crises around the world has increased. The dollar and the pound are the two oldest currencies in use today, and they have lost more purchasing power since 1971 than over any other similar period in their long history. There is a belief today that after the inflationary 1970s, inflation has ceased to be a problem, and that central bankers—now allegedly politically independent and keenly aware of inflation risks—have learned to safely manage a paper money system. Monetary expansion has, however, continued at a fairly brisk pace, and since the 1980s seems to have fed asset price inflations more than consumer price inflations. Spectacular real estate lending booms occurred in Japan in the 1980s, in Scandinavia and various Southeast Asian economies in the 1990s, and more recently, in Ireland, Spain, the United Kingdom, and the United States in the 2000s, and in each and every case, the bursting of these bubbles led to sharp economic contractions and financial crises. The paper money system unsurprisingly has fed the powerful trend of “financialization” of the economy, making banks and the entire financial sector disproportionately big and also disturbingly unstable. Elastic money and central banks that stand ready as lenders of last resort were supposed to make bank runs a thing of the past; however, not only have bank runs made a noticeable comeback in the recent crisis, but we now seem to face the increasing risk of a run on the entire system courtesy of a banking industry that under the privilege of central bank protection has become bloated, overstretched, and dangerously interconnected. Last but not least, indebtedness has exploded everywhere, in absolute terms and relative to economic

productivity, and the financial system and indeed the economy at large now seem to have become addicted to easy money. Global central banks have finally painted themselves into a corner where they must keep interest rates at practically zero and repeatedly use their printing presses to prop up selected asset prices directly to sustain even a minimal appearance of stability. This, however, the consensus tells us, is just a cyclical phenomenon. There will be an exit and a return to normality and probably soon. Well, we shall see, but there are reasons to remain doubtful.

This leads us from diagnosis to outlook, by definition the most speculative part of the book. If I am right, then we can say more about the long-run prospect of our current monetary arrangements than simply that volatility will persist and crises occasionally recur. An inherently unstable system that produces growing imbalances is unlikely to last forever. It is likely to sooner or later approach some form of end-game, some form of cathartic event. And I believe the choice is the following: Either policy makers accept the inevitable and allow the market to liquidate the accumulated dislocations, maybe as part of a deliberate return to some form of hard and inelastic monetary arrangement, or at least a voluntary end to central bank money printing and active monetary policy, or, ever faster money printing will ultimately lead to inflation, undermine confidence in the system, and bring about the hyperinflationary disaster that has terminated most paper money systems in the past.

In either case, some form of liquidation of the accumulated imbalances will be unavoidable. What Ludwig von Mises wrote about the individual credit boom applies to the modern fiat money system as a whole:

There is no means of avoiding the final collapse of a boom brought about by credit expansion. The alternative is only whether the crisis should come sooner as the result of a voluntary abandonment of further credit expansion, or later as a final and total catastrophe of the currency system involved.⁴

Although both outcomes are still possible, and both constitute some form of “paper money collapse,” the reader may suspect that the title of this book is more appropriate for the hyperinflationary end-game. And, indeed, it is my view that this remains the more likely of

the two outcomes in the long run, although I believe the other one to be preferable because it is less damaging to society overall. How the present system will end must, however, remain a question of subjective judgment. Reasonable people may disagree on this point, although I do not believe that they can disagree on the validity of the theoretical argument presented here. I will make my case for what I consider the likely future of our monetary system toward the end of the book.

What Is Different from the First Edition?

A second edition allows the author to respond to criticisms of his initial effort, to incorporate new ideas and to reflect further on the topic, to comment on related works by other authors that have come out in the meantime or have been brought to his attention, and to also comment on and incorporate into his analysis any developments in the “real world” that have occurred since the book was first published. I am delighted at the opportunity to revisit *Paper Money Collapse*, and I have made use in some form of every one of the opportunities listed above.

Over the two years since the publication of the first edition, I have given numerous speeches and lectures and also launched a website for which I wrote more than 100 blog posts, often in the form of small essays. These in turn received more than 2,300 comments from readers, many of which were extremely insightful and thought provoking. Additionally, I benefited from the many questions, challenges, criticisms, and suggestions from those who attended my presentations, and from the comments made by reviewers of the book. Thus, the reader of the second edition will find additional material at various points of the investigation, and will (hopefully) also find some points better articulated and various errors corrected and some criticism addressed. All of this is woven into the text rather than concentrated in separate chapters, as I did not want to disrupt the flow of the argument.

More specifically, the treatment of fractional-reserve banking (money creation by private banks) is now clearer and more accurate, I believe. I have also addressed at two points in the text the so-called free-banking school, represented in particular by George Selgin and

Lawrence White, with whom I agree in some respects and strongly disagree in others, in more detail than I did in the first edition. I will also address Gordon Tullock's critique of Austrian Business Cycle Theory. Additionally, I will provide a (short) critical treatment of some new proposals to curb money creation by the private sector but to enlarge and strengthen the money-creation powers of the state, such as the recent International Monetary Fund working paper by Benes and Kumhof⁵ or by the British advocacy group Positive Money. These authors often include a critical treatment of fractional-reserve banking in their argument, and as fractional-reserve banking has been an important reason for the growth of the money supply (mainly due to its being systematically and generously subsidized by the state), a casual observer might think their ideas are similar to mine. That is not the case. Their economic arguments are deficient and their policy proposals dangerous, and I hope I have made my differences with them clear.

There has been one major new—and positive—development in the sphere of money that is potentially revolutionary, that did come as a surprise to me, and that has profound implications for what is discussed in this book: It is the rise of cryptocurrencies, and in particular, of bitcoin. I was not even aware of bitcoin's existence when I handed in the final draft of the first edition. (Bitcoin was launched in 2008; my final draft of the first edition dates from February 2011.) But it is, of course, of profound importance to the topics discussed in this book, and I include my assessment of it in this second edition. The more I learn about it, the more I consider it one of the greatest developments in the sphere of money in a very long time. Maybe it will still fail, but conceptually—viewed from the perspective of the monetary economist—its potential is staggering.

Bitcoin is a virtual currency based on a complex cryptographic algorithm that allows monetary transactions between any two parties anywhere in the world through a process that promises to be cheap, fast, and secure. It combines the benefits of modern payment technology with the advantages of the commodity money of old: Bitcoin is a form of money that has no issuing authority (Bitcoins can be “mined” in a complicated and self-limiting process by bitcoin users), is not tied to any country or political jurisdiction, and because it has no issuer, it cannot be used for any political ends. Most important, its algorithm is

designed in such a way that the supply of bitcoins will expand only very slowly for some time but finally end up being entirely fixed. Bitcoin is inelastic, hard, apolitical, and completely global money. It thus ticks all of the boxes that this book suggests are the true characteristics of good money, and I am glad I can now incorporate it into my treatment.

As the themes of *Paper Money Collapse* have continued to preoccupy me since the first edition came out, my thinking on this topic has naturally evolved further. In that sense, a book like *Paper Money Collapse* may never be truly finished. However, I have had no reason so far to change, in any fundamental and meaningful way, the overall argument presented in the first edition. The key message of the book remains the same, and so do its conclusions.

What about real-life events? Have the developments of the past two years—with the possible exception of bitcoin—made a reassessment of the originally bleak outlook necessary?

When revisiting the original forecasts, I think the reader will find that some of them have been borne out by events and some not. As far as policy is concerned, and in particular monetary policy, recent developments have for the most part confirmed my expectations. None of the major central banks have been able to exit the extreme policy programs adopted years earlier and originally advertised as short-lived emergency measures, or even been able to reduce policy accommodation on the margin. To the contrary, in most countries, additional “stimulus” has been implemented. Here is a snapshot of what has happened since the first edition was published:

The U.S. Federal Reserve (Fed) is now on its third round of quantitative easing (QE), started in September 2012, and this time the program is officially open-ended. Under current arrangements, the Fed is on target to produce more than \$1 trillion of new base money per calendar year. A policy tool that was deemed highly unconventional when introduced in 2008 to stabilize the banks in the wake of the Lehman collapse has now, five years after the recession officially ended, become a tool for boosting overall economic activity and in particular the rate of employment in the United States. Recently (this introduction was written in January 2014), the Fed has begun to slowly reduce its bond-buying program, a process that is now labeled *tapering*. We

should remember, however, that the Fed had already ended QE twice since the crisis, only to resume the policy later. Whether the process of tapering can be continued and if it is really the start of a normalization of policy and the removal of ultra-easy money remains to be seen.

For its part, the European Central Bank (ECB) even attempted to hike rates in the spring of 2011, but then felt compelled to reverse course again. Just recently, the ECB cut rates to a new record low. In contrast to the Fed, the ECB does not have a much larger “balance sheet” now compared to two years ago. (An official balance sheet does not exist at the ECB, but what is known as the “consolidated financial statement of the Eurosystem” comes pretty close.) The European debt crisis has abated somewhat at the time of this writing, but only because the ECB announced that it was prepared to buy the sovereign bonds of struggling nations in potentially unlimited quantities, a promise on which the markets may still decide to call the central bank.

The Bank of England has conducted an additional three QE programs in the course of which it has almost doubled its holdings of U.K. government debt (gilts). Its policy rate has been nailed to the floor (0.5 percent) since 2009, and the bank promises it will stay there for a long time.

And Japan confirmed my expectation that policy makers will not be content for long to produce just enough monetary accommodation to keep things from deteriorating further, but will at some point go “all in” to create a new upswing at almost any cost. Under a new prime minister and a new central bank chief, this is precisely what the Bank of Japan promised to do in early 2013 with a new policy of aggressive debt monetization and renewed quantitative easing.

There were a few policy-driven events that pointed in the other direction, that is, not toward reliquefying everything but toward allowing the market to liquidate some things. Greece experienced a partial default that wiped out a lot of its privately held debt but—bizarrely but not unsurprisingly—shielded the debt held by various public-sector institutions, and in Cyprus a major bank was wound down, resulting in losses for shareholders, bondholders, and depositors. Fiscal reform is a hot political topic in many countries, but progress has at best been modest. “Living within your means” is now called *austerity* and has predominantly a negative connotation. The main thrust

of policy around the world continues to be in the direction of reflation and “stimulus.” The Eurozone has been a partial exception to this global trend, but the question is: Will it remain one?

As I expected in the first edition, aggressive reflation did lead to rising prices but delivered so far disappointingly little in terms of self-sustaining growth. Frustration about the strength of the “recovery” is still widespread. However, and this was indeed a big surprise for me, it was again mainly asset prices that rose sharply, while consumer prices continued to remain remarkably subdued. The biggest surprises over recent years were asset markets, not policy or the “real economy.” I had expected a somewhat different mix between consumer and asset price inflations, mainly as a consequence of the changed transmission channels of policy and because I thought the public would remain more skeptical toward new asset price booms and would not embrace them so readily. Yet at the time of this writing (January 2014), in the United States all the major stock indices are at or near all-time highs, yield spreads on corporate debt are at or near all-time lows, issuance in the corporate bond market is at record levels, and farmland is appreciating at double-digit rates in many parts of the country. At the same time, the preferred measures of consumer price inflation are barely positive and remain below their official target. The extent of asset price appreciation and of consumer price stagnation is certainly at odds with my earlier forecast.

Most surprising of all, however, was the sharp correction in the gold price that started in 2013, in particular in light of the persistently reflationary policies of central banks and continuing rallies in almost all other asset markets. If the gold market anticipates an end to reflation and a coming deflationary correction, then should certain other asset markets not behave differently, too?

Paper Money Collapse was never intended to be an investment book, never a book that provides near-term forecasts and investment ideas. Its outlook was never aimed at a two-year forecasting window. Nevertheless, I will try to provide some thoughts about markets as part of an updated outlook at the end of the book. Here, it may suffice to say that my main views have not changed. Central banks have no exit strategy. A return to “normal” policy will be impossible, meaning politically unacceptable. Heavy-handed interventions in the

economy are pretty much a certainty, and inflation remains the most likely endgame. This will end badly.

Support from Eminent Economists

This book is an attack on modern mainstream economics' view on money, but it is not an attack on economics. To the contrary, I believe my position stands in a long tradition of analysis of monetary phenomena, and in the course of my argument I will draw on the work of some of the greatest minds in the history of economics in support of my case. Indeed, the idea that monetary expansion is a source of broader economic instability, which is central to my argument, is as old as economics itself, and it has remained a recurring feature of economic theorizing for almost 300 years, from Cantillon's essays, published in 1755, through the Currency School of British Classical Economics in the nineteenth century, and to the Austrian Business Cycle Theory, developed by Ludwig von Mises and F. A. von Hayek between 1912 and 1933. It appears that since the 1930s modern macroeconomics has neglected or even forgotten some crucial insights that had once been well-established and that are still important today.

To develop my argument from the ground up, I start with some basic notions about money that every user of money, and that means practically everybody, should be able to confirm from their own everyday experience. This process has two advantages: It allows the layperson to follow my argument throughout; no previous knowledge of economics is required. But, importantly, it also forces the economically trained reader to critically examine some of the notions that he or she may have adopted without much reflection through long exposure to mainstream economics and that he or she never really put to the test. I believe it will become clear that many of these do not stand up to rigorous analysis.

Building on the work of the giants of economics is a plus and a minus. The plus is that it lends some respectability to my case and that hopefully more readers will be willing to engage with my argument and not be put off by its bold conclusions. The downside is that some may suspect there is nothing new here and that they know it

already. The Austrian School of Economics and in particular the work of Ludwig von Mises, the school's greatest exponent in the twentieth century, provide the main theoretical underpinning of this book. The Austrian School appears to be in the midst of a revival, not least in the blogosphere. However, this book is not a mere regurgitation of canonical Austrian texts. There is a critical treatment of some of von Hayek's conclusions in *Denationalisation of Money*. I reject Murray Rothbard's claims that fractional-reserve banking is fraudulent but equally repudiate the assertion of the (semi-Austrian) "free bankers" that fractional-reserve banking can smoothly adjust the quantity of money to changes in demand.

There is, of course, a great intellectual debt to Ludwig von Mises. Without studying von Mises, I would not have been able to write this book. But it was my personal experience as an investment professional for almost two decades that made me appreciate how relevant von Mises is to understanding today's environment, and how misguided the explanations and solutions of today's mainstream are. Von Mises died in 1973 and never saw the global unconstrained fiat money experiment in full bloom. In applying Misesian perspective to modern monetary infrastructures and policies, I hope to have added something to the "Austrian" theoretical edifice, if only at the margin. But if I failed to do so and if I only managed to get my readers better acquainted with von Mises's thoughts and aroused their interest in the Austrian School, I would still consider my project a success.

A Note on Pronouns in the Text

In order to illustrate fundamental economic relationships, I will have to use certain archetypes, such as the consumer, the saver, the entrepreneur, the investor, and the money producer. This raises the issue of pronouns. With some exceptions, I decided against alternating between "he" and "she" or "him" and "her" and against writing "he or she" or "him or her" and just use "he, him, himself." This is simply for ease of reading and is meant to be nonexclusive.

Notes

1. Some friendly reviewers from the Austrian School of Economics suggested that I use the traditional definition of *inflation* of an ongoing expansion of the money supply, rather than a rise in prices. However, the way the term *inflation* is used today is usually in reference to price changes, and any growth in monetary aggregates that does not, for whatever reason, lead to, or not lead instantly to, higher prices, is usually now not called inflation. I see no harm in using the new definition and probably many problems in insisting on the traditional one.
2. In the course of our investigation we will meet economists who maintain that “free banks” could automatically deliver a stable price level. Although I will also arrive at the conclusion that banks should be entirely free enterprises, I do not maintain that they can deliver such stability in macrovariables, including the price level, nor do I deem it necessary for a well-functioning economy that they do so.
3. Carmen M. Reinhart and Kenneth S. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly* (Princeton/Oxford, UK: Princeton University Press, 2009): 204–207.
4. Ludwig von Mises, *Human Action: A Treatise on Economics*, 4th rev. ed. (Irvington-on-Hudson, NY: Foundation for Economic Education, 1998): 572.
5. Jaromir Benes and Michael Kumhof, *The Chicago Plan Revisited*. IMF Working Paper WP/12/202 (Washington, DC: International Monetary Fund, 2012).

Part One

THE BASICS OF MONEY

Chapter 1

The Fundamentals of Money and Money Demand

Modern industrial society requires extensive division of labor. Extensive division of labor is feasible only in a market economy, that is, in an economy based on the voluntary contractual exchange of goods and services on markets. Such a system, by necessity, requires the institution of private property (clearly delineated ownership of goods and services) and a medium of exchange, money.¹ Modern civilization, and the degree of material provision (wealth) that we all associate with advanced civilization and that we have come to expect from it, requires trade, markets, private property, and money. Such an economic arrangement can be called, broadly, capitalistic.

Primitive societies may be able to do without these things. A strictly self-sufficient small community, maybe a single household,

a clan, or a small village, may produce the bare necessities of life and distribute them according to the diktat of a leader or group of leaders, according to some central plan or agreement, or even according to established traditional rules. But such a society does not take advantage of the benefits of an extensive division of labor that wider trade relationships allow, and its members will struggle to become more prosperous. Autarky is a recipe for poverty. Very few people today want to live in such a society, and it is no surprise that the vast majority of mankind has left this way of life behind.

For the past 200 years communism has promised to erect a modern industrial society with a high standard of living for everyone but do so without private property, without free trade, and thus without money. In a proper communist commonwealth, where every resource is owned and allocated by the state, there is no place for market exchange and no place for money. Economics has demonstrated convincingly that no advanced industrial economy can ever operate along communist lines,^{2,3} and the historic failure of self-proclaimed (albeit not fully consistent) communist societies in the twentieth century illustrates this poignantly. *Capitalism* is a term that still has negative connotations in many circles, but it is a fact that the only advanced, highly productive, and wealth-generating societies we know, whether from experience or theoretical investigation, are in a broad sense capitalist societies. They require private property, exchange (trade), and money.

The Origin and Purpose of Money

Money is the medium of exchange. Money facilitates the exchange of goods and services on markets. Of course, private property owners can exchange property without the help of money. They can trade goods (or services) directly for other goods (or services). Such exchanges are called direct exchange, or barter. Exchanges that involve a medium of exchange are called indirect exchange. The problem is that in a barter economy people cannot realize the full benefits of trade because transactions are possible only whenever each party wants precisely what the other party has to offer. Person A will sell his good “p” to person B only if whatever B has to offer in exchange, let us say good

“q,” is precisely what A wants. If one of the two parties has nothing to offer that the other party has use for, then the trade will not take place. Economists call this condition *double coincidence of wants*, and it severely restricts the number of transactions that will occur in a barter economy. An additional impediment to trade is that many goods are indivisible. Please note that double coincidence of wants and limited divisibility hamper not only the exchange of physical goods for other physical goods but also the exchange of services. Despite these inevitable drawbacks of a barter economy, the exchange of goods and services started most certainly on such a limited scale with people exchanging what both parties to the trade found immediately useful.

It is obvious that in a barter economy people would pretty soon start to accept certain goods in trade, not because they want them but because these goods can be traded very easily for other things. There is a bigger market for some goods than for others; certain goods are more marketable; they are more fungible. For example, somebody may sell a goat for a sack of salt, not because he desires the salt but because he knows that salt is more easily traded for other things and that he stands a good chance of later exchanging the sack of salt for whatever he really desires. This is such logical behavior that it would be utterly surprising if it did not happen fairly quickly in any trading society. As more people start accepting the more fungible goods in trade, these goods become yet more fungible, and it is clear that they ultimately gain the status of generally accepted facilitators of trade. These goods could be cloth, beads, wheat, or precious metals. Whatever they are, they acquire a special place in the universe of traded goods. They are media of exchange. The most fungible good and the most generally used medium of exchange is ultimately called *money*. Now person B can buy product “p” from person A, although A has no use for B’s product “q.” B can instead sell “q” to C, D, or E; accept the medium of exchange from them as payment; and use that to buy “p” from A. Person A will accept the medium of exchange in the knowledge that others will also accept it in exchange for goods and services.⁴

Thus, no more than rational self-interest on the part of trading individuals is required to explain the emergence of media of exchange.⁵ It is in the interest of everybody who wants to participate in the free, voluntary, and mutually beneficial exchange of goods and

services to use media of exchange. Indeed, it is in the interest of everybody to ultimately use only one good as the medium of exchange, the most fungible good, and that is called *money*.

Money is not the creation of the state. It is not the result of acts of legislation, and its emergence did not require a society-wide agreement of any sort. Money came into existence because the individuals who wanted to trade found a medium of exchange immediately useful. And the more people began to use the same medium of exchange, the more useful it became to them.⁶

Money is a social institution that came about spontaneously. Other such institutions are the concepts of private ownership and of clearly delineated property and the rules and standards according to which property titles can be transferred. All these institutions came into being because people saw the immediate benefit from extended human cooperation, of cooperation that goes beyond the immediate family or clan. Such cooperation allows an extended division of labor that enhances the supply of goods and services for everyone who participates in it.

Not only does the existence of money not require a state organization to issue it, but it is also inconceivable that money could have come into existence by any authority (or any private person or institution) declaring its unilaterally issued paper tickets money.⁷ That money does exist in this form today is obvious. Yet, as the Austrian economist Carl Menger showed more than 100 years ago, money could have come into existence only as a commodity.⁸ For something to be used for the very first time as a medium of exchange, a point of reference is needed as to what its value in exchange for other goods and services is at that moment. It must have already acquired some value before it is used as money for the first time. That value can only be its use value as a commodity, as a useful good in its own right. But once a commodity has become an established medium of exchange, its value will no longer be determined by its use value as a commodity alone but also, and ultimately predominantly, by the demand for its services as money. But only something that has already established a market value as a commodity can make the transition to being a medium of exchange.

Which commodity was used was up to the trading public. Not any good was equally useful as money, of course. Certain goods

have a superior marketability than other goods. It is no surprise that throughout the ages and through all cultures, people almost always came to use precious metals, in particular gold and silver, as these two possessed the qualities that were ideal for a medium of exchange: durability, portability, recognizability, divisibility, homogeneity, and, last but not least, scarcity.⁹ Indeed, the very rigidity of their supply made them attractive. The fact that nobody could produce them at will made them eligible. They could be mined, of course, but that took time and involved considerable cost. And their essentially fixed supply contrasted with the inherently flexible supply of the goods and services for which money was being exchanged, thus ensuring that exchange relationships were not further complicated by a volatile money supply.

An Anthropologist's Challenge

The anthropologist and political activist David Graeber has recently challenged this account of the origin of money. In his book *Debt: The First 5,000 Years*,¹⁰ he makes the following three claims:

1. The barter economy is a myth told by economists, and it is not supported by anthropological evidence.
2. What was common instead was the “gift” economy, in which people hand over goods or perform services without immediate payment but under the mutual understanding that, at a later point in time, a reciprocal service or handing over of a good will be performed.
3. Money originated as an accounting device employed by Sumerian temple workers (i.e., state bureaucrats) in Mesopotamia as early as 3500 B.C.

Graeber believes he has undermined the traditional explanation for the rise of the monetary economy but in fact he has done no such thing. As we will see, he has simply failed to apply concepts of economics accurately to the societies he analyzed, either because he misunderstood these concepts or refuses to employ them correctly. Be that as it may, this has led him into confusion.

As to point 1: Graeber gives this chapter the title “The Myth of Barter” and quotes fellow anthropologist Caroline Humphrey as stating that “No example of a barter economy, pure and simple, has ever been described, let alone the emergence from it of money; [. . .].”¹¹ But these somewhat grandiose claims are not supported by evidence. Graeber qualifies them by stating that “all this hardly means that barter does not exist,”¹² only that it is almost never employed between fellow villagers but is usually confined to trading with strangers. Graeber himself provides three examples of primitive societies for which barter is an important part of their lives: the Nambikwara of Brazil, the Gunwinggu people of western Australia, and the Pukhtun of northern Iraq.

“What all such cases of trade through barter have in common is that they are meetings with strangers who will, likely as not, never meet again, and with whom one certainly will not enter into any ongoing relations.”¹³

I am not aware that economists have made this distinction between trading with fellow villagers and strangers, and I am not clear why this distinction should be of any significance for understanding the benefits of barter and the emergence of indirect exchange through money. Graeber does not make this clear. The fact that barter is (mainly) employed for trading with strangers seems to somehow discredit it in his view, although why is never explained.

Graeber has certainly not shown that barter is a myth. To the contrary, his examples illustrate vividly the power of trade. Trade is, by definition, to the benefit of both parties to the transaction. Otherwise, why would they trade? In Graeber’s examples, people overcome tribal hostilities and inborn animosity to strangers because they evidently realize that they benefit from trading with people outside their intimate circle of friends and family. Trade is a form of extended human cooperation—extended because it allows cooperation across political or established familial borders. It is this process that creates “society.” Trade, first through barter, then through indirect exchange via money, enhances wealth and furthers peace, and it allows humans to build societies that are extensive and open, rather than closed and tribal. Such a pro-market interpretation seems to elude Graeber.

Regarding point 2: Instead Graeber considers much more important the exchanges between people among whom fairly close social ties

already exist. Here, he discovers a form of exchange that he believes has escaped the economists or has been shamefully neglected by them. People hand over goods or perform services without receiving immediate payment, but in the knowledge that at some future point in time the other party will reciprocate. Graeber explains that both parties even call their part of the deal *gift*, and he provides some stylized examples to illustrate the process.¹⁴ Apparently, Graeber fails to realize that these are also instances of barter, and that only the delivery of one side of the trade has been postponed into the future.

Only two forms of exchange are logically conceivable: direct exchange (goods/services for other goods/services) or indirect exchange (involving money as a medium of exchange). Graeber's example of a "gift" economy involves the handing over of shoes today in exchange for handing over something else, which is as yet unspecified but could be, as per his example, potatoes or a pig, at an equally unspecified time in the future. This is, of course, again a barter transaction, but both sides of the transaction occur at different times. There is an element of credit here, but it is still barter. One party does not get anything in return right away, but that party now has a claim against the other party, and that claim will ultimately be settled again in the form of goods or services.¹⁵

Even more surprisingly, Graeber believes that double coincidence of wants has now been avoided.

"In any of these scenarios, the problem of 'double coincidence of wants,' so endlessly invoked in the economics textbooks, simply disappears."¹⁶

This is not the case. We may say that the constraint from double coincidence of wants is now lessened. What the party that has delivered first may get later is not specified right away, so it will depend on any future needs as they arise. This means that a range of possible goods or services may later qualify as repayment and may then indeed satisfy the party that delivered first. However, the two parties are now bound together via the original transaction. If A has given something to B, A now has a claim specifically against B, and only against B. If A thought it unlikely that B would ever produce anything or have anything in his possession that could really interest A, A would be reluctant to enter the original trade with B in the first place. Additionally, B must fear that, given the unspecified nature of the claim that A now has against him,

he will later be asked to hand over something that he does not want to part with. Graeber sees no problem with any of this because all his trading partners are neighbors and already part of a friendly community. But it is clear that, outside the small, closely knit neighborhoods for which Graeber has constituted his examples, this will quickly be a hindrance to the emergence of a more extensive network of trade relationships. In a modern economy, we certainly prefer the flexibility that generally accepted media of exchange give us to the mutual dependencies that a network of claims against specific individuals entails.

We can illustrate this further by considering the example of two self-employed hairdressers, one working in Graeber's modified barter economy, the other in an economy using money. By cutting the hair of his clients, the first hairdresser establishes a portfolio of claims against his customers. He has acquired not a present good but a string of future goods. Also, the initial transaction (providing the service of hair cutting) has tied him to those customers. He cannot buy anything from those whose hair he has not cut.

By contrast, the second hairdresser is paid with units of the most fungible good, the generally accepted medium of exchange, *money*. He is in possession of a present good, not a future good. He can cash it in instantly or may hold the money for some time and wait for a more appealing spending opportunity. Importantly, money allows him to transact with anybody participating in this monetary economy (using this form of money), not just the clientele of his salon. He may even buy things from bald people. In the process, he does not incur any credit risk to his individual clients. After all, we benefit from trading with strangers, with people we will never meet again.

Be that as it may, it is evident that notwithstanding Graeber's nostalgic attachment to the intimate relationships of the "gift" economy, human societies have evolved very differently. Almost all of them have adopted media of exchange, and Graeber cannot even blame this on the economists he so much likes to ridicule. Economists have explained these phenomena only for the past 300 years, but money has been used for more than 2,500 years. Economics helps us analyze the benefits of money conceptually, and those standard explanations still appear valid and convincing, and they should be obvious to Graeber if only he allowed himself to use the analytical tools of the economist.

As to point 3: The Sumerian economy of 3500 B.C., according to Graeber,¹⁷ used the silver shekel as a monetary unit. One shekel's weight in silver was fixed as the equivalent of one bushel of barley. All the silver was stored in temples and was thus not used in trade by the public. There was no need for this, according to Graeber, as payments could be made in anything else. The silver hoard was used for government accounting purposes only.

No prizes for guessing what type of economy this was. Of course, it was again a barter economy. The monetary unit did not circulate in the economy, so people exchanged goods and services directly for goods and services, maybe with the mismatches in settlement periods and thus with the element of credit that Graeber considers so important, but certainly without the network-expanding powers of a medium of exchange. The Sumerian economy therefore tells us little about the benefits of money and how money came to be used because it is not a monetary economy in the first place but a barter economy. Graeber, despite his insistence on the "myth of barter," has given us yet another example of the barter economy and its inherent constraints. Graeber fails to realize that a pile of silver owned exclusively by the state is not "money" in any traditional meaning of the word, and whatever the temple workers recorded in their accounts were not money prices but barter-exchange relationships translated via barley into silver.

Graeber keeps insisting that credit came before money, and we may happily concede this point, but why this is relevant is not clear. A barter economy can certainly entail credit in order to lessen the constraints from double coincidence of wants, but that still does not make it a reasonable alternative to the monetary economy. A developed market economy requires indirect exchange. The use of money becomes indispensable in economically advanced societies because only a medium of exchange allows a wide network of impersonal trade relationships to emerge (trading with strangers). The economist's conceptual analysis of the importance and genesis of money remains valid. Graeber has not undermined it in the slightest. He has not exposed the fallacies of the economists but has revealed his own prejudices against the open society and its foundation in extensive contractual, voluntary, and money-aided exchange, which still is the basis of our prosperity today.

What Gives Money Value?

To the extent that a good begins to function as money, its value is no longer determined alone by any specific use value that the money commodity may otherwise have but also, and soon dominantly, by its monetary exchange value, by its function as a facilitator of trade. When gold and silver became media of exchange, their market value was no longer determined solely by their original use value as metals in industrial production or as jewelry. Now people had demand for gold and silver as monetary assets. This additional demand, and any changes in this demand, naturally affected the prices of these metals. When the demand for money went up, that is, when people wanted to hold a larger share of their wealth in the form of money, the prices of gold and silver went up, assuming that all else remained unchanged; and when the demand for money fell, the prices of gold and silver fell, again assuming that all else remained the same. Gold and silver acquired an additional element of value independent of their use value, and that was their pure exchange value as media of exchange.

Something is money only because others in society accept it as money in trade. This is true of any form of money, whether it is gold, paper tickets, or the immaterial electronic book entries that we use predominantly today. And the exchange relationship between what is used as money and all the goods and services that are being exchanged for money (money's purchasing power) is also determined by the trading public. This is an important point that often seems to get overlooked. Those who advocate gold and silver as proper money often refer to an "intrinsic value" that these metals allegedly possess. They seem to believe that the fact that these are physical assets and that they have nonmonetary uses as jewelry or industrial commodities also gives them value as money. This view is mistaken. Their nonmonetary uses mattered only at the point in time, now long past, when they were first used as money. Once the precious metals had established themselves as monetary assets, their nonmonetary uses became secondary for their valuation.

The term *intrinsic value* is meaningless in economics. All value is subjective, meaning it is the result of acts of valuing by people. Gold

and silver have certain physical properties that are intrinsic to them, but how those are valued is always the result of a subjective assessment by the users of gold and silver. Certain properties of gold made it better suited for monetary purposes than any other (or most other) naturally occurring elements, foremost its durability and divisibility. But electronic money today is also perfectly divisible and, for all we know, durable. Electronic money is not only immaterial; it also has no other, nonmonetary function whatsoever. It is evident that this does not preclude electronic money from being used as money. Both gold and electronic money are being used as forms of money today (albeit to different degrees), and this is the result of social conventions. That is always the case with money, which is always and everywhere a social institution. People have found it useful for thousands of years to use gold as a monetary asset, and to some degree they still do so today. And more recently, people have found it useful to use electronic money.

If the public were to no longer consider gold a monetary asset, its price would certainly collapse, although it would not go to zero, as would happen to paper money or electronic money if it were no longer considered money. Conversely, if gold lost all its nonmoney functionalities, if it magically became useless as an industrial commodity or jewelry, it could still retain its value as a monetary asset if the public continued to consider gold as a useful monetary asset. There are, of course, big differences between gold and state-issued fiat money, and they relate to the process of their production and the elasticity of their supply, and those are determined somewhat (but not entirely) by their physical properties. But the sooner we free ourselves from the material aspects of the various forms of money and focus on those other features, the better.

A similar mistake is often made by the defenders of state fiat money. They assume that it is the state that bestows value on fiat money today. Again, this view is mistaken. All currencies today are irredeemable paper monies. The state does not back them with anything, and they are not claims on anything. If you take a paper note to the central bank, you do get change—that is all. Again, its value comes from the public's use of it as money in trade. It is the public that bestows value on money.

(Almost) Any Quantity of Money Will Do

Once a commodity or any other asset is accepted as a medium of exchange, its usefulness as such cannot be enhanced by an additional supply. This is a unique feature of money. Other goods deliver a greater service to the public if their supply is increased. More cars can transport more people; more TV sets can entertain more people; more bread can feed more people. These things are goods because they have use value, they can directly satisfy the needs of their owners. The same holds for the means of production, such as tools, plants, and machinery. Although they do not satisfy the needs of consumers directly, their usefulness lies in their ability to help in the production of goods and services that will ultimately satisfy the needs of consumers. This is why they have use value, too. More consumer goods can satisfy more consumer needs now; more investment goods can satisfy more consumer needs later. A society that has more consumer goods and investment goods is richer. A society that has more money has higher prices.

In this respect, money is different from any other good. To the extent that a good is used as money, its usefulness lies exclusively in its marketability, in its general acceptance as a medium of exchange, as a facilitator of trade. Its value to its owner lies in its exchange value, not its use value. Money is valued because of what you can buy with it. If society overall has more money, meaning that society has a bigger quantity of the money substance, it has more of the medium with which to exchange things, but it does not have more things to exchange. The exchange value, the purchasing power of every unit of the money commodity or money substance, will be different (prices will be different), but this is unrelated to society's overall wealth, the available quantity of goods and services. It follows from this that—outside of the extreme cases of acute scarcity or abundance of the monetary asset—*any* amount of the good money is optimal. Any quantity of the money commodity or money substance will be sufficient to allow the money commodity to fulfill all functions of a medium of exchange.¹⁸

To illustrate this, let me take you back to the community of A, B, C, D, and E that we met earlier in this chapter when demonstrating the benefits of money. Let us assume this community uses gold as a

medium of exchange and the available supply of gold and the various preferences of the trading individuals result in an exchange relationship of one-tenth of an ounce of gold for one unit of A's product "p" and one unit of B's product "q." Person A is willing to sell his product "p" to person B and accept one-tenth of an ounce of gold in return for it. Person B has acquired the gold by selling his product "q" to another member of the community. Person A can equally use the gold to buy goods and services from C, D, or E. The benefit that this community derives from indirect exchange, from using the available amount of gold as money, is the same as if the community had a smaller or larger supply of the precious metal at its disposal. Let us assume that the supply of gold was smaller and that the exchange ratio would turn out to be one-twentieth of an ounce of gold for one unit of "p" or "q." Or we could imagine a third scenario in which the community had a much larger quantity of gold and the exchange ratio would be, let us say, one-fifth of an ounce of gold for one unit of "p" or "q."

The benefit that society derives from using gold as a medium of exchange is identical in every one of these cases. As gold functions as a medium of exchange, the size of its available supply is entirely immaterial. Once a good is used as money, practically any amount of that good (within reasonable limits) is optimal for fulfilling all the functions that a medium of exchange can fulfill. As long as the good in question has all the attributes listed here and is therefore the most fungible good and widely accepted, nothing stands in the way of its delivering all the services that a medium of exchange ever can deliver. All the benefits that society can derive from using a medium of exchange can be derived from any amount of the medium of exchange.^{19,20}

Naturally, this applies to all forms of money, including today's paper money or electronic money. Whether a pile of banknotes adding up to \$10,000 is a lot of money or not depends entirely on what you can buy with it. When there was a much smaller quantity of dollar banknotes, or book entry claims to dollar banknotes, circulating in the U.S. economy, \$10,000 could buy you more goods and services than today. The exchange value of money was different—its purchasing power was different—when the supply of money was different. But this is all. The U.S. economy does not work any better or any worse if the overall supply of what is used as money, whether it is gold, silver, paper

tickets, or electronic book entries at banks, is larger or smaller. This is the logical consequence of money's having pure exchange value and no direct use value. From this follows that, as long as we allow prices to be reasonably flexible, there can never be a shortage of money, and there is thus no need for ongoing money production. This point will become clearer in the course of our investigation.

The Demand for Money

An important concept that leads to much confusion and misunderstanding is the concept of the demand for money. How much of the monetary asset is desired?

Demand for money is not demand for wealth. In everyday speech it is often assumed that everybody wants more money, that the demand for money is therefore limitless. But what people mean by this is the demand for wealth, for control over goods and services, but not demand for the medium of exchange specifically. It is probably not unfair to assume that most people prefer more goods and services to fewer goods and services. They prefer more wealth to less wealth, and this is the reason that people, over time, developed all those social institutions that help them work together more efficiently, such as private property, trade, and money, and that help them become wealthier; and it is the reason people, through their continuous spontaneous cooperation on markets, maintain these institutions today. But demand for wealth does not concern us here. Demand for money, rather, means the following: Given a certain level of wealth, how much money do people want to hold? How much of their overall wealth do people want to hold in the form of the medium of exchange at any point in time? What are the factors that determine this money demand and cause it to change, and how is money demand being satisfied in a market economy?

The first question is: Why hold money at all? The monetary asset has important disadvantages to other goods and services and claims to goods and services. Money has no direct use value. It neither satisfies needs directly as consumption goods do, nor does it help produce consumption goods in the future as investment goods do. It usually offers no return in the form of interest or dividends (exceptions to this will be discussed

later). Holding the monetary asset thus involves opportunity costs. But the one essential advantage that the monetary asset has over all other goods and services is its general acceptance in return for goods and services. Like no other asset, it can be exchanged for any other good or service instantly and with no or minimal transaction costs. This marketability gives its owner a flexibility that (usually) no other good can provide. Extreme fungibility is the hallmark of money. The demand for money is demand for readily usable purchasing power. People have demand for money because they want to be ready to trade. The demand for money can also be called the demand for cash holdings, although the term *demand for money* will be used here. It is that part of a person's overall possessions that is most readily exchangeable for goods and services on the market.

Thus, it is the uncertainty and unpredictability of life that causes people to hold the monetary asset. People hold some of their wealth in money because they want to have the flexibility to engage in exchanges quickly and spontaneously. The relationship between the demand for money and the number and volume of overall transactions, however, is tenuous. We can illustrate this with the following thought experiment:

If we imagine for a moment an economy in a state of equilibrium, or, as Ludwig von Mises put it, an “evenly rotating economy,” an economy in which the same procedures and activities unfold with unvarying regularity again and again, in which nothing ever changes, and in which therefore every transaction is completely predictable, there would be no need for anybody to hold money.²¹ Everybody could precisely match the time and the size of their outlays with the time and the size of their incoming revenues. Excess income could always be fully invested and thus earn an income in the form of interest, dividends, or rents. In a world of no uncertainty, there would still be transactions but no need to hold a monetary asset. Everybody simply needed an accounting unit but nobody had any actual demand for money holdings. Of course, such an economy is pure fantasy. It is entirely a theoretical construct that helps the economist isolate, analyze, and describe certain procedures in theory. It could never exist in the real world. The mental construct of the evenly rotating economy is, within limits, useful for economic science. But these models struggle to account for the demand for money, which is a phenomenon of the real world of uncertainty and unpredictability.

How much of the monetary asset any person wants to hold is ultimately subjective but it is clear that it is intimately linked to the purchasing power of the monetary unit. In our earlier example of a community of A, B, C, D, and E, how many ounces of gold a person will want to hold as his cash balance will be different in each scenario. If the community has relatively large quantities of gold available for use as money, then the purchasing power of each unit of gold will be—all else being equal—relatively low. Let us assume that exchange relationships determined by market exchange come out at one-fifth of an ounce of gold for one unit of “p” or “q.” In this scenario, a person with a certain demand for readily available purchasing power (demand for money) will want to hold more gold than if the community overall had relatively small quantities of gold and the purchasing power of each unit was relatively high (for example, one-twentieth of an ounce of gold buys one unit of “p” or “q”). The purchasing power of each ounce of gold is different in the two scenarios. Therefore, the flexibility that each ounce of gold provides as a medium of exchange to its owner is different. As demand for money is demand for readily exercisable spending power, a person with a certain (subjective) demand for money will hold different quantities of the monetary unit if money’s purchasing power is different.

This is, of course, true for any form of money. It applies equally to fiat money. Nobody has demand for a specific quantity of banknotes or a specific number of coins, just as under a gold standard nobody has demand for a specific amount of gold. Demand for money is always demand for readily exercisable purchasing power. It is purchasing power that one demands, not the money substance as such, whatever it happens to be. If money’s purchasing power is low, we need to hold more of it to satisfy the same money demand than if money’s purchasing power was high.

Naturally, every person has it in his or her power to adjust holdings of the monetary asset precisely according to personal preferences. Of course, a person’s overall wealth sets a limit to how much of the monetary asset the person can own. Conversely, every person must have a bare minimum of nonmonetary goods to stay alive (food, shelter). But within these limits every person can hold exactly the amount of money he wants to hold. If a person wants to hold more money, he

can sell assets or reduce money spending. If a person wants to hold less money, he can spend the money on goods and services. It would be absurd to make the claim that a person really wants to hold less money but cannot reduce his money holdings. If nobody in the economy accepted the surplus money in exchange for goods and services, then this form of money would have ceased to function as money. After all, general acceptance is what makes it money. By the same token, no person could claim to want to hold more of his wealth in the form of money but be unable to exchange his other possessions for money. In that case, one would have to question if the person's other possessions were not worthless and if the person already held his entire wealth in the form of money. Because of the high marketability of the monetary asset, which is the precondition for its function as money, every person holds exactly the quantity of money that the person desires to hold.

But what if everybody in society wanted to increase money holdings? Would that not require somebody to come up with a plan to produce money? The answer is no.

The demand for money can always be satisfied by a change in money's price, meaning its purchasing power. If people have a higher demand for money, they will sell goods and services or reduce money outlays on goods and services. If many people do this, it will put downward pressure on the prices of goods and services, and this will cause the purchasing power of the monetary unit to rise. But the rise in money's purchasing power is precisely what will satisfy the additional demand for money. This process will last until people are again happy with the quantity of money they hold. The quantity of money in the economy has not changed, but its purchasing power has. The same quantity of money that bought a certain quantity of goods and services before now buys a larger quantity of goods and services. The public now holds a large portion of its overall wealth, consisting of money and nonmoney goods, in the form of money. This means the public's higher demand for money is satisfied. An increased demand for money is always increased demand for purchasing power in the form of money, and this demand will be fully met by a fall in money prices, meaning the rise in the purchasing power of every unit of money.

The key difference between money and all other goods and services is again that money has only exchange value and not use value.

If demand increases for any other good, somebody has to produce more of that good for this demand to be satisfied. Additional demand for TV sets and cars can be met only by producing additional TV sets and cars because only additional units of these goods can satisfy additional demand for their services. Demand for cars and TV sets is demand for the use value that these goods provide. Money, however, does not need a producer. Every amount of money is optimal. If the public wants to hold more money, nobody has to produce more money. As money has exchange value, the extra demand for money is synonymous with extra demand for money exchange value and can be met by a drop in prices, that is, a rise in the purchasing power of the monetary unit. By selling goods and services in order to raise money balances, as all people do who want to raise their individual money balances, the community collectively exerts downward pressure on prices, and the resulting drop in prices is in itself sufficient to satisfy the increased demand for money. No new money needs to be produced to meet additional demand for money. Conversely, if the demand for money declines, people will “sell” money holdings for goods and services. The result will be a rise in the money prices of goods and services, meaning a drop in the purchasing power of money. This is the unique feature of a medium of exchange. Demand for and supply of money are coordinated by changes in purchasing power, not by adjustments to the physical supply of monetary units. Just like all individuals can hold, at every point in time, exactly the money purchasing power they desire simply by buying or selling goods and services, so the economic agents in aggregate can hold, at every point in time, exactly the money purchasing power they desire simply by selling or buying goods and services and thereby adjusting the purchasing power of the existing stock of money.

Are “Sticky” Prices a Problem?

One potential criticism at this point could be that in the real world not all prices are that flexible. Many prices are “sticky” and will not adjust as quickly as this somewhat stylized account implies. Does this process really work as smoothly as described here, or does it not lead to economic disruptions? And would this lead to an economy with constant massive price swings?

These are important points, and we will meet them again on a few occasions and in different shapes throughout our further investigation. My response to them is twofold:

1. Yes, this account is to some extent idealized but not by much. In the real world, certain frictions will indeed be inevitable and the process will not be as smooth. However, these frictions should not be overestimated. In essence, this process does take place as described.
2. The expectation, often implicit in this criticism, that systems of elastic forms of money, in which the quantity of money can be adjusted easily, can provide a smoother adjustment to changes in money demand is entirely illusory.

A full explanation of these two points will have to wait until the later chapters when we will have covered more theory, but a few things may be added to point 1 here already: It is inevitable that some prices will adjust more quickly than others, but a widespread stickiness of prices is unlikely in an entirely free market and does not even exist today when markets are not “perfectly” free. More things are being repriced quite quickly in response to demand changes than is often believed, not only financial assets but also real estate, airline tickets, hotel rooms, used cars, most items in the supermarket, and almost anything bought and sold on the Internet. Almost 100 years of ongoing paper money inflation has made many believe that prices go up more easily than down, but whenever monetary conditions are stable we see that this is not the case. Even items that appear to have “fixed” prices, such as new cars, are often quickly discounted if demand drops. Even many wage deals now include variable components that make them much more flexible than previously. I think many economists overstate the problem of price stickiness. And if prices are that sticky, why do many mainstream economists constantly follow inflation statistics and perennially worry about even minor deflation? Furthermore, and very importantly, we do not have to assume that *everything* will be constantly and flexibly repriced for the process described here to work.

Moreover, big price swings and drastic changes in money’s purchasing power are not to be expected. First, there are powerful balancing

factors at work. Consider the following: When a section of the public experiences a higher money demand, reduces money spending, and thus pushes prices lower, the rest of the public, who, we must assume, have an unchanged money demand, will now be confronted with falling prices, which means a higher purchasing power of their (unchanged) money holdings. This part of the population will now have an incentive to spend some money. These people do not have a higher money demand, yet the downtrend in prices increases the purchasing power of their money balances, and thus the opportunity costs of holding money rather than spending it. To some degree the process will thus be aided by money flowing from those with unchanged money demand to those with increased money demand. The latter “bid” money balances away from the former. This process will take some of the adjustment pressure off prices.

Second, a sudden, drastic, economy-wide change in money demand is unlikely. It may occur in a crisis, but what is to be expected in normal times is that, as the economy gets slowly more productive and the supply of goods and services slowly increases, money demand will also rise, and this will lead to moderate ongoing deflation, a modest tendency for prices to drop on trend. As we will see in the course of our analysis, there is no problem with this process. In fact, it has many advantages.

I admit that changes in money demand can be disruptive and that this will be particularly the case if they are drastic and sudden. But as I will show in the course of our analysis, no elastic monetary system is conceivable, not even in the frictionless world of theory, that can avoid these disruptions through quick adjustment of the stock of money. This is the reason why any economy using money (and therefore any developed economy) is subject to certain instabilities. But we will see that these instabilities are much larger in a system of elastic money than a system of inelastic money. What I have tried to show here is simply that, because of money’s unique feature, there is no need for ongoing money production, that demand for money can be met, naturally and automatically, through market forces adjusting its price.

The conclusions so far may seem a bit surprising, as they go against much of what is being written and said about money in the media and

even many textbooks. I think that most people today readily assume that a higher demand for money must mean, ultimately, a bigger supply of the available money units. This, however, involves an undue transfer of relationships that hold for goods and service that have use value to the sphere of money, which has pure exchange value. I will make two more points to illustrate the conclusions from this chapter.

It is a fact of history that fundamentally different substances have functioned as money. Nobody will deny that gold and silver functioned as money, and nobody can deny that, today, pieces of otherwise pretty worthless paper and even immaterial, electronic book-entry claims to such pieces of paper function as money. What made these substances “money” was evidently not specific physical properties. Gold, silver, and paper are very different substances, and immaterial money is no substance at all. What made these “things” money was only their acceptance in voluntary exchange for goods and services rather than any ability of these substances (or nonsubstances) to satisfy needs directly. But if money is money only because it is generally accepted as money in exchange for goods and services that have use value, then its value must be pure exchange value. Once we agree on this point, all the conclusions of this chapter follow logically: Once a good is established as money, no additional quantities of this good are needed. The performance of an economy is independent of the supply of money. Within reasonable limits, any quantity of money is optimal. Money production is redundant. Supply of and demand for money can always be brought in line by changes in money’s purchasing power. Society overall and every individual in society can satisfy their demand for the monetary asset without the help of ongoing money production.

I hold these statements to be correct, but the reader can check them for himself. As a user of money, the reader will know why he holds money and what determines the amount of money he wants to hold at any point in time. After all, to grasp what money is for and how we use it, and what therefore makes good money, does not require us to speculate about its origin 3,000 years ago and to analyze the tribal traditions of the Gunwinggu people in Australia, however educational that may be in other respects. Money is a social tool, and we all use it every day. All I am doing as an economist is to analyze in a more conceptual way what

we are all doing daily as money users, and the reader/money user can test my analyses and does not have to take my word on faith. I can thus argue as follows:

We money users hold cash balances because we want to be ready to trade. If we did not value the flexibility, the readiness of instantly engaging in economic transactions with others, we could as well put all our wealth in consumption goods that satisfy our needs or in investment goods that generate returns and that deliver more consumption goods to us in the future. Holding cash involves opportunity costs. We hold money balances only to the extent that we value the flexibility that they give us higher than the additional things we could enjoy if we spent the money. How high we value that flexibility is subjective. It varies from person to person and for the same person will change from time to time, depending on personal circumstances. What drives the desire for flexibility does not have to concern us here. But whatever our desire for “spending flexibility” is, how this translates into demand for a specific quantity of money naturally depends on the purchasing power of the monetary unit. Demand for money is therefore demand for purchasing power in the form of money. It follows that changes in money demand can always be met by changes in money’s purchasing power.

The preceding explains why societies can function and grow with inelastic commodity money. Inelasticity of supply is no hindrance for a commodity to be used as money. Or to put it differently, there is no basis for the widespread belief that somebody has to meet the growing demand for money in a growing economy—or in an economy that may for other reasons have a growing demand for money—by creating more money units.

Other Functions of Money

The skeptical reader may at this point still raise the following objections: First, the case is built on money’s function as the medium of exchange, but standard economic textbooks also ascribe other functions to money, such as a store of value or a unit for accounting and monetary calculation. Second, the changes in money’s purchasing power that result from changes in money demand could be disruptive,

as they may impair money's role as a basis for economic calculation. Maybe it is better to adjust the money supply in response to changes in money demand than to allow money's price to change. This would make sure that money is a reliable tool for economic calculation. Third, if money production is not needed, how can we account for the growth in banking, which for a long time has included the issuance of money substitutes and fiduciary media, the latter meaning uncovered claims to money proper that are used by the public just like money, for example, demand deposits. How can we account for the fact that the world has moved away from commodity money of fixed supply to paper money of perfectly flexible supply?

These are all good and valid questions. We will address each one of them in detail in the course of our investigation. At this juncture it may just be sufficient to make the following points.

All additional functions that can be assigned to money are the result of money being the accepted medium of exchange. These functions, important as they are, are derivatives of the medium-of-exchange function. Because money is the medium of exchange and every good or service is traded against money, money prices are ideal for economic calculation. As to money being a vehicle for storing wealth, it is apparent that many other assets can be used for that purpose, too. Many of these have the additional attraction of potentially generating returns over time. Money does not offer any returns. It can therefore compete with other potential storages of wealth only by offering something special, and that is its universal acceptance in exchange for goods and services, its unique marketability, the ability to be exchanged for goods and services faster and more conveniently than any other asset. That, after all, is why it is money. So we are again back to the medium-of-exchange function of the monetary asset.

Certain financial assets, in particular high-quality debt claims that are traded in very liquid markets, can sometimes become "near-monies," and their owners may thus feel a reduced need to hold money proper. But these assets are fundamentally different in that they constitute simultaneously somebody else's liability and therefore always carry an additional risk. Proper commodity money, such as gold, but also fiat money in the form of irredeemable paper tickets, is a financial asset that is not somebody else's liability at the same time. The purchasing

power of this money varies only with changes in the demand for money and, in the case of paper money, also with changes in its inherently flexible supply. We see here that the inflexibility of supply in the case of commodity money makes it a superior store of value.

There is obviously a scenario in which money does generate a return, and that is when there is deflation. In an economy with an unchanged money supply but rising productivity, meaning a growing supply of goods and services, prices will on trend decline. This is called *secular deflation*. The purchasing power of the monetary unit appreciates over time. An unchanged quantity of money buys more things next year than this year. It is clear that this is very different in today's world of universal paper money in which central banks usually aim for a steady depreciation in money's purchasing power. In short, the store-of-value function of money is fulfilled much better in a system of inflexible commodity money than in a paper money system. A detailed discussion of these points will have to wait until we discuss advantages and disadvantages of deflation. In any case, the store-of-value function of money is certainly no argument for ongoing money production but an argument against it.

We will also discuss the second point regarding the potential for purchasing power stability of paper money in detail in a later chapter. I already mentioned earlier that the expectation that elastic money systems can adjust the quantity of money in a way that avoids price changes is unfounded, even in theory. This will become apparent in the course of our further analysis. But it is already clear at this stage that such an argument for the introduction of elastic money is very different from the widespread notion that a growing money demand means somebody somehow has to produce money and that, therefore, some form of elasticity in the money supply is required. Ongoing money production is simply not needed. It is not true that society needs a money producer who can satisfy changes in money demand and that it is probably best to entrust this role to the state, as is universally the case today. Money is certainly not a "natural monopoly" of the state. Money has evolved organically and spontaneously from the voluntary actions of trading individuals. Once the market has identified the suitable monetary commodity, no further production of this commodity, nor any other adjustment to its supply, is needed. Those who advocate

elastic forms of money cannot claim that it is necessary or inevitable. They have to show that it is superior to inelastic money. Their argument will have to be that by replacing the money of the market—a commodity of relatively inelastic supply—with elastic fiat money under the control of the state, better results can be achieved for society overall. This is obviously a much weaker argument. It relies crucially on the appropriateness of the specific theories according to which money production is beneficial. We will look at these arguments in detail later.

However, our conceptual analysis of demand for money and how it differs from demand for any other good or service has already revealed a fundamental problem for any central bank trying to avoid fluctuations in money's purchasing power that may result from changes in the demand for money. The problem is the following: If the demand for any good or service rises and all else remains the same, the price of that good or service will rise in relation to all other goods and services. At the higher price, some of the demand for this good or service will now go unfulfilled. However, the higher relative price will provide an incentive to producers or potential producers of this good or service to produce more of it and, if indeed more of that good or service is then being produced, the extra demand may finally be met and the price recede again in response to the additional supply. This is the standard process for any good that has use value. The situation is different with money, which is demanded only for its exchange value. In the case of the monetary asset, a rising demand for money—all else being equal—will lift money's price relative to all other goods and services. The purchasing power of the monetary unit will rise. However, at the higher "price," no demand for money goes unfulfilled. As demand for money is only demand for money purchasing power, the higher purchasing power in itself has fully satisfied the additional demand for money.

Naturally, this cannot be said of any other good, which, in order to be a good at all, has to provide use value, which can never be satisfied simply by a change in the good's price. It follows that even a money producer who claims to print money only to satisfy any additional demand for money and to stabilize money's purchasing power faces a fundamental problem. In order to avoid a rise in money's purchasing power, the money producer has to anticipate the rise in money demand before it articulates itself on the market. This appears to be

impossible given what we said previously about everybody's ability to satisfy changes in money demand instantly. The money producer would practically have to know that money demand was about to go up before the economic agents themselves knew. Whenever the demand for money rises, economic agents can be expected to act on this change immediately. They will instantly raise their cash holdings and exercise downward pressure on the prices of goods and services. The purchasing power of money changes more or less simultaneously with the demand for money. After such a rise in money's purchasing power has occurred, the money producer knows that demand for money has gone up, but his role is nevertheless redundant: The purchasing power, which he set out to stabilize, has now risen anyway, and the extra demand for money is fully satisfied through this rise in money's purchasing power. In the case of goods and services that have use value, changes in market prices communicate changes in the preferences of the consumer. In the case of money, price changes (changes in money's purchasing power) also communicate shifts in preferences but, at the same time, the price changes constitute the full satisfaction of the changed preferences. Those who advocate an elastic form of money in order to absorb sudden changes in money demand and to keep money's purchasing power stable will have to explain how the money producer is supposed to anticipate changes in money demand before they affect purchasing power. We will revisit this point when we discuss the concept of price-level stabilization in full in a later chapter.²²

The third point about the rise of banking, and fractional-reserve banking in particular, is a different one. What fractional-reserve banking is and how it came about will be explained in more detail shortly. Here, a couple of short comments may suffice.

Fractional-reserve banking introduced a degree of elasticity into the money supply, even at a time when money proper was still a commodity of essentially inelastic supply. Banks created so-called fiduciary media, that is, uncovered claims to commodity money.²³ These claims could come in the form of redeemable banknotes or redeemable deposits, redeemable into the core monetary asset that is, in this case, gold. As these were not backed by the banks' physical holdings of the monetary commodity and yet were still used by the population just as if they were money proper, their effect was to—de facto—expand the

supply of what was used as media of exchange in the economy. Because fractional-reserve banking developed spontaneously in the market, the advocates of elastic money will point toward its existence and long-standing history of practice as proof that the market has demand for an elastic form of money. How else could the market have supported fractional-reserve banking for so long? How can fractional-reserve banking as a market phenomenon be reconciled with our earlier statement that ongoing money production is not needed and that a changing money demand is satisfied fully and naturally by changes in money's purchasing power alone?

In order to answer these questions, we will first draw a number of additional conclusions directly from money's unique position as a good that is solely demanded for its exchange value. We will see that whoever manages to issue a form of elastic money and have it accepted by the public as a general medium of exchange is in a very special position. In contrast to any other producer of goods and services in the economy, the money producer enjoys the unique privilege of being able to happily ignore the level of independent demand for his product and yet produce very profitably. Because of money's unique features, money production can proceed regardless of money demand.

The Unique Position of the Paper Money Producer

For the reasons that the monetary asset is different from any other good, the position of the money producer is different from the position of the producer of any other good. First of all, money can be "sold" and distributed more easily than any other good, as the characteristic feature of money is its unique marketability. The money producer can instantly exchange it for any other good or service. This is not the case with any other good or service produced in the economy, as these necessarily have use value and thus meet specific needs. The salability of every other good is therefore limited by the as-yet-unfulfilled demand for the specific satisfaction it provides. Money's use is universal.

Moreover, essentially any quantity of money can be produced and placed with the public. If, as we have seen, any demand for money can

be satisfied by a rise in the purchasing power of the monetary unit, then it must be the case that any additional supply of money can be absorbed via a drop in the purchasing power of the monetary unit. One follows logically from the other. If unwanted amounts of money are being produced and distributed (they simply have to be spent by the money producer), they will tend to raise money prices in the economy, meaning they will lower the purchasing power of each existing monetary unit. With money demand being unchanged but with the purchasing power of every monetary unit now being lower, the public will willingly hold larger quantities of the monetary asset. As he produces more money, the money producer will face a declining purchasing power of every additional unit of money he creates, but he will never face a situation in which unsalable amounts of the monetary asset pile up in his warehouse, a situation that is indeed a risk for every other producer in the economy.

The producers of goods that have use value, for example, cars or TV sets, may also try to place extra units by lowering their price, but such a strategy faces some tight restrictions. First, the cost of production will impose a limit on how much prices can be lowered to sell extra units. Such a strategy is likely to lead to losses soon. Second, there is the fact that even at lower prices the public will not absorb unlimited amounts of additional cars and TV sets. Given that these goods offer use value, demand for them is satiable.

The first point traditionally also applied to money producers. In a strict commodity money system, the money producer is he who extracts the monetary commodity from where it occurs naturally, gives it an economically usable form, and brings it into circulation. Under a gold standard, those are the gold miners. As long as gold is considered a form of money, gold miners, too, will not have to sit on their inventory for long. At falling prices, the gold can always be placed. But mining gold is expensive, and if a growing supply depresses prices too much (has caused a too steep decline in money's purchasing power, that is, the price of gold), further exploration will be unprofitable. This, however, changes fundamentally for the paper money producer. Producing modern state fiat money (paper money or electronic claims to paper money) is essentially costless. Thus, the paper money producer can produce unlimited quantities of money and place them. Neither the cost

of production nor any given level of money demand on the part of the public is a constraining factor. If the money producer is willing to live with a falling price of the monetary unit (inflation), he can produce and place with the public as much money as he wants.

Even today's mainstream consensus does not contest that an injection of new money could always be absorbed by a rise in prices. The public can essentially be made to hold any amount of money. Whatever the public's present desire for holding money balances might be, the paper money producer can always produce more and place it.

The former chairman of the Fed, Ben Bernanke, once expressed the privilege and power of the paper money producer thus:

*The U.S. government has a technology, called a printing press (or, today, its electronic equivalent), that allows it to produce as many U.S. dollars as it wishes at essentially no cost. . . . We conclude that under a paper-money system, a determined government can always generate higher spending and hence positive inflation.*²⁴

To “generate higher spending” (a higher gross domestic product [GDP]) and “positive inflation,” or to at least willingly incur higher inflation as a by-product of generating a higher GDP, is frequently the goal of a modern central bank, and printing money is the means to achieve it. We will analyze the rationale behind such statements later. But what is already noteworthy is that Mr. Bernanke evidently does not consider present money demand an obstacle to a “determined” government's monetary policy. The extent of the public's autonomous desire for cash balances determines how quickly money printing translates into inflation, but it does not constitute a constraining factor for paper money production as such.

It is certainly the case that when aggressive money printing causes a very fast drop in money's purchasing power, this can lead to the present form of money losing its status as a medium of exchange completely. This is what happens in the final stages of hyperinflations when they morph into complete currency collapse. But as long as an economy's established money maintains its status as the medium of exchange, a growing supply of it will simply be absorbed via a drop in its purchasing power.

Because of what makes money money, the producer of money is in a unique situation: He can produce money very profitably, and although

the public has no need for any additional units of his product, as any demand for money is demand for readily exercisable purchasing power and can be met by automatic changes in the purchasing power of the monetary unit, the money producer can place essentially any amount of his product.

The Monetary Asset versus Other Goods

Before we analyze fractional-reserve banking in more detail in the next chapter, a couple of additional conclusions can be drawn first from the fundamental difference between the monetary asset and all other goods in an economy.

As no ongoing production of money is needed, society derives no advantage from having competing producers of the good “money.” In the case of all other goods and services, which necessarily have use value, competition among the existing or even potential competition from new producers of goods is essential for ensuring that the optimal number of goods is produced at the lowest possible cost. In the case of the medium of exchange the optimal amount already exists, and there is no advantage to be had from lowering the cost of money production. Lowering the cost means that more money can be produced with the same or even lower factor input, but more money is of no benefit to society. More of any other good or service with use value is a benefit to society. Thus, factors that can be allocated either to money production or the production of any other good and service should always be allocated to producing nonmoney goods and services.

The verdict is the same when it comes to choice. The advantage that competition by private producers offers in terms of delivering goods and services with different specifications that cater to individual consumer preferences and tastes does not exist when it comes to the good “money.”

The competition among producers today guarantees that the consumer gets not only one type of car and one type of TV set, but a whole range of cars and TV sets. It is advantageous to society that the specific preferences of its individual members can be met. But this is the case only because these goods and services have use value. The

enjoyment somebody derives from his own car or TV set would not be diminished—and potentially would be enhanced—if these items were completely customized to meet individual requirements, and if everybody else in society used types of cars and TV sets with different specifications. This is not the case with money. The good “money” is only useful for anybody because others in society use the same good as “money.” A customized form of money that only one person uses is no longer money. It would no longer be a medium of exchange. It would be useless. A medium of exchange logically requires that others use the same form of money, too. Widespread use is the precondition for a good to be money. Universal use would be ideal. Customized money is a logical impossibility. Indeed, the more universally accepted a good is as money, the more valuable it will be as a medium of exchange.

The standard reasons for why a competitive market of private entrepreneurs is best in providing goods and services—reducing the cost of production and thus allowing an expansion of production with an unchanged or even lower factor input; producing a greater variety of products to meet specific consumer needs; technical progress²⁵—do not apply to the good “money.” The very fact that money is unchanging in terms of its supply and its specifications and widely accepted in its uniformity makes it ideal as a medium of exchange, and it explains why the precious metals gold and silver have been chosen as the ultimate form of money throughout human history.

For similar reasons, proposals for “currency competition” by private money producers do not seem convincing. One of the most famous advocates of this idea was Friedrich August von Hayek, who suggested in his book *Denationalization of Money* that the state’s territorial monopoly of money printing should be revoked and the supply of paper money opened up to the competition of private money producers.²⁶

Hayek was, next to Ludwig von Mises, the other outstanding representative of the second generation of Austrian School economists. His first two publications, the German-language *Geldtheorie und Konjunkturtheorie*²⁷ (1929) and his first English book, *Prices and Production*²⁸ (1931), were contributions to the Austrian business cycle theory, which had been founded by Hayek’s mentor, Ludwig von Mises, with the publication of Mises’s seminal book on money in 1912.

For his work, Hayek received the Nobel Prize in Economics in 1974 (Mises having died in 1973). The work of Mises and Hayek will have a great role to play in the further analysis, although I cannot agree with Hayek on this point.

Hayek proposed competition in paper money production not because he thought that this would supply society with more and cheaper paper money but, quite to the contrary, because he thought a competitive market would produce “better” paper money, meaning less inflation-prone paper money. According to Hayek, paper money competition would help avoid the overproduction of money that is a constant problem if money production is under the exclusive control of the state. With competing paper monies to choose from, the public would be less exposed to the inflationary policies of a single territorial monopolist. In a system of multiple paper monies, if the inflationary consequences became too painful, the public could at least switch to another provider. Based on our analysis so far, we can already identify some flaws in this proposal (and others will become apparent later).

First, the proposal introduces multiple parallel monies, which is suboptimal and costly, and the public may thus reject it. A society with multiple media of exchange does not realize the full advantages of using money. The coexistence of multiple monies partially defeats the very purpose of having a medium of exchange in the first place. Money is more useful to its owner the more transactions it can facilitate instantly, without, for example, having to be exchanged for something else first. The more widely accepted a medium of exchange is, the more valuable and useful it is to its owners and society overall. This is precisely the reason why, historically, trading communities have exhibited a strong tendency toward adopting the same commodity as money. Because of money’s considerable network effects, market forces will tend toward the establishment of one money, rather than a multitude of different currencies. A universally accepted medium of exchange that facilitates any transaction between anybody in the world would, of course, be the optimal currency. In that respect, gold was the first, and has so far been the only, practically global medium of exchange.

A look at today’s world-spanning patchwork of local state paper monies can illustrate this point. From a global perspective, markets are today partially segregated by the use of multiple state fiat monies, each

of which enjoys regional dominance due to the state monopoly of issuance, legal tender laws, and long-standing history of local use. This monetary arrangement reintroduces an element of barter into international market exchange, an undoubtedly suboptimal arrangement.

If, for example, someone earns an income in the United Kingdom in pounds but wants to spend part of it in the United States, that person has to find somebody who wants to do exactly the opposite. Only then can he exchange some of his pounds for dollars. We meet here again a form of “double coincidence of wants” that characterized the barter economy. This would not be necessary if both countries used the same form of money, or if they were at least on an identical commodity standard, such as a true gold standard, in which pounds and dollars were simply defined as specific units of gold. Then, money could flow from one country to another, similar to the way in which it flows today from one region to another region within the same country or currency area. This is how money facilitated international trade under a gold standard.

The closest the world has ever come to a global form of money, which is the most valuable form of money for cooperation on markets and a global division of labor, was the classical gold standard, from 1880 to 1914. Although these arrangements were far from ideal and certainly no blueprint for the best conceivable gold standard, the classical gold standard still marked a remarkable period of strong growth, expanding global trade, and harmonious monetary relations between nations, a period abruptly brought to an end by World War I.²⁹

I do not think that many people today realize that the abandonment of the international gold standard and its replacement with a multitude of local paper money franchises under state control during the twentieth century constituted economic regression and not progress. In order to deal with the inefficiency of partial barter, an active market in the various state monies has developed, the 24-hour, several-trillion-dollars-a-day foreign exchange market. Today’s public seems to consider this market the epitome of international free markets and uninhibited capital flows. This is a misconception. In fact, the global foreign exchange market essentially constitutes a second-best solution by money users to cope, as best as possible, with politically motivated monetary segregation. The desire by every government to issue

its own paper money for its own political reasons is a powerful hindrance to global market integration, effective division of labor, and human cooperation across political borders. Today's foreign exchange market is makeshift to minimize the cost from monetary nationalism. "The high technology and the elaborate financial instruments in the foreign exchange and money markets are no more the expression of a high degree of market development than the increased sophistication of burglar alarms is evidence of a greater degree of public security" (John Laughland).³⁰

Hayek's proposal to go back to multiple monies even in societies that already benefit from the use of one unified medium of exchange would deprive money users of some essential advantages of using the established form of money and for this reason the public may simply reject it.

Second, there are other reasons why the public may not take to Hayek's well-intended proposal. We have already seen that money could not have come into existence by anybody issuing otherwise worthless paper tickets and declaring them money. Today, essentially worthless paper tickets (and electronic claims to such tickets) are accepted as money because of their particular history, meaning the established tradition of using them in exchange, which dates back to the time when they still used to be claims on scarce commodities. The public feels confident that paper money will be accepted today mainly because it was accepted yesterday, and yesterday the public accepted it because it was accepted the day before, and so forth, all the way back to when the monetary commodity was gold or silver, and the monetary use of gold and silver goes back further to when these commodities were not yet money but simply forms of jewelry or prestigious objects. As we have already discussed, the institution of money originated from frequently traded commodities. Paper money did not appear from nowhere, readily formed and uniformly accepted. And this will pose a big challenge to new money producers. Against the established state paper monies we use today, new paper monies issued by private producers will find it difficult to gain acceptance.

Again, we see a fundamental difference between money and any good or service that has specific use value. When governments give up monopolies in postal services, airlines, or TV programming, private competitors can quickly gain a foothold, not only by finding more

efficient ways of delivering a similar service but often by catering to individual needs and providing more tailored versions of the product or service. “One size fits all” is usually an inferior approach when it comes to the provision of goods and services that deliver use value, but in the case of money, which is demanded only for its exchange value, “one size fits all” is indeed quite appropriate. Hayek might be mistaken when he believes that the public may want to swap a widely accepted uniform medium of exchange that suffers from a steady loss of purchasing power for a multitude of less widely accepted monies that have a more stable purchasing power, in particular as inflation, as long as it is not too high, is often deemed manageable by the individual money user.

Herein lies an important advantage for the paper money producer once his money is widely accepted as a medium of exchange: The advantages of staying with the established and widely used medium of exchange are usually considerable, and the costs of switching to a new medium of exchange sufficiently prohibitive that a considerable degree of ongoing decline in the monetary unit’s purchasing power can be expected to be tolerated by the public. History shows that established media of exchange remain in use even at relatively elevated inflation rates for a long time. Of course, the public will try to protect itself as best as possible against the negative effects of the creeping loss of purchasing power. People will try to keep their cash balances fairly low or to anticipate further price rises when setting prices in the present. This will inevitably accelerate the decline in the purchasing power of the monetary unit, and it may ultimately lead to complete currency collapse. But it is usually only in the later stages of the inflationary process that the public shuns the established money completely and switches to other media of exchange, like foreign currencies or commodities. But for as long as monetary expansion is ongoing but not excessive, the public will usually manage to adjust its economic activities to money’s declining purchasing power.

As the present economic mainstream treats inflation not only as one of many problems associated with elastic money but the only problem, it is maybe not surprising that paper money systems enjoy such wide acceptance again. By itself, continuous moderate inflation is not an insurmountable problem. Modern macroeconomists have even elevated moderate inflation to the status of a policy objective and a slowly

rising consumer price index to standard-bearer of monetary stability. However, as I am going to demonstrate, changes in purchasing power are not the only effects of elastic money, and not the most sinister ones. An expanding money supply will always change relative prices, the allocation of resources, and the direction of economic activity, too. Over long periods of ongoing money injections and a constant, if even fairly slow, decline in money's purchasing power, there must occur a continuous mispricing of assets and misallocation of resources that will lead to a progressively more unbalanced economy. A paper money system with moderate inflation is not as stable as it may appear for a long time—even to the individual paper money users. And even if the individuals were aware of those drawbacks, long-run economic stability would still hardly be a decisive factor for the individual money user when choosing his preferred form of money. A new, privately issued paper money that is less elastic, less inflationary, and less destabilizing to the economy in the long run, may still find it difficult to compete with an established, widely accepted form of fiat money, even if the latter is, in the long run, highly destabilizing.

A proper denationalization of money would indeed be a great step toward a more stable monetary system but such a denationalization would require the state to exit the money production business completely. Inviting private “competitors” to join the state in the area of money printing is not enough. Under Hayek's proposal of *denationalization lite*, the success of private money producers is questionable, and if they were to succeed, the outcome would be suboptimal: various parallel monies, all of which might still be elastic enough to cause economic instability. What would be needed, instead, is a complete separation of money and state. If the state were to exit the sphere of money completely and hand the task of supplying a medium of exchange back to the private sector, it is extremely likely that we would again get a hard form of money, one that cannot be produced by a privileged money producer at will, and one that is truly international. Indeed, our further investigation will demonstrate that a highly elastic form of money is unlikely to emerge from the free market but is usually the result of state intervention.

The gold standard was, after all, already a denationalized form of money, and the twentieth century's trend away from gold and toward

national state paper monies reflects the peculiar intellectual and political trends of that century. Money has thus only recently become nationalized, and we still suffer the consequences to this day. A return to a gold standard would mean a proper (re)denationalization of money. Hayek was wrong, in my view, when he suggested that competitive paper monies could be as good or even better than a gold standard,³¹ but Hayek was also skeptical as to whether it would be politically feasible to reestablish a gold standard, and his proposal can be seen as an alternative, albeit a flawed one, in my view.³²



With the unique position of the money producer explained, we now turn to the question of fractional-reserve banking, which is an essential component of the present paper money system. It therefore demands closer inspection.

Notes

1. Ludwig von Mises, *Die Gemeinwirtschaft: Untersuchungen über den Sozialismus* (Jena, Germany: Gustav Fischer, 1922).
2. *Ibid.*
3. David Ramsey Steele, *From Marx to Mises: Post-Capitalist Society and the Challenge of Economic Calculation* (La Salle, IL: Open Court, 1992).
4. Ludwig von Mises, *Theorie des Geldes und der Umlaufsmittel*, 2nd, improved ed. (Munich/Leipzig, Germany: von Duncker and Humblot, 1924): 1–3; Carl Menger, *Grundsätze der Volkswirtschaftslehre* (Vienna: Wilhelm Braumueller, 1871): 250–260.
5. Hans-Hermann Hoppe, “Banking, Nation States, and International Politics: A Sociological Reconstruction of the Present Economic Order” in *The Economics and Ethics of Private Property: Studies in Political Economy and Philosophy*, 2nd ed. (Auburn, AL: Ludwig von Mises Institute, 2006): 77–78.
6. The first economist, to my knowledge, who elaborates this point clearly was Carl Menger, an Austrian economist and founder of the Austrian School of Economics, in his 1871 book, *Grundsätze der Volkswirtschaftslehre*. See in particular pp. 253–255.
7. Joerg Guido Huelsmann, *The Ethics of Money Production* (Auburn, AL: Ludwig von Mises Institute, 2008): 29–33.

8. Menger, *Grundsätze der Volkswirtschaftslehre*, 250–260.
9. Murray N. Rothbard, “The Case for a 100 Percent Gold Dollar” in *In Search of a Monetary Constitution*, ed. Leland B. Yeager (Cambridge, MA: Harvard University Press, 1962): 99.
10. David Graeber, *Debt: The First 5,000 Years* (Brooklyn, NY: Melville House Publishing, 2011, 2012).
11. *Ibid.*, 29 (page numbers refer to the 2012 paperback edition).
12. *Ibid.*
13. *Ibid.*, 32.
14. *Ibid.*, 35, 36.
15. Graeber’s claim that economists have ignored such exchange relationships is equally wrong. For a brief and economically correct treatment of such arrangements, see Ludwig von Mises, *Human Action: A Treatise on Economics*, 4th rev. ed. (Irvington, NY: Foundation for Economic Education, 1963/1998): 195. Mises wrote this in 1949.
16. Graeber, *Debt*, 36.
17. *Ibid.*, 39.
18. Mises, *Human Action*, 421.
19. *Ibid.*
20. Those who are critical of the concept of commodity money sometimes try to undermine it by constructing extreme examples. What if there were only one gram of gold in the world? Would that also constitute the optimal quantity? The answer is, of course, no, it would not. A commodity that is that rare is not suitable as money. If gold had been this scarce, no society would have used it as a monetary asset. But this is hypothetical. Gold is not that rare. What if gold could suddenly be produced in laboratories and its supply therefore easily expanded? In that case, gold would lose its unique qualification as money. The public would then probably choose a different commodity. But if a commodity is neither extremely scarce nor extremely abundant, and if its physical qualities make it suitable as a medium of exchange, such as durability, homogeneity, and divisibility, once this commodity has been chosen as a medium of exchange, any quantity of it can deliver all the services that money can ever deliver. A society derives no advantage or disadvantage from whether its supply of gold is such that the price of good “p” comes to one-fifth of an ounce of gold, one-tenth of an ounce of gold, or one-twentieth of an ounce of gold. The benefit of using gold as a medium of exchange is the same in each scenario. This is what is meant by the statement that any amount of the monetary asset is optimal.
21. Mises, *Human Action*, 246–250.

22. See Chapter 6.
23. Mises, *Human Action*, 433–435.
24. Ben Bernanke, remarks before the National Economics Club, Washington, DC, November 21, 2002, www.federalreserve.gov/boarddocs/speeches/2002/20021121/default.htm.
25. What is the role of technical progress in the field of money? We revisit this question when we speak about Bitcoin.
26. Friedrich August von Hayek, *Denationalisation of Money: The Argument Refined* (London: Institute of Economic Affairs, 1990 [1976]).
27. Friedrich August von Hayek, *Geldtheorie und Konjunkturtheorie* (Vienna/Leipzig: Hoelder-Pichler-Tempsky AG, 1929).
28. Friedrich August von Hayek, *Prices and Production*, reprint (New York: Augustus M. Kelley, 1967; first published 1931).
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30. Laughland, *The Tainted Source*, 236.
31. Hayek, *Denationalisation of Money*, 109, 130–131.
32. For a critique of Hayek’s proposal from a Misesian point of view, see Murray N. Rothbard, “The Case for a Genuine Gold Dollar,” in *The Logic of Action One: Method, Money, and the Austrian School* (London: Edward Elgar, 1997): 366–370, reprinted from Llewellyn H. Rockwell, Jr., ed., *The Gold Standard: An Austrian Perspective* (Lexington, MA: D.C. Heath, 1985); and Bettina Bien Greaves and Percy L. Greaves Jr., “On Private Paper Money,” Letter to the Editor of the *Wall Street Journal*, August 23, 1977, reprinted in Percy L. Greaves, ed., *On the Manipulation of Money and Credit* (New York: Free Market Books, 1978): 275–279.

Chapter 2

The Fundamentals of Fractional-Reserve Banking

Over the 50 years up to the onset of the recent financial crisis in 2007, industrial production in the United States increased by a factor of roughly five.¹ Over the same period, the amount of money in the economy, measured by the Federal Reserve's M2 money supply aggregate, increased by a factor of 25.² We can state with some certainty that all this additional money was not strictly needed. We have seen that even a growing economy does not need a growing quantity of money. Neither was this money created in response to some rapid increase in the public's autonomous money demand. Indeed, the public could be persuaded to hold these massively expanded quantities of media of exchange as part of their voluntary cash holdings only by severely diminishing the purchasing power of every single monetary

unit. The dollar lost about 86 percent of its purchasing power over this period if measured with consumer prices. In 2007, \$1 bought about 14 percent of what it bought in the late 1950s.³

We remember the Bernanke quote: “The U.S. government has a technology, called a printing press (or, today, its electronic equivalent), that allows it to produce as many U.S. dollars as it wishes at essentially no cost. . . . We conclude that under a paper-money system, a determined government can always generate higher spending and hence positive inflation.”⁴ President Nixon removed the last link to gold and therefore the last constraint on paper money production in 1971. Since then, the owner of the paper money franchise, the government, has facilitated a massive expansion of money. This has certainly led to inflation, but the system’s defenders will argue that it has also brought about higher spending. All this money may not have been necessary and not demanded by the public, but it may still have been beneficial overall. Whether monetary expansion on this scale has been, or conceptually even can be, a net positive is, of course, the central question of this book. Before we proceed to answer that question, we need first to understand the money creation process in some detail, and this will require a closer look at the role of banks.

In a paper money system, not everybody can print money. The right to do so is ultimately the prerogative of the state. Printing money without the license of the state is counterfeiting and illegal. All complete paper money systems (those with no commodity backing whatsoever) are thus fiat money systems. Money—at the basic level—is provided by the state and its agencies. However, in our modern monetary system, most of what we use as money is not physical paper money anymore. It is not printed on paper but is simply an electronic book entry at a bank. It is electronic deposit money, and although it can be considered a claim against the bank for the delivery of physical paper banknotes, the presently available amount of physical banknotes in any country is merely a fraction of the outstanding amount of electronic money. This is a different way of saying that banks practice fractional-reserve banking. Fractional-reserve banking is a process through which banks expand the available quantity of money. On top of a given level of core money—whether this is gold, as was the case under a gold standard, or state-issued paper money, as is the

case today—the banks create additional deposit money. (How they do this will be discussed in this chapter.) We can think of the core money (gold or paper tickets) as money proper, and the bank-issued deposit money as money derivatives. The public, however, considers the two, under normal circumstances, as indistinguishable. Both together make up the majority of what is used as money in the economy today. (In the following, I will sometimes call this money *bank-issued money* or *fiduciary media*, which is the more accurate scientific term but also a bit awkward; and sometimes I will call it *derivative money*. All these terms are used synonymously. And when the distinction between this money and core money [notes and coins created under state monopoly] is of no importance, I may just use the term *money*. I hope that what I am referring to is always clear from the context.)

I previously mentioned the Federal Reserve's M2 money aggregate. It includes currency in circulation (physical notes and coins created under state monopoly), demand deposits at banks, various time deposits, money market funds, and a few other items. This aggregate includes everything that, according to the views of the economists at the U.S. central bank, the American public uses as money. Of the almost 11 trillion dollars in M2, about 1.1 trillion are dollar notes and coins (many of the former are probably circulating abroad) and about 2.4 trillion are money market funds (as of December 2013).⁵ The rest are demand deposits and various time or saving deposits at banks. Almost 70 percent of what is money, according to Federal Reserve definition, is thus a balance sheet item at a bank. These numbers will not look very different in other countries with developed banking systems. If anything, the numbers are often tilted even more toward deposit money. Most of what we use as money today has thus not been printed by the central bank but has been created by private banks.

In fact, even most of the currency in circulation, that is, the physical money of notes and coins that cannot be produced by the banks, probably has its origin in fractional-reserve banking. This is money that the banks created first in the form of deposit money but that the public then decided to exchange partially for physical notes and coins. The central bank then produced the notes and coins to allow the banks to pay out to depositors. This is one of the ways in which the central bank supports—but at times also controls and potentially restricts—the

activity of fractional-reserve banks. Of course, the notes and coins could theoretically have come into being simply by the state's producing them and using them to pay its employees, its contractors, welfare recipients, or others who get money from the state. Historically, this has been a common process for states to distribute their newly created paper money. Given the present financial infrastructure, this would be a highly unusual process today. So when Mr. Bernanke speaks of using the printing press to create "higher spending" and positive inflation, he will, like most central bankers, usually try to encourage the banking system to do most of the money printing. (However, recently, the banks' ability to create more deposit money has been somewhat restricted due to the fallout from the financial crisis, so that a lot of new money has indeed been "printed" by the central bank.)

A superficial look at the large share of bank-created deposit money in the broader money aggregates today has led some observers to consider the private banks as the root of all monetary evil. These critics would feel more comfortable if the state and its agencies could directly control and potentially administratively determine the quantity of money in society rather than have profit-seeking banks print money and saddle an unsuspecting public with large amounts of debt in the process.⁶ They often portray the central bankers as almost helpless bystanders in the money production process conducted by greedy, or at any rate not sufficiently public-spirited bankers, and they seem to assume that the central bankers have ultimately no choice but to bail out the banks when they have finally overextended themselves. We will see that this view is based on a misunderstanding of the relationship between the state and banks. It is true that it was private banks that developed the techniques by which most money has been created and is still being created today. Fractional-reserve banking, and thus money creation, has been a feature of the banking business for about 300 years. But it is also true that in an entirely uninhibited market, the ability of banks to create money is severely limited, and it is also true that over the past 100 years the state has built a monetary infrastructure that has greatly aided the money creation abilities of the banks: the demonetization of gold and the introduction in its place of central-bank-created money as the banks' main reserve asset; an institutional safety net for banks in the form of lender-of-last-resort central banks and

government-sponsored deposit insurance schemes. This infrastructure did not evolve through market forces but came about through political decisions, and there can be no doubt that its purpose was—and still is—to encourage banks in their fractional-reserve-banking activities, and to do so by removing or systematically weakening many of the market forces that would normally keep bank money creation in check. More money and bank credit creation was deemed desirable because it was believed to be beneficial to the economy, while at the same time the goal was to put this process under greater government control (banks have sometimes complained about the latter but rarely about the former). The massive expansion of money that I cited at the beginning of this chapter was feasible only with the help of these institutional changes. States and banks are partners in the money-creation business (or accomplices, if one takes a more critical position), and although it may often appear different (even to the bankers), the senior partner in this alliance remains the state. However, I am jumping ahead. To fully grasp the key components of fractional-reserve banking and its inherent constraints and possibilities, it seems best to develop a conceptual history of how it emerged and grew.

The Origin and Basics of Fractional-Reserve Banking

The first bankers were goldsmiths. When money was essentially gold or silver, goldsmiths entered the field of financial services quite naturally, first by assessing the metal content of gold or silver coins, for which they were uniquely qualified, and later by also taking gold or silver money on deposit and by lending gold and silver money against interest. A charge of misappropriation has been made against these early bankers. The basis for this allegation is the assumption that those who deposited money with them were simply seeking safekeeping services. Carrying heavy gold or silver coins around is cumbersome. It is therefore fair to assume that a natural demand for deposit and safekeeping services arose and that goldsmiths were natural providers of these services. If the contract between depositor and goldsmith/banker constituted a true deposit contract, ownership of the money continued

to reside with the depositor. In principle, a depositor retains property titles to the deposited goods and can demand their instant return.

Goldsmiths/bankers might already have been in the business of lending gold from their own inventory, which, of course, would be unobjectionable as they had clear ownership of this gold. But to the extent that they began to use the gold that was deposited with them under safekeeping agreements for extending loans on their own account, they committed acts of embezzlement. They used other people's property for their own gain.⁷

Let us first assume that the original agreement between goldsmith/banker and depositor was indeed a pure safekeeping arrangement and that the banker honored this arrangement. Consequently, the gold continued to be the property of the original depositor. It remained in the vaults of the goldsmith/banker, who was not entitled to use the gold for any other purposes. He was not allowed to add it as an asset to his balance sheet, and he certainly was not allowed to lend it to a third party. Most probably, the depositor received a warehouse receipt that certified his ownership of the gold. This warehouse receipt or money certificate⁸ was a paper ticket, but it was not paper money in the sense that we have used the term so far. Each paper ticket was—this is our assumption—100 percent backed by physical gold and therefore represented a proper claim to commodity money. There is no reason why such a paper ticket should not be accepted as money in exchange for goods and services. The paper ticket was fully backed by gold, instantly redeemable in physical gold, and therefore practically as good as gold. It was, of course, more convenient to use such a paper ticket than heavy coins of precious metal for transactions. Therefore, we can assume that such money certificates were soon in use as means of payment in lieu of physical gold. Importantly, the issuance of these money certificates did not change the overall amount of money in the economy. The money supply was still determined by the available supply of the money commodity—in this case, gold. The money supply did not become elastic. The circulating money certificates simply constituted an innovation in payment technology. They allowed an easier transfer of ownership in money but they did not expand the money supply.

Now let us assume that the goldsmith/banker lent half of the gold in his vault to a third party. Whether the depositor knew about

it or not is a question to which we will come shortly. The goldsmith/banker might have lent the gold in one of two ways: either by handing the physical gold to the borrower or, considering that warehouse receipts on deposited gold were now in circulation and accepted as media of exchange in their own right, he might have simply printed additional warehouse receipts and lent those against interest. In one big leap, he had become a fractional-reserve banker. More warehouse receipts were now in circulation that came with a promise from the banker to redeem them instantly into physical gold than there was gold in the banker's vault. The claims against the banker that circulated in the economy were not fully reserved but only fractionally reserved. The supply of what the public used as money had now expanded.

It is extremely unlikely that the banker's loan customers borrowed the money in order to keep it in cash. The predominant reason for taking out a loan (and paying interest on it) is naturally to obtain other goods and services that one urgently desires. The borrower would have spent the money on goods and services. As a result, the extra money led to additional transactions, and the newly printed warehouse receipts ended up in the hands of other people. Multiple claims on the same quantity of deposited gold now circulated, and whoever from the enlarged group of holders of warehouse receipts was first to demand repayment in gold would have been paid out with the money that the original bank client had deposited.⁹ Once reserve ratios drop sufficiently, this is indeed very likely to be somebody who never even deposited gold in the first place but only received the warehouse receipts as payment in a commercial transaction.

What if the original depositor found out about it? Would he not be upset? Would he not consider his property rights violated? He had deposited gold for safekeeping purposes and now the banker, in order to increase his loan portfolio and to make more profit, had issued additional claims on this gold, the depositor's property. The answer is, surprisingly, not that clear-cut. Of course, the depositor might have been upset that the original contract had not been honored. But if the banker laid open his business strategy and drew up a new contract with his depositor, it is not unreasonable to assume that the depositor would consent to the practice of fractional-reserve banking and willingly participate in it. Indeed, this seems to be largely what happened

historically and what led to the widespread acceptance of this practice. So why would the original depositor agree to it?

We have to remember again the key difference between money and any other good or service in the economy (see Chapter 1). Money is demanded only for its exchange value, not for any use value that the money substance may also have. In what shape or form money comes is immaterial. Money is money as long as it is accepted as money in transactions. It follows that the original depositor had no interest in the gold as a precious metal. He did not consider it to be an item of jewelry or an industrial commodity. It was a medium of exchange. He now held a piece of paper that might or might not be backed by gold but as long as it was accepted as money in transactions, it served the purpose of money. Importantly, the depositor of the original gold is thus in a different position from that of a depositor of any other good. Critics of fractional-reserve banking sometimes illustrate how outrageous the practice is by using analogies from the field of consumer goods. What if you checked your coat at a theater coat check and you found out that your coat was lent during the performance to somebody else against money? What if you valet-parked your car and found out that the valet service also ran a rent-a-car service behind your back, for which your car was used while you left it in the care of the valet? But these analogies are flawed. An owner of a coat or a car usually cares about this specific property and the use value it provides. The paper ticket he receives when he “deposits” these goods cannot provide any of the services that make these goods valuable, and the paper ticket is therefore valuable to its owner only as a means to retrieve the originally deposited consumer goods. The depositor of gold, however, deposits money, a good that only has exchange value and for whose physical properties he does not care, and in turn he receives a paper ticket that also has exchange value and that may even be easier to use. It is apparent that the gold depositor gives up very little in that transaction as long as the paper ticket he receives for his gold continues to be accepted by the wider public as a medium of exchange (or, in the case of a bank deposit, as long as he can reasonably expect to redeem at any time in money proper or to transfer his deposit to another bank). Additionally, the banker may pay a certain fraction of his income from lending the money to a third party to the original depositor; that is, he may pay him interest on the deposited gold.

While there is a risk that the public, upon learning that the tickets are no longer fully backed by gold, may refuse to accept them in exchange for goods and services or may not accept them at face value, this is not necessarily the case. The critics of fractional-reserve banking are obviously correct when they point out that, in legal terms, the various holders of the circulating paper tickets hold a very different asset from the original 100 percent warehouse receipt. What they hold now is, in fact, paper money. In order to distinguish such a medium of exchange from proper commodity money, it has been called a “fiduciary medium.” We can think of it as a derivative of the proper commodity money.

It is, of course, very unlikely that the bankers could have lowered the reserve ratios very drastically over a short time. In our example, the jump from 100 percent reserves to 50 percent reserves in one big move seems extreme. This would probably have undermined the confidence in the new medium of exchange. But if banks lowered their reserve ratios gradually, and if they managed to meet the redemption requests of anybody who requested to be paid out in gold in the meantime, a considerable injection of new money, or fiduciary media, could have been achieved.

For this process to be nonfraudulent and fair and legal, it has to be transparent, and it appears that even in the early days of banking the goldsmiths/bankers openly advertised this new practice and tried to attract additional depositors by paying them interest on their deposits. British financial journalist Ellis T. Powell reports that as early as 1676, a tract by the title “The Mystery of the New-Fashioned Goldsmiths or Bankers” explained that:

*. . . this new practice giving hopes to everybody to make Profit of their money, until the hour they spent it, and the conveniency, as they thought, to command their money when they pleased, which they could not do when lent at interest upon personal or real Security; . . .*¹⁰

This quote nicely illustrates the appeal of fractional-reserve banking to the depositor. Even before the invention of this technique, the depositor could have lent his money at interest. But that meant the money was invested, and the investment could not be liquidated easily in order to enter a new transaction. The interest income on

such debt claims is in part compensation for the loss of the flexibility to transact spontaneously, which the original amount of money (in the form of money) had provided. The bank deposit appears to break down this barrier between money and debt claims. Bank deposits seem to be both at the same time. This is possible only because of the bank's promise to repay instantly in money proper (gold) and, as a consequence of this, the acceptance of these uncovered claims against the bank by the general public in lieu of money proper.

Who Owns “Deposited” Money?

From a legal perspective it is clear that the depositor does not hold money proper any longer. Ownership of the deposited gold has unquestionably passed on to the banker. The banker is now the owner of the gold and the depositor the owner of a claim against the banker on the payment of gold. (For our modern fiat money system simply substitute the words *notes and coins* for the word *gold* in the previous sentence.) The fact that interest is being paid should provide a strong indication that the depositor is no longer contracting for safekeeping services only. If the deposit were a safekeeping arrangement, why would the banker pay the depositor and not the depositor the banker? By entering an agreement under which the bank is paying the depositor interest, the depositor must accept that the bank uses the money to earn interest in the market. Money is the medium of exchange and never generates income as such. It makes no difference whether it is under the mattress of its original owner or in the vault of the bank. *Pecunia pecuniam parere non potest*, as was already understood in ancient Rome: Money cannot beget money. In order for any income to be generated, the money has to be spent, or, as is the case here, be used as a “reserve” for the banker's issuance of fiduciary media as part of his loan business. As money's only value stems from its ability to facilitate exchange, it would be absurd to expect anybody to pay a fee for temporarily being in possession of somebody else's money but not being allowed to exchange it for anything else. The original owner of the money thus necessarily relinquishes ownership of the money and instead receives ownership of a debt claim drawn on the bank.

This is an aspect of banking that is often not fully appreciated even today. Whenever we pay money into a bank, we exchange ownership of money for ownership of a claim against the bank. In 1848, in a ruling by the House of Lords, Lord Cottenham, the Lord Chancellor, expressed this with remarkable clarity:

Money, when paid into a bank, ceases altogether to be the money of the principal; it is then the money of the banker, who is bound to an equivalent by paying a similar sum to that deposited with him when he is asked for it. . . . The money placed in the custody of a banker is, to all intents and purposes, the money of the banker, to do with it as he pleases; he is guilty of no breach of trust in employing it; he is not answerable to the principal if he puts it into jeopardy, if he engages in a hazardous speculation; he is not bound to keep it or deal with it as the property of his principal; but he is, of course, answerable for the amount, because he has contracted.¹¹

The differences between traditional commodity money and these new fiduciary media are now becoming apparent: When our original depositor had physical gold money in his possession, he owned an accepted medium of exchange that was not also somebody else's liability, and the aggregate supply of which could not be expanded in the short term. Of course, more gold could be mined, minted, and then brought into circulation, but as this was both time consuming and expensive, he would not have had to fear any sudden changes in the purchasing power of his gold money stemming from any changes in the money supply. This does not mean that the purchasing power of his money holdings was necessarily stable. As we have seen in our analysis of money demand, any changes in the public's demand for money would have resulted in changes in the purchasing power of the monetary unit.

Now that the depositor has possession of fiduciary media (money derivatives), either in the form of a redeemable but uncovered banknote or a redeemable but uncovered bank deposit, he still owns an accepted medium of exchange. This is at least our assumption. It is a requirement for fractional-reserve banking to work. However, this money-like asset is simultaneously somebody else's liability, namely, the liability of the banker. It also can be created fairly easily. Its supply can expand considerably, even in the short term. If the banker is willing

to lower his reserve ratio further, he can create more fiduciary media and distribute it through his loan business. The purchasing power of every unit of this medium of exchange may still change in response to changes in money demand, just as was the case with commodity money. But in addition to this effect, the purchasing power of the monetary unit will now also change in response to changes in its supply, and it may change in response to any changes in the public's view of the creditworthiness of the issuing bank.

In the process of fractional-reserve banking, money users exchange inelastic commodity money for fiduciary media of a more elastic supply. This requires that the money users consider fiduciary media to be sufficiently close to money proper to adequately fulfill its services, which means the fiduciary media are accepted in place of money proper in transactions or they can be instantly converted into money proper. In using this form of medium of exchange, the money users expose themselves to new risks from the supply side of money. As more media of exchange can now be produced quickly and relatively cheaply, the risk has increased that the purchasing power of each unit of money will decline. Additionally, the money users are exposed to the risk that the bankers will issue too much fiduciary media or will suffer losses from their loan business so that other money users will question their ability to redeem in gold and refuse to accept their fiduciary media. Thus, there is no free lunch here, as the quote from 1676 might at first convey. To own money and own an interest-bearing debt claim at the same time is still impossible. In depositing money in a bank, ownership of money proper has been relinquished. Money has been exchanged for a claim against a bank, which—one hopes—is almost as good as money. Inevitably, it comes with extra risk, and the interest income it provides can be considered compensation for this risk.

It would not be entirely incorrect to compare fractional-reserve banking with a Ponzi scheme. The depositors pool their money holdings in a bank and get paper receipts in return. They know that the banker will issue more receipts as part of his lending business so that ultimately considerably more paper tickets circulate than there is money in the bank to pay out every holder of a paper ticket. However, the banker shares some of his profit from this process of money creation with his depositors, which is their incentive to participate in the

scheme. Individual depositors may from time to time take money out of the scheme, but it is important that not too many do so. Should the confidence in this scheme diminish, for whatever reason, more holders of paper tickets will ask for redemption and try to get money proper out of the scheme before the reserve is depleted. The stability of the scheme rests entirely on the confidence of every member in its sustainability. A key difference to Ponzi schemes, however, is that a fractional-reserve bank ultimately does not have to collapse. If the banker manages this process prudently and conservatively, if he does not lower the reserve ratio too much, and if he avoids the type of losses in his loan book that would undermine his reputation, there is no reason why he should be subject to a bank run.

With the onset of fractional-reserve banking, the overall money supply did indeed become somewhat elastic. Commodity money and fiduciary media, or derivative money, began to circulate next to one another. They may be different assets from a legal perspective, but as fiduciary media were accepted and used by the money users just like commodity money, the supply of what was used as money in the economy did indeed expand. The essence of the process described here is still at work in every fractional-reserve banking economy in the world today. The difference between money proper and fiduciary media has, however, largely disappeared from the discussion. In a paper money economy, no form of money, not even the reserve money that modern banks cannot produce themselves and that has replaced a metallic reserve as the basis for the fractional-reserve banking process, is backed by anything that comes with an inelastic supply. Thus, all types of money can today be created practically without limit.

Having gone through the basics of fractional-reserve banking, we can now expose some of the fallacies about this practice that are still widespread.

Exposing Misconceptions about Fractional-Reserve Banking

First, the prime motive for the expansion of the money supply through fractional-reserve banking does not stem from higher money

demand from the public. Nobody who participates in the fractional-reserve banking process, and thus makes it possible, does so from any desire for higher cash balances. This is even the case for the borrower. As we saw in Chapter 1, money demand is demand for money holdings, but only rarely will somebody take out a loan in order to simply hold a larger cash balance. People who take out loans are usually buyers of goods and services and sellers of money. They have a high marginal demand for goods and services and a low marginal demand for money. That is precisely why they take out a loan. It is only because the borrowers desire immediate control over additional goods and services and the specific satisfaction that these goods and services provide that they are willing to endure the cost of interest payments. Borrowers take out loans in the form of money but will usually spend the money right away. Conversely, the person who has an increased demand for money is a marginal seller of goods and services in order to obtain more of the medium of exchange. This person has a high marginal demand for money, a strong desire to obtain the flexibility that only the universal medium of exchange can deliver, and, consequently, a low marginal demand for goods and services, which necessarily can satisfy only specific wants. To this day, public debates on monetary matters frequently confuse the demand for money with the demand for loans. Not only are the two completely different, but they also originate from opposite desires.

In the case of the depositor and the bank, it is very clear that neither participates in the process of fractional-reserve banking to obtain higher money balances. The goal of the depositor is to combine the flexibility that usually only ownership of money proper can provide with interest income that usually only a less than perfectly liquid investment can provide. The goal of the bank is to generate additional profits from extending loans. If any of the constituencies that enable fractional-reserve banking to proceed—the depositor, the banker, and the borrower—were to develop a higher demand for money, they would do what we described in Chapter 1. They would sell assets, either consumption goods or investment goods, or curtail their ongoing money outlays on acquiring consumption goods and investment goods, and build up cash holdings. If a sufficient number of people have a higher demand for money and all else remains unchanged, the purchasing power of money would have to rise. A rising demand for

money does not lead directly to more fractional-reserve banking (there is an indirect link, as we will see soon). As before, it leads to downward pressure on prices or an upward pressure on the purchasing power of the monetary unit. The reverse would occur if the demand for money declined. What has changed now that we have banks that engage in fractional-reserve banking is that the effects on money's purchasing power from the demand side are mixed with effects from the supply side. At times of generally falling reserve ratios and therefore accelerated money production through fractional-reserve banking, the decline in money's purchasing power could partially compensate or even fully offset the rise in money's purchasing power stemming from an autonomous rise in money demand. However, the extent to which fractional-reserve banking is practiced is not (directly) steered by the public's demand for money. To the extent that the fractional-reserve banker is willing to lower his reserve ratio and expand the creation of money, and to the extent that he can maintain the acceptance of his money as a medium of exchange, he is a money producer and can produce regardless of demand. He benefits fully from the privilege of producing a good that is demanded only for its exchange value.

However, as economists George Selgin and Larry White have shown¹², an indirect link between discretionary money demand by the public and the extent of money production through fractional-reserve banking does indeed exist. The most potent constraining factor to the money creation of the bankers is the risk of a bank run. Banks can create money derivatives or fiduciary media (banknotes or bank deposits that are not backed by money proper), but they cannot create the money proper that those derivatives or fiduciary media are a claim to (gold under a gold standard or, today, the notes and coins that only the state can legally produce). Fractional-reserve banking is profitable but inherently risky. If too many owners of fiduciary media demand repayment in money proper, banks are in trouble. It is this risk that will restrict the banker's willingness to lower the ratio of reserves to outstanding fiduciary media, and thus limit the bankers' ability to bring new fiduciary media into circulation. Selgin and White argue, correctly in my view, that at times when the public has a higher demand for money, it is safer for the banks to lower their reserve ratios (lower the ratio of reserves of money proper to outstanding fiduciary

media). A higher demand for money means that people reduce cash spending. This means the frequency of transactions drops. Money does not change hands as quickly as before.¹³ Economists call this phenomenon a drop in money velocity, and it is indeed a consequence of a higher money demand. To the banks this is clearly visible, and it means that the risk of outflows that lead to a drain on reserves (money proper) is diminished. The risk that a given amount of bank-created deposit money will lead to transfers to another bank or to an outflow of physical banknotes (or gold) is smaller on the margin when the velocity of money is lower. It is therefore reasonable to assume that changes in money velocity will, all else being equal, lead to changes in the quantity of money supplied by the bankers. I have three comments to make on this point.

First, the goodwill of the public remains the key constraining factor on the fractional-reserve activity of the banks, and when the banks have exhausted that goodwill completely, when they have taken reserve ratios to the extreme that the trust of the public will still tolerate, only then will marginal changes in the velocity of money direct further money creation by the banks. To the extent that bankers still have unexploited public goodwill, to the extent that they can issue additional fiduciary media without triggering a bank run, they can issue extra fiduciary media without any regard for marginal money demand. To the extent that they enjoy these degrees of freedom, they are money producers and can, as we have seen, produce without regard for demand. If, for example, the government introduces a measure that makes banks safer in the estimation of the public and that therefore reduces the sensitivity of the public to further bank credit creation and further issuance of fiduciary media, the banks have extra room to create money, and this additional capability to create money is then independent of the money demand of the public. However, it is probably fair to assume that in an entirely free market the banks would indeed reach the point at which they have taken their money creation to the maximum and at that point changes in money velocity would indeed exert a powerful influence on any additional fractional-reserve banking activity, just as Selgin and White argue.¹⁴

Second, money's exchange value still remains the most direct and probably most powerful coordinator of money demand and supply.

When the public reduces money spending to satisfy a higher money demand, this causes the velocity of money to drop but also exerts downward pressure on prices. To the extent that prices fall and the purchasing power of every monetary unit rises, the money demand of the public is satisfied and velocity may revert to some higher level again, or not stay low long enough for the banks to conduct extra fractional-reserve banking. It is not clear to me why the banks would detect changes in velocity faster and respond to them by creating extra fiduciary media faster than a rise in money's exchange value would bring money demand and supply in line again. I do not see why changes in the money supply through fractional-reserve banking should fully replace—or conceivably can fully replace—changes in prices (that is, money's purchasing power) as a coordinating force.

Third, fractional-reserve banks that create extra money cannot give the new money directly to those who have a higher money demand but have to inject it into the economy via the credit markets. The first recipients of the money are therefore borrowers on the credit market, and as we have seen, these are unlikely to be the very people who have a higher demand for money. The new money is likely to arrive at those who have a true demand for it only after it has circulated through the economy in a number of transactions. As we will see in the course of our investigation, this is a highly disruptive process for the economy. In fact, we will be able to show that such an expansion of the money supply, while at first stimulating for economic activity, must ultimately set up the economy for a recession that will make bank runs likely. (George Selgin specifically acknowledges that the bank's loan customers are not people who have a higher demand for money,¹⁵ but he avoids the problems that this creates, and that we will investigate in the next chapters, by equating a higher demand for money with an increase in voluntary saving.¹⁶ This is untenable, in my view, but we need a bit more theory to see why. We will revisit this point later.¹⁷) In any case, banks simply do not offer a service by which they directly meet demand for cash balances and through which they could directly transact with those individuals that have a higher money demand. At a basic level, banks take deposits, facilitate payments, and give loans. None of these services directly satisfy the demand for money.

I do agree with Selgin and White that fractional-reserve banking is not fraudulent and that there is little reason to legally restrict it or even ban it. Selgin and White call themselves “free bankers,” and if they mean by that that banks should be free enterprises that should neither be under more restrictive rules than other businesses nor enjoy legal privileges, I am in complete agreement with their demands. I will arrive at similar conclusions at the end of this book. But I disagree with their conclusion that fractional-reserve banking is likely to or is even theoretically able to satisfy changes in money demand with fewer disruptions than a market-driven change in money’s exchange value. Selgin and White assign “equilibrating” powers to fractional-reserve banking that it does not possess in my view. But this is for a discussion at a later stage of our analysis.

There is a second fallacy about fractional-reserve banking we should expose: The extent to which fractional-reserve banking occurs is, contrary to widespread belief, not the result of independent loan demand from the public, and thus is not regulated by it. The demand for loans is, under normal circumstances, not independent of the level of interest rates. If a bank can still lower its reserve ratio (without incurring a bank run) and decides to do so, all it has to do is simply lower the rates on new loans to increase the demand for loans, which it can then meet by issuing new fiduciary media. Loan demand is not an independent entity to which the banks respond only passively. All else being equal, lower rates mean higher loan demand.

We conclude that the fractional-reserve banks are constrained in their money creation only by the public’s belief in the soundness of the banks and not by any independent demand for money or by any independent demand for loans. If the banks are willing to lower reserve ratios and thus run a higher risk of illiquidity—that is, of being unable to meet redemption requests—and as long as the public considers the banks safe and thus accepts bank-issued money, the banks can increase their loan portfolio by encouraging additional borrowing through lower rates and place the additional money in the market place independent of the present extent of money demand. If money demand has not risen, the additional money will be absorbed via a tendency toward higher prices, that is, a lower purchasing power of the individual monetary unit. The only constraining factor is the overall level of reserves and the risk

of a bank run. If too many people ask to exchange their fiduciary media for money proper, any bank will face the risk of running out of reserves. Naturally, this risk increases if the bank is perceived to be in trouble, maybe as a result of problems in its loan portfolio. Once the soundness of a bank is questioned, outflows are likely to accelerate. In a fractional-reserve banking system, and today that means practically every banking system, every bank is potentially at risk of a bank run. But as long as confidence is maintained in the soundness of the banking system, the banks can create more money and place this money with the public. They can increase borrowing and therefore overall levels of debt.

“Free Banking” Is Limited Banking

From our analysis it is clear that in an entirely free market, that is, a market in which the state stays out of the sphere of money and credit completely, fractional-reserve banking will be limited in scope. Private banks have never managed, without the intervention of the state, to replace the core monetary asset completely with bank-issued fiduciary media (that is, to demonetize the monetary commodity or to bring reserve ratios close to zero), and we can understand conceptually why that appears to be unlikely in any case. Banks have always managed to issue new forms of money that the public used side by side with the monetary commodity, which was predominantly gold or silver. The public accepted these fiduciary media because they were ultimately claims on money proper, that is, on the core monetary commodity, which neither the banks nor anybody else could create at will. Nobody can say how fractional-reserve banking would have developed in an entirely free market because we have not had a free market anywhere over the past 300 years since banking developed. But it seems likely that, when deposit banking first spreads, bankers manage to slowly lower their reserve ratios and issue new “money.” In doing so they incur the risk of bank runs, but it seems not unreasonable to assume that over time banks may learn to manage this risk, get a handle on the frequency of redemption requests, and work out some sort of stable reserve ratio. Once such a stable reserve ratio has established itself, the process of money creation will have come to an end, at least

if the amount of reserve money does not change again. There will then be more money in circulation, in the wider sense of the term—that is, including fiduciary media—than in a system with 100 percent reserve banking (or no banking). However, this new and larger supply of money is again fixed. In order to create more fiduciary media, the banks would need additional reserves (or the velocity of money would have to decline in a stable and predictable manner). Under a pure gold standard, for example, ongoing money production would seem to be possible only to the extent that more gold gets mined and is brought into circulation as money. This process is, crucially, out of the control of the banks. It is also slow. Once a stable and, from the point of view of the banks, sustainable reserve ratio has established itself, the money supply is no longer determined by the banks' policy. The process of adding money to the system through fractional-reserve banking would have stopped and we would be back to a system of essentially inelastic money.¹⁸ The notion that fractional-reserve banking means ongoing issuance of ever more new money is fallacious. Money creation requires a lowering of reserve ratios, and in a free market with commodity money, strict limits to the lowering of reserve ratios exist.

As long as the core monetary asset is an apolitical commodity of essentially inelastic supply (such as gold) and as long as banks are free enterprises that are not protected by the state but that operate at full risk of failure, market forces will put strict limits on the extent to which fractional-reserve banking can expand the money supply. But it is obvious that over the past 100 years the institutional, legal, and regulatory backdrop for banks has changed fundamentally. Extensive measures have been taken and an elaborate infrastructure has been erected by the state to reduce the risk of bank runs and to increase the confidence of the public in the soundness of the fractional-reserve banking industry. Most important, the abandonment of a metallic standard, a hard and inflexible monetary core to which all bank-issued forms of money constitute a claim, and the adoption of a full paper money system have removed the inelasticity of bank reserves. When banks expand the supply of money and credit, run low on reserves, and face increased outflows of core money (naturally redemptions are no longer in gold but in physical paper money or in the form of transfers to

other banks), they can get new reserves from the central bank, which now has a lender-of-last-resort function and, under a paper money standard, can create as much reserve money as it wishes “at essentially no cost” (Bernanke). Naturally, in such a system, the public no longer distinguishes between the various banks in respect of their reserve policies. Maintaining higher reserve ratios and thereby running a lower risk of a bank run conveys no competitive advantages on any bank. Such a financial system greatly increases the potential for money creation through fractional-reserve banking.

Today’s mainstream consensus believes that modern central banking, the demonetization of gold, and the introduction of bank reserves that are fiat money and thus potentially unlimited, plus the introduction of deposit insurance and the state’s regulatory oversight over banking, have made banks considerably safer. This may be true on the level of the individual bank. If one bank gets into trouble, it can now be rescued more easily. Ironically, however, these arrangements may have made the banking sector as a whole vastly less stable and in fact dangerously so for the broader economy. With the market’s key checks and balances and tight constraints on money creation removed, the banks can now lower their reserve ratios much further, issue vast amounts of fiduciary media and thus create substantial amounts of new bank credit. It is fair to assume that this was in a way intended. Today’s consensus believes that constant growth in the money supply and constant credit growth (even credit growth that is not funded by proper savings but simply by bank money creation) is a positive for the economy. We will analyze whether that is really the case in the following chapters. But we can already hint at the fact that most generations of economists prior to 1930 were less sanguine about the effects of ongoing large-scale money expansion. And if they were correct, and I will argue in the following that they were, then our economies face the challenging prospect of considerable imbalances emanating from the monetary sphere and feeding back into a financial system that is now, thanks to long-standing heavy state protection, much more highly geared. Banks routinely run cash and capital reserves today that are a fraction of what they could conceivably be in a free market, or even a nearly free market. The risk of the run on the individual bank has now been replaced with the risk of a run on the entire banking system.

If banking were entirely “free,” meaning “capitalist” in the true sense of the word; if banks were not protected and regulated by the state; if they did not enjoy the privilege of a “lender of last” resort and, in particular, if that “lender of last resort” could not provide unlimited new reserves to the banks; if individual banks were under full risk of default just as any other true capitalist enterprise; and if the public knew this and acted accordingly, banking would be more limited and most certainly safer, not least for the economy as a whole. As Ludwig von Mises put it:

Free banking is the only method for the prevention of the dangers inherent in credit expansion. It would, it is true, not hinder a slow credit expansion, kept within very narrow limits, on the part of cautious banks which provide the public with all the information required about their financial status. But under free banking it would have been impossible for credit expansion with all its inevitable consequences to have developed into a regular—one is tempted to say normal—feature of the economic system. Only free banking would have rendered the market economy secure against crises and depressions.¹⁹

Banks can play an important role in the economy. They provide payment services, and they can help channel savings into investment and thus fund productive capital. No money creation is necessary for this. Asset management firms also channel savings into investments and do so on a one-for-one basis and without creating extra money and extra credit (that is, credit not funded by savings) in the process. But banks do more than that and always have done more. They fund some of their loans through money creation. They expand (at least for some time) the quantity of media of exchange and thus extend credit that is not funded by savings. The process of fractional-reserve banking was developed in a (relatively) free market when money proper was still gold and when the state did not regulate, support, or hinder banking. The growth in banking has always been accompanied by occasional panics and bank runs, but, as we have seen, in a free market fractional-reserve banking ultimately faces strict limits. There can be no doubt that the spectacular expansion in the supply of money and credit over recent decades was conceivable only due to the extensive support of fractional-reserve banking by the state (frequently with encouragement from the bankers). As long as the core monetary asset is an apolitical and inflexible commodity that not even the state or any of its agencies can create

(such as gold), the extent to which the state can aid the banks is limited. The introduction of fully elastic fiat money under central bank control has made ongoing large-scale money and credit creation possible. Today's mainstream maintains that this was on balance a positive development as the extra money allows for "higher spending" (Bernanke) and as the risks associated with credit expansion can be controlled. In the following chapters, I will argue that this view is mistaken.

Summary of Part One

We conclude that elastic money is not the natural outcome of the market or of a growing economy. Elastic money is not needed, and an ongoing expansion of the supply of the monetary asset not required or demanded by the public. As with any other good, supply of and demand for money are constantly aligned by market forces. However, in contrast to any other good, money is demanded only for its exchange value, not for any use value that the monetary asset might have. Therefore, the market forces that coordinate supply and demand in the case of money only need to adjust money's exchange value, that is, the purchasing power of the monetary unit. This happens naturally as a result of the constant buying and selling of money by the public in response to any changes in the demand for money relative to the demand for other goods and services. While changes in the public's demand for any other goods or services can be satisfied only by changes in the physical supply of these goods and services, changes in money demand can be met by changes in money's purchasing power. No changes in the supply of monetary units are needed. A society that uses money does not require ongoing money production.

However, for the very same reasons, should a money producer manage to establish himself and have his irredeemable paper tickets accepted as money in the economy, then this money producer can produce and place with the public, at a profit to himself, practically any amount of money he wishes. In contrast to any other good or service, lack of demand is practically no obstacle to the production and distribution of money. Additional money will be absorbed by the economy at a lower purchasing power of the monetary unit.

An element of elasticity has always been part of the monetary infrastructure, simply through the mining of the precious metals that used to be the dominant forms of money. This elasticity has historically been of minor importance, however. Even discoveries of new gold or silver deposits, which have naturally caused an expansion of money in circulation and thereby led to inflationary distortions, never generated the type of economic disruptions that have become the hallmark of systems of elastic paper money.²⁰

For the past 300 years another element of elasticity has become important: fractional-reserve banking. To the extent that banks manage to issue uncovered claims on money, such as uncovered banknotes or bank deposits, and have these uncovered claims accepted by the public in lieu of money proper, they become de facto money producers and can profitably place this new money, or fiduciary media, by extending more credit. Again, this process does not occur in response to, nor is it controlled (directly) by, any independent demand for money on the part of the public. Fractional-reserve banking is not directly related to money demand (an indirect link exists via the velocity of money). Even regarding loan demand the relationship is tenuous because, if banks are willing to lower their reserve ratios, they can offer newly created deposit money at lower interest rates. Under normal economic conditions, this leads to additional borrowing.

Fractional-reserve banking is risky for the banks, as it involves the issuance of uncovered claims that can be presented for redemption at any time. Not surprisingly, it has proven to be a rather unstable business. In a free market with hard money at its core, the practice of fractional-reserve banking is ultimately severely restricted by the limited availability of reserves and the risk of bankruptcy. This changed fundamentally when the state began to support fractional-reserve banking in a structural way by providing fully elastic bank reserves and a government agency as a lender of last resort. These institutional changes increased substantially the ability of banks to create credit through money production. The effects of this process have long been the subject of research and debate among social scientists.

Large-scale money creation in today's financial architecture is decidedly not a market phenomenon. It is a political phenomenon. In the present monetary system, the growth of the money supply is to

a considerable degree the consequence of political decisions. The fact that these have far-reaching effects on many economic processes cannot be denied. Mainstream economists often advertise the power of money injections to stimulate economic activity during recessions. But if money injections can work as an anticrisis policy tool, even if only for a limited time, this means they constitute discretionary and exogenous changes of economic conditions. If an expanding money supply had no impact on the use of real resources in the economy, it could not be a tool for stimulating the economy. As modern paper money systems are designed to constantly expand the supply of money, not just at times of crisis, it follows that the present system is a system of ongoing manipulation of the economy, of continuous intervention, of a constant altering of key economic variables.



In the next part of this book, we investigate the full range of necessary consequences that every discretionary injection of money entails. In order to draw decisive conclusions, we have to do this in the form of a careful systematic analysis. I start with a very simple and indeed unrealistic model of money injections and then move, step by step, to more realistic models. This process allows us to start with basic assumptions that the reader can easily check for himself, and in moving to more complex models we can work out the essential effects of elastic money even in more complex settings. In order to follow our reasoning, no background in economics is required. Certain economic concepts that are necessary to understand the later and more realistic models, such as saving and interest, will be explained to the extent that they are needed.

Notes

1. Federal Reserve Statistical Release, “Industrial Production and Capacity Utilization—G.17,” www.federalreserve.gov/RELEASES/g17/table1_2.htm.
2. Federal Reserve Bank of St. Louis, <http://research.stlouisfed.org/fred2/tags/series/?t=m2>.
3. The U.S. Consumer Price Index (see www.bls.gov/cpi) is calculated by the Bureau of Labor Statistics and is based on a 1982 base of 100. It may also

be convenient to use the following inflation calculator: www.usinflationcalculator.com.

4. Ben Bernanke, remarks before the National Economics Club, Washington, DC, November 21, 2002, www.federalreserve.gov/boarddocs/speeches/2002/20021121/default.htm.
5. Board of Governors of the Federal Reserve System, www.federalreserve.gov/datadownload/Choose.aspx?rel=h6.
6. Andrew Jackson and Ben Dyson, *Modernising Money: Why Our Monetary System Is Broken and How It Can Be Fixed* (London: Positive Money, 2012); and Jaromir Benes and Michael Kumhof, *The Chicago Plan Revisited*, IMF Working Paper WP/12/202 (Washington, DC: International Monetary Fund, 2012), www.imf.org/external/pubs/ft/wp/2012/wp12202.pdf.
7. This view is strongly associated with the Austrian School economist Murray N. Rothbard. See, for example, his “A 100 Percent Gold Dollar,” in *In Search of a Monetary Constitution*, ed. Leland B. Yeager (Cambridge, MA: Harvard University Press, 1962): 134–196. In particular: “The banks here take on the character of shrewd entrepreneurs. But so is an embezzler shrewd when he takes money out of the company till to invest in some venture of his own. Like the banker, he sees an opportunity to earn a profit on *someone else’s assets*” (p. 114, italics in original). See also *The Case against the Fed* (Auburn, AL: Ludwig von Mises Institute, 1994): 29–57. These views have influenced many other Austrian School economists. See, for example, Jesús Huerta de Soto, *Money, Bank Credit, and Economic Cycles* (Auburn, AL: Ludwig von Mises Institute, 2006). Although de Soto develops his argument more on the basis of legal tradition, he arrives at basically the same conclusions. I do believe that this view of fractional-reserve banking is untenable. I also believe that it can be rejected without inflicting any damage to the overall “Austrian” view on money and credit and Misesian theory in general.
8. Ludwig von Mises, *Human Action: A Treatise on Economics*, 4th rev. ed. (Irvington, NY: Foundation for Economic Education, 1963/1998): 433.
9. For a property rights discussion of fractional reserve banking, see Hans-Hermann Hoppe, Joerg Guido Huelsmann, and Walter Block, “Against Fiduciary Media,” reprinted in Hans-Hermann Hoppe, *The Economics and Ethics of Private Property*, 2nd ed. (Auburn, AL: Ludwig von Mises Institute, 2006): 205–254. See also sources in note 7.
10. Ellis T. Powell, *The Evolution of the Money Market, 1385–1915* (London: Frank Cass & Co., 1966): 60.
11. See www.uniset.ca/other/css/9ER1002.html; also quoted by Murray N. Rothbard, *The Mystery of Banking* (Auburn, AL: Ludwig von Mises Institute, 2008): 92; and Powell, *The Evolution of the Money Market*, 73, footnote 2. To this day Lord Cottenham’s ruling exasperates critics of fractional-reserve

banking as the extent of the discretionary powers it bestows on the banker appears to them to be extensive. However, Lord Cottenham's specific conclusion that ownership of money changes hands is for the economist the inevitable consequence of the fact that interest is being paid.

12. George A. Selgin, *The Theory of Free Banking: Money Supply under Competitive Note Issue* (Lanham, MD: Rowman & Littlefield, 1988). Online Library of Liberty: http://files.libertyfund.org/files/2307/Selgin_1544_EBk_v6.0.pdf; and George A. Selgin and Lawrence H. White, "In Defense of Fiduciary Media—or, We are Not Devo(lutionists), We are Misesians," *Review of Austrian Economics*, 9, no. 2 (1996): 83–107, http://mises.org/journals/rae/pdf/rae9_2_5.pdf.
13. In particular, Selgin, *The Theory of Free Banking*, 60.
14. In his *The Theory of Free Banking*, George Selgin assumes that the monetary commodity is no longer in circulation among nonbanks. Nonbanks hold only "inside" money, that is, bank-produced money. The monetary commodity has become solely a reserve asset for interbank-clearing purposes. I consider this at least unlikely but will not discuss this here.
15. *Ibid.*, 48: "Bank borrowers generally acquire money balances only to spend them immediately on goods and services. The demand for money, properly understood, refers to the desire to hold money as part of a financial portfolio. A bank borrower contributes no more to the demand for money than a ticket agent contributes to the demand for plays and concerts; only holders of money or actual occupants of concert seats contribute to demand."
16. *Ibid.*, 50
17. See Chapter 6.
18. I am grateful to David Goldstone for pointing this out. As Selgin and White have stressed, banks may occasionally be able to conduct more or less fractional-reserve banking according to changes in the velocity of money.
19. Mises, *Human Action*, 443.
20. Peter Bernholz, *Monetary Regimes and Inflation: History, Economic and Political Relationships* (Cheltenham, UK/Northampton, MA: Edward Elgar, 2003): 21–24.

Part Two

THE EFFECTS OF MONEY INJECTIONS

Chapter 3

Money Injections without Credit Markets

We will start our analysis of the effects of an expanding money supply with a model that is purely a mental construct. It is a simple thought experiment that was famously used by David Hume about 250 years ago in his essay “Of Interest.”¹

Even, Instant, and Transparent Money Injection

Let us assume that a money producer increases the individual cash balances of every person in society through an act of magic by exactly 10 percent overnight. If a person had \$1,000 in money the evening before, that person will now have \$1,100 in money holdings. A person who had \$50 in money will now have \$55. The overall amount of money in the economy thereby increases by 10 percent but, importantly, this

happens instantaneously, with everybody affected at the same time and in exactly the same way. This is a one-off event; no additional money injections follow. We will make one additional assumption: Every person, as he wakes up and goes about his business, not only knows immediately that he magically received an additional 10 percent of cash, but he also knows that everybody else has received an additional 10 percent of their previous money holdings, too.

This is, of course, a most unrealistic example of money injections. However, we can quickly see that this fantastical scenario is the only one imaginable, in which the increased supply of money affects the price level only and does so in a way that is exactly proportional to the change in the money supply. As we adjust the model step by step to make it more realistic, other effects of money injections will become relevant. But in this initial scenario it is rational for everyone to refrain from changing any spending patterns, from changing the composition of the consumption of goods and services, and of saving and investment, and only to adjust nominal prices. It will be instantly clear to everyone that, first, society overall has not become richer. Society has now an additional 10 percent of its medium of exchange, but it does not have any more goods and services to buy with this extra money. Second, nobody's relative position in terms of wealth or access to the medium of exchange has changed. Surely, the only rational thing to do is to adjust all nominal prices and nominal prices only. By lifting all prices by 10 percent, the overall effect of the increase in the money supply is fully and instantly absorbed. There are no second-round effects. This is all that has to be adjusted. As demand for money is demand for purchasing power in the form of money, the person who was content to hold \$1,000 in money the previous night will, after a rise in all prices of 10 percent, be content to hold \$1,100, and the person who previously was happy to hold \$50 in money will now gladly hold \$55.

Given that every individual can hold exactly the cash balance he desires at every point in time, we must assume that each person held exactly their desired money balance before the injection of new money. Therefore, all prices have to rise by 10 percent in order to make everybody equally content with holding the enlarged cash positions. Everybody's supply of money has increased by 10 percent via the act of

magic from the money producer. Now, via the rise in all prices by 10 percent, everybody's demand for money has increased by 10 percent, too. Every person in their role as producer (entrepreneur, worker) will charge an extra 10 percent for all goods and services sold, while in their role as consumer every person will be willing to pay an extra 10 percent for all goods and services bought.

This magic injection of new money has no impact on the production of goods and services, on resource allocation, or on income distribution. None of these variables will be altered as a result of the additional money. In this model, new money will only have an impact on prices and, as it affects all prices simultaneously and to the same extent, every conceivable statistical average of prices will go up by the same extent. Only in this most unrealistic model is the change in the price level proportional to the change in the money supply.

If we look at our model economy through the prism of macroeconomic statistics, and if we compare these statistics for the period after the injection of money with those of the period just preceding the injection, it is clear that nominal gross domestic product (GDP)² went up by 10 percent, that the price level went up by 10 percent, and that real GDP was unchanged. No new economic activity occurred in response to the money injection. The amount of money is entirely unrelated to the number of economic transactions, as we have already established in the previous chapters. More money as such does not mean a different economic performance. As we will see, it is the specific process of how money is injected into the economy that normally generates additional activity. This activity is always adjustment activity, that is, additional transactions by which the economy copes with a changing money supply. But if money is injected in the way just described, evenly and completely transparently—but only if it is injected in this way—it will result exclusively in nominal price changes.

If the money producer wanted to achieve the effects that today are generally associated with an expanding money stock—higher “spending” and higher inflation—he will be disappointed as he only gets inflation but no additional “spending.” With even and transparent money injections he will only get price effects. In order to stimulate additional economic activity, he has to at least obscure the money

injection process or additionally make it uneven, meaning benefiting some at the expense of others from the start, in order to generate additional transactions.

Even and Nontransparent Money Injection

Let us now assume that the same magical increase in everybody's money balances occurs, but that this time people do not know whether everybody else has also received an additional 10 percent of their previous cash holdings. Although objectively the situation is exactly the same as in the first scenario, the outcome will be different, as now there is room for error.

We can split the economic agents in our economy into two groups. The first group will interpret the situation correctly and therefore not change their consumption and production pattern but only adjust nominal prices. In their role as producers, these individuals will charge an extra 10 percent for goods and services produced; in their roles as consumers, they will accept to pay an extra 10 percent in goods and services consumed. The second group misinterprets the situation. Members of this group believe that only their own cash positions have changed and that their economic position has now been altered relative to that of other members of society. Even if they appreciate that a magical increase in their own cash balances has not made society overall richer in goods and services, they believe (erroneously) that their relative position is now better. More of the medium of exchange is now in their hands. They believe they have become relatively wealthier. In their role as consumers, members of this group will now increase their spending.

What will they increase their spending on? It is clear that they will not simply buy 10 percent more of whatever they used to consume before. According to what economists call the law of marginal utility, a person will spend extra money on those goods and services that on the person's subjective value scale are just below all the goods and services that the person has already bought when on a smaller budget, but that are at the top of the scale of goods and services that the person does not yet own as the person previously lacked the necessary

funds. Just as a person who has lost some of his money balances, perhaps as a result of theft, would not sell a fraction of every one of his assets to restore a certain desired money balance, but would sell the least desired asset or cut back outlays on the least desired consumption or investment expenditure, a person who receives extra money will spend it on that most desired asset (or consumption or investment item) that was previously just outside the person's financial reach. Therefore, the new money will flow to producers that provide these newly desired goods and services. Additional consumption demand has now materialized.

For these producers, the extra demand for their goods and services is difficult to interpret. Is it simply the result of more money going around, or is it the result of a genuine rise in consumer demand that reflects either changed consumer preferences or a better competitive position of these producers as compared to other suppliers of similar goods and services? If producers think it is the latter, that is, a genuine rise in demand for their product, they may reasonably expect this new demand to last and may make additional investments in their business. This will lead to an additional increase in economic activity. However, this is evidently the wrong interpretation of the situation. Neither have consumer preferences changed, nor have these producers beat their competitors.

As we have seen, the consumers who engage in additional spending have not changed their personal value scale but simply, and wrongly, believed they had additional spending power. As prices all around begin to rise, these consumers will soon have to increase their outlays on those goods and services that they always consumed and that rank higher on their value scale than the goods and services they intended to spend the new money on. We have to remember that they planned to spend in addition to what they had spent previously, rather than change their consumption pattern. As the prices for more and more goods tend to go up, they will soon realize that they are not richer and that they misjudged the situation. They will have to abandon their new spending plans. The extra consumption will thus ultimately evaporate. Consequently, the producers who wrongly expected this consumption to reflect lasting changes in consumption behavior will also have to abandon their investment projects.

Those individuals who make the original mistake of believing that only they have received extra money are not just consumers; they are also, in a different capacity, producers. Thus, we have to assume that some producers believe that their customers' spending power has not changed and that these producers, out of fear of losing business to the competition, will not lift the prices of their goods and services initially. Consequently, these producers are also likely to experience extra demand for their goods and services, simply because they will be selling at lower prices than their competitors who interpret the situation correctly. If they do not quickly realize their mistake, they may also think they are benefiting from changing consumer preferences or a better competitive position and may even invest in their business in order to expand it. But these producers are selling at prices that are below what they would be if the producers had all the relevant information. As prices all around tend to go up, they will soon have to pay higher prices when purchasing investment and consumption goods and they will realize that they are selling their products "below market." By misinterpreting the situation for longer than others, they based their economic calculations on incorrect inputs and ended up selling their goods and services at what must now appear to them to be "incorrect" prices. Those, however, who shifted their purchases temporarily to those producers who were adjusting too slowly to the new environment of rising prices, benefited at their expense. As a general rule, control over some economic resources will have shifted from those who interpreted the situation at first incorrectly to those who interpreted it correctly from the start.³

It is obvious that in the stylized world of our highly theoretical models, the scope for these mistakes is fairly limited. The quick and, indeed, instantaneous change in most prices that can be assumed in a model economy will communicate the facts quickly to everybody. The time and space for some consumers and some producers to err and to develop the patterns described above is very restricted in the context of pure models. However, the more we move away from the unrealistic model assumptions and consider a real-life economy, in which spending is not ongoing but discontinuous and intermittent, and price discovery therefore periodic, these processes will be unavoidable. In any case, the imperfections of a real-life economy, when compared to

the purity of the theoretical model, enhance the phenomena we just described; they do not cause them. What causes the processes described here is the lack of full transparency, which leads to potential misinterpretation. Some economic agents will confuse additional nominal spending with a rise in real demand that can only result from changes in consumer preferences or true entrepreneurial success. This confusion leads to additional economic activity. It is evident that in this scenario, the economy undergoes a period of adjustment in which additional economic transactions are being undertaken.

If the money producer again sets out to achieve the standard macroeconomic responses that are today associated with an expanding money supply, namely, higher GDP growth and higher inflation, he will be happier than after the attempt in scenario 1. By allocating money evenly but by simply decreasing transparency, the money producer has caused some economic agents to misinterpret the situation. Their errors generated additional activity and these additional transactions will have temporarily lifted GDP. As a result of these transactions, at the end of the process some will be richer (the ones who interpreted the situation correctly and bought from those who were adjusting slowly) and others will be poorer (those who increased the prices they demand for their goods and services too late). The allocation of resources and the distribution of incomes have now been permanently altered. It is therefore inevitable that the composition of goods and services in the economy has changed as well. Some people now have more economic means, others less. It follows that the structure of production will be changed as well, and, because of this, it is inevitable that the increase in the price level is no longer proportional to the increase in money. An overall tendency toward higher prices has developed, although how much prices rose on average is now unclear. Different prices will have responded differently.

The temporary rise in GDP leaves a somewhat bitter aftertaste, however, as it is clearly of a different quality than what we would normally expect from the occurrence of new voluntary transactions. In a free and uninhibited market, the voluntary exchange of goods and services by private property owners is, by definition, to the benefit of both parties or at least to what they perceive to be their benefit at the time; otherwise, no voluntary exchange would occur. A rising GDP

number for such a free and uninhibited market economy indicates that the number of transactions, of goods and services bought and sold, has increased, and that more mutually beneficial exchanges among members of society have occurred. Consequently, more material needs have been fulfilled and more people have marginally improved their provision of goods and services.⁴

However, we can draw none of these conclusions in the case of the adjustment activity that was stimulated temporarily by the injection of money. The additional transactions that our money producer initiated crucially rely on error. If everybody had full knowledge of the even injection of new money, nobody would have seen any reason to change his behavior. As we saw in Chapter 1, the quantity of monetary assets available to society is immaterial for the number of economic transactions that society can engage in. More money does not mean more economic activity; and more economic activity does not require more money. What has, in scenario 2, generated additional economic activity is not more money per se, but the specific process of money injection. This process has disoriented some consumers and producers, and their errors have caused adjustment activity that has temporarily lifted the number of economic transactions that make up the GDP statistics. While the boost to growth is transitory, the changes to resource allocation and income distribution are permanent. The money injection has caused a growth blip. It also created winners and losers.

Uneven and Nontransparent Money Injection

Our money producer can obviously achieve similar results if he does not increase everybody's money holdings to the same extent and at the same time, but if he gives newly created money only to a select few. This process also has the advantage that it doesn't require magic. The money producer can simply print the money and use it to transact with others in the economy. He simply spends it. The first recipients of the new money are those that the money creator buys from. Those will spend at least some of the money in turn on the purchase of goods and services from others, as it cannot be assumed that their demand for money has simultaneously risen by the exact amount they

have received from the money creator. So the money is distributed to the next group of producers and so forth. This process unfolds until the new money is completely dispersed throughout the economy. In contrast to the earlier, less realistic models, not everybody will get money instantly. That additional transactions occur—which will necessarily boost the GDP statistics—is without question in this scenario. But other effects must result, too.

It is clear that this is how new money is in essence circulated in real life. Indeed, it is the only way in which new money can be brought into circulation in the real economy. Any injection of money will have to start at a particular point in the economy, and the new money will get distributed in a process that takes time and involves numerous transactions. In real life, new money can never reach everybody, or even large sections of society, at the same time, but only through a step-by-step process, which will inevitably change the allocation of resources and the distribution of the ownership of economic means.

It is immediately clear that an instant and proportional adjustment of the overall price level is now completely out of the question. It is impossible. As the new money does not reach everybody instantly, it is impossible for everybody to simply move prices up. How prices will ultimately be affected will be clear only at the end of an extended and complicated process. Consequently, the redistribution effects will now be larger.

That this process creates winners and losers is without question. The biggest beneficiary of the process is certainly the money creator himself, as he brings the money into existence at almost zero cost and buys goods and services that others have produced. But even the recipients of the new money in the first couple of stages of the distribution chain derive substantial benefit from it. They enjoy the extra monetary income early in the process, before many other prices in the economy have responded to the inflow and gone up. The producers at the next stage of the money distribution process receive new money, naturally, from those who received it before them and who, because their money demand has not gone up at the same time, spend some of it on goods and services. When the new money reaches a group of producers, they will be able to sell their goods and services at slightly higher prices

because of the additional demand for what they have to offer, and the higher nominal spending power of those who are one stage ahead of them in the money distribution chain, and who they sell to.

Thus, at each step, a marginal upward pressure on prices will be applied, and over time, more and more prices will be lifted. It is evidently advantageous to be close to the money producer in this money distribution chain. The earlier one receives some of the new money, the higher its purchasing power still is. At this point, many prices will not have gone up yet. The winners in this process are thus those who get hold of the new money before the full effects on prices that will ultimately result from the money injection have materialized. Those who receive the new money early will benefit at the expense of those who receive the new money later. The redistribution of income and ownership of resources will be more pronounced than in our previous and less realistic example. It will also no longer be driven by individual error or misjudgment but be mainly the result of where one happens to be located in the money distribution chain. A redistribution of economic means is the logical consequence of any real life injection of new money into an economy.

From what we said earlier about money demand it also follows that, as more and more prices rise, the distribution process will slow down as a result of the public's growing demand for monetary units. This demand rises naturally in response to money's progressive loss of purchasing power. Thus, fewer and fewer people will pass the money on to the next stage. As we know, the additional money that was injected but not demanded can be placed with the public only via a drop in money's purchasing power. As more and more prices rise during the money distribution process, the willingness to hold additional units of the monetary asset goes up and the additional money will increasingly be held as part of voluntary cash holdings, rather than passed on.

At the earlier stages of this process, when the monetary unit still enjoys its full purchasing power, the opportunity cost of holding on to the extra money is very high. Most prices have not gone up yet, so the early recipients of the money have every incentive to spend it. But as the new money spreads throughout the economy and more prices rise, the desire to keep more of the medium of exchange as

part of one's cash holdings will rise, too. This will, over time, slow down the money distribution process until it comes to a standstill. The multitude of transactions by which the new money makes its way through the economy and by which economic means get redistributed will have led to a temporary increase in GDP. Now that the money distribution process is concluded and the extra money is held voluntarily as part of individual cash holdings, it no longer stimulates additional transactions. No further boost to economic activity emanates from it. The GDP statistics were lifted temporarily but this effect has now run its course. The reallocation of economic means is permanent, however.

Every injection of money must reallocate resources. These reallocation effects are not reflected and cannot be gauged from the changes in the standard macroeconomic aggregates such as the price average (the price level) and the number and size of economic transactions (GDP). The former will rise, albeit not in proportion to the money injection, and the latter will rise as well, albeit only temporarily, as the distribution of the new money must induce a set of new transactions. Whether any of this is beneficial to society is debatable. The standard discussions about economic policy, along the lines of how much inflation should be tolerated for a certain boost to growth, give the impression that everybody shares in the benefits of growth and everybody suffers the disadvantage of higher prices, and that therefore a balance between these two effects can be established that is advantageous for society overall. This is decidedly not the case. Money injections always redistribute control over economic means. They must always create winners and losers. The losers do not benefit at all from this policy, regardless of how big a temporary GDP blip is being manufactured. The losers can rightfully claim that they are deprived of economic means for the sake of a boost to the GDP statistics that is short-lived and has no lasting benefit for society overall.

As we have already seen in the preceding scenario, the nature of the temporary boost to overall economic activity is very different from what we would normally expect when the talk is of generating higher GDP numbers. With better economic growth, we associate that more economic needs have been met, that more people have bettered their economic position, even if only marginally.

We expect that more mutually beneficial transactions have occurred. More growth means to us better supply with goods and services, more wealth and more economic opportunity. We expect that more people fulfill their economic potential in a growing economy. All of this is usually expected from rising GDP statistics. But there is no reason to think that this has occurred in the case of simple money injections.

The statistical measure GDP can measure only the number of economic transactions and the nominal amounts involved in them. In an entirely free market, it would indeed be reasonable to assume that all of the above expectations as to what a higher GDP entails are essentially met. In a free market in which no monopolist of coercion and compulsion exists, every transaction must be engaged in voluntarily by both parties and must therefore be deemed beneficial to both sides. Thus, a rise in the number of transactions means that mutually beneficial cooperation on markets has intensified and a better supply with goods and services has been achieved. In a free market that is entirely constituted by voluntary cooperation, consistently high GDP readings can rightly be interpreted to indicate rising wealth, better fulfillment of individual economic potential, more efficient resource use, innovation, and capital accumulation.

But none of this has occurred as a result of money injection. Sure, additional transactions have been initiated and the money producer can rightfully claim to have boosted GDP, if only temporarily. But this growth in GDP is of an entirely different nature. Just as throwing a stone into a lake causes numerous ripples on the water's surface, so has the arbitrary injection of new money—money that was not needed and not demanded and that has no implication for the economy's ability to produce goods and services in the long run—set off a number of transactions by which the economy adapted to this discretionary interference. This process will redistribute the ownership over economic means. It will lift GDP statistics temporarily, never lastingly. It will not lead to a better use of resources, to better human cooperation on markets. It will not lead to innovation, creativity, or more entrepreneurship. It is a trick that the money producer plays on the economy for short-term effect, and it cannot increase the efficiency and productivity of the economy.

Notes

1. David Hume, “Of Interest,” in *Selected Essays*, Stephen Copley and Andrew Edgar, eds. (Oxford: University Press, 2008): 177–188, in particular, p. 181.
2. GDP is the market value of all officially recognized final goods and services produced within a country in a year, or other given period of time. GDP per capita is often considered an indicator of a country’s standard of living. (Source: Wikipedia; http://en.wikipedia.org/wiki/Gross_domestic_product.)
3. As Michael A. Myers has pointed out, because the new money entered the economy by an act of “magic” and therefore cannot be explained, other misinterpretations are also possible. Some people may even think that others in society have received a *larger* cash infusion than they did and thus anticipate a bigger inflation than will ultimately occur. As producers, these people will now try to delay the sale of their goods or services, which will, of course, not contribute to additional transactions. However, as consumers, they will try to buy more of the goods higher up on their value scale at still-low present prices. In anticipation of price rises and the imminent personal loss of real purchasing power, they will tend to reduce their cash balances quickly and buy additional goods now. This in turn does lead to additional transactions. As Mike has also observed, some people may think the inflow was not a percent of previous cash balances but the same nominal amount for each member of society. I think that in this case their actions will depend on additional assumptions they make about the overall impact of this, and the overall outcome remains inconclusive. In any case, I do believe that by far the most common errors would be the ones I analyzed in the text, and that these additional and very valid scenarios do not contradict or materially weaken the conclusions drawn from this thought experiment. I am grateful for Mike’s contribution.
4. This does not mean that the physical quantity of goods must have necessarily increased. If two farmers trade one cow for one horse, this means that one farmer must value the horse more than the cow, and the other farmer the cow more than the horse. Although the transaction does not increase the physical supply of cows and horses, the trade has delivered value to both parties to the trade. The “needs” (or “wants”) of both farmers are now better satisfied. The transaction was valuable to both parties and is deservedly a part of GDP.

Chapter 4

Money Injections via Credit Markets

In this chapter we further enhance the realism of our model of money injections from Chapter 3. We now introduce the market for credit. Most money creation today occurs via the fractional-reserve banking industry or the central bank. Banks operate in the loan market, and this is where money is being injected into the economy in the real world. A functioning loan market would obviously also exist in a world of inflexible commodity money and without fractional-reserve or central banks. The loan market is one of the institutions that help channel savings into investments, which is an essential part of any capitalistic economy. To imagine how this would work without banks, one only has to look at today's fund management industry, which also operates in the loan market (and the equity market) and which cannot print money.

In order to integrate bank credit into our model, we have to briefly clarify a few key concepts, such as investment, saving, capital

goods, and interest. Even those readers who are knowledgeable about economics and familiar with these notions may benefit from the following explanation as it works out the features most relevant to our discussion and also refutes some common misconceptions about these concepts.

Consumption, Saving, and Investing

Everybody makes consumption and saving decisions. These are decisions about the use of economic resources, namely, how much of what is at our disposal today should we use for meeting present-day consumption needs and thus consume, and how much should we set aside for meeting future consumption needs. It is clear, although it often gets overlooked in macroeconomic debates, that what we save does not drop out of the economy. We ultimately still want to use these resources for consumption, but for as long as we do not want to consume them, others can use them for production purposes. By putting our savings in a bank or investing them via the bond or equity market, they become investments and help build a stock of capital goods.¹

Everything in an economy is ultimately directed toward meeting the needs of people. As we have already seen, only goods and services can fulfill people's desires. Money as such cannot do it, and neither can most production goods, like machines, tools, and office buildings, but the latter can help produce and deliver the consumption goods and services that people ultimately want. Therefore, every economic activity is ultimately directed at producing consumption goods and services. By setting aside some resources for meeting future consumption needs, we invest them. They can become the capital goods that allow us to produce more and better consumption goods for the future and, in many cases, to produce consumption goods that would be inconceivable if the economy did not have a substantial capital stock. In everyday life we think of saving, and therefore of investing, purely in monetary terms, as money facilitates the exchange of goods and services and as any economic calculation requires money prices. It is evident, however, that ultimately it is goods and services that get exchanged and allocated. A society can invest only those resources for investment purposes

that are not needed by the consumers today in order to meet their present consumption needs.

It is the mark of poor societies that they need most or all of their available resources for present consumption, often literally for feeding, clothing, and sheltering the population. Richer societies have resources that are not needed for present consumption, which are saved, invested, and become capital goods. The purpose of capital goods is to produce consumption goods, but the capital goods now allow for production processes that have a higher physical productivity. Labor incomes in rich countries are higher than in poor countries because rich countries have a larger capital stock to work with. After many generations of saving, investing, and building a productive capital stock, the marginal productivity of labor is substantially higher than in poor countries.

Ultimately, the decisions on saving and investment are decisions about the use in society of real resources. Money facilitates the exchange of real goods and services, which is what any economy is ultimately about, and this includes transactions by which resources are allocated toward consumption purposes or saving/investment purposes. Just as an economy does not need more money in order to produce more goods and services, an economy does not need more money to have more investment and more savings or more capital. If that were the case, poor countries could become richer by simply printing more money.

Interest

The analysis of money injections via the loan market requires understanding of the concept of interest. Somewhat contrary to the views of the general public, interest is not a feature only of money lending. Indeed, interest is an integral part of human action. The underlying concept of interest would be detectable even in a human society that did not know money and did not have a market for loans because even in such a society, every person would certainly value the same good or service differently depending on whether it were available today or only at a later point in time. This is called *time preference* and is an essential component of any act of valuation. “Present goods are valued higher than future goods of the same kind and quantity.”²

This statement is *a priori*. It must be true whenever all other factors affecting the valuation process are identical. If a person were indifferent to whether to enjoy the pleasure of consuming a certain good today or tomorrow, that person would tomorrow logically be indifferent to whether to consume it on that day or a day later. Consequently, that person would be indifferent to whether to consume the good at all. This means that the person does not value the good and that the good, therefore, does not even constitute a good to that person. "All other things being equal, to want something is to want it sooner rather than later."³ If things in some remote future were as valuable to me as anything today, I would never get up and try to obtain anything. Human action necessitates time preference.⁴

Interest is, first and foremost, simply the ratio of the value assigned to present goods over future goods. We can think of the interest rate as the discount rate at which the two values would be equal. Interest is therefore a ratio of prices, not a price in itself.⁵ Interest always involves an act of valuation, which, by definition, is subjective and bound to change over time and from person to person. Therefore, interest reflects the current value assessment of economic agents, specifically, how they value goods and services of the same kind at specific points in time. Interest is then the direct expression of time preference. If time preference is high, meaning the value assigned to the satisfaction of present needs is high, interest will be high and future goods will be assigned a more heavily discounted value compared to present goods. If time preference is low, meaning the value assigned to the satisfaction of future needs is not much lower than the value assigned to the satisfaction of present needs, interest will be low and future goods will now be discounted less heavily.

This can be illustrated further by looking again at two societies, one rich and one poor. Members of a poor society are likely to have a high time preference. Given the limited means at people's disposal, many immediate consumption needs will still go unfulfilled and the value of future goods, which can only fulfill needs in the more remote future, will be assigned a much lower value than present goods. In a poor society, interest rates will therefore tend to be high. By contrast, in a rich society, many people will have the means to fulfill their most urgent present consumption needs and are now extending their

economic planning into the more distant future. Arranging their resources to prepare for the education of their children, their own retirement, or even for future generations are now part of their considerations, and the value they assign to future goods is therefore relatively high. People in rich societies tend to have a low time preference, and interest rates tend to be low.

This is a conceptual analysis of interest. The interest rates that we observe in financial markets or in loan contracts naturally include additional elements, an entrepreneurial element and risk premiums for the risk of loan losses or for a loss in money's purchasing power. But it is clear that at the core of market rates is still the rate of interest that we describe here, which is the constituting element of market interest rates, and which Ludwig von Mises called "originary" interest in order to distinguish it from the interest rates observable on the loan market.⁶

This confirms a point established earlier in consideration of the principles of money production: The level of interest rates does not depend on the amount of money in the economy. An economy that has more money does not have lower interest rates.⁷ The level of interest depends on the time preference of the economic agents—their subjective valuation of present goods versus future goods. Equally, the level of interest does not depend on any attributes of the existing capital stock, such as its physical productivity, as was believed by classical economists. The idea that the productivity of the existing capital stock determines the level of real interest rates, that is, market rates adjusted for an inflation risk premium, is still widespread among financial market professionals today. This productivity approach to real interest rates is an entirely erroneous concept. It can be easily refuted.

Interest Rates Are Not Determined by Factor Productivity

The underlying assumption appears to be that in the process of bargaining between lenders and borrowers on capital markets over the temporary control of resources, the borrowers, who usually are entrepreneurs in need of resources to facilitate their investment projects, are willing and able to pay higher interest rates if the capital goods they

acquire with the borrowed funds have a higher productivity. In that case, each of these capital goods of higher productivity helps produce, every year, more goods than the entrepreneurs can sell on the market, than the capital goods of lower productivity would. Consequently, it is assumed that rising productivity leads to higher market rates for the temporary control over resources, that is, to higher real interest rates on the loan market. The fatal flaw in this reasoning is that it ignores the present price of capital goods. Capital goods with a higher productivity must—all else being equal—also have a higher price.

We have already established that all economic activity is ultimately directed toward meeting consumption needs. Capital goods, such as tools and machinery, have value only to the extent that they help produce consumption goods, which in turn are demanded by consumers. Let us assume a machine is physically capable of producing, over its lifespan of 10 years, a total of 100,000 units of consumption good “p,” and that the machine cannot be employed for any alternative purpose. If the demand for the good “p” were suddenly exhausted and no more units of “p” could be sold at any price, the machine would, of course, become instantly worthless. Conversely, if demand for consumption good “p” were to increase and its price to rise, then—all else being equal—the price of the machine would tend to rise, too. Although the exact price of the machine will, at any moment in time, be the result of many market factors, it is undeniable that its value to its owner and thus its price on the market must stand in a close relationship to the price of the good that it helps produce. If we now assume that the demand for “p” is still relatively strong and that more of “p” could be sold to the consumer at only marginally lower prices for “p,” then we must assume that a new machine that is now capable of producing 150,000 units of “p” over a 10-year period would also demand a higher price. If the price of capital goods is derived from the price of the goods they help produce, then capital goods of higher productivity must have a higher price than capital goods of lower productivity, again assuming that all else is unchanged. It therefore follows that the internal rate of return on the investment in machinery will not necessarily be higher simply because the machinery has now a higher physical productivity. The new machine can produce more of good “p,” but it will also require a bigger outlay for the entrepreneur to acquire this

machine. The ability of any piece of the capital stock to help generate sellable consumption goods is fully encompassed in its present price.

We may further illustrate the inadequacy of the productivity approach to interest rates by envisioning an event that would dramatically change the population's time preference but not the productivity of the capital stock. If it became known that a giant asteroid were to hit the earth in three months and wipe out all life on the planet, it is clear that nobody would plan beyond three months and that the value of future goods and services would immediately drop to zero. This means that interest rates suddenly would not only be very high, but that they would have to be infinitely high. All available resources would instantly be redirected, to the extent possible, toward present consumption, and nobody would direct any resources to the satisfaction of consumer needs beyond three months. However, the physical productivity of the capital stock would obviously not have changed at all, but time preference and, therefore, interest rates would certainly have changed enormously.

An opposing, if somewhat less graphic, example would be the following: If the people living in some reasonably wealthy country, meaning a country where already many resources get allocated to meeting needs in the remote future, were to learn that their life expectancy had suddenly been drastically prolonged (maybe as a result of some astonishing breakthrough in medical research), it would be reasonable to assume that interest rates would tend to decline. The provision for the future would now become a relatively more important task, and the satisfaction of present consumption needs a relatively less important one. Time preference would have been lowered and the value assigned to future goods and services would have risen. Again, the physical productivity of the existing capital stock would not have changed at all, but time preference would have changed, and that would have necessitated a change in the rate of interest. While in the scenario of the asteroid disaster, the tendency to consume rose sharply and the tendency to save practically vanished, in this example, the tendency to consume declined while the tendency to save increased. The physical productivity of the capital stock, however, was unchanged in both cases.

Although the originary rate of interest is not identical to the market rate of interest, it is apparent that the two are closely connected and

that, if we rule out any disturbances on the loan market, a change in originary interest will cause the equivalent change in the market rate. To illustrate this let us again assume that time preference has declined, something that should be fairly normal in the development of a growing economy in which people get wealthier on trend. To say that time preference has dropped is identical to saying that the originary rate of interest has dropped or that future goods are now valued at a marginally smaller discount relative to present goods. People will direct some resources away from meeting present consumption needs and toward meeting future consumption needs. They consume less and save more. The additional savings are offered to entrepreneurs on the loan market where they will lower the market interest rate. At the lower interest rate, investment projects that thus far have not been viable due to the previously higher rate of interest now become marginally profitable. The lower interest rate thus encourages entrepreneurs to take temporary control of the additional resources saved by the consumers and to employ them in production processes. Via a drop in interest rates, the changed time preference leads to a reallocation of resources in the economy, away from consumption and toward investment.

To the extent that interest rates on the loan market correctly communicate changes in the originary rate of interest, they help shift the economy's resources into the forms of employment that are in accordance with the time preferences of the consumers. If their time preference is relatively low and the satisfaction of present-day consumption needs less of a priority, more resources get allocated to the production apparatus of the economy where these resources will not satisfy immediate consumption needs, but where they help produce future goods and services. The extension of the production processes that the new capital allows enhances overall productivity. By employing more capital, the economy will not simply deliver the same goods and services in the future that it delivers today, but it also can now produce more or better goods with the same input, or the same goods with less input. This is one of only two possible ways of increasing society's material wealth, namely, the increase of the per-capita use of capital, the other being the division of labor.

It also becomes evident why societies that have acquired a certain capital stock will exhibit a tendency to become ever wealthier. By

employing more resources in production processes of higher productivity, more goods and services can be produced; this makes it even easier to fulfill present consumption needs and the wealthier population will now have—all else being equal—an even lower time preference, which leads to a larger share of the now enhanced supply of goods and services being directed toward production. This powerful tendency causes rich countries to get richer.

For any society that prefers more goods and services to fewer goods and services, a high savings rate and low interest rates are certainly desirable, as these two will help build and maintain the capital stock that allows for high-productivity production processes. Yet it is also clear that any attempt to force interest rates lower through market intervention is dangerous and ultimately futile. Low interest rates are of no use but, indeed, harmful if they do not correspond with the population's time preference. If the government of a poor country managed to artificially lower the interest rates on the loan market with the aim of encouraging borrowing, investing, and the expansion of a wealth-enhancing capital stock, they would certainly not do their population any favors. The low rates would cause the reallocation of scarce resources away from where they help meet present consumption needs to where they will deliver future and better and cheaper goods. However, the time preference of the population is still high. Meeting the needs of the present is still a priority, and only higher interest rates will communicate these preferences correctly and ensure the appropriate use of resources. In an extreme scenario, we could imagine people having to go without food, clothes, or shelter while resources get shifted to building factories and office buildings.

As important and desirable as the latter are for an advanced economy, at this moment the population simply has other priorities. If market prices, including interest rates, do not reflect those priorities accurately, resources will be employed in ways that are of lesser importance to the population and will be wasted. From this, it follows that the path from being a poor country to being a wealthy one is likely to be slow and arduous. It will require, as its starting point, the voluntary lowering of time preference, most likely very marginally at first, which will allow at least some resources to get saved and

shifted to production. These constitute the seeds of a nascent capital stock. If they are kept alive and nourished, they should deliver at least a modest increase in income, which in turn should help lower time preference further. Thus, it can be hoped that the first rungs have been climbed on the ladder that leads to a lower time preference, higher savings rates, higher productivity, and, therefore, increasing wealth.

What is also clear from our analysis is that a one-off investment in productive capacity is not sufficient. A capital stock not only needs to come into existence, but it also needs to be maintained. The higher income that results from the higher productivity of using more capital should go some way toward making the maintenance of existing capital less of a burden. However, if time preference is not lastingly lowered, resources will ultimately have to be redirected again toward meeting imminent consumption needs. In this case, investment projects that were started by a temporary surge in savings will not be seen through to their completion or will not receive the steady reinvestment of resources that is required to keep them functional. The resulting disinvestment will reduce the capital stock again.

The level of interest rates in an economy is the result of an act of valuation on the part of the economic agents. In order for the investment in productive capital to increase, consumers must voluntarily free up these resources and allow their redirection toward capital formation. A change in consumer preferences is therefore the prime mover of an increase in investment. The relative valuation of present goods and services versus future goods and services has changed in such a way that the consumers are now willing to forgo the use of some of their resources for present consumption. This change in preferences is communicated to other economic agents in their role as entrepreneurs via lower interest rates. The lower interest rates will encourage the entrepreneurs to invest additional resources for the benefit of producing future goods and services. In short, increased investment is not the result of lower interest rates but of increased voluntary saving on the part of consumers. Lower interest rates indicate the increased propensity to save and assure that increased saving leads to increased investment. The driving force behind the increase in investment is a change in valuations by the consumer.

Money Injection via the Loan Market

As described in Chapter 2, in order to expand their loan business, fractional-reserve banks lower the interest rate on new loans and, as more loans are extended, bring new money into existence. Since the effect on the loan market is identical to an increase in voluntary savings, the entrepreneurs who take up the extra funds and invest them have no way of distinguishing one from the other. An increase in available credit as a result of additional true savings and an increase in available credit as a result of more fiduciary media (derivative money) in response to the banks' lowering of their reserve ratios look identical to those who borrow from the loan market. In both cases, more funds become available and interest rates decline.

The new funds will not go to all businesses and industries alike but naturally will fund those projects that were marginally unprofitable at previous interest rates. As in the preceding scenario of uneven and nontransparent money injections without credit markets, the new money will not affect everybody at the same time and certainly not raise all prices instantly and to the same degree. The key beneficiaries of the new money are obviously the banks themselves and then the first recipients of the new money, meaning those bank clients to whom the new loans will be extended. They can use the new money to acquire goods and services before the price-raising capability of the new money has fully run its course. The new money allows its recipients to bid away resources from other economic agents. As in the case of a voluntary increase in savings, resources now get reallocated from consumption to investment. The capital stock gets extended.

The problem, however, is that no change has occurred in the time preference of consumers, in their propensity to save, and in the ordinary rate of interest. Nobody has, via an act of voluntary saving, freed up economic resources from their employment in satisfying imminent consumption needs and made them available for production purposes that can only deliver consumption goods and services later. The urgency to consume now is still unchanged. The allocation of resources that is about to take shape as a result of the increased lending and the extension of the capital stock is not in accordance with consumer preferences.

It is evident that, just as in our earlier models, some prices will have to rise in response to the inflow of new money. It is also clear that, without support from changed consumer preferences, the extended capital structure that is beginning to evolve as a result of the money injection cannot be maintained. The projects that were previously unprofitable are, in fact, still unprofitable. They would have a chance of being realized only if more resources were available for production, but that is not the case as consumers still demand these resources for consumption. The lowering of interest rates on the loan market has fooled entrepreneurs into thinking that consumers have decided to consume less and save more and that more resources are now available to be employed in additional production processes. The extension of the capital structure is based on the erroneous assumption that the public has lowered its time preference and is happy to see more resources employed in an extended production apparatus.⁸

As in our previous models, the injection of money has the character of a disturbance of the market process. This does not come as a surprise if money is correctly understood as a medium of exchange that facilitates transactions but does not bring new goods and services into existence. Money does not change the elementary valuations at the core of the market process, namely, the wishes and preferences of the consumer, among them, importantly, time preference. More money is not needed for a growing economy, for an expanding productive sector, for saving and investment, and for the creation of wealth. But expanding the supply of money disturbs relative prices, first and foremost interest rates, and disorients market participants.

The Process in More Detail

In this section I will look at the process of money injection via the loan market in more detail. As with the previous scenarios, this is a conceptual analysis of economic processes. What we are doing here is economic theory. Not all readers may be used to this way of thinking and theorizing. Most books on money, banking, and financial crises today focus heavily on statistics or even anecdotal observation, into which they seem to delve without any theoretical bias and from which

they appear to readily extract convincing conclusions. I fear that this may make these books appear to many readers as being closer to “real life,” empirical, and thus maybe even scientific. But this would be the wrong conclusion entirely. Every analysis of history—and statistics are by definition observations of specific historic events—requires a theory. Many apparently empirical books just do not spell out the underlying theory in detail, or simply assume that whatever their theoretical underpinning is, it is the generally accepted theory and just beyond reproach. This attitude may just help perpetuate flawed and inadequate theories and ultimately be a hindrance to a better understanding of economic life. Be that as it may, this cannot be the approach suitable for our task. From the beginning we set out to challenge the established consensus, and in order to achieve this we must be very clear about our theoretical foundation first and then see how well it does in explaining historical data and “real-life” observation. We have to go back to theory, even to first principles, such as the principles of what money is and what constitutes money demand. What we have done so far is work out a general and conceptual analysis of money and the effects of money expansions. We have also worked out the principles of banking as well as key economic concepts such as saving, investing, and interest rates. On this foundation we can now develop a theory of money injections via the banking system, a theory that will be very close to how money gets injected into the economy in “real life.” We will discover many adverse effects of money injections that are inevitable in our conceptual analysis, and, if we have made no mistakes, must be, if not inevitable, then at least extremely probable in reality but that are woefully underappreciated in or even completely missing from most mainstream accounts of money creation and today’s public debate. Once we have grasped these processes in the pure setting of conceptual analysis, it will not be difficult to also find them everywhere around us in real-world data and to illustrate them with countless anecdotal “evidence.” But—theory first.

Let us assume that, at the starting point, the economy is in a state of “equilibrium.” The idea of equilibrium is a mental construct that is sometimes useful because only an economy in equilibrium would not be subject to any inherent forces that change it. This notion thus allows us to isolate the effects of changes that we introduce for analytical

purposes. No such state of equilibrium will ever be attained in reality, although economic processes certainly tend toward equilibrium. This is simply an analytical tool, albeit an indispensable one.

In our model economy, the size of the present productive structure reflects the prevailing time preference of the consumer. This means the extent to which available resources are allocated toward production rather than imminent consumption reflects prevailing time preference, and this is communicated to everybody in the economy via interest rates. Now an injection of new money from the banking industry via the loan market occurs. Inevitably, the new money at lower interest rates will encourage entrepreneurs to start new and more capital-intensive investment projects. Lower interest rates mean that the element of time becomes less of a constraining factor. Processes that require outlays today but only generate returns tomorrow, or deliver consumable goods tomorrow, are now more easily realizable. Tying up economic resources in longer-lasting production processes is the very essence of capital creation, and it has just become cheaper.

Let us assume that entrepreneurs start investing in plants and machinery that will ultimately allow the production of the very same consumer items that are in demand today but allow a more efficient production of them. We have already seen that this is likely to be the case as the use of more capital increases productivity. From a technological point of view this is a very sensible endeavor indeed, as a shift toward more capital-intensive production is essential for any society whose members want to get wealthier. The increased money leads to increased investment, which helps meet the same consumer needs more efficiently. This sounds rather good. What can go wrong?

The entrepreneurs will inevitably use the newly available funds to bid away resources from others in the economy. More specifically, the new money will allow the new entrepreneurs to pay other producers to produce the intermediate goods—such as machines and tools—that they need for their new investment projects. This means that some producers who previously employed scarce resources, including labor, in the production of consumer goods, albeit at relatively lower levels of productivity, will now shift these resources toward the production of producers' goods, that is, the tools and machinery that the new

entrepreneurs need for their projects. Obviously, they will do this only if they are paid more than what they received in their previous line of business, and this is possible only because of the newly created money in the hands of the new entrepreneurs. What we see here again, in the context of a more complex and more realistic model this time, are the reallocation effects of money injections that we already encountered in the earlier and more primitive models. The new money has not filtered through to the consumer goods market yet. But in this first stage, it allows its first recipients, the new entrepreneurs, to pay higher wages and higher factor prices for the labor and the intermediate goods they need for their investment projects. The prices of certain investment goods will now go up.

Initially, there are still enough already produced consumer goods available for consumption to proceed undisturbed. At this first stage, a rise in overall economic activity will undoubtedly be recorded as unchanged consumption that can for a while coincide with increased investment activity. The gross domestic product (GDP) statistics of our model economy will pick up at first.

After some time, however, the redirection of productive resources will be felt on the market for consumer goods. The stream of readily available consumption goods will lessen as productive capacity is being redeployed toward delivering the machines and tools that the entrepreneurs need for their new projects. Fewer readily available consumer goods arrive on the market. At this point, the fact that credit expansion was funded by money printing rather than by true saving comes into play and begins to develop forces that will work in the opposite direction of the ones at work so far. If the whole process had been kick-started by an act of voluntary saving on the part of consumers, the marginal drop in supply of consumer goods would not be a problem. Increased saving would have meant a lessened demand for consumption goods, but this was not the case in this scenario. A shrinking supply of consumer goods coupled with an unchanged urge to consume can mean only that an upward pressure on consumer goods prices will now develop. But how can consumers pay the higher prices? The newly printed money has not dispersed through the entire economy yet but is still circulating among various producers. The short answer is, they cannot, or at least not right away.

The producers of the new intermediate goods will, of course, receive higher money incomes. This means they will be the first to be able to pay higher prices for consumption goods. Naturally, this includes the workers who work for these producers. As they work in one of the sectors that benefit from the infusion of new money first, they stand a better chance than workers in other industries of demanding higher wages to compensate them for the rising prices of consumption goods. We see here another example of the redistributive power of money injections. But it is clear that not all consumers will be able to raise their money income in response to the price pressures in the consumption goods market. We will address shortly how they can respond to this.

In any case, it is evident that prices for investment goods rise earlier and, until the later stages of this process, also more strongly than the prices for consumer goods. The investment goods market is the market on which the new money arrives first. It is the rise in the prices of capital goods that encourages some producers to redirect their efforts from producing consumption goods to producing capital goods (machinery, tools) for the new entrepreneurs, and this will later lead to the rise in prices for consumption goods. Inflation measures that focus on consumer prices are therefore likely to pick up the price effects of money injections via the loan market only at a late stage of the process.

Many popular presentations of the money injection process appear to imply that new money spreads quickly to every corner of the economy. These models tend to ignore the redistributive effects of money injections because they disregard the very process by which money gets dispersed throughout the economy. With the new money not spreading instantly and magically to everybody in the economy, it has the power to shift resources into different employment for some time. In our scenario, the new money reaches a specific group of producers first who can only realize their projects if they pay other producers who thereby become the second recipients of the money. As the money filters through the economy, resources will get reallocated. For a while the productive structure that is beginning to take shape makes it look indeed as though additional saving has occurred. In the absence of shifts in consumer preferences, however, the resulting structure is unsustainable.

For the outside observer and, equally, for all the actors in the economy, there is simply no way of telling whether what is occurring is in response to money printing or in response to voluntary saving. Of course, the by now familiar results of a near-term boost to GDP (spending) and a trend toward higher overall prices (inflation) will be evident. In a way, money injections via the loan market combine elements of our previous two models. There is an indisputable element of deception involved. Savings have not increased and preferences have not changed, but market signals have become distorted in a way that makes economic agents believe that these changes have indeed occurred. Equally, this process involves a decidedly uneven distribution of the new money. Both effects combine to disorient decision makers and to have them engage in processes that have no support from underlying consumer preferences. Money injections lead borrowers onto the thin ice of investment projects for which the fellow members of society are not willing to supply resources, at least not as readily and inexpensively as artificially lowered interest rates on the loan market suggest.

Surely, the economy exhibits all the symptoms of genuine vibrancy at first. There are new and better paying jobs in the expanding industries, and there is an increase in investment activity. Ultimately—but only at a later stage in this process—the prices of consumer goods will begin to rise. We now turn back to the question of how consumers cope with the diminishing supply of consumption goods and the rising price pressures. Besides rising wage income, which we discussed previously, the consumers have other means of raising the funds to pay higher prices. To the extent that they have been savers before, they now have an incentive to reduce active saving from ongoing income, and also to liquidate existing savings and spend the money on consumption. Some of their consumption needs are remaining unfulfilled at old prices and can be met only at higher cost. Simultaneously, the interest they get for lending their existing savings on the loan market has dropped as a result of artificially lower interest rates. Consequently, the actions that consumers take in response to the changing price structure and reduced supply of consumer goods are directed toward driving both consumer prices and interest rates higher. Because the shift in resources was not in accordance with their preferences, it should not

come as a surprise that the activities of consumers—their consumption decisions and their saving decisions—will tend to counteract the trends that have been initiated by the arbitrary injection of new money. Interest rates reflect the time preference of economic agents, and as the prevailing rate on the market for loans has been artificially lowered, the liquidation of savings is one mechanism by which the rate can be raised again to reflect the true underlying “originary” rate of interest.

The rise in interest rates is meaningful in another way. So far in the analysis, we have assumed that the originary rate is unchanged and that only the loan rate has been changed, that is, depressed by money production. However, we have to presume that in response to the effects of money injection described before, the originary rate of interest has in fact gone up, rather than stayed unchanged. Because of the money-induced changes in resource allocation, certain consumption needs remain unfulfilled, which means time preference is now higher than it was at the start of the money injection process. Consumers should assign an even lower value to future goods relative to present goods than before. Their time preference must have risen in response to the new undersupply of consumption goods. The desire to liquidate savings or refrain from saving is not only the result of the artificially depressed loan market rate, but it is also the natural expression of a higher time preference that is the direct result of the insufficient supply of consumer goods.

Rising consumer prices and rising interest rates are now beginning to derail the very process that the money injection had set in motion. For the producers who began to redirect their efforts away from delivering consumer goods and toward producing the intermediate goods (machinery and tools) for the new entrepreneurs, it is now less compelling to do so. Sticking to their previous business of producing consumer goods looks relatively more attractive again given the higher prices of consumer goods. To the extent that the new entrepreneurs need new loans or need to roll over existing loans at current interest rates, they are now facing higher funding costs.

The combination of higher consumer prices and higher interest rates sends an unmistakable signal to every producer in the economy: Time preference is high. Consumers need more consumption goods and they need them fast. Building a more elaborate production structure,

whatever its technological benefits might be, is a luxury that society cannot or does not want to afford itself at this stage. It is therefore likely that the investment projects that were started are discontinued. At least some of the new entrepreneurs will fail as their projects were based on erroneous assumptions. The error was, however, not one of poor judgment on their part but was the unavoidable result of a distorted market signal. The lowering of the loan rate had fooled the entrepreneurs into believing that new resources had become available for extending the capital structure, when all that happened was that more money had been printed.

We have tried to analyze the process by which the investment boom is started and then aborted in some detail and what we see at its core is again the principle that any injection of new money temporarily increases the purchasing power of its recipients for as long as and to the degree that the price-raising capabilities of the new money have not run their course. Once that is the case, the preferences of the economic agents, which are the ultimate drivers of any voluntary activity and any sustainable resource allocation, come to the surface again, and when that happens resources will again be reallocated. What matters to an economy is always the same: the available resources, both nature-given and previously produced (the capital stock), the technological know-how, and the preferences, attitudes, and wishes of the economic actors. None of this is changed by the trickery of money injection.

Obviously, the effects of money injection do not have to be as short-lived as in our scenario, which, for the sake of keeping the analysis simple, assumed a one-off act of discretionary money injection. If the banks are willing, they might extend their money-creation activities over a longer period and just as the first dose of money is beginning to lose its power to shift resources, another injection of money might occur, further extending the process just described. If money creation is continuous, the buildup of the capital structure beyond what consumer preferences ultimately allow can be much more extensive. Indeed, this is what is likely to happen in reality. Fractional-reserve banks go through periods of more risk taking and less risk taking, and, considering today's monetary infrastructure, they are unlikely to cancel one another out in the process.

If one or more banks decide to lower rates to expand their loan operations through a lower reserve ratio and increased money production, this is bound to generate two conflicting tendencies. On the one hand, it will exert pressure on competing banks to do likewise as they risk losing business by not matching the lower loan rates of their competitors. This factor is bound to make money creation more broad-based and lasting. On the other hand, lowering reserve ratios increases the risk of bank runs and to the extent that other banks do not join in, the ones that are more advanced in the money creation process risk increasing outflows of reserve money to their more conservative competitors, which increases their business risk substantially.

In an entirely free market, in which the monetary asset is a non-replicable commodity, and in which no central bank and state support infrastructure exist, the scope for money creation through fractional-reserve banking is strictly limited as just explained. Today's monetary arrangements, however, with their lender-of-last-resort central banks, elastic and unlimited reserve money, and state guarantees for depositors, have greatly diminished the risks that were usually inherent in joining other banks in a credit boom. Importantly, the various measures that were designed to make banking safer for the banks have invariably desensitized bank customers to the balance sheet risk of the individual bank. Consequently, little or nothing is to be gained for the management of any bank from running a higher reserve ratio and a more conservative balance sheet policy. Banks can always borrow new reserves from the central bank, and only if the central bank charges interest rates (or pays interest on reserves deposited at the central bank) that make potential outflows prohibitively expensive will this pose a constraining factor on additional bank lending. In a fiat money system, the monetary policy of the central bank becomes the ultimate constraint for bank credit creation and thus money production, while market forces, such as the competition between independent banks, are severely limited. The central bank has to, at a minimum, tolerate the expansion of money and credit by the banks. But this appears highly probable given that most central banks today have a mandate to support economic growth and allow ongoing moderate inflation. There can be little doubt that, in aggregate, today's regulatory and financial support structure for banks has substantially increased the tendency of

banks to expand balance sheets together. Under present arrangements, it is much more likely that banks mutually reinforce their tendencies to reduce reserves, lower rates, and create more money.

The very impression of economic vibrancy that is generated in the early phase of the process will also encourage more banks to join others in their creation of money and credit and turn it into an economy-wide trend. Overall business conditions appear good, which in turn makes the risk of lending seem small. If anything, in these conditions banks will tend to lower their reserve ratios further.

These are the basic elements of a credit cycle, in which a period of expanding money encourages additional investment but leads to an unsustainable structure of the production side of the economy and to a distorted structure of relative prices. These structures are distorted and unsustainable because they are at odds with the preferences of consumers. Only continuous injections of money by which the money producer tries to stay a step ahead of the attempts of the consumers to reestablish the prices and the productive structure that reflect their preferences keeps the boom going. Whenever the inflow of new money ceases, or only slows down meaningfully, a recession ensues; at least some of the new investment projects get dismantled, and resources are again reallocated and prices readjusted. A recession has in fact become unavoidable once money creation has meaningfully affected prices and resource allocation. The recession is the necessary process of adjustment by which the economy is cleansed of the accumulated mispricings and misallocations of resources from the preceding, artificial boom. Naturally, the correction will be more severe the longer and the more extensive the preceding money-induced boom has been and the larger the dislocations in the economy have become.

The phenomena that characterize a period of recession are a decline in economic activity and a fall in certain prices. Activity declines because many of the investment projects that previously benefited from the money injections are discontinued. Additionally, those prices that were artificially boosted by money injections during the boom will tend to recede. Painful as they might be to some in the economy, these corrections are necessary to bring prices, resource allocation, and economic activity back in line with the preferences of all members of society. This process is therefore in the interest of everybody. It is indispensable for

the continuing smooth operation of the extensive division of labor that the extended market economy makes possible. There is simply no alternative to going through a readjustment of prices and resource use once money injections have led economic structures astray. It is also evident that the recession will not go on forever, as is often feared. There is no reason to assume that the recessionary forces will somehow feed on themselves and lead to ever worsening conditions. The recession will end when structures are again more closely aligned with the preferences of consumers.

Policy Implications of the Austrian Theory

As mentioned previously, what we describe here is a business cycle theory, usually called the Austrian theory of the business cycle. I give a stylized and compressed version of the theory, which should be sufficient for our purposes but necessarily neglects some of the finer points of the theory. This theory is called the Austrian theory because it was first formulated by Viennese economists working broadly in the methodological tradition of Carl Menger (1840–1921), who elaborated the principles of what became the Austrian School of Economics in the latter part of the nineteenth century.⁹ Building on Menger’s methodological foundation, Eugen von Boehm-Bawerk (1851–1914) made crucial advances in the theory of capital and interest,¹⁰ and Ludwig von Mises (1881–1973), who became the leading intellectual light of the Austrian School in the twentieth century, did seminal work in several areas, among them notably the theory of money. It was in particular Mises’s 1912 book on money and fiduciary media that laid the foundation for what became the Austrian Business Cycle Theory.¹¹

In contrast to practically all other cycle theories, the Austrian theory manages to explain the phenomena of boom and bust on the basis of a discretionary disruption of the market’s pricing process via the injection of money. It does not have to rely on seemingly arbitrary and often dubious disturbances that often appear to spring up randomly in other and more popular explanations of cycles such as a lack of “animal spirits,” a drop in aggregate demand, a sudden lack of investment opportunities, or an excessive propensity to save or to hoard money.

Once the expansion of money and the artificial lowering of interest rates have sufficiently dislocated the allocation of resources, a recession has become inevitable because it is required to get resource allocation back to sustainable structures. The conclusion for policy makers is clear: Do not try to artificially lower interest rates and create extra growth through cheap credit! After a short-term boom you will face a recession. If you want to avoid a recession, you have to keep the supply of money (fairly) inelastic and stable, and you have to allow voluntary saving to determine interest and credit on an unhampered market. It should already be clear to most readers—and it will become clearer in the next few chapters—that this was decidedly not the course politicians took throughout the twentieth century and up to the near present, the course that has led to our present system and its present crises.

Public debate and policy today are largely guided by macroeconomic theories that portray the recession as an almost isolated event driven by uncontrollable exogenous forces. These theories fail to appreciate that the roots of the recession (most frequently and potentially always) lie in the preceding false boom. A lot of the blame for this has to go to the change in the focus of economic inquiry, namely, from a micro perspective that starts every analysis with the individual actor, to the macro perspective of statistical aggregates. The latter has come to dominate economics since the second third of the twentieth century. The macro variables that now rule economic debate, such as GDP or the consumer price level, are incapable of capturing the all-important effects of money injections on relative prices and resource allocation. The corresponding theories cannot account for new money's power to redirect activity and reallocate income and resources because they only deal with money's impact on the large wholes of national account statistics. Consequently, they fail to identify the most potent reasons for recessions, which are the dislocations that are unavoidable by-products of the money-induced boom. Guided by these theories, economic policy today is destined to fight the symptoms. Policy constantly tries to abort or delay the necessary adjustment process and to maintain or even expand existing relative prices and resource allocations through market interventions such as further money injections (easy monetary policy) or state-enforced resource use (fiscal policy).

And in a world of limitless paper money and lender-of-last-resort central banks, this means that whenever the dislocations created by easy money and artificially low interest rates begin to derail the economy, a credit correction is avoided by a renewed administrative lowering of rates by the central bank and, if required, further additional injections of money. The idea behind this is obvious: The boom is good and should just be enjoyed; the correction is bad and must be avoided at all cost. And with money being now fully elastic, why ever suffer a credit contraction?

However, we know from the Austrian analysis that this cannot solve the underlying problems. Easy monetary policy in a recession simply obstructs or stops the adjustment process. The misallocations of capital from the previous boom do not get corrected and instead are carried forward into the next money-induced expansion in which additional misallocations are added to the existing ones. The next time a recession occurs—and it will, of course, only be a question of time—the need for a cleansing correction will be even more intense, and it will consequently require an even larger injection of money and even lower interest rates than previously to postpone the correction again and to manufacture another boom with the help of artificially low interest rates. There can be no doubt that this is a process that must make the economy progressively more unbalanced. Recessions will get more protracted, recoveries will be more difficult to engineer and will be shallower and more fragile. As the distortions that need liquidating get bigger, it will be politically ever more difficult to allow the correction to unfold. And as the policy establishment has long maintained that “under a paper money system, a determined government can always generate higher spending and hence positive inflation,”¹² the short-term fix of more money will be applied in ever larger doses. If this policy framework is not ultimately abandoned, it must finally undermine the confidence of the public in the state’s paper money and lead to complete currency collapse.

We have to remember that the Austrian School developed its cycle theory in the context of a hard and inelastic monetary core, usually gold under a gold standard. With an inflexible monetary base, the type of active monetary policy that short-circuits recessions and extends the cycle was not possible. Recessions were, by and large, allowed to

properly cleanse the economy of misallocations and bring the economy back into some form of balance. It was therefore indeed appropriate to speak of a cycle. But this is no longer the case. A cycle implies that the system returns somehow to its previous position, or at least somewhere near its previous position. A business cycle describes fluctuations around a mean. This mean can be stable, or ascending or descending. But, crucially, the cyclical factors are independent from the trend development of the mean. They do not describe any long-term trend at all but simply the ups and downs of fluctuations around the trend. In this sense, it is no longer appropriate to speak of a cycle. The introduction of a complete paper money system has transformed the factors that drove the business cycle into factors that drive the overall system towards increasing instability. Imbalances and dislocations get bigger, and in a desperate quest for short-term relief, policy makers are bound to accelerate this trend of monetary disintegration. In contrast to the cycle, this development has an endgame.

Addendum: Gordon Tullock's Critique of the Austrian Business Cycle Theory and Some Words on "Forced Saving"

As we will see in one of the following chapters on the history of paper money systems, the idea that monetary expansion could be the source of economic disturbances is almost as old as the science of economics itself. Richard Cantillon wrote about it in the early eighteenth century and about 50 years before Adam Smith published *The Wealth of Nations*. The idea also featured strongly among nineteenth-century British classical economists (David Ricardo in particular). Ludwig von Mises knew and readily acknowledged that what he called the monetary theory of the business cycle had a long tradition. His (and later Hayek's) version of the theory was more sophisticated and probably closer to the truth than its predecessors. It was thus a better and more useful theory, and I still maintain it is the best theory of economic recessions we have today. Yet, from the late 1930s onward, mainstream economics developed in a direction that embraced different theories. It seems that some economists found the theory somewhat insufficient to explain

what they wanted to explain, but maybe more important, specific intellectual trends (and also political trends) made other theories more appealing. What these trends were we will discuss in a later chapter. In my view, the Austrian theory has not been refuted and even rarely profoundly critiqued but from 1940 onward mainly ignored. I expect that the Austrian theory will enjoy a revival and reappraisal because the economic deformations of advanced paper money systems not only illustrate the processes described by Mises and Hayek so vividly, but there is simply no other meaningful compelling theory that can make today's monetary and cyclical phenomena intelligible.

Before we apply the theory to our present system, it may still be useful to look at some of the criticism directed at it. Here, of course, is not the place to conduct a complete evaluation of the Austrian Business Cycle Theory and its critics, so I am not even pretending to do this. I will take one critique, that by U.S. economist Gordon Tullock, famous for his work on Public Choice Theory and his collaboration with Nobel Prize winner James Buchanan, that he published under the heading "Why the Austrians Are Wrong about Depressions" in 1987¹³ and treat it as fairly representative. I accept that there may be other criticisms that could potentially be more powerful and profound, although I am not aware of them.

Tullock raises a few critical points, none of which is really enough, in my view, to justify the title of his essay. To show that the Austrians are "wrong," which must mean their theory is faulty, Tullock should show major deductive flaws or inconsistencies in the theory that render it useless as an explanation of the cycle. In my view, most of his criticisms are instead of the nature that the theory is not incorrect or illogical but, in Tullock's view, rather insufficient to explain real-world recessions. Tullock seems to say, at least in his main points, not that the theory was nonsense but that the deformations and dislocations that according to the theory result from artificially lowered interest rates and extra bank credit are not adequate to fully explain the crisis. The Austrians may not be wrong, but they fall short of the target of fully explaining recessions. I think that most of Tullock's criticisms can be refuted, but he raises one issue that does indeed pose a challenge of sorts and is worthy of deeper analysis, although he does not, in my opinion, articulate it very well.

Here are Tullock's seven critical points. Not all of them are of equal importance, as he himself acknowledges by calling three of them "nits" from "nit-picking," although I am not sure I agree that these are necessarily the weakest arguments.

1. Why do the monetary expansion and the artificial boom ever have to end? They had to under a gold standard, but today, in a system of endless fiat money, could they not go on forever?
2. Should businesspeople not learn from experience and, after a few painful cycles, let themselves no longer be fooled by low interest rates and tricked into ultimately unsustainable investment projects?
3. The Austrians call this a *cycle*, but on statistical evidence, the occurrence of crises appears to be a random walk.
4. Through interest rate repression and inflation, the government diverts resources from consumers and gives them to producers. Is this not a reallocation of "savings"? Is it really fair to say that the new capital expenditure is not backed by saving, as the Austrians do?
5. Interest rates only determine the extent of investment in new capacity, not to what extent existing capacity is used.
6. When interest rates rise and the boom turns into a bust, those who started investment projects at lower rates are likely to incur losses or even go bankrupt, but a lot of the new productive capacity that they created up to this point, even if built on what turned out to be miscalculations prompted by artificially low interest rates, will not be physically destroyed and may still be productively employed, albeit at lower prices and probably by new owners. What is so bad about it?
7. According to the theory, boom and bust should be confined predominantly to the producer goods industries (capital goods industries). This is not a big part of the economy. Is the theory sufficient to explain large business slumps and widespread unemployment?

As to point 1, Tullock calls this point a "nit," although I think it is a very important point and will indeed be central to further investigation. What Tullock alludes to is that the Austrian Business Cycle Theory was first articulated under gold standard conditions. The gold standard used to set fairly strict limits to the expansion of bank credit.

A boom brought about by easy money would not last long, as the limited and inflexible supply of gold would quickly put an end to it. But in our brave new world of unlimited paper money and therefore paper money reserves, why would the boom ever have to end? I think this is the answer: If the Austrians are right about the causes of economic instabilities, then a policy of constant and unlimited monetary expansion, of avoiding, or at any rate shortening, all recessionary corrections and periodic liquidations by the market, must lead to a growing deformation of the economy, to an ever more destabilizing accumulation of imbalances. Misallocations of capital, mispricings of assets, and misdirection of economic activity must in a system without the constraining factor of a hard monetary core and without occasional liquidations, get progressively worse, and the market pressures toward liquidation of these imbalances must consequently get progressively stronger, which in turn will necessitate even more money printing from central banks and other market interventions to keep market forces in check. At the end of this process we should expect either a deflationary cleansing or a hyperinflationary meltdown. That the system must approach some form of catharsis appears highly probable.

To put this differently: If the Austrians are right about the cycle in a still fairly inelastic money system, then they must, in a fully elastic money system, forecast a major economic catastrophe.

In 1949, Ludwig von Mises stated:

*There is no means of avoiding the final collapse of a boom brought about by credit expansion. The alternative is only whether the crisis should come sooner as the result of a voluntary abandonment of further credit expansion, or later as a final and total catastrophe of the currency system involved.*¹⁴

Today's central bankers, supported by the majority of mainstream economists, evidently do maintain, contra Mises, that a boom brought about by credit expansion does not ever have to end, that it can always be extended by a new monetary "stimulus." If they did not believe this, today's policy program would make no sense. But, contra Tullock, the switch from hard money to soft money is no reason for Austrians to forget their concerns about elastic money and join the mainstream in declaring the end of recession and crises (as the more shortsighted

indeed did when the U.S. Federal Reserve was launched in 1913¹⁵). To the contrary, applying the insights of Austrian theory to the new monetary infrastructure must lead to very different conclusions from those of the mainstream, and a very pessimistic outlook.

In any case, this appears to be more of a question of how to apply Austrian theory to a new institutional environment rather than a fundamental challenge to Austrian theory as such. Thus, maybe Tullock was right to call this point a “nit” in the context of a theoretical critique.

Somewhat bizarrely, Tullock himself appears to see that any attempt to avoid cyclical downturns forever with easy monetary policy must ultimately lead to hyperinflation (at least according to Austrian theory), but simply declares that those are “unpleasant, but not really a disaster.”¹⁶ This is truly an astonishingly nonchalant assessment of hyperinflations. I would assume that most economic historians agree that complete currency meltdown is, contra Tullock, one of the worst social disasters that can afflict a society. To give just one example of the devastating impact of currency collapse I may point the reader to Adam Fergusson’s famous account of the Weimar hyperinflation.¹⁷ Tullock’s remark is also surprising because as a young economist, Tullock wrote a seminal paper on early paper money systems in China, in which he showed that each of these systems led to rising inflation and ultimately economic chaos, usually followed by the quick demise of the respective Chinese dynasty in question.¹⁸ Hyperinflations, apart from substantial economic costs, evidently also had grave social and political consequences, even then. Be that as it may, advocates of today’s complete fiat money system usually do not count hyperinflations among tolerable outcomes and acceptable costs.

Regarding point 2, can the cycle be avoided through rational expectation? We have already seen that in an entirely free market with hard money at the core of the banking system, not only would the entrepreneurs guard against falling repeatedly for the same monetary trick but, more important, the bankers would be reluctant to keep lowering reserve ratios, realizing that the additional credit they can extend, while profitable to them at first, also increases the risk of downturns later. We have already discussed that in a developed free-banking system, reserve ratios are likely to reach a stable plateau, and that once that

is the case, further money expansion ceases. Tullock's point is relevant in a free market system, but I assume that most Austrian economists would agree that persistent large swings in overall economic performance are unlikely anyway in a free market. The Austrian theory is so relevant today precisely because we do not have a free market in money, finance, and banking. The availability of bank reserves and the level of short-term interest rates (and increasingly of long-term rates) are today a matter of monetary policy and determined administratively by the central bank. We can imagine a scenario in which the private sector may not want to take the central bank up on its offer to borrow again at low rates, to go further into debt and to participate in yet another artificial boom that will end in recession. Indeed, after recent crises this has frequently appeared to be the case. Whether it was out of lack of risk-taking capital or whether the vivid memories of the recent recession still functioned as a deterrent, the private sector's reluctance to take on more debt has often made monetary "stimulus" appear ineffective for long stretches of time. But this has usually only prompted the central bank to lower rates further or to keep them very low for longer until the cheap credit was finally picked up by someone. "We will do whatever it takes" has recently become a proud mantra of the monetary interventionists. In this sense, Tullock's point poses more of a challenge to Bernanke's declaration that a "determined" government can always create "higher spending and positive inflation" via the printing press, than a critique of Austrian theory.

It may also be added that today many entrepreneurs and investors are well aware that interest rates are systematically manipulated for political reasons, which usually means they are artificially depressed, and that they try to strike a balance in their financial dealings between capturing the near-term benefit of cheap credit and avoiding the fallout from the macroeconomic consequences of such policies in the long run. Under today's regime of persistent monetary interventionism, everybody has to be a speculator on monetary policy, and this is, under present economic arrangements, the rational thing to do. This increases, however, the risk of error and thus of macroeconomic fluctuations as we have seen already in our simple model of money injections.¹⁹

As to point 3, cycles or random walk, this truly is a "nit" and a bit of a silly point. There is simply nothing in Austrian Business Cycle

Theory that would require boom and bust to form a smooth, rhythmic pattern. How long a boom will last and at what point the bust sets in is likely to be different from one cycle to the next and will always depend on the specific historical circumstances. No analysis of the patterns of past cycles can confirm or invalidate the theory.

As to point 4, does this form of monetary intervention not simply reallocate savings? No. The starting point of the cycle is not a simple reallocation of funds (whether those deserve the label *saving* or not) from consumers to producers but the injection of new funds (new money) into credit markets. This allows, as we have seen in our earlier, more primitive models of money injections, additional economic activity to unfold for some time, in this case most likely additional investment activity by the entrepreneurs who take out the new loans. The reduced supply of consumer goods and thus higher consumer goods price inflation, which, in Tullock's interpretation, seem to take away things from the consumer and appear to give them to the producer, are second-round effects that kick in later. It will be at that point that the fact that the additional funds were drawn not from voluntary savings (and thus did not correspond to a change in consumers' time preferences) but simply "printed" by the central bank or the private banks becomes crucial. The extra activities that the inflow of money kicked off will have led—not instantly but over time—to the re-employment of some of society's resources away from immediate consumption and toward future consumption. As this is at odds with the public's real preferences, a process of reallocation will commence. In the absence of further money injections, relative prices will begin to change in such a way that the initial plans of the first receivers of the new money get frustrated and many of their projects will have to be abandoned. This is what explains the cycle. Whatever the process seems to take away initially from the consumer, the consumer will reclaim later. This is what causes the correction.

With regard to point 5, interest rates matter predominantly for investment in productive capacity, less for the use of existing capacity. This is true to some degree but irrelevant for the Austrian theory, which explains the cycle with a temporary mismatch between voluntary real saving and real investment, and the resulting capital misallocations, and for these processes interest rates are crucial, which

Tullock does not deny. During the recession, existing industrial capacity, in particular in those sectors that benefited from the cheap credit of the previous boom and therefore added capacity, may indeed remain underused for a while, but this is an effect of the cycle, not a cause.

Regarding points 6 and 7, much productive capital, even much of what was added in the boom, will survive the bust and can still be used (6). The effects of the cycle are mainly felt in the capital goods industries, which may not be big enough to explain an economy-wide recession (7). What Tullock seems to be saying with these two points is that the damage inflicted by an Austrian-style cycle appears to be too limited to explain bigger real-world crises. There is an empirical aspect to these points but also one related to comprehension. Tullock's reservations partly seem to stem from how Austrian theory is usually explained (and the way I, too, explained it earlier) with a theoretical model in which only producers borrow and in which new money only funds new productive capacity. (Tullock's critical essay was written in direct response to an article by Murray Rothbard, in which he uses mainly the same model to explain the theory.) I would suggest that the effects of bank credit expansion and artificially low interest rates are much broader and much more extensive than is implied by the conveniently simple and stylized exposition of the theory used here, which may indeed give the impression that only a few capital producers who erroneously bet on a lasting investment boom suffer from the bust. While this way of explaining the theory is not incorrect and is still relevant to economies today, it may in some ways be more representative of a late nineteenth-century or early twentieth-century economy (when the Austrian theory was indeed developed), when capital markets were smaller, and consumer credit or public-sector loans small or nonexistent. And back then, and this is an empirical point, business cycles were indeed often sharp and brutal but also usually short and mainly concentrated in capital goods and related industries. Unemployment was indeed "transitory" back then, and unemployment that is only transitory is not enough to meet Tullock's expectations as to what cycle theories need to explain. But this criticism does not refute the Austrian theory, nor does "transitory" unemployment seem an unrealistic notion for the *laissez faire* economy of 100 years ago. In a modern economy, and certainly in a modern paper money

economy, it is not only entrepreneurs who borrow (and now borrow more heavily) but also consumers and public entities. Banking systems and financial markets in general are now vast, and a large universe of financial assets depends for its daily pricing on interest rates and credit conditions. Borrowing rates have a substantial impact on a large portion of economic activity. The potential for artificially lowered interest rates to distort a whole range of asset prices and affect a large spectrum of activities throughout the economy is undoubtedly considerable, and the fallout from the inevitable bust is unlikely to be confined to one particular industry as the theoretical model may suggest. Whatever concern Tullock may have had regarding the harmless looking cycle in the context of the stylized model looks entirely misplaced in the context of today's thoroughly *financialized* economies. When investigating the rise of the modern paper money economy and recent financial crises, we will have plenty of opportunity to apply the Austrian theory, and I believe that any worries that the phenomena that the Austrians described and analyzed could lack in significance for the wider economy will quickly dissipate. Before I close this chapter, I will illustrate the Austrian theory using the recent housing boom and bust in the United States, and this should make some of these points clearer. But first, I should say a few words about another aspect of Tullock's criticism, which I do consider profound.

Tullock makes the correct point that productive capacity that was built in the boom on the basis of easy money-induced miscalculations does not necessarily get physically destroyed in the recession and may still lift productivity going forward, and behind this observation lies, in my view, a more meaningful and deeper point than the casual exposition of it in Tullock's brief essay may suggest. If the central bank or the private banks keep expanding money and credit for long enough and thus depress interest rates for long enough, some of the new investment projects will get a chance to be completed and new productive capacity will thus come to market, marginally lifting overall productivity and thereby real incomes, and higher real incomes mean, all else being equal, a higher propensity to save. Thus, some of the new industrial capacity that was built during the boom may end up being ultimately funded by voluntary saving again and thus be economically viable (meaning profitably employable, not just physically usable) when the

credit boom ends. This idea is not new and has been discussed under the heading of “forced saving” by economists before, although the term *forced saving* seems misleading. The monetary expansion forces investment onto the system against the preferences of the public, which at first does not want to fund these investments with voluntary savings, but once some of these investments have raised productivity and thus lowered time preference (and the ordinary rate of interest), voluntary saving will be higher than at the start of the process and therefore be able to fund some of the new capital stock.

Of course, this does not mean that there would no longer be any recessionary crisis. When the flow of new money ends or even just slows, and interest rates rise again, some of the more recently started investment projects will not be seen through to their conclusion. Expectations of an ongoing investment boom will still get disappointed and some economic activities will still be discontinued. But it may not be the case that *all* investment that occurred during the artificially induced boom is now nonfundable through savings. The newly accumulated capital stock may not have to be liquidated in its entirety.

However, it would be dangerous to overstate this effect, as other powerful drivers are still at work: While completed investment projects can boost the propensity to save via higher income on the margin, the propensity to save is simultaneously being depressed by the lower interest rates and consumer price inflation that are also essential components of the money expansion process. Additionally, as Ludwig von Mises pointed out,²⁰ higher inflation disorients economic decision makers, as it tends to falsify economic calculation and accounting. Some of the gains that capital goods producers reap in the early stages of the expansion process are phantom profits, the result of these producers simply being in the early stages of the new-money-distribution chain.²¹ Because the new money has not lifted many other prices yet (including the replacement costs of the machinery these producers use), present profitability appears higher than it is. Such errors are bound to lead to further capital consumption. Additionally, in our modern economies, monetary expansion often funds investment in long-lasting consumption goods (residential housing) or public-sector expenditure, which means it has little, no, or even a detrimental impact on overall productivity.

In summary Ludwig von Mises concluded:

The main thesis of the champions of inflationism and expansionism is thus rather weak. It may be admitted that in the past inflation sometimes, but not always, resulted in forced saving and an increase in capital available. However, this does not mean that it must produce the same effects in the future too. On the contrary, one must realize that under modern conditions the forces driving toward capital consumption are more likely to prevail under inflationary conditions than those driving toward capital accumulation. At any rate, the final effect of such changes upon saving, capital, and the ordinary rate of interest depends upon the particular data of each instance.

An Example: U.S. Housing Boom and Bust

After such extensive theoretical elaborations, it may be helpful to briefly illustrate the theory using a recent real-world example: the U.S. housing boom of the early 2000s that led to a housing bust in 2007–2008 and triggered the financial crisis of 2007–2009. Whether that crisis really ended in 2009 remains debatable. In my view, the crisis is not even resolved at the time of this writing (January 2014). In any case, we will have reason to revisit it in later chapters.

Unlike when dealing with a theoretical model, we cannot start our narrative with an economy in “equilibrium.” By the late 1990s, a stock market bubble had evidently already formed in the United States with the help of generous liquidity injections from the Federal Reserve in 1998 and 1999. This bubble finally popped in 2000. In response to a mild recession in 2001 and to avoid an extended period of financial deleveraging, the Federal Reserve actively depressed the Fed funds rate, a key funding rate for banks, to around 1 percent for 3 years (end 2001 to end 2004).²² This added fuel to an already buoyant mortgage market and propelled the domestic housing market into what clearly became bubble territory.

Between 1996 and 2006, total mortgage debt outstanding in the United States almost tripled, from \$4.8 trillion to \$13.5 trillion,²³ and the aggregate value of household real estate rose from \$9.4 trillion to almost \$25 trillion.²⁴ Over a 10-year period, the value of the

housing stock thus more than doubled. This was not the first time such a large increase in nominal real estate wealth had occurred. During the inflationary 1970s, the value of the housing stock even tripled (1972 to 1982), and in the somewhat less inflationary 1980s it doubled also (1982 to 1992). However, in both instances, about 70 percent of the appreciation could be traced to a general decline in the dollar's purchasing power, that is, to inflation. Between 1996 and 2006, however, general inflation explained less than half of the overall appreciation in the housing stock. Indeed, Reinhart and Rogoff²⁵ calculated that, in inflation-adjusted terms, house prices appreciated three times faster over that period than over the preceding 100 years.

As funds were channeled not into productive investment but into private homes, which are, contrary to widespread beliefs, not investment goods but long-lasting consumption goods, how does this tie in with the models presented so far? I believe that only marginal adjustments need to be made. Of course, we can no longer assume that a general rise in the propensity to save may have occurred. To make the models easier, we often assumed, when analyzing the effects of voluntary saving, that all consumers saved and that all their savings were handed over to entrepreneurs who increased productive capacity. Remember that this was the model for the free and undisturbed market with hard money. To now allow for consumer credit, we have to assume that some consumers save and that they give their savings to other consumers who go into debt. Consumers as a group will thus not increase their savings in aggregate. Some save, others dis-save (borrow). I see no reason why an entirely unhampered market with hard money at its core should not also develop consumer credit markets, in particular for real estate. While houses are consumer goods and nonproductive, they usually make excellent collateral. Houses are long lasting and dispense their utility to their owner only over an extended period of time. If one owner cannot repay his mortgage, the house can be sold to another owner. Extending consumer loans for Caribbean holidays seems a much riskier business by comparison.

However, I think it is also reasonable to assume that in a free market with hard money, certain limits to the growth in consumer borrowing would apply. Those consumers who borrow have to repay and service their debt out of their future income, but having borrowed

to buy a private home (or a new car) has not increased their ability to do so.²⁶ This is the crucial difference to borrowing for potentially productive uses. Under hard money conditions, projects that fund the productive employment of resources should have a competitive edge, attract more of the funds that those consumers who save make available, and thus contain the growth in nonproductive, consumption-related borrowing. In my view, it is indeed an indication of the immense power to distort capital allocation that in so many modern fiat money economies with their constant subsidization of credit expansion, economic resources on a massive scale are now commonly being channeled into residential housing. Capital misallocation is not proven by this phenomenon but still remains highly likely.

Anyway, we have little reason to believe that what happened in the U.S. housing and mortgage market had much to do with voluntary savings. As soon as the Federal Reserve ended its interest rate repression and the flow of new money ceased, the mortgage market froze and house prices stalled before they finally went into a tailspin. Neither changed consumer preferences nor a higher availability of savings had been behind the housing boom but most certainly distorted interest rate signals and new paper credits both supplied generously by the U.S. central bank. (Occasionally, a theory is propagated according to which a “savings glut” from foreign countries had spilled into U.S. financial markets and triggered the housing boom. This theory has little merit as an explanation for the crisis. We will discuss it in a later chapter.²⁷) What we have here is in large part a classical Austrian business cycle. An expansion of money and credit depressed interest rates and initiated an investment boom that directed resources and economic activity into projects that, to be sustainable, would require at least parts of the public to provide the necessary funding through saving. The available pool of real savings, however, turned out to be much more limited than generous lending conditions in the mortgage market and other credit markets had projected. As with any Austrian cycle, once the flow of new money ends, or even just slows, the true preferences of the public come to the fore. Without additional aid from artificially low rates from the Federal Reserve, the housing market began to stagnate in 2006, then declined steeply from 2007 onward. This triggered a sharp recession and a financial crisis.

It would be difficult to detect elements of “forced saving” here. Not only did the new investment not lift industrial productivity, the artificial housing boom seems to have depressed the true propensity to save even further, as indicated by America’s official savings rate, which reached an all-time low just about when the housing market peaked (2007). Persistently rising house prices made many Americans apparently wealthier and thus reduced the perceived need to save from present income. Protecting a certain level of consumption in the future (for example, in retirement) now seemed less challenging given larger present wealth. Additionally, easy access to mortgage loans not only encouraged many Americans to become home buyers but also to borrow against the rising value of their present homes (so-called mortgage equity withdrawals). Going deeper into debt is evidently the polar opposite of higher saving. Between 1996 and 2006, outstanding household debt grew from 66 percent of GDP to 96 percent of GDP.²⁸

Tullock’s concern that in Austrian theory the recession would affect only those producers whose products had benefited directly from the preceding boom, and that this could be too narrow an impact to explain full-blown recessions, hardly seems relevant for this real-world example. Surely, the construction industry was a major beneficiary of the housing boom and a major victim of the housing bust. But so were consumer goods sectors that first saw their sales jump on the back of extra spending funded by mortgage equity withdrawals, then collapse when the mortgage-refinancing boom ended. Real estate and mortgage brokers first benefited, then were among the losers. And most important, the banks and the wider financial industry that had channeled easy money into the housing market reaped substantial profits from the boom, only to suffer unprecedented and frequently devastating losses when the tide turned. Not only did substantial fee income from arranging and repackaging mortgage loans suddenly evaporate, but the massively inflated amount of outstanding mortgage debt ended up on the balance sheets—sometimes highly leveraged balance sheets—of financial firms, causing the housing bust to translate into a major banking and financial crisis.

Could rational expectations have avoided the cycle? This would have required businesspeople to constantly question, over a 10-year period, the numerous different market prices, such as house prices,

interest rates, and risk premiums, that they were confronted with daily in running their businesses, and to continuously and successfully distinguish to what degree these market phenomena reflected lasting fundamentals and were thus probably sustainable, and to what degree they were merely the result of the central bank's present interest rate policy and thus manipulated and unsustainable. In a free market, nonmanipulated market prices play an important role in guiding entrepreneurial activity. In a free market, any businessman can operate profitably only if he produces what the consumer wants, and market prices are important guideposts for him. In the wake of the crisis, it has become popular to chastise bankers and other finance professionals for the vast errors they evidently made and to lay the blame for this on an exaggerated desire for profit (greed) that seemed to have clouded their judgment. This critique seems superficial and unsatisfactory. First of all, we have to remember that entrepreneurs that strive for profit and respond to market prices are precisely what, in a free market, gives power to vast masses of consumers. By buying or abstaining from buying, consumers affect prices and, via profit and loss, direct the activities of producers. Shareholders may nominally own companies, and hired managers may control daily operations, but in undisturbed markets, the ultimate control over what will be produced and how society's economic resources will be employed lies with the buying public. Of course, entrepreneurs cannot simply look at present prices but have to make guesses about future prices. They have to judge future trends and try to anticipate changes in consumer tastes. A speculative element is at the heart of all entrepreneurial activity. But during the boom, prices were decidedly *not* guided by the tastes and preferences of the public but were distorted to a considerable degree by monetary policy and distorted deliberately. Bankers indeed made colossal errors, but there is no escaping the fact that the very pricing mechanism that usually helps them in their decision making, and that is at the heart of a functioning market, was being systematically manipulated by the central bank.

The strong growth in lending and borrowing that occurred between 1996 and 2006 was certainly no accident and not the result of a collective failure in entrepreneurial foresight. Policy makers *wanted* bankers to lend more and the public to borrow more. What else was behind the policy of depressing banks' refinancing rates for so many

years? It seems somewhat strange to blame those who actively participated in the housing boom (and thus initially benefited from it) for falling for a trick that policy makers played on them, but not to criticize the policy makers who laid the trap in the first place. Encouraging the public to join the housing boom was indeed official policy for a long time. Policy was specifically designed to encourage higher leverage and higher indebtedness. Of course, all this new, cheap money from the central bank could have been directed somewhere else, but in that case the distortions and deformations that piled up in the real estate market would have only surfaced somewhere else in the economy. And even here, the government's fingerprints are clearly identifiable. After all, the government has a long-standing history of directing resources into housing, for example, via an advantageous tax treatment for real estate assets and real estate borrowing, and via the government-sponsored agencies, the Federal National Mortgage Association (FNMA) and the Federal Home Loan Mortgage Corporations (FHLMC), which for decades and with the help of their implicit and now explicit government guarantees, have insured mortgage lenders and thus partially socialized the risk of mortgage lending, another important factor that explains the channeling of considerable resources into nonproductive domestic real estate.

But in one respect this cycle was indeed different from the classic Austrian business cycle. The standard account of the business cycle assumes that during the cyclical correction, the economy gets cleansed completely of any imbalances and deformations it accumulated during the money-induced boom. Whatever misallocations of capital occurred get liquidated in the inevitable and unavoidable recession. This was a sensible assumption for purposes of theoretical exposition and was not far from reality in a world in which core money was gold and thus inelastic. There are no means available in such a system for aborting the process of liquidation and for extending the credit cycle further. This is different in today's world of lender-of-last resort central banks and unlimited paper money. When the economy weakens and the boom turns into bust today, there is usually little consideration for whether the boom was artificial and liquidation therefore necessary and healthy. To avoid a further correction, more new money is printed to depress interest rates for even longer and probably to even lower levels. The

housing boom of the early 2000s was the consequence of a policy that was supposed to arrest the process of deleveraging and derisking started by the bursting of the stock market bubble in 2001 and the corporate defaults of 2002 (WorldCom, Enron). To counter the forces of contraction unleashed by these events, a policy of stimulus was deemed necessary. And it has to be said that policy did indeed achieve its immediate objective. The 2001 recession was short and shallow, and the financial fallout from these events (and the 9/11 terror attacks) limited. Deleveraging was arrested and releveraging encouraged. However, the long-term costs of these interventions are substantial, as postponing the liquidation of imbalances does not make liquidation unnecessary. Not surprisingly, by 2007 and 2008 the economy was even more highly leveraged, more indebted, and overall much more unbalanced than it had been in 2001 and 2002. It is therefore exceedingly likely that the recession and financial crisis in 2007–2009 were much bigger than an uninhibited recession in 2002 would have been. In other words, the path back to a more stable and balanced economy was easier in 2002 than it was in 2007.

Of course, policy intervention could not avoid liquidation entirely. The Nasdaq bubble did deflate in 2000 and 2001, and house prices did correct sharply between 2007 and 2011. Some high-profile corporate failures occurred in the financial industry: Countrywide, Washington Mutual, Bear Stearns, and, most famously, Lehman Brothers. Nevertheless, policy makers went to extraordinary lengths to again stop, slow, or even abort the process of cleansing and liquidation.²⁹ Large sections of the financial industry have undoubtedly benefited from the policy of zero interest rates that the Federal Reserve felt compelled to implement in 2009 and that is still in place today (January 2014). Numerous borrowers benefited from this policy, not least the public sector, which saw its outstanding debt explode (federal debt doubled between 2007 and 2011),³⁰ and so have investors in equities, bonds, and real estate. The aggregate value of household real estate had collapsed from \$25 trillion in late 2006 to a little more than \$18 trillion in early 2011 but by the summer of 2013 it reached almost \$22 trillion again. By the end of 2013, equity markets had fully recovered from the losses of the crisis and had reached new all-time highs. To what degree any of these developments reflect an improvement in

economic fundamentals or simply new and now more aggressive monetary intervention nobody can say with any certainty. Between the start of the crisis in the summer of 2007 and the end of 2013, the Federal Reserve increased the monetary base by almost \$3 trillion, and thus added in five years more than three times the amount of bank reserves it had created from its very inception in 1914 until the crisis in 2007. In any case, it appears incredibly unlikely that all the imbalances and deformations that caused the crisis in 2007 and that had their origin in artificially cheap money are now resolved and that no new imbalances have been added in this new period (and even longer period) of yet lower—practically zero—interest rates and other market manipulations.

Summary of Part Two

Injections of money do not improve the productive capacity of an economy. This is not surprising, considering that we have already established that money is simply a medium of exchange and that it is in the nature of a medium of exchange that practically any supply of it is sufficient to deliver all the services a medium of exchange can ever deliver. More money is not needed for economic agents to produce and trade more goods and services. Thus, the productivity of an economy cannot be permanently enhanced by the injection of additional money. However, this does not mean that money injections have no effects.

Today's macroeconomic mainstream stresses two effects of money injections. Money injections elevate the price level, and they boost spending, that is, GDP. Our systematic analysis of money injections revealed that the former effect always occurs. Of course, this is under the important assumption, essential for formulating any economic theory, that all else is equal. If we remove that assumption and consider a situation in which the demand for money happens to increase simultaneously, it is conceivable that the price-lifting effect of the money injection may be partially or fully compensated by the price-lowering effect of rising money demand. In such a situation, the statistical measures of inflation may remain broadly unchanged. This is a scenario that we will consider in more detail in the next chapter. However, none of

this detracts from the essential truth of the statement that an expanding supply of money, all else being equal, will lead to a drop in the purchasing power of the monetary unit.

Our analysis has revealed a couple of additional facts about the new money's effect on prices. In every even marginally realistic scenario of money injection, the effect on prices will neither be uniform nor proportional to the expansion of the money supply. This means that it is inconceivable that a 10 percent expansion of money will lead to all prices rising by 10 percent, or even a relatively broad average of prices rising by 10 percent. The reason for this is simply that money will always be injected at a specific point in the economy, and that it will then begin to disperse via a number of transactions. This is the "GDP-lifting" effect of money injections that we will discuss next. But because new money always changes relative prices and therefore resource allocation and wealth distribution, it is impossible for prices to change uniformly and in exact proportion to the size of the inflow. An expanding money supply will lead to a drop in money's purchasing power, but some prices will respond more than others.

As to the GDP-boosting effect of money injections, it is indisputable that these are temporary effects only. It is impossible for money injections to lift the economy's growth potential to a higher plateau and to lastingly improve the economy's productivity. However, the mainstream is not wrong in maintaining that money injections lead to additional economic transactions and therefore to a temporary lift of GDP statistics. We have to remember, though, that all that the GDP statistics do is to record the number of economic transactions and the notional amounts involved. The type of additional activity that money injections initiate is rather different from what most people would normally associate with a rising GDP. The additional transactions are adjustment activity by which the economy adapts to the disturbance of a discretionary injection of money. The transactions result from the uneven distribution of the new money and from the desire of the early recipients of the money to take advantage of their privileged position by buying cheaply from those that still sell at lower prices. Additional transactions occur also because of errors that market participants make in response to some of the changes in relative prices that the new money creates early in the process.

Not only does the inflow of money not improve the market's core function, which is to bring together individuals for mutually beneficial economic exchange, it also invariably disorients market participants and allows those in an advantageous position in the money-distribution chain to benefit at the expense of those in a less advantageous position. Early recipients of the new money are always the winners, late recipients always the losers. We have to admit that as a consequence of all of this, the GDP statistics will record additional transactions for a while but it is clear that GDP loses its status as a measure of economic health under these circumstances. GDP has risen, but lasting real wealth has not, and neither has the efficiency of resource use. And if money is injected via credit markets, which is the most common procedure of money creation today, the efficiency of resource use will even decline.

In this case, the new money must disturb the essential price relationship that is interest. Interest is the relationship of present prices to future prices and is essential for the allocation of scarce resources between consumption and investment. An expansion of money lowers interest rates artificially and thereby encourages a level of investment activity that goes beyond what would be justified by voluntary saving. The resulting shifts in resource use and the extension of the capital stock are therefore unsustainable. The resulting boom is misguided and will end in a correction. Again, error is at work. The spurt of growth that is kick-started by the injection of money is based on an illusion. Economic actors are tricked into believing that a larger amount of resources has been freed up from their previous employment in close proximity to immediate consumption and has been made available for employment further away from immediate consumption, thus allowing a more extended productive sector or the production of more longer-lasting consumption goods, like houses. Those who take up the new money loans offered at lower rates on the loan market, and use them to invest, do so under the false impression that what they do is in accordance with the wishes and preferences of the other members of society who appear to have signaled a lower time preference and therefore a willingness to support an extended capital structure. The additional growth occurs only because actors are misled into forms of economic

activity that would deliver the hoped-for results only if consumer preferences had shifted. That, however, has not been the case. The rise in GDP is manufactured via a misallocation of resources. The boom must end in a bust.

There is no escape from the conclusion that a recession will not be avoided but, at best, be postponed by artificially lowering interest rates again and by injecting even more money when the initial boom peters out. The recession is the inevitable and necessary, if painful, process by which prices and productive structures get realigned with consumer preferences. The economy gets cleansed of the misallocation of resources and the misdirection of economic activity that were the necessary precondition of the false boom. If monetary policy tries to avoid or short-circuit the recession by injecting more money, as is now standard practice for all paper money central banks, it will only postpone the necessary adjustment. This will also make the ultimate recession even bigger, as the extra money injection will lead to the accumulation of additional dislocations.

Thus, one of the key arguments supporting the present arrangements—paper money, central banking, and state-sponsored fractional reserve banking—namely, that they allow a swift and effective policy response to recessions, collapses entirely. A pro-growth monetary policy works everywhere and always via resource misallocation. It can therefore never be the solution to an economic crisis but only its origin. An expansionary monetary policy, even when applied after a crisis and during recession, and even at times of no inflation or deflation, misdirects resources away from the underlying preferences of society. Such a policy has to operate via distortions to generate a boost to growth. Misallocation of resources is the only way for new money to generate additional economic activity.

In the next chapter, we take a look at the issue of price-level stability and ask how good an indicator of monetary stability a stable price average really is, and to what degree price-level stability is even achievable under a paper and a commodity money system. This is important for our case against the mainstream consensus, because in today's debates on monetary matters, the price level plays such a prominent role.

Notes

1. Ludwig von Mises, *Human Action: A Treatise on Economics*, 4th rev. ed. (Irvington, NY: Foundation for Economic Education, 1963/1998): 259–264, 490–493.
2. *Ibid.*, 524.
3. George Reisman, *Capitalism: A Treatise on Economics* (Laguna Hills, CA: TJS Books, 1998): 55.
4. *Ibid.*, 483–490; Mises improves the important theory on interest developed by Eugen von Boehm-Bawerk; see Eugen von Boehm-Bawerk, *Positive Theories des Kapitaless*, 3rd ed. (Innsbruck: Verlag der Wagnerschen Universitaets-Buchhandlung, 1909): 426–453; for a short and excellent summary of these theories, see also Joerg Guido Huelsmann, *Mises: The Last Knight of Liberalism* (Auburn, AL: Ludwig von Mises Institute, 2007): 773–779; see also George Reisman, *Capitalism*, 55–56.
5. Mises, *Human Action*, 526.
6. *Ibid.*, 526–537.
7. But an injection of new money via the loan market can temporarily depress market interest rates, as we will see shortly.
8. It would be more correct to say that low interest rates indicate that the public is happy to see resources allocated to uses where they are at greater distance to immediate consumption. This way, the statement includes investments in long-lasting consumption goods that only expend their use value over a longer period. The obvious example is houses. Low interest rates encourage investment in productive capacity and in long-lasting consumption goods. For ease of presentation, the analysis will focus on productive investment only. The results would be, for the purposes of this investigation, the same if we included real estate.
9. Carl Menger, *Grundsätze der Volkswirtschaftslehre* (Vienna: Wilhelm Braumueller, 1871).
10. Boehm-Bawerk, *Positive Theories des Kapitaless*.
11. Ludwig von Mises, *Theorie des Geldes und der Umlaufsmittel*, 2nd, improved ed. (Munich/Leipzig, Germany: von Duncker and Humblot, 1924). Further elaborations on Mises's business cycle theory include: Mises, *Human Action*, 538–586; Mises, *Geldwertstabilisierung und Konjunkturpolitik* (Jena: Verlag von Gustav Fischer, 1928), translated in Percy L. Greaves, ed., Ludwig von Mises, *On the Manipulation of Money and Credit* (New York: Free Market Books, 1978); and Murray N. Rothbard, *America's Great Depression* 5th ed. (Auburn, AL: Ludwig von Mises Institute, 2000), 3–36. Friedrich August von Hayek further elaborated on and expanded the theory. See Friedrich August von

- Hayek, *Geldtheorie und Konjunkturtheorie* (Vienna/Leipzig: Hoelder-Pichler-Tempsky AG, 1929); and Friedrich August von Hayek, *Prices and Production* (New York: Augustus M. Kelley, 1967; first published 1931). For a detailed modern restatement see Jesús Huerta de Soto, *Money, Bank Credit, and Economic Cycles* (Auburn, AL: Ludwig von Mises Institute, 2006): Chapters 5 and 6.
12. “Ben Bernanke: Remarks before the National Economics Club,” Washington, DC, November 21, 2002, www.federalreserve.gov/boarddocs/speeches/2002/20021121/default.htm.
 13. Gordon Tullock, “Why the Austrians Are Wrong about Depressions,” *Review of Austrian Economics* 2 (1987): 73–78.
 14. Mises, *Human Action*, 572.
 15. The Federal Reserve Act was signed into law on December 23, 1913. This was followed by the United Cigar Store Co. running full page newspaper advertisements in which it compared the law to the Declaration of Independence and predicted that financial panics “should under this new system become effete.” Quoted from James Grant, *Money of the Mind: Borrowing and Lending in America from the Civil War to Michael Milken* (New York: Farrar Strauss Giroux, 1992): 140.
 16. Tullock, “Why the Austrians Are Wrong about Depressions,” 73.
 17. Adam Fergusson, *When Money Dies: The Nightmare of the Weimar Hyperinflation* (London: Old Street Publishing, 2010).
 18. Gordon Tullock, “Paper Money: A Cycle in Cathay,” *Economic History Review* 9, no. 3 (1957): 393–407.
 19. See Chapter 3.
 20. Mises, *Human Action*, 549.
 21. See Chapter 3.
 22. Board of Governors of the Federal Reserve System, Economic Research and Data, “Selected Interest Rates (Daily)—H.15,” www.federalreserve.gov/releases/h15/data.htm.
 23. Federal Reserve Bank of St. Louis, http://fraser.stlouisfed.org/publications/ERP/page/7254/download/46604/7254_ERP.pdf.
 24. Federal Reserve Bank of St. Louis, “Economic Research, Households and Non-Profit Organizations, Real Estate at Market Value, Level,” <http://research.stlouisfed.org/fred2/search?st=household+real+estate>.
 25. Carmen M. Reinhart and Kenneth S. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly* (Princeton/Oxford, UK: Princeton University Press, 2009): 207.
 26. Of course, this is different in the case of student loans.

27. See Chapter 9.
28. Federal Reserve, Statistical Release Z.1, “Financial Accounts of the United States,” www.federalreserve.gov/releases/z1/Current/.
29. For a refreshingly contrarian (antiestablishment) and highly credible account of the 2008 financial crisis, I recommend David A. Stockman, *The Great Deformation: The Corruption of Capitalism in America* (New York: Public Affairs, 2013), in particular Part I.
30. Federal Reserve, “Financial Accounts of the United States.”

Part Three

FALLACIES ABOUT THE PRICE LEVEL AND PRICE-LEVEL STABILIZATION

Chapter 5

Common Misconceptions Regarding the Price Level

The main reason why the phenomena analyzed in the previous chapters, although powerful and for a long time the intense focus of theoretical investigation, are not at the forefront of present monetary policy discussions is that it is widely believed today that money that is broadly price-level stable, meaning, whose purchasing power as measured by some price index does not decline too rapidly or is not otherwise too volatile, is also “neutral” money, that is, this money should have no distorting or disruptive influences on the real economy. It would not be an exaggeration to say that a reasonably stable price level has become the accepted definition of good money, and that, as long as the central bank delivers an acceptable degree of price-level stability, it must have done a good job. *Price level* here means any of the

broad-based statistical averages of prices in the economy that are considered reasonable representations of money's purchasing power, such as, most important, the consumer price index, and sometimes the producer price index and potentially others. In today's debate, a reasonably stable price index has become shorthand for monetary stability. This is not a new idea but has been deeply engrained in neoclassical economics. In his 1931 book *Prices and Production*, which provides an excellent exposition of the Austrian Business Cycle Theory, Hayek quotes Cambridge economist Arthur C. Pigou as saying that "if countries with paper currencies will regulate them with a view to keeping the general price level in some sense stable, there will be no impulses from the side of money which can properly be called 'autonomous.'"¹ This view of "in some sense" price-stable money as being "neutral" money is untenable. Hayek, of course knew this and refuted it. Yet it has remained a cornerstone of today's accepted belief system on money.

The Fallacy That a Stable Price Level Means "Neutral" Money

What does "keeping the general price level stable *in some sense*" mean for policy makers today? It certainly does not mean complete price-level stability. The shift from inelastic commodity money to elastic paper money was consummated precisely in order to allow the constant expansion of the money supply, and, as we have seen and as is not contested by the mainstream, this will lead to an ongoing decline in money's purchasing power. Today's macroeconomic consensus maintains that this is helpful for growth. In the preceding chapters we saw that this is not the case. Be that as it may, a too-rapid decline in money's purchasing power is deemed undesirable, and *good money* is thus defined as money whose purchasing power diminishes constantly but at a moderate pace. Most major central banks now define price level stability as constant inflation of around 2 percent per annum.

In some way, the fixation with the price level is understandable if we consider that accelerating inflation and ultimately hyperinflation is an inherent risk in any paper currency but logically impossible in commodity money systems such as proper gold standards. As we will see in

the next part of our investigation, every paper money system in history has, after some time, experienced rising inflation, and no paper money system in history has survived. Either a voluntary return to commodity money was accomplished before a complete currency meltdown occurred, or the system collapsed in hyperinflation and economic and social chaos. We are frequently told that this time is different. Policy makers assure us that they have learned the lessons of history and will now pay close attention to the inflation rate. Thus, we may appreciate why the price level has achieved such extraordinary importance in policy debates. This focus, however, has been the source of new and dangerous fallacies.

Although it is certainly true that elastic money with a rapidly diminishing purchasing power is “bad” money, it does not follow that money with only a moderate decline in purchasing power is necessarily “good” money. To put this differently, the distortions that expanding money must necessarily generate, and that we analyzed in detail in previous chapters, occur whenever the money supply is expanded, even if certain other developments should mitigate the impact of this monetary expansion on the price level, and if therefore the price level does not rise much or not rise at all. What could these compensating factors be? It is clear that if the demand for money rises at the same time as additional money is being injected into the economy, the price index may remain fairly stable. From this, today’s macroeconomic consensus concludes that the additional money is nondisruptive. The extra money just satisfies additional demand for money. As the price level remains relatively stable, no overissuance of money has occurred, and therefore no economic imbalances have been generated. This is a misconception, as the previous analysis has shown.

We have seen that injections of money lead to misallocations of capital, which in turn create first a boom and then a bust. These misallocations are the result of distorted relative prices, in particular artificially lowered interest rates, as a direct consequence of the money injection. They are distinctly not the result of a change in the price level. The statistical averages of prices may indeed remain fairly unchanged even after an injection of new money, but this does not mean that relative prices were not distorted by the money injection and that therefore capital misallocations have not occurred.

By definition, a price average cannot reflect changes in relative prices, but it is distortions in relative prices that lead money injections to cause capital misallocations. The price average may remain broadly unchanged in a scenario in which rising demand for money is depressing certain prices in the economy, while an injection of money is simultaneously lifting other prices. We have to remember that neither phenomenon affects all prices in the same way and to the same extent. In such a scenario, the price index is unchanged but the effects on resource allocation are identical to what we saw in the models in the previous chapters. Because of compensating factors, money injections may not succeed in lifting the overall price *level*, but they will still disrupt *relative* prices and lead to capital misallocations.

We see here a fundamental problem with macroeconomics. The assumption of those who consider the price average a good benchmark of monetary stability is that the rising demand for money on the one hand and the rising supply of money on the other hand would simply meet in the market and smoothly offset one another. But a look underneath the broad aggregates makes it clear that this is not only unlikely, but it is also practically impossible. The reason is that those who produce the extra money, that is, the banks and the central bank, do not deal with those whose demand for money has increased. Those who have a higher demand for money, as we have seen, become sellers of goods and services. In order to raise money holdings, either they will liquidate some of their possessions, that is, sell assets, or they will reduce ongoing outlays, which means they will cut back on spending on the acquisition of additional consumption or investment goods.

In order to directly meet this demand for money via an increased supply of money—evidently a superfluous exercise as the extra demand would be met naturally and automatically by an adjustment to the purchasing power of the monetary asset—a process would have to exist by which the central bank or private banks would directly engage with these people, buy assets from them, and thus supply them with more money. No such process exists. As we have seen, the central bank and assorted private banks place the new money on the loan market. Borrowers on the loan market, however, have no demand for money but a strong demand for goods and services. That is why they borrow and incur the extra expense of interest. Once they got hold of

the money through the loan, they immediately spend it. Only very few people who have genuine demand for money will borrow money at interest on the loan market in order to maintain a higher cash balance. While such behavior cannot be excluded entirely, it is evident that the usual procedure for anyone wanting to increase cash balances is still willing to sell assets or reduce money outlays. Those who will be encouraged by the lowering of interest rates on the loan market and the production of extra money by the banks to take out additional loans, and who are therefore the first recipients of the new money, constitute, most certainly, a different subset of the public from those who experience a rising demand for money. Thus, the increased demand for money cannot be satisfied directly by the central bank and banking sector, in contrast to what the simple juxtaposition of aggregate money demand and aggregate money supply in macroeconomic models tends to suggest. The extra money may reach those who have extra demand for money in a roundabout way, but in the meantime the extra money will lead to all the dislocations that we analyzed previously.

If we assume that a central bank had, over a given period, allowed the money supply to expand but that the price index had, by the end of this period, not moved much, we may agree with the mainstream that the effect of the extra money on the price average had been compensated by the opposing effect of a rising demand for money. We may also agree that if the central bank had not allowed an expansion of the money supply, the price level would most likely have declined. However, we cannot agree with the conclusion that the money injection had thus sustained a greater monetary and economic stability. The extra money that the banking sector produced was not handed directly to those with a higher demand for money. It was placed in the loan market where it propagated a drop in interest rates, thereby encouraged additional borrowing and additional investment, and initiated economic activity and resource use that would ultimately not be backed by the public's true propensity to save.² All these disruptive effects still unfolded. None of them were rendered harmless just because somewhere else in the economy a rising demand for money suppressed certain prices, thereby allowing the price *average* to remain broadly unchanged. In fact, the destabilizing effects of money injections would have been avoided only if the central bank and assorted private banks

had not artificially lowered rates and injected more money, and had instead allowed the increased demand for money to be satisfied naturally by a rise in money's purchasing power. From the point of view of overall economic stability, the drop in the price level in response to a rise in money demand, that is, a period of deflation, would certainly have been preferable to the maintenance of price level stability via additional money injection.

The notion that the price level is an accurate and reliable indicator of monetary stability and therefore economic stability is wrong and dangerous. Money injections must distort interest rates and other relative prices and lead to suboptimal resource use. This is what makes an elastic money supply so disruptive and what causes the boom-bust cycle. None of these disturbances is neutralized by the rise in money demand. All that the rise in money demand does is mitigate the effect of the money injection on the price average.

Bitter experience with paper money inflations has made the public more aware of the risk of loss of purchasing power. But today's obsession with statistical inflation measures, while understandable, brings new risks. First of all, there is the risk that these measures have been constructed inappropriately. In particular, they may be too narrow. They may be based on a limited set of consumer prices, which, as we have seen, usually respond fairly late in the money expansion process, and may thus provide an incomplete image of money-induced price distortions. But even if they are reasonably broad and not too misleading, these price averages are still unable to capture the full effects of money expansion. A rising demand for money may contain the impact of the monetary expansion on such a price average, but this will not diminish the potential of the money injection to distort relative prices and to misallocate resources.

The Fallacy That Hard Money Is Unstable Money, Part 1—History

Paper money systems are fiat money systems and thus centrally managed monetary systems. The notion is widespread today that a well-managed fiat currency can potentially deliver, if not a stable, at least a

predictably changing price level, and a high degree of predictability of the price level should be particularly advantageous for economic calculation. This has led to the view that fiat money could in this respect be superior to commodity money. Because the purchasing power of the latter is, of course, not controlled or managed by any institution, and must necessarily adjust to any changes in money demand or to other market forces, occasionally even abruptly, it is commonly believed today that the exchange value of commodity money must be very unstable. This has led to the bizarre situation that what is essentially one of elastic money's key weaknesses, its declining exchange value and constant risk of gross overissuance, which makes some self-constraint by the central bank a political requirement, has been transformed into one of paper money's alleged advantages. Well-managed paper money, so states today's macroeconomic consensus, is not only better than poorly managed paper money, but it is also even better than commodity money, which is not managed at all. Many mainstream economists today readily quote price-level stability as a reason in favor of a paper money system under government control rather than against it.

This line of reasoning is remarkable considering that any destabilizing volatility in money's purchasing power, and certainly any ongoing decline in purchasing power, has never been a serious problem under commodity money systems. It is a fact of history that commodity money has never been abandoned and replaced with paper money for the purpose of providing society with a more stable medium of exchange. To my knowledge, there is no historical example of money users in society either coming together voluntarily to create among themselves a noncommodity form of money, or asking their government to create a noncommodity form of money because they thought that the existing commodity money was deemed too volatile to be of use for commerce. Paper money was introduced regularly by states in order to improve their own finances (most commonly for the purpose of waging war) and, to a lesser degree, to provide "elastic money" in aid of fractional-reserve banking. Undoubtedly, this often appealed to sections of the population, but not because they were hoping for greater purchasing power stability but because they shared the erroneous belief that "easy" money meant more prosperity.

The suggestion that, under a paper money system, a medium of exchange of greater purchasing power stability could be created is not corroborated by any historical experience. Throughout history and without exception, exactly the opposite has been the case. Whenever commodity money was replaced with state paper money, sooner or later, the monetary unit began to lose purchasing power. Indeed, volatility of the price level has only ever been discussed as an economic problem in paper money systems, or in watered-down commodity money systems with rapidly expanding fractional-reserve banking. While commodity money has a remarkable record of stability, state fiat monies have, without exception, led to rising inflation and frequently ended in total inflationary meltdown.

In his study *Monetary Regimes and Inflation*, Peter Bernholz looks at long-run statistics of the cost of living in Britain, Switzerland, France, and the United States.³ No upward or downward trends are discernible at all from 1750 to 1914. Clear upward trends in the cost of living materialized after 1914, when some governments left the classical gold standard to allow for inflationary war financing. These trends become more marked after 1933 and in particular after 1971, when the United States took the dollar off gold internationally and a complete paper money system was established globally.

There can be no doubt that the intellectual trends of the twentieth century were exceptionally adverse to the concept of commodity money and very favorable to state-controlled paper money. This was the century of big state ideologies, of socialism and communism, of fascism and Nazism, and, after the Second World War, of social democracy, that is, of “capitalism” under the control of a democratically legitimized state. The notion that the ambitions of state authority should be subjugated to the strict confines of a commodity money system, or that a society’s monetary affairs should be outside political control, did not resonate much with the zeitgeist. It is no surprise that of the 30 superinflations that meet the modern statisticians’ definition of a hyperinflation, that is, a monthly rise in consumer prices of more than 50 percent, 29 occurred in the twentieth century.⁴ Of the pre-twentieth century paper money collapses, only the meltdown of the assignats, the paper money of revolutionary France, makes the cut.

The two oldest currencies in the world today, the pound and the dollar, experienced persistent inflation episodes only when they were taken off gold or silver, and when they temporarily existed as pure paper monies. None of these inflationary intervals was more damaging to their purchasing power than the one in the past century (post 1971). In the first third of the twentieth century, consumer prices in the United States and in Britain increased by a factor of about 1.6 to 1.7.⁵ By 1965, prices had risen almost fourfold in the United States and more than sixfold in the United Kingdom from their levels at the start of the century. But once the dollar's last link to gold was severed, inflation accelerated sharply to levels never seen before in the entire history of these currencies. At the beginning of the twenty-first century, prices had risen by a factor of roughly 20 in the United States and 70 in the United Kingdom from their levels in 1900. These inflations by far surpassed any of the inflations in these currencies during previous off-gold periods.

On any scale that encompasses these colossal post-1971 inflations, the milder swings in purchasing power before 1914 appear only as blips. Again, the bigger ones of these shifts were not deflations but inflations, and they occurred at times when the respective currency was taken temporarily off gold or off silver. In the case of the dollar, this was, most notably, the period after the War of 1812 and around the Civil War.⁶ For sterling, this was, in particular, the period during and after the Napoleonic Wars, when the British government under William Pitt used the Bank of England to fund the war with France.⁷

Outside of paper money episodes, inflations were recorded when metallic money was debased, that is, when the state reduced the metal content of the money without changing the nominal value. Before states established themselves as paper money producers with territorial money monopolies, this was a common stealth tactic to fund state spending, most frequently the army and war. Additionally, inflations were recorded at times when new deposits of gold or silver were discovered and exploited, and the money supply was expanded more meaningfully. However, it is significant that all these inflations pale into insignificance if compared with the inflations of the later systems of fully elastic state paper money.⁸

There is simply no basis in the historical record for the popular fear that in a commodity money environment the price level would

fluctuate widely with every little change in mining activity or any new discovery of gold or silver deposits. As we have already explained conceptually, the notion of a completely stable purchasing power of money is, of course, a fantasy. Complete price-level stability is a mental construct in economic models. In a commodity money system, changes in money demand must affect the purchasing power of the monetary unit. We will see shortly that this must also be the case in a paper money system, even a theoretically well-managed one. The notion that a paper money central bank can guarantee a superior predictability of the price level, even in theory, is flawed. We address this in the following chapter. Be that as it may, over the more than 2,000 years of the use of money, predominantly in commodity form, money's purchasing power has at times gone up and at times gone down. However, the historical record is very clear on one point: Major and economically disruptive changes in money's purchasing power have occurred only in the form of inflations, sometimes followed by corrective deflations, and these have always taken place during paper money episodes. Inflations and deflations as economic problems were unknown to commodity money societies. In terms of price-level stability, commodity money systems have been remarkably sound, while paper money systems have been unstable in the extreme.

A widespread concern about commodity money systems seems to be that they have a tendency toward ongoing deflation. Under a system of inflexible commodity money, a growing economy that constantly expands its production of goods and services should experience an on-trend decline in the price level. This is at least conceptually correct, although there is no reason to believe that this phenomenon constitutes a problem. Indeed, as we will see, this type of secular deflation has many advantages. Historically, it also has been of minor relevance.

After the United States joined Britain on what became the classical gold standard in 1879, prices declined on trend for the next 19 years at an annual average rate of just over 1 percent.⁹ This compares with a still-positive inflation rate of 0.3 percent in Japan over the 20 years after that country's money-induced real estate bubble burst in 1990.¹⁰ Japan is today regularly cited by mainstream economists as an example of the evils of persistent deflation. Yet the United States, during its two decades of gold-standard deflation, experienced solid growth and

rises in income and wealth. In fact, even prior to joining the gold standard, the United States had gone through 12 years of almost no money supply growth and had experienced an almost halving of the price level from the elevated levels that prices had reached during the Civil War inflation. This equates to a roughly 5 percent per annum deflation rate. But still, U.S. economic performance was vibrant during this time, causing even such prominent advocates of state paper money and central banking as Milton Friedman and Anna Schwarz to conclude that this constellation “casts serious doubts on the validity of the now widely held view that secular price deflation and rapid economic growth are incompatible.”¹¹

During the second half of the classical gold standard, between 1897 and 1914, prices rose in the United States on average by about 2 percent,¹² which can probably be explained with the expansion of fiduciary media through fractional reserve banking (as described in Chapter 2) and vast new gold discoveries in South Africa, Colorado, and Alaska.¹³ Fractional-reserve banking received increasingly political backing as part of a policy to economize on gold and, in particular with the founding of the Fed in 1913, to support money-induced credit creation. Thus, the foundation was being laid for substantial money-driven boom-bust cycles and, finally, the replacement of a gold standard with fully elastic state paper money.

We conclude that, historically, the most stable form of money has been commodity money, while elastic paper money was an invariably unstable form of money. Whoever wants to provide society with a medium of exchange of reasonable purchasing power stability as a basis for balanced and continuous economic growth, and who has to base his decision on the historical record alone, will undoubtedly have to choose commodity money over paper money. However, our argument has to rest ultimately on a conceptual analysis, and not on an interpretation of past experience. Only a systematic, fundamental analysis can deliver conclusions that have to be accepted as universally valid. History can tell us what happened and not what must happen. We will now conduct such a conceptual analysis and start with a question: What factors could cause a system of entirely inflexible commodity money to exhibit purchasing power instability? On the basis of this analysis, we can then test the popular claim of the advocates of state

paper money that a well-managed and inflation-controlled form of fiat money can provide, at least in theory, superior price-level stability to commodity money. It will be shown on conceptual grounds that this, too, is a fallacy.

The Fallacy That Hard Money Is Unstable Money, Part 2—Theory

It has been shown that commodity money was historically reasonably stable in terms of its purchasing power. This is not surprising if we analyze it conceptually. We will do this by addressing the three potential reasons for concern about price level stability under a commodity money system. First, could commodity money be unstable because of influences on its exchange value that emanate from the monetary commodity's remaining use in industrial applications? Second, as the money supply does not expand with the growth of the economy, will there be constant deflation? What problems does this cause, if any? And third, how disruptive will changes in the demand for money be if they have to be fully absorbed by money's purchasing power?

First, we look at a situation in which the monetary commodity is still being employed in other, nonmonetary applications in addition to its use as money. It cannot be denied that the remaining industrial use of the monetary commodity continues to exercise an influence on its price formation. For example, if the demand for the commodity in its nonmonetary uses rises, its price will, all else being equal, be bid up until some of the existing quantity of the commodity will get redirected from monetary to nonmonetary use. Naturally, the reverse will happen if the demand for the commodity in its nonmonetary function decreases. Extra supply of the commodity will then become available for monetary use and will have to be absorbed via a drop in the monetary unit's purchasing power. These processes introduce, potentially, an additional source of fluctuations in money's purchasing power independent from changes in the demand for money. However, excessive volatility appears unlikely, and the reason for this lies in the unique nature of money demand.

Demand for money is always demand for readily usable purchasing power. If demand for the money commodity in its industrial application goes up, the price of the money commodity goes up, and the purchasing power of every monetary unit increases. But if money demand has not changed simultaneously (and this is necessarily the “all else being equal” assumption we have to make), it must mean that money users should feel the urge to marginally reduce their holdings of the monetary asset. As the purchasing power of every unit of the monetary asset has increased, the money users can hold the same overall purchasing power with fewer units of the monetary asset. Putting this differently, the opportunity costs of holding a certain quantity of the monetary asset has increased, as every unit of it can be exchanged for more goods and services. Consequently, as the demand for the monetary asset in its nonmonetary uses goes up and begins to exert upward pressure on its price, demand for the commodity in its monetary use must go down. This will in turn put downward pressure on the exchange value of the monetary unit. The users of money will quickly make additional quantities of the money commodity available for other uses if its purchasing power begins to rise. Conversely, the users of money will quickly absorb additional quantities of the monetary commodity if its price begins to drop because those who use it in its industrial application have less demand for it and sell it. This extraordinarily high responsiveness to price changes is unique to the monetary commodity, which is always demanded only for its exchange value and not for any use value that comes with its physical properties. This will smooth out price volatility much more than is feasible for any other good that is subject to competing demands that all originate from its use value. (The gold price has been very volatile in recent years, and this is sometimes cited by skeptics as proof that it makes poor money. This volatility is only possible because gold has been largely demonetized over the past 100 years, and particularly over the past 40 years. A remonetization of gold would lead to a much more stable purchasing power of gold over time, albeit at, most likely, a much higher level.)

We can illustrate this further by looking at a good that is demanded only for its use-value. Let us take steel. If the demand for steel goes up in one of the industries that use steel, and this puts upward pressure on the steel price, other industries will certainly have

an incentive to replace steel with other materials. But usually, there are technical limits to such substitutions, and there is a high probability that other industries will have no choice but to pay the higher steel price. The *ceteris paribus* rule of economic analysis, the assumption that all else remains unchanged, requires that, in the case of all goods that only have use value, if demand goes up in one application, demand in other applications remains unchanged. But in the case of the money commodity this is fundamentally different. There is always one user, the money user (and this is indeed everybody in the economy), whose demand for physical quantities of the commodity should immediately drop if anybody else starts bidding up the price of the money commodity. The demand for physical quantities of the money commodity in its monetary use should decline if the commodity's price rises in response to a higher demand for it in nonmonetary applications. The reverse happens if money's price declines. This is a unique feature of the monetary asset. Consequently, the price of the money commodity will not be as sensitive to a rise in physical demand in one specific (nonmonetary) application as is the case with all other goods that, by definition, have only use value. Here we have a conceptual explanation for the remarkable purchasing power stability of commodity money that the historical record shows.

The second concern we have to address conceptually is the notion that money of essentially fixed supply means the economy is in a permanent state of deflation. As an expanding economy creates more goods and services to be exchanged for money, but with the supply of money essentially fixed, the purchasing power of every unit of money must constantly appreciate.

This notion is correct, although it is worthwhile to consider all consequences associated with a rise in productivity in an economy with an unchanging money supply. To some degree we should encounter the same effect we discussed in the preceding paragraphs: As prices begin to decline and money's purchasing power rises, people will begin to sell some of the monetary asset because the opportunity cost of holding wealth in this form increases, at least in terms of consumption goods. As we have seen, money does not fulfill any needs directly, but with the rise in money's purchasing power, every unit of money now buys more goods and services that do fulfill needs directly.

It is therefore reasonable to assume that people reduce their money holdings somewhat. To the extent that they do so, it will again put downward pressure on money's purchasing power¹⁴ and will counteract some of the effect from higher productivity. However, in a deflationary environment, gold now competes to some degree with genuine investment goods. Money has a small positive yield. This in turn lowers the costs of holding money again.

And there is another aspect: The demand for money should in this scenario not remain unchanged but in fact rise. If the economy produces a larger quantity of goods and services than before, and money users get, on average, wealthier, it is only logical to assume that the money users want to hold more purchasing power in readily spendable form. Indeed, it would be somewhat unrealistic to assume that, although more goods and services are now on offer, the individual money user would not have a higher demand for the flexibility to spontaneously engage in economic transactions. To the extent that this is the outcome, a monetary system with a money commodity of essentially fixed supply will indeed experience secular deflation. A growing economy with an entirely inflexible money supply will exhibit a tendency for prices to decline on trend and for money's purchasing to steadily increase. But the key question now is why should this be a problem?

We have already seen that, historically, secular deflation was rather minor and that it certainly never appeared to present any serious economic difficulties. No correlation between deflation and economic recession or stagnation is evident under commodity money systems. I will now try to show that there are no reasons on conceptual grounds to consider deflation to be a problem either. There is nothing fundamentally disruptive or problematic about a gradual trend decline in the price level.

First, for the single purpose of rational economic calculation based on money prices, an ongoing moderate deflation is neither better nor worse than the ongoing moderate inflation that is widely advocated today under state-managed paper money. The on-trend decline in prices will simply come to be expected by economic agents and be part of their economic planning.

The widespread belief that deflation hurts borrowers on the loan market is unfounded. This view stems from the specific situation of

an economic crisis, in which a sudden and unexpected drop in many prices can cause problems for those in debt, as it requires more real goods and real services to repay a nominal loan amount. This would provide a windfall gain for the creditors. But what we discuss here is not a sudden, crisis-induced (or money demand-induced) deflation but trend or secular deflation as a feature of commodity money, which emanates from rising productivity and thus gradually rising money demand. And in this context, there is no reason to believe that, when agreeing to the terms of a loan, borrowers would disregard probable trend deflation any less than lenders disregard probable trend inflation in today's monetary system. Unexpected inflation is usually good for borrowers and bad for lenders and unexpected deflation is usually bad for borrowers and good for lenders (as long as the borrowers can still pay), but any discernible, moderate, and stable trend in either direction will simply be anticipated and incorporated into the market rate of the loan agreement by both sides.¹⁵

Second, if we move beyond the use of money prices in economic calculation, deflation has considerable advantages. In an environment of ongoing secular deflation, money has an inherent return. In this scenario, cash holdings can function as a store of value and thus as an instrument of saving. Money balances will give their owners not only the highest flexibility to engage in transactions spontaneously but also a positive return, which stems from the on-trend increase in the purchasing power of the monetary unit. Of course, it is to be expected that most savings will still be channeled into financial or other assets that provide superior returns, but those members of the public who want to save but lack the expertise to invest in debt claims or equity claims will have a reasonable—if usually low yielding—alternative to such investment vehicles in the form of the monetary asset. By contrast, in today's environment, characterized by a constant decline in money's purchasing power, cash balances cannot fulfill this function, and every member of society who wants to save has to engage in some form of speculation. We have previously seen that fractional-reserve banking attracts depositors with the prospect of combining, in the form of a bank deposit, the full flexibility of ownership of money with the positive return of ownership of a debt instrument. Banks make this promise by creating multiple claims on the same original quantity of money,

which makes this procedure inherently risky. In a commodity money system with ongoing secular deflation, cash holdings do in fact provide the flexibility of the most fungible good and a small return at the same time, and they do so without any of the risks and instabilities of fractional-reserve banking.

One of the popular yet entirely unjustified concerns about deflation is the idea that in an economy with declining prices, spending decisions would be deferred ever further into the future as a postponement of any purchase always means that more goods and services can be bought later. This is nonsense. This view completely neglects the essential concept of time preference. As we have seen, to want something means, all else being equal, to want it sooner rather than later. When making a spending decision, every decision maker in the economy simply contrasts his personal time preference with the benefit he would receive from the additional goods and services he could obtain if he deferred his purchase and waited for prices to decline. That is all.

This situation is not fundamentally different from an inflationary environment in which real interest rates, that is, inflation-adjusted interest rates, are positive. In such an inflationary economy, the consumer can obtain interest income for his savings in excess of inflation. In this situation, too, a postponement of an act of spending and the investment of the funds at positive real interest rates in the interim will give everybody the opportunity to buy more in the future. The disadvantage of not being able to consume today simply has to be compared with the advantage of being able to consume more tomorrow. As everybody can quickly confirm from their own experience, none of this will stop present consumption and none of this is an obstacle to a growing and vibrant economy.

An additional illustration of time preference and of the misconception that deflation drains present demand is provided today by those sectors in which productivity gains are so rapid and competition so intense that nominal prices for these goods tend to decrease over time even in a generally inflationary environment. In recent years, this has been the case for many products in the area of consumer technology, such as personal computers, laptops, mobile phones, and other handheld devices. In general, these sectors have experienced strong growth on the back of solid customer demand, despite the fact that

every buyer knows full well that by not buying any of these goods today, he stands a good chance of buying the same, or even a more advanced product, for a lower price in the future. This is in fact a good example of personal time preference in action. The subjective benefit from obtaining the use value of the respective good now or in the near future is evidently deemed higher than the compensation for waiting, which is a lower price in the future.

We conclude that today's widespread fear of deflation is unfounded. It appears that after almost 100 years of global inflation, the possibility of an ongoing rise in the monetary unit's purchasing power has become a strange and discomfiting concept to many people, making them susceptible to the scaremongering of parties who have a vested interest in ongoing money expansion and inflation. However, if one thinks about it dispassionately and rationally, a continuous decline in nominal prices seems to be a more natural condition for a growing economy in which people get, on trend, wealthier, than the artificial weakening of money's purchasing power through its constant overissuance by those who control the money supply.

For a society to become richer means that things become more affordable. Today, a worker in an industrialized economy has to work, on average, fewer hours to be able to afford a new refrigerator or TV set than a worker 20 or 50 years ago, and today he would also acquire a hugely advanced specimen of this product. In a commodity money system with secular deflation, these advances in the efficiency of society's resource use, the growth in its productive capacity, would be reflected in declining nominal prices. Instead, the discretionary and essentially arbitrary injections of substantial amounts of money, to the benefit of the money producers and unchecked by a limited demand for it from the public, constantly cause the medium of exchange to lose exchange value and cause prices to rise. Not only is this inflation in itself unnecessary and disruptive, but, as we have seen, the unavoidable distortions in relative prices that result from any money injection, and in particular from the vast ongoing money expansion common today, must also lead to economic dislocations and a progressively unbalanced economy.

Third, there is another and more sophisticated argument about potential instabilities created by commodity money, and that is that the unavoidable, if historically minor, volatility in its purchasing power as

a result of any changes in money demand could, in itself, be a source of economic instability. Defenders of paper money will request that this issue is duly taken into account when contrasting the two systems. In the absence of a flexible money supply, sudden changes in money demand will have to be fully absorbed by changes in money's purchasing power. One could argue that this, too, has the potential to disrupt the otherwise smooth operation of the economy. Indeed, as we have seen, this phenomenon will also affect the prices of different goods differently. People will not sell or buy equal parts of everything when money demand rises. Relative prices must change. Additionally, people will be affected differently, depending on how much cash they hold at the time the change in purchasing power occurs. A change in the demand for money will change overall prices but also relative prices and therefore the relative position of economic actors and the allocation of resources in the economy. All of this is true and it confirms that no form of money can ever be "neutral," meaning no form of money is conceivable that will not, at least at certain times, exert influences on the real economy. This, however, leads to a different question: How would any of this be avoidable in a system of elastic paper money? If consequences of changes in money demand exist that can be labeled disruptive, the point is then whether such disruptive effects could be avoided or absorbed more smoothly in a system of elastic paper money. This will be the focus of our investigation in the next chapter. However, a couple of general observations can already be made here.

First, changes in purchasing power that emanate from changes in money demand can be in either direction. Money demand may increase at certain times and at other times decline. We may characterize these occasional swings as disturbances but they should not exert the lasting, systematic effect on resource allocation and, in particular, the size and structure of the productive side of the economy that must result from a constantly expanding supply of paper money. A one-off change in money demand has similar effects as a one-off injection of money. But even an ongoing gradual rise in money demand cannot have the same disturbing effect. It will cause a tendency for prices to decline, but it does not systematically change relative prices in one specific direction. There is no reason to assume that a rising demand for money will constantly distort the price relationship between present goods and future

goods of the same type, that is, distort interest rates. This is the key difference to the present paper money system, which has an inherent tendency to artificially lower interest rates. Constant money injection interferes with market interest rates and therefore leads to disruptions of the saving-investment equation. The point is not that commodity money is perfect by the unrealistic expectation of some economic model of perfect efficiency. The point is that paper money is always disadvantageous relative to inelastic commodity money.

The danger is that the present obsession with price-level-stability and the misguided notion that a stable price-level is, in itself, a sign of economic stability, leads to the belief that “good” paper money could be “neutral” money, that is, money that does not at all interfere with the real economy. This would indeed be a grave error. Money is never neutral, has never been neutral, and can never be made to be neutral. From the moment that human society made the transition from direct trade (barter) to indirect trade via media of exchange, a new element entered economic relationships. Money allowed great advances in human cooperation on markets, but money has its own dynamics and inevitably also constitutes a source of occasional disturbance and of economic volatility. There is simply no point in arguing that a monetary system would be conceivable in which money was simply a veil that would float over the “real” processes of the economy and that had no impact on the use of real resources. We therefore readily admit that no system of commodity money can guarantee complete stability of prices and an unvarying purchasing power of the monetary unit. But such a system would be fundamentally incompatible with a market economy anyway. In a market economy, any notion of complete stability or predictability is unrealistic. Nobody can argue that commodity money will satisfy the lofty demands of some theoretical notion of perfect monetary stability, but its historical record is not only remarkably good, but it also is vastly superior to that of paper money. Our conceptual analysis has shown why this is the case. All that is now left to do is to show that even on purely theoretical and conceptual grounds, paper money under control of a central bank can never deliver superior purchasing power stability compared with inflexible commodity money.



For the following analysis, we will disregard the disastrous history of paper money and the vested interests of the paper money producers and the early beneficiaries of money injections. We will, for arguments' sake, assume that achieving the highest possible price level stability is a reasonable objective for a monetary constitution, in theory at least. We will further assume that an independent central bank could be put in charge of the money franchise and would focus exclusively on offsetting any volatility in money's purchasing power stemming from changes in money demand and thus endeavor to deliver a better stability than inflexible and unmanaged commodity money. It will be shown that even under such idealized conditions, the goal of superior stability of the price level is unattainable.

Notes

1. Friedrich August von Hayek, *Prices and Production* (New York: Augustus M. Kelley, 1967): 107.
2. This problem would largely disappear if any rise in money demand could properly be labeled "voluntary saving," and this is indeed an assumption that some economists make. Occasionally, a rising money demand may indeed reflect a higher propensity to save. In those instances, which are more likely in a deflationary environment, money becomes an instrument for saving. However, I believe it is inaccurate to equate demand for money with voluntary saving generally and categorically. I will address this issue in the following chapter.
3. Peter Bernholz, *Monetary Regimes and Inflation: History, Economic and Political Relationships* (Cheltenham, UK/Northampton, MA: Edward Elgar, 2003): 3–5.
4. *Ibid.*, 8.
5. Roy W. Jastram, *The Golden Constant: The English and American Experience, 1560–2007*, with additional material by Jill Leyland (Cheltenham, UK: Edward Elgar, 2009), 221–222.
6. Howard S. Katz, *The Paper Aristocracy* (New York: Books in Focus, 1976), 24; and Roy W. Jastram, *The Golden Constant*, 143–149.
7. Murray N. Rothbard, *Classical Economics* (Cheltenham, UK/Northampton, MA: Edward Elgar, 1995), 159–161; and Vera C. Smith, *The Rationale of Central Banking and the Free Banking Alternative* (Indianapolis: Liberty Press, 1990), 14–18.

8. Bernholz, *Monetary Regimes and Inflation*, 21–30.
9. Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States, 1867–1960* (Princeton, NJ: Princeton University Press, 1963; ninth paperback printing, 1993), 93.
10. Statistics Bureau of Japan, www.rateinflation.com/consumer-price-index/japan-historical-cpi.php?form=jpncpi.
11. Friedman and Schwartz, *A Monetary History of the United States*, 15; see also Jesús Huerta de Soto, *Money, Bank Credit and Economic Cycles* (Auburn, AL: Ludwig von Mises Institute, 2006), 341.
12. Friedman and Schwartz, *A Monetary History of the United States*, 91.
13. James Grant, *Money of the Mind* (New York: Farrar, Straus and Giroux, 1992), 101.
14. Hans-Hermann Hoppe, “Theory of Employment, Money, Interest, and the Capitalist Process: The Misesian Case Against Keynes,” in *The Economics and Ethics of Private Property: Studies in Political Economy and Philosophy*, 2nd ed. (Auburn, AL: Ludwig von Mises Institute, 2006), 145–146.
15. Please remember that this point refers exclusively to the issue of predictability. Moderate inflation is still worse than moderate deflation for other reasons, namely, that moderate inflation requires constant money injections that in themselves are destabilizing, as discussed earlier. Here, we only compare moderate inflation, as advocated by today’s consensus, with moderate deflation on grounds of predictability for economic calculation.

Chapter 6

The Policy of Stabilization

To begin the discussion in this chapter, we need to define the objective of a policy of price-level stabilization. The advocates of price-level stabilization and of central bank-controlled moderate inflation can have no objection to any moderate, trending, and therefore reasonably predictable changes in purchasing power, such as the secular deflation of commodity money. Their very own model entails just such on-trend purchasing power changes. What their system must achieve is to smooth out the potentially abrupt changes in purchasing power that may stem from sudden changes in money demand.

Problems with Price Index Stabilization

The advocates of price level stabilization argue thus: As relative prices are all-important in directing resource use toward meeting the most

urgent needs of the consumer, it is essential for economic agents to always be able to distinguish changes in prices that result from the sphere of goods and services from changes in prices that result from a change in money demand or money supply. In a commodity money system, in which the supply of the monetary asset is essentially fixed, how can economic agents isolate price changes that result from changing consumer preferences or a changing supply of certain goods and services, from changes in prices that simply result from changes in the demand for money? As this is not possible in an economy with inelastic money, economic agents must frequently err in their economic calculations. They are bound to misinterpret price changes because they cannot distinguish between price changes that result from “real” factors (changes in tastes, technology, or scarcity) from those that result from changes in the demand for the inelastic medium of exchange. If all price changes that result only from the money side of the economy could be eliminated, then all remaining price changes could firmly be attributed to the goods side of the economy, that is, to real factors. Economic planning and economic calculation could thus be made more reliable and the allocation of scarce resources be made more efficient. Therefore, a monetary unit of stable or at least predictably changing purchasing power would provide a unit for economic calculation superior to commodity money that remains necessarily subject to shifts in purchasing power due to changes in money demand. If the supply of money is fixed, its purchasing power must be allowed to fluctuate. But if the money supply is essentially elastic, its purchasing power can, at least in principle, be held steady. In order to achieve this, the money supply must, of course, be manipulated by a central authority, for no automatism exists by which a stable purchasing power would be achieved otherwise. (Again, the “free bankers” argue that such an automatism does indeed exist. We address their theory at the end of this chapter.)

The first problem for such a program is the measurement of money’s purchasing power. This is a fundamental problem for any policy of purchasing power management. We have spoken about money’s purchasing power and the price level as theoretical concepts to explain a very complex reality. The way in which we used these terms has been in the somewhat stylized form that all economists resort to when

analyzing economic phenomena: It is the *ceteris paribus* approach, the assumption that, as we look at a specific phenomenon, such as a change in the purchasing power of money or a change in money demand, we assume that all else remains unchanged. Only under this rather unrealistic condition can we mentally isolate the money-induced price changes from the goods-induced price changes.¹ This approach is not only common in scientific inquiry, it is indispensable. However, in the real world, it is impossible to isolate money-induced price changes from goods-induced price changes. "All else being equal" never works in the real world.

The idea that there is such a thing as one specific and identifiable purchasing power of money, one universally applicable price level, is a fantasy. Every exchange relationship between the monetary asset and any good or service that money is being exchanged for is as good a representative of money's purchasing power as any other. In a dynamic economy, money's purchasing power may frequently rise versus one good, stay unchanged versus another, and drop versus yet another. This must be the case because the exchange relationships between the various goods that money is exchanged for cannot be expected to remain unchanged. When analyzing monetary phenomena, the economist makes the *ceteris paribus* assumption. He pretends that the exchange relationships between all other goods and services are fixed, and only the relationship between the monetary asset and these goods and services changes. This is an indispensable mental tool for scientific analysis. But when the economist or economic statistician calculates a price index in the real world, he implicitly pretends that the *ceteris paribus* assumption also holds in reality. This is baseless and indefensible, and it puts the whole project of price level stabilization on shaky conceptual ground from the start.

Once we drop the all-else-being-equal assumption and move to the real world, it is clear that money-induced price changes cannot be distinguished from goods-induced price changes. Only in extreme scenarios, like a major inflation, when the change in purchasing power of the monetary asset is very rapid and occurs over an extended period in the same direction, and in a magnitude that overwhelms any other relative price changes, can the two at least partially be distinguished. But the goal of price-level stabilization is not to avoid major inflations

or deflations. Commodity money can do an entirely adequate job in this respect. The alleged advantage of well-managed state paper money should be precisely that it provides an even greater stability in terms of money's purchasing power.

Of course, it is mathematically possible to calculate some average of the exchange relationships between the monetary asset and the various goods and services in our model economy. The question is how sensible the result of such an exercise can be. Despite the widespread use and the general acceptance of price indices today, all of them stand, conceptually, on thin ice. In fact, they may distort and obscure more than they reveal.

Additionally, various alternative procedures for the calculation of such an average exist and they will necessarily lead to different results. Should an arithmetic mean or a geometric mean be used? Are all the prices of equal importance for calculating money's purchasing power? It is clear that each result will be different and that reasonable people may disagree over which standard is more appropriate. Rather than embodying the definitive measure of money's real purchasing power, which is a theoretical concept and not a definitive real-world entity, the chosen price level standard will have to be a compromise, reflecting considerations of practicality and convenience and politics. Different groups in society have different interests concerning how price level stability should be defined. That these index numbers represent a definite economic entity is a dangerous misconception.

Let us now assume that a statistical method has been agreed upon to calculate a price level for measuring money's purchasing power. It will now be extremely difficult for the money producer to inject precisely enough money to keep the agreed-upon statistical average stable or, as is more common today, to keep it advancing at a steady pace of, say, 2 percent per annum. In a modern economy with millions of goods and services and ongoing changes in preferences and in economic conditions, initiated by innovation and entrepreneurial activity, the task is truly monumental.

Defenders of paper money and price stabilization will argue that the money producer can still identify certain trends in such variables as economic growth and wealth and, therefore, in money demand. If only the money producer forecasts these trends correctly, he stands

a good chance of achieving stability over the medium to long term. Most inflation-targeting central banks today allow for a certain amount of near-term volatility around their aimed-at inflation rate, anyway. But again, for as long as money demand develops in a stable and somewhat predictable fashion, it does not pose a particular challenge for a commodity currency of fixed supply either. If we assume that an economy experiences a steady rise in the demand for money of about, for example, 2 percent per annum, in a commodity money system with an essentially fixed money supply, everybody could simply adjust monetary calculations for the tendency of an ongoing deflation of 2 percent per year. In terms of calculation efficiency, a steady and reliable tendency of all prices to fall by 2 percent is no better or worse than a reliable tendency of prices to rise by 2 percent every year, courtesy of the money producer. It follows that a money producer whose money creation only accommodates long-term trends in money demand (to the extent that it is realistic to assume that these long-run trends do indeed exist and can be correctly identified) does not provide a form of money that is superior in reliability for monetary calculation to inelastic commodity money. The Achilles' heel of the latter, in theory, is precisely that exogenous and sudden changes in money demand will have to be fully absorbed by changes in money prices for goods and services, and that this will affect different prices differently and affect economic agents differently.

However, this particular problem is fundamentally insolvable for the fiat money producer. If a sudden change in money demand occurs, money users will immediately respond to it. They can and will adjust their money holdings very flexibly through minor changes in their buying and selling of goods and services. This will instantly affect prices in a paper money economy, too, and, once the purchasing power of the monetary unit has responded, no additional changes are required. The change in prices constitutes the full and efficient satisfaction of the new money demand. For the fiat money producer to avoid this effect, he would have to anticipate sudden (nonlinear) changes in money demand before they impact money's purchasing power. He would have to know of a coming change in the demand for money before even the individual economic agents know of it. This is theoretically and practically an impossibility. If, for example, a sudden rise in money demand occurs,

it will quickly cause a drop in the price average. As a result, the money producer will undershoot his inflation target for a period, but there is no reason for him to compensate this effect with increased money production in the next period. First, the change in money demand may have reasonably been a one-off event, rather than a trend change. Second, the shock of a move in the price level has now occurred and additional money creation will not undo it. And third, the overall demand for and supply of money are again in equilibrium. At the higher purchasing power of the monetary unit, no demand for money goes unfulfilled. No additional action from the money producer is needed.

And, finally, even if we assume that all of this were possible, and that the goal of a medium of exchange of steadily declining, but in its decline perfectly predictable, purchasing power had been realized, we would still have to conclude that superior monetary stability had not been achieved. The ongoing money injections necessary to manufacture steady inflation will necessarily dislocate the loan market, artificially lower rates, and thus help build an investment structure that is not aligned with ongoing voluntary savings. As we have shown, money injections cause economic dislocations that manifest themselves in a credit-driven business cycle even if the purchasing power of the monetary unit is stable or falling gradually in a predictable manner. The two are entirely different phenomena. Price-level stability is not synonymous with monetary stability. In creating a monetary unit that is stable or in any case predictably changing in terms of its purchasing power, the money producer still creates economic instability through the constant injection of new money.

Money injections via the loan market must channel the new money first to those who do not have a high demand for cash balances but a high demand for goods and services. Only in a roundabout way will the new money finally reach those with a heightened demand for cash. In his attempt to give the economy a monetary asset of stable purchasing power, the fiat money producer inevitably obstructs one of the market economy's most important mechanisms, that of coordinating the future-oriented activities in the economy with the time preferences of the members of society.

The agenda of the advocates of price-level stabilization is therefore illogical. It seems absurd to suggest that resource allocation efficiency

can be enhanced via money injection when money injection itself disturbs efficient resource allocation. The idea of giving all economic agents a stable price level so that they can better identify relative price changes is superficially appealing but collapses entirely as a realistic policy agenda once it becomes apparent that price level stabilization can be achieved—even in theory—only by ongoing money production, and ongoing money production will itself always be a source of resource misallocation.

Addendum: The “Free Bankers” and the Theory of Immaculate Fractional-Reserve Banking

These arguments against the policy of stabilization through central banking also apply in essence to the arguments from the advocates of “free banking,” who maintain that a stabilization of the price level and of the overall economy will occur naturally under free market fractional-reserve banking. This position is presented most effectively and prominently by economists George Selgin and Lawrence White, whose work we encountered briefly in Chapter 2. Theirs is a minority position (as is mine) and they are certainly not representatives of the mainstream consensus. Selgin and White are heavily influenced by the Austrian School, in particular by F. A. Hayek, although in 1996 Selgin and White also claimed to be “Misesians,”² and they are in favor of a hard monetary core and against central banking. A substantial overlap with the positions presented in this book exists. But there are also some crucial differences, and those relate mainly to the question of how a free-banking system, an unhampered market in banking based on an inelastic reserve asset and without a central bank, would operate. While I agree with Selgin and White that fractional-reserve banking is not fraudulent and would most certainly occur in a free market, I disagree with their view that this would bring about a perfectly elastic and smoothly adjusting overall money supply through the activities of the fractional-reserve banks, and that this would not only stabilize the purchasing power of the medium of exchange but also the broader economy. What the advocates of central banking try to achieve through clever central bank manipulation of bank reserves and the fixing of

short-term interest rates, the “free bankers” argue, would simply occur in a free market anyway.

Selgin and White argue, contra the position presented in this book, that a high degree of elasticity of the money supply is not only not harmful but even beneficial, as long as money production is conducted by fractional-reserve banks in a free market. In fact, such banking activity brings about and maintains what they call a “monetary equilibrium.”⁷³ They acknowledge that, in principle, a rising demand for money can be met by falling money prices but consider this process potentially disruptive (disequilibrating) in the short term. Like the advocates of central banking (today’s mainstream), they consider a quick adjustment of the quantity of money preferable. And this is how they suggest it works under “free banking”: When money demand rises and the public reduces money outlays in order to increase cash balances, the velocity of money drops. Money changes hands less frequently. A lower money velocity means that the private banks now face a marginally smaller risk of outflows of bank reserves, and this means they can now lower their reserve ratios and create more deposit money on the given (and presumably fixed) stock of bank reserves. The reverse is true when money demand drops and the velocity of money rises. Thus, via the velocity of money and its marginal impact on the riskiness of fractional-reserve banking, changes in money demand steer the money production of the private banks. Money demand and supply are brought in line not via changes in money’s purchasing power but through adjustments in the supply of money. The price level is stabilized.

This argument will look familiar to the reader. We already investigated some aspects of it in Chapter 2, and we rejected it then. While the basic mechanism that Selgin and White describe is probably at work to a degree, there is no reason to believe that this will avoid changes in prices altogether and that it can stabilize money’s purchasing power completely. When the public reduces money spending, this will also put instant downward pressure on prices. It is not apparent why the banks would invariably respond faster to an observed drop in money velocity than the sellers of goods and services would respond to a drop in money spending on their goods and services, and lower prices in response. And to the extent that prices drop, additional money

production becomes unnecessary. Selgin and White must assume a constantly high degree of price stickiness in the markets for goods and services, and at the same time an ultra-fast response from the banks to observed changes in velocity. This seems inconsistent and unrealistic.

Furthermore, in reality and unlike in economic models, changes in money demand are usually not general but will most certainly be confined to parts of the public. If a group of people experiences a higher demand for money and will thus reduce spending on goods and services that are relevant to this group, this will exert downward pressure on specific prices and not on the overall price level, which is a problematic concept anyway, as we have just elaborated. This will increase money's purchasing power in respect to specific items, namely, the ones that matter to this group of people. By contrast, the extra fractional-reserve banking activity that Selgin and White envision in response to a drop in velocity must place the new money via the loan market with an entirely different group of people and thus in a way that will most certainly lift the prices of different items. Even if we contemplate for a moment that the two price effects could offset one another so that the overall price index would remain indeed unchanged, relative prices still would have changed and the question remains if the extra loans generated other instabilities.

As we explained at length, the people who take out the extra loans from the banks are certainly not people who have a higher demand for money. They are instead people who have a high marginal demand for goods and services. They will most certainly spend the money right away. The new money may only reach those who have a higher money demand in a roundabout way through a number of transactions (and by then these people may have satisfied their money demand through lower prices already). We have seen that this is the source of various disruptions. Even if the banks manage to stabilize some general price index, the extra money they bring into circulation is bound to depress interest rates on the loan market and disrupt the process that coordinates saving with investment.

Interestingly, Selgin uses the same definition of money demand that we developed earlier, and he explicitly acknowledges that those who the banks place the extra money with do not have a higher money demand, yet he does not see this as a problem. How can we

explain this? Partly this is because Selgin works with broad macroeconomic aggregates and does not distinguish the different groups in his further analysis, and partly and most important, this is because Selgin assumes that any rise in money demand is equivalent to a rise in voluntary savings. Holding more money means not consuming and thus means saving. The responding money production by the fractional reserve banks lowers interest rates on the loan market but this lowering of interest rates is now no longer disruptive as it corresponds with a higher propensity to save (a higher money demand).

“Are adjustments in the supply of loanable funds, meant to preserve monetary equilibrium, also consistent with the equality of voluntary savings and investment? The answer is yes, they are. [. . .] To hold inside money (deposit money created by fractional-reserve banks) is to engage in voluntary saving.”⁴

This position is untenable, in my view. Money can, of course, be occasionally a vehicle for saving. We just explained that the moderate secular deflation that is to be expected in an inelastic money system would make cash quite a reasonable saving instrument. But it is certainly inadmissible to label all money demand voluntary saving. Quite frequently, money demand has nothing to do with saving and investment. First, a rise in voluntary saving and thus investment requires a lowering of time preference, an increased future orientedness of actors, and a marginal rise in the demand for future goods relative to present goods. Money, however, is the prototypical present good. It gives its owner instantly exercisable purchasing power. It provides flexibility and reflects present orientedness. Second, accumulating cash balances means nonconsumption but it equally means noninvestment. I may, for example, increase my money holdings by reducing some of my monthly consumption spending and also by reducing some of the usual monthly allocations to my retirement account through which I buy stocks and bonds. I evidently now prefer, on the margin, the flexibility that only the medium of exchange gives me to the use value that I get from present consumption goods but also and equally to the future goods to which I usually allocate my savings. Maybe I am not sure if I want to finally spend this money on consumption or saving and investment. (In general, I consider it advisable to follow Mises and distinguish between consumption goods, producer goods, and money.)

And what if there were a general rise in economic uncertainty and investors liquidated stock and bond portfolios in order to hold more cash? Would it really be admissible to assume that time preference and the propensity to save have not changed? The rise in money demand would lead to lower prices and thus higher yields for these financial assets. Would it really keep the economy closer to equilibrium if, in response to this, the banks created more loans (or bought the bonds sold by investors, and paid for them with new deposit money), and thus kept market interest rates from rising? What if investors sold bonds because they felt that market interest rates were too low and insufficient to reflect their time preference or risk tolerance? Would the banks then not even hinder the equilibrating effect of a rise in yields by creating more money and more credit, and thus lowering yields again?

And an additional problem arises: If investors sell financial assets not to the banks but to those nonbanks that had previously been content with holding money but are now enticed to buy financial assets at discounted prices, this process may increase the velocity of money temporarily. Money will be changing hands faster in the sell-off, and this will increase the risk of outflows of reserves for the banks, thus not allowing them to produce extra money.

In my view, Selgin and White create an idealized version of fractional-reserve banking, a form of immaculate elasticity of fiduciary media that is only conceivable under extremely unrealistic assumptions: Nominal prices do not respond to changes in money spending, but private banks respond imminently to changes in money velocity; all extra money demand is funded out of previous consumption and is thus a form of saving; extra money demand is never met by selling assets, as this would not lower velocity but probably even increase it. In general, I do not believe that their position is very "Austrian," and certainly not Misesian, as Selgin, I think, realized when writing his 1988 book. The focus on broad aggregates, such as the price level and overall saving, and on the concept of equilibrium, put Selgin and White closer to the macroeconomic mainstream in respect of methodology, and in some respect even in their conclusions.

Although the "free bankers" should, in principle, argue against the institution of central banks and fiat money, and for a free, entirely

uninhibited market in banking services, a program that I would happily subscribe to, even though I would expect it to work differently in reality, some “free bankers” have recently become much more accommodating of the idea of central banking and suggested that central banks target the “nominal gross domestic product (NGDP)” instead of inflation, the money supply, or some arbitrary combination of inflation, growth, and unemployment, as is common today. Such ideological flexibility seems to be driven by the notion that the free-banking theory has now revealed how a free-banking system would operate in a free market—that is, how it would broadly stabilize economic activity and overall price levels, through immaculate money elasticity—and that by targeting nominal GDP state central banks, which are decidedly not free market institutions, could come close to achieving similar results. This approach entails additional problems that go far beyond the flaws in the original free-banking theory. Not only is the assumption of the meaningfulness of broad statistical aggregates, such as GDP and the price level, highly problematic (as we will see in Chapter 9), but also the belief that the central bank could reliably manage these variables and that it could thus imitate free market outcomes strike me as preposterous. Sadly, this approach further legitimizes the existence of central banks and plays down the adverse effects of constant monetary expansion that was a cornerstone of Mises’s theory.

I conclude that the “free-banking” theory does not invalidate or weaken my case against an adjustable money supply. The two key criticisms of the idea that an elastic money supply is the best way to meet money demand remain:

1. We lack a procedure by which we can detect changes in money demand *before* they have begun to affect prices, and if prices are already beginning to change, then these price changes already constitute the very process that satisfies the new money demand. This makes changing the quantity of money superfluous.
2. We lack a procedure by which we can expand and contract the supply of money without affecting the supply of credit and without changing interest rates. This makes changing the quantity of money dangerous.

Summary of Part Three

It is claimed by today's macroeconomic mainstream and widely accepted by the public that the purchasing power of money can be accurately measured and then managed by the central bank, so that a monetary unit of superior stability can be delivered. It is therefore readily believed that paper money should be a better, because more predictable, medium of exchange than commodity money, the supply of which is not managed by any institution. Additionally, as the supply of commodity money is fairly static and as there is no reason to expect that the supply will keep up with advances in productivity, an economy that uses commodity money is likely to experience ongoing secular deflation.

As we have seen, no procedure exists by which money's purchasing power can be accurately and definitively measured. The concept of a measurable relationship between money and a broad aggregate of goods and services implies stability of exchange relationships between the individual goods and services, which is a fiction. Price indices are no better than guesses and should be treated with the utmost skepticism. Furthermore, even a paper money producer with the best of intentions can ever only hope to identify long-term trends in money demand, to the extent that these exist and are reasonably stable, and try to manage his supply accordingly. In a paper money system, too, any sudden changes in the demand for money will directly affect money's purchasing power, just as they would in a commodity money system. The paper money central bank has no means by which to anticipate these before they have an impact on the purchasing power of money. Demand for money is not demand for loans, and the paper money infrastructure with its central bank and fractional-reserve banks has no mechanism for satisfying this demand before it has satisfied itself naturally by the selling and buying of money and the automatic adjustment of money's purchasing power.

In terms of the predictability of price trends, the moderate inflation officially targeted in paper money systems today has no advantages over the moderate secular deflation in a commodity money system. But in all other respects, and in sharp contrast to generally held beliefs today, secular deflation has many advantages. In a commodity money system,

the monetary asset is likely to provide a small steady return through the on-trend decline in prices, which allows those without investment expertise (or the means to purchase investment advice) to save through cash holdings. However, the constant injection of new money in a paper money system has to lead to the distortions of interest rates and to the misallocations of capital that we analyzed earlier and that will progressively unbalance the overall economy. This has to be the case even if the goal of a steadily and moderately declining purchasing power is realized. The paper money producers have no means by which to satisfy the demand for money directly but always have to give new money first to borrowers on the loan market, thus initiating the distortions in capital allocation explained earlier. A reasonably stable or predictably rising price level is no guarantee of underlying monetary and economic stability. A growing demand for money may offset the price-raising effects of money injections on the chosen price statistics but will not render the disruptive potential of money injections harmless.

There is no reason on the basis of fundamental economic analysis to assume that paper money could ever provide a more stable or otherwise advantageous medium of exchange to inflexible commodity money. The historical record in fact provides an even more devastating verdict on paper money. Commodity money has, through the ages, consistently provided a medium of exchange of reasonable stability. Large swings in purchasing power were largely unknown to commodity money societies and occurred only under paper money systems, when they invariably took the form of inflations, sometimes followed by corrective deflations. All paper money systems have resulted in high and accelerating inflation and ended in a return to commodity money or total currency collapse.

To suggest that our present paper money system is a superior guarantor of monetary and therefore economic stability is nonsense. Not only is there no evidence to support such an allegation, but also everything points toward the opposite being the case. Elastic paper money is today the biggest threat to a smoothly functioning economy and rising prosperity. It must lead to growing instabilities and ultimately to economic collapse. Before we chart the likely path of the present system toward its inevitable endgame, we first have a look at the history of paper money systems to show how they came about and how they

finally collapsed. Following this, we look at the present system more closely, in particular by revealing its main beneficiaries and the intellectual support structure that keeps it in place.

Notes

1. On this point and on much that follows in this paragraph, see Ludwig von Mises, *Geldwertstabilisierung und Konjunkturpolitik* (Jena: Verlag von Gustav Fischer, 1928), in particular Chapters 1 and 4, 18–23, translated in Percy L. Greaves, ed., Ludwig von Mises, *On the Manipulation of Money and Credit* (New York: Free Market Books, 1978), 83–107.
2. George A. Selgin and Lawrence H. White, “In Defense of Fiduciary Media—or, We Are Not Devo(lutionists), We Are Misesians,” *Review of Austrian Economics*, 9, no. 2 (1996): 83–107.
3. As reference for this entire section, see George A. Selgin, *The Theory of Free Banking: Money Supply under Competitive Note Issue* (Lanham, MD: Rowman & Littlefield, 1988); Online Library of Liberty: http://files.libertyfund.org/files/2307/Selgin_1544_EBk_v6.0.pdf; Selgin and White, “In Defense of Fiduciary Media.”
4. Selgin, *The Theory of Free Banking*, 50.

Part Four

A HISTORY OF PAPER MONEY AND HOW WE GOT TO WHERE WE ARE NOW

Chapter 7

A Legacy of Failure

Once a commodity of essentially fixed supply becomes generally accepted as a medium of exchange, society can reap all the benefits from the use of money and all the advantages from indirect exchange by using this type of money. Nothing can be gained from ongoing money production, whether private or public, or from competition between currency providers or between alternative monies. Obviously, competition and innovation still matter for all sorts of financial services related to money. Here, the same rules apply that apply to all goods and services that have use value. But no economy needs an expanding supply of the medium of exchange. People buy and sell the monetary asset according to their individual demand for money, and this will lead to changes in the purchasing power of the monetary asset, which are sufficient to align demand for money with the fixed supply of money.

Money will never be “neutral.” Changes in money demand affect the monetary unit’s purchasing power but also change relative prices and thus feed back into the “real” economy. Such disturbances are the

price we have to pay for enjoying the incalculable advantages of indirect exchange, of trading with the help of money. We have also seen that whatever disturbances emanate from money, they are vastly greater in a system of elastic money. Replacing inelastic commodity money with elastic paper money must lead to economic dislocations, to the obstruction of the pricing process, to ongoing decline in money's purchasing power, and increasingly to economic disintegration.

So how can we explain that practically all economies are operating under paper money standards today? If money users derive no advantage from the abandonment of commodity money and the switch to elastic money, how could the paper standard completely replace commodity money? It has been shown that a type of paper money was issued in the form of fiduciary media by fractional-reserve banks ever since the first banks began their operations. Banknotes and bank deposits that were only partially backed by gold or silver were issued by private banks and used by the public just as money proper and most certainly for the extra convenience they offered. But these forms of money remained in principle redeemable into money proper. It has also been shown that this issuance was not in response to any additional demand for money per se but simply a by-product of new (and risky) banking techniques, and that this form of money never replaced commodity money entirely. Additionally, in a free market there are tight limits to the practice of fractional-reserve banking. Reserve ratios will be lowered only so far, and a complete substitution of hard commodity money with bank-issued paper money under free market conditions seems unlikely theoretically and has never been achieved in the real world. So how was commodity money replaced with paper money?

The answer is clear and unambiguous on the grounds of both theory and history: Paper money systems are creations of the state. History does not provide a single example of privately issued paper money replacing commodity money simply as the result of the spontaneous and voluntary interaction of private citizens.¹ Unconstrained, fully elastic money is, has always been, and most certainly always will be state money, fiat money. It therefore deserves special scrutiny. Unlike other elementary social institutions like private property, market exchange, and commodity money, paper money cannot claim to be the result of voluntary interaction. It was not adopted because its benefits were

obvious to the mass of money users who then voluntarily chose to abandon gold or silver entirely and use only paper money. Since it has been introduced by political means and for political purposes, the specific doctrines that support it require particularly close attention. Various reasons are cited today for the alleged advantages of fiat money, but, as we have seen, none of them stand up to critical inspection. Historically, the reason for why paper money was introduced has—consistently and often by official admission—been this one: to fund state expenditures, predominantly to finance war.

Paper Money Experiments

All states enjoy the privilege of funding themselves via taxation, that is, the expropriation of resources from private wealth owners and market-income earners. All other persons and entities in society have to obtain the goods and services of others by contributing to the production of goods and services themselves and then engaging in voluntary exchange. The state can take by force or by the threat of force. Openly taxing wealth and income of the private sector, however, is rarely popular and thus comes with natural limitations. Printing money opened up an additional avenue for funding the state. Without exception, this was the reason for all experiments with paper money in the history of mankind. In every case, the supply of paper money was constantly expanded and the purchasing power of the monetary unit eroded. Paper money always led to high inflation, ending either in the total collapse of the financial system with catastrophic effects for economy and society, or in the timely abandonment of paper money and the return to commodity money.

China invented paper, ink, and printing and was thus the first to experiment with paper money, probably as early as around AD 1000.² Between the early twelfth and the late fifteenth centuries, extensive paper money systems were developed under the Southern Song Dynasty (1127–1279), the Jin Dynasty (1115–1234), the Yuan Dynasty (1271–1368), and the early period of the Ming Dynasty (1368–1644), all of them for the purpose of generating income for government expenditures. Although payment in kind was still widespread at the

time, governments encouraged the use of paper money among the public by demanding that taxes be paid with this money. Governments also used their paper money to pay their own employees, mainly the standing armies. Initially, issuance was fairly moderate in each case, but over time ever more paper money was circulated and the purchasing power of money inevitably began to decline. Sooner or later, all Chinese dynasties experienced inflation and indeed progressively rising inflation. Various policy measures were taken to fight the symptoms and to keep the currency in circulation. The Yuan Dynasty first restricted and then banned private trading in gold and silver. It also undertook various currency reforms by which new paper money with new denominations was circulated. The Jin Dynasty attempted price controls. The paper monies of the Jin and Yuan Dynasties ended up worthless by 1223 and 1356, respectively, preceding the downfall of the dynasties themselves by only a few years (1234 and 1368). The Southern Song Dynasty was spared the fate of complete currency collapse only by its occupation and then dissolution at the hands of the Mongols. The Ming Dynasty is the exception. After introducing paper money and experiencing the regular pattern of growing issuance and rising inflation, the Ming rulers abandoned the paper money experiment altogether and returned to commodity money. Remarkably, after 1500, China did not return to paper money but remained on commodity money until paper money was reintroduced as part of Westernization in the nineteenth and twentieth centuries.³

In 1690, Massachusetts, at the time a British colony, started issuing paper money to pay its soldiers for military expeditions against French Quebec.⁴ The trend caught on in other North American colonies until all of them issued paper money. The result was in every case a steep decline of the purchasing power of the monetary unit. The British parliament put an end to this experiment with paper money in 1764.⁵

The Bank of England was established in 1694 for the specific purpose of lending to the state. A multitude of legal privileges was bestowed on the Bank, which gave it an exalted status from the start. Anticipating the policy of all modern central banks, the Bank of England issued bank notes against liabilities of the Crown, which means it monetized government debt.⁶ During the first 100 years of its existence, the Bank was

permitted on several occasions to default on its promise to repay notes in physical gold and still continue as a going concern.⁷

France issued paper money under the famous scheme of the Scottish gambler and monetary theorist John Law (1671–1729) between 1716 and 1720 in order to shore up public finances. “Saddled with enormous public debt as a result of the wars of Louis XIV, the government was on the brink of its third bankruptcy in less than a century.”⁸ The issuance of paper money led to a speculative stock market boom, the Mississippi Bubble. The inevitable crash and the decline in the value of bank notes brought turmoil to the French economy but failed to ease France’s fiscal predicament.⁹ Law ended up impoverished and was forced to leave the country.

It has been said that times of bad money are times of good monetary theory, and this is certainly true for France’s first major paper money disaster. Richard Cantillon (1680s–1734) was one of the most remarkable and colorful of the early economists. Living in Paris at the time, he befriended John Law, became a partner in his Mississippi Company, rode the bubble as it inflated, and apparently exited his positions—unlike Law himself—before the bubble popped. He retired a wealthy gentleman in London and wrote a book on economics. His treatise, *Essai sur la Nature du Commerce en General*,¹⁰ was published posthumously in 1755, and is usually considered the first concise treatise of economics. In it Cantillon dealt with, among many other things, certain effects of an expanding money supply through banking, particularly under paper money conditions, which he had observed at close range.¹¹ He noted that new money would not simply lift all prices and certainly not proportionally to the money inflow. Some prices would respond sooner and more than others. The early recipients of new money usually gain at the expense of later recipients. This insight—known as the Cantillon effect—is often underappreciated today due to the modern obsession with the general price level and the tendency to ignore relative prices. As Cantillon pointed out, relative prices always change in response to money injections, and this must affect resource allocation and the economy’s composition.

In 1775, the North American colonies resumed the issuance of paper money in the form of “continentals,” named after the Continental Congress, this time to fund the Revolutionary War. Six years later, continentals were practically worthless.¹²

France's next paper currency was the assignat, issued during the revolution to fund another bankrupt government. Assignats lasted from 1790 to 1803, when they, too, finally became worthless.¹³ The paper money collapse of the assignats is the first recorded inflation that made the modern statistical definition of hyperinflation, that is, a rise in prices of more than 50 percent in a single month.¹⁴ In 1803, Napoleon introduced the franc.

It is perhaps not surprising that after these currency disasters in France and America, the appetite for paper money had severely diminished among statesmen and social thinkers alike. Eighteenth-century France was home to a number of exceptional economists, among them the "philosophe" Count Antoine Destutt de Tracy (1754–1836),¹⁵ an articulate opponent of paper money who exerted a strong influence on U.S. presidents Thomas Jefferson and John Adams. Jefferson even edited the first English translation of de Tracy's main work, which became a standard textbook in the U.S. market at the time.¹⁶ But it was war that would soon provide again the impetus for further adventures in money printing. Still, a strong antipathy to paper money and banking (and certainly central banking) long remained a strong feature of America's political philosophy and characterized the attitudes of, in addition to Jefferson and Adams, Presidents George Washington, John Quincy Adams, Andrew Jackson, Martin van Buren, William Henry Harrison, and James K. Polk.¹⁷ Two attempts by the supporters of monetary expansion, notably the bankers themselves, to establish a national central bank failed. Only in 1913 did the advocates of "elastic currency" finally succeed, when they launched the Federal Reserve.

The period from 1793 to 1821 saw international conflict on an unprecedented scale, involving much of Europe and, at times, America, in what are called the Napoleonic Wars. In Britain, the government of William Pitt increasingly used the Bank of England to fund the war against France. Excessive credit creation led to the outflow of gold, and in 1797, the Bank was asked to suspend redemption in specie. Britain remained off gold for 24 years and experienced then unprecedented price inflation.¹⁸ In 1821, Britain returned to the gold standard.

And again a period of monetary decay seems to have advanced monetary theory as Pitt's policy instigated the so-called bullionist controversy.¹⁹ British economists of what became known as the Currency

School demonstrated that an expansion of money in circulation not only tends to lift prices, but it also initiates a business cycle by setting off a credit-driven boom that will inevitably transform into a recession. Their insights played a role in the passing of the 1844 Bank Act, also known as the Peel Act, which banned the issuance of banknotes by private banks. While intended as a restriction on fractional-reserve banking (at the time Britain was long back on a gold standard), it ultimately failed to inhibit the creation of deposit money by the banks, and it also had the spurious effect of further strengthening the monopoly position of the Bank of England. Nevertheless, it constituted one of the few incidents in which academic concerns over money expansion swayed the political debate.

To fund the War of 1812 between the United States and the British Empire, the U.S. government issued substantial numbers of Treasury notes, borrowed heavily from the growing banking sector, and in 1814 allowed the banks to suspend specie payment (redemption of paper notes in physical gold). Resumption of specie payment took place in 1817, but it was again suspended in 1819.²⁰ The next major experiment with paper money was initiated by the Civil War. The United States was again taken off gold in December 1861, when payment in physical gold was once more suspended. This was followed, over the next three years, by substantial issuance of new paper money, soon known as “greenbacks.” As should be expected, greenbacks quickly began to lose purchasing power and declined sharply versus gold. Greenbacks were declared legal tender, however, and in 1863 and 1864 various measures were taken to suppress the price of gold and to discourage the use of gold as a basis for contractual exchange.²¹ The Resumption Act was finally passed in January 1875, but the full resumption of specie payment did not occur until 1879.²² In that year, the United States joined the classical gold standard, a global monetary arrangement that, while not perfect, saw an unprecedented and, as of today, unrepeated period of fast global growth, free trade, and harmonious monetary relations that was ended by the First World War. Germany, Holland, and the Scandinavian countries had joined Britain on the gold standard in the 1870s. Switzerland, Belgium, and France all followed in 1878. After the United States joined in 1879, Austria followed in 1892, Japan in 1897, Russia in 1899, and Italy in 1900.²³

It should come as no surprise that the classical gold standard coincided with the era of Classical Liberalism, and that it was thus strongly supported by widely held ideas and notions, as well as cultural and political attitudes, that were conducive to free trade and limited state involvement in economic affairs. This was an era of sound money, free trade, balanced budgets, and *laissez-faire* in economics. Politicians could spend only the funds that parliament was willing to take from the citizenry openly through taxation. Persistent deficit spending was impossible. “Parliamentary control of finances,” wrote Ludwig von Mises, “works only if the government is not in a position to provide for unauthorized expenditures by increasing the circulating amount of fiat money. Viewed in this light, the Gold Standard appears as an indispensable implement of the body of constitutional guarantees that make the system of representative government function.”²⁴ Or, as James Grant put it succinctly: “To its friends, the gold standard was the rule of law applied to money.”²⁵

1914–2014: A Century of Monetary Decay

Today, it is often asserted that the gold standard failed and had to be replaced with something better, something more flexible. The global economic crisis of the 1930s—the Great Depression—is frequently attributed to the gold standard, as a gold standard evidently restricts the ability of central banks to print money and stimulate the economy when in recession. Another culprit, according to today’s consensus, was the Federal Reserve itself, as it should have eased monetary conditions more aggressively, even within the confines of the nominally still existing gold standard, an allegation that Friedman and Schwartz famously made in their study of American monetary history²⁶ and that is now an almost universally accepted doctrine in financial markets and in academia. But this still begs the obvious question of why the economy was suddenly in such difficulties in the first place. Why was such massive, indeed unprecedented, stimulus needed? As we have seen, it is precisely the unique advantage of a hard money system that it prevents the buildup of the type of dislocations and deformations that lead to crises. In my view and according to the analysis presented here, not only is it

impossible for a proper gold standard to allow a complete unbalancing of the economy to occur in theory, but it is also a fact that in practice the gold standard had, up to then, evidently guaranteed long periods of relative monetary stability. It had been elastic monetary systems—paper money systems—that routinely led to major crises. Under gold standard conditions, there had been occasional recessions and, of course, bank runs and panics, and the reasons for those are not difficult to find. We elaborated them in previous chapters. Fractional-reserve banking introduces a certain element of elasticity in the money supply, and did so in particular when the practice of deposit banking spread in the late nineteenth century. The resulting credit cycles were brutal but short. Recovery was quick. The Great Depression was different. Why were the historic patterns supposed to have changed in the 1930s? This is a question for the present mainstream that so readily blames the gold standard.

I think the answer is that nothing had changed. A proper gold standard would indeed have continued to keep the economy broadly in balance. It would have been a strong bulwark against the sprouting of the type of dislocations that built up during the First World War and through the 1920s, and that finally pushed the global economy over the edge. But it is a fact that a proper gold standard, a true hard money system that imposes essential limitations on debt accumulation and financial risk taking, had long been dismantled. The checks and balances that a monetary system with a hard core enforces had long been abolished or weakened, and this had again happened for political reasons. Developments in the early twentieth century thus fit quite neatly into the historical narrative on money. Again, it was war and the state's desire for more resources that played a hand in undoing sound money. Germany was the first major country to exit the gold standard in 1914 to fund the war effort; others followed. In the United States, the newly founded Federal Reserve quickly became involved, against the intentions of at least the more thoughtful among its supporters, in funding the U.S. war effort after 1917.

But the very fact that a central bank had finally been established in the United States in 1914 is an indication of deep changes in the intellectual climate that began in the late nineteenth century and that would profoundly reshape the relationship between money and state

for the next 100-plus years, and up to this day. James Grant writes about the 1880s:

There was a political impetus toward inflation. This was the silver movement, a Populist program for the nation's currency and the politics of debt. If the Federal Reserve had been in existence, the Populists would have petitioned its board of governors for easier money and lower interest rates. In the absence of the Fed, they demanded a larger monetary role for a cheaper metal."²⁷

The idea that easy money and cheap credit were sources of prosperity became more powerful.

In the second half of the gold standard era, a distinct trend toward higher inflation had already emerged, albeit still subdued by the standards of complete paper money systems. This mild inflation was the result of official policy increasingly encouraging the issuance of fiduciary media by the banks, a trend that culminated in America's establishing its first full-fledged lender-of-last-resort central bank. According to Friedman and Schwartz:

*The Federal Reserve System was created by men whose outlook on the goals of central banking was shaped by their experience of money panics during the national banking era. The basic monetary problem seemed to them to be banking crises produced by or resulting in an attempted shift by the public from deposits to currency [gold, DS].*²⁸

The latter part of this sentence should probably read, "[. . .] attempted shifts by the public out of uncovered fiduciary media issued by the banks and previously accepted by the public, back into money proper." The Achilles' heel of this system may then be seen more accurately, not in a fickle public but instead a banking sector that issues uncovered claims against itself. And the solution may then be found straightforwardly in either restricting this practice or at least allowing those who engage in it to bear the consequences, rather than providing a backstop for it and thereby encouraging it. Friedman and Schwartz continue: "This in turn required the existence of some form of currency that could be rapidly expanded." Evidently, this was in contradiction to the very concept of a proper gold standard, a conflict that Friedman and Schwartz acknowledge.²⁹ Those leading the charge for a new financial architecture put the logic of the British Currency School

and the Austrians on its head: Greater stability was now to be achieved by making money more elastic rather than less elastic. As Edward B. Vreeland, congressman from New York and co-author of the 1908 Aldrich-Vreeland Act, an important precursor to the Federal Reserve Act, remarked in 1912: “. . . the elasticity of cash is important,” but “the elasticity of credit is of vastly greater importance.”³⁰ Vreeland continued: “Go to England, Austria, France, Germany—any great country abroad. Not one of them by law requires a bank to keep a dollar of reserve on hand.” But, according to Vreeland—and rather bizarrely by the standards of economic logic—this was supposed to make these financial systems safer: “. . . we find that not one of them has had a money panic for more than 50 years.”

Of course, the idea of a central bank had its skeptics and adversaries, too, among them New York Republican and winner of the Nobel Peace Prize, Elihu Root. Writes James Grant: “To the proponents’ claims that the nation was going to be the lucky recipient of an ‘elastic’ currency, Root retorted that it would be rather an ‘expensive’ one—all growth and no contraction.”³¹ In his speech against the Fed, Root gave a vivid, proto-Austrian illustration of the monetary theory of the business cycle:

*With the exhaustless reservoir of the Government of the United States furnishing easy money, the sales increase, the businesses enlarge, more new enterprises are started, the spirit of optimism pervades the community. . . . All the world moves along upon a growing tide of optimism.*³²

But Root knew, quoting the “students of economic movements,” that those easy-money booms must end and must end badly.

We certainly know how this debate ended. The concerns of the critics were brushed aside, the Fed was launched, and the first decisive steps away from hard money and toward elastic money were taken, even if notionally the gold standard was still in place for a while longer. Fractional-reserve banking now had a government-sponsored backstop, and the Fed routinely offered funding for banks at below-market rates. Here are some anecdotes from James Grant’s excellent account of the unshackling of credit and the socialization of banking: “From 1914 to 1920 more than 1,700 new banks began operations in eleven typical agricultural states.”³³ “Between 1910 and 1920, according to the U.S.

Department of Agriculture, total farm mortgages jumped to \$7.9 billion from \$3.3 billion, a rise of 137 percent. It continued to rise in the early 1920s.”³⁴ And the Fed was also dragged into war financing, as by 1919 it provided facilities for banks to lend against war bond collateral. “In March 1918, the national banks held \$341 million in war bonds as collateral for loans. In September 1919, they held \$1.2 billion worth.”³⁵ In 1924, John Maynard Keynes famously announced that the gold standard had already become a “barbaric relic.”

Despite a sharp recession in 1920–1921 in the United States that, because it was allowed to unfold freely, should have gone a long way toward cleansing the economy of its distortions, the U.S. financial system continued its deformation in the “Roaring ’20s” on the back of a booming stock market and again with the aid of its young central bank: “Between 1922 and 1928, the Federal Reserve presided over a doubling of domestic bank credit.”³⁶

“It is easy to make [gold] a scapegoat,”³⁷ Sir Cecil Kisch, a British civil servant and authority on central banking, concluded when serving on the Chatham House Study Group in England in 1931, and observing that globally, on relatively small proportions of bullion, an enormous credit structure had been erected.³⁸

A cleansing of accumulated capital misallocations had become necessary—as painful as it was. But instead of the quick and sharp contraction that occurs in uninhibited markets, the U.S. economy was put through a crippling and dragged-out slump that lasted pretty much to the start of World War II.³⁹ The various forms of state intervention that became popular during the 1930s’ New Deal greatly obstructed the adjustment process and thereby protracted the period of pain and misery unnecessarily.⁴⁰ In any case, the general sentiment in favor of state intervention meant that government-supported money creation was not identified as the source of the economy’s malaise, but more of it was widely viewed as the solution.

According to widespread belief, recovery was expected only from the state, and for the state to deliver growth, the state had to be able to create yet more money. In 1933, Roosevelt took the dollar off gold domestically, giving the state full control over the monetary sphere within the United States. To allow unconstrained inflationism, the time-honored alternative to state paper money, gold, had to be ostracized.

Per executive order, Roosevelt confiscated all privately held gold in the United States and banned private ownership of it. Shortly afterward, the U.S. government devalued the dollar versus gold and thus de facto defaulted on its sovereign debt.⁴¹ Although the executive order expired, restrictions on gold ownership remained in place until 1974.

In what should have been the shining hour of the Austrian theory, as it was by the early 1930s not only practically uncontested in the realm of business cycle theory but had also proven useful for predicting and explaining an economic disaster, it was instead ignored. By 1933, the major contributions from Mises and Hayek on the origins of business cycles had been published, and the theory had found its way into the English-speaking world.⁴² Yet it had practically no impact on policy. The political mainstream now embraced state action, mistrusted the market, and harked back to old mercantilist ideas, which found a popular restatement in the 1930s in the works of John Maynard Keynes. The insight that expanding money disrupts the economy was ignored and forgotten, the comforting belief that printing more money could always buy the government a recovery became instead the new creed. To this day, the monetary infrastructure and the dominant monetary policy framework are but the institutionalized belief that a constantly expanding supply of money is good for the economy. During normal times, money is to be expanded slowly and moderately to aid growth but not to ignite inflation. At times of recession or deflation, money is to be expanded forcefully in order to stimulate the economy and encourage spending. Thus, for 70 years, the wrong lessons have been drawn from the Great Depression, which makes a repeat of this tragic event simply a question of time.

At no time in history was the hostility toward commodity money so deep rooted and so lasting as in the twentieth century. A dislike of gold and a desire for state-controlled paper money were universal. Gold had been a check on government power but big state ideologies and totalitarianism were now on the rise. The idea of omnipotent government was, of course, incompatible with a gold standard. The revolutionary government in Russia confiscated gold in all forms in 1917.⁴³ In Germany, the Nazi economist Werner Daitz declared:

In future, gold will play no role as a basis for the European currencies, because a currency does not depend on what it is covered by, but rather it is dependent

*on the value which is given it by the state, or in this case by the economic order which is controlled by the state.*⁴⁴

After the Second World War, no return to commodity money occurred, and the last remnants of an international gold standard were disposed of in 1971, when Richard Nixon closed the gold window—another de facto default. Under U.S. leadership, the world began to increasingly embrace social democracy as the dominant societal model, even though the term remains unpopular in the United States to this day. But whatever the name one gives this system, it is undeniable that a return to Classical Liberalism or anything similar to nineteenth-century laissez-faire was not achieved and not even attempted. In the new system, the economy was nominally capitalistic in that most enterprises were privately owned. Yet, the state played an important and, over time, increasingly active role, to be witnessed, among other things, by constantly rising levels of taxation, regulation, and public debt. With the collapse of communism in 1989, this model of the mixed economy became the indisputable political ideal globally. That the state should supply the economy with its own paper money under a regional monopoly, that the state should thus control and flexibly adjust the supply of money and constantly expand it has become almost unchallengeable in mainstream debate.

The inevitable consequences of the new paper standard have become ever more manifest since 1971. Over the past four decades, the decline in the purchasing power of pound and dollar—the two oldest currencies in the world—has been the steepest in their long history. Debt levels have risen sharply, and the financial industry has greatly expanded. Asset bubbles, frequently in real estate, emerged in many places around the world, leading inevitably to financial crises.

Japan experienced an immense housing boom and equity market boom in the 1980s that ended in a crash and banking crisis from which the country has still not fully recovered. Japan is today the most highly indebted nation on the planet. The United States and western Europe (with the exception of the Scandinavian countries) have, until recently, escaped major crises, but this hardly means that they have not accumulated dislocations. In the case of the United States, in particular, it seems that the monetary authorities managed to repeatedly prolong

the paper credit expansion through timely rate cuts and additional money injections whenever a recession began to unfold, a policy that was greatly aided by the dollar's unique position as the world's reserve currency. The last time U.S. authorities allowed high real interest rates to cleanse the economy of misallocations from a preceding boom was in the early 1980s. After the recession that followed, money and credit growth were, by and large, allowed to resume for the next three decades, not least because most of the monetary expansion was now channeled into financial assets and real estate. As the new money mainly lifted the prices of stocks, bonds, and houses, and as the ongoing but comparatively moderate price increases in the standard "consumption basket" were judged to be acceptable, money-fueled credit expansion was tolerated and actively supported by the central bank. Since the late 1980s, the Fed has on various occasions avoided or short-circuited market corrections and extended the credit boom: after the 1987 stock market crash; after the 1994 Mexican peso crisis, in 1998, when the collapse of the Long-Term Capital Management hedge fund and the default of Russia threatened to kick off a wave of international deleveraging; toward the end of 1999, when the Fed injected substantial amounts of money prohibitively out of concern about potential computer problems related to Y2K; and between 2001 and 2004, after the Enron and WorldCom corporate failures and the bursting of the Nasdaq bubble, when the Fed left interest rates at around 1 percent for three years. Unsurprisingly, bankers and investors became more and more used to being occasionally bailed out with easy money from the Fed, and consequently became more confident and aggressive in their risk taking. By the late 1990s, market participants had a new name for the central bank's predictable reaction function: the "Greenspan put," named after Alan Greenspan, Fed chairman from 1987 to 2006, and later the "Bernanke put," after Ben Bernanke, Fed chairman from 2006 to 2014.⁴⁵ A "put" is an options contract that gives its owner (the buyer of the option) the right to sell an asset at a predetermined price (to the seller of the option) and that can thus be used for limiting the losses on an investment in case of a market sell-off. The phrase thus alludes to an inherent downside protection that investors get from the Fed. When prices on asset markets decline, the Fed tends to lower interest rates, expands available credit, and now increasingly also purchases select assets directly.

In the United States, total net debt as a percentage of gross domestic product (GDP)—which stood at about 150 percent when Nixon took the dollar off gold—reached a record high of 370 percent in the third quarter of 2009. In the 10 years to the start of the most recent crisis in 2007, bank balance sheets in the United States more than doubled, from \$4.7 trillion to \$10.2 trillion.⁴⁶ The Fed's M2 measure of total money supply rose over the same period from less than \$4 trillion to more than \$7 trillion and has by now reached \$11 trillion.⁴⁷ And as previously mentioned, in the 10 years to 2007, house prices appreciated, in inflation-adjusted terms, three times faster than over the preceding 100 years.⁴⁸ There has been a lot of talk about deleveraging after the recent financial crisis, but little real deleveraging has occurred.⁴⁹ In the United States, the total amount of public-sector debt outstanding has indeed doubled since 2007.

These phenomena are not confined to the United States; they are global. Reinhart and Rogoff⁵⁰ calculated that “advanced economies hit a peak (in terms of gross central government debt) not seen since the end of World War II. In fact, going back to 1800, the current level of central government debt in advanced economies is approaching a two-century high-water mark.” But it gets worse:

Broader debt measures that include state and local liabilities are unfortunately not available across a long historical period for many countries, . . . but including them would almost surely make the present public debt burden seem even larger. . . . [I]ncluding the liability side of old-age pensions and medical benefits would . . . make the overall debt picture much worse today relative to earlier periods.⁵¹

In order to sustain the mirage of sustainability, central banks adopt ever more extreme policy positions. Elihu Root's prediction has come true. It is now “all growth and no contraction,” at least when it comes to money, credit, debt, and asset prices. The state, the banks, and many investors have come to rely increasingly on the central banks and their printing presses to keep market forces at bay and to further postpone the day of reckoning, when liquidation of unsustainable, never-to-be-repaid debt, in particular by governments, will become unavoidable. Central bankers already seem to have painted themselves into a corner. The fact that half a decade after the official

end of the financial crisis and the beginning of the “recovery,” every major central bank still feels compelled to keep policy rates at or near zero; that none of them has meaningfully unwound their emergency programs; and that all of them either continue to depress interest rates and compress risk premiums by targeted asset purchases or promise to stand ready to do so at any moment—and, if need be, without limit—should be a clear sign that massive distortions persist. These distortions will get further cemented and will get larger the longer these policies continue. The point at which a somewhat orderly exit from these policies might still have been feasible has probably long passed.

The policy stance of global central banks is ultimately not a cyclical phenomenon. It is not simply the result of an incredibly slow and drawn-out global recovery and likely to be normalized once self-sustained growth has returned. It is rather the logical endpoint to which an unconstrained paper money system such as ours must sooner or later drift. It is the logical destination of a system that, in the United States, started with the establishment of the Fed in 1914, the abrogation of the domestic gold standard in 1933 and the international one in 1971, and that now embraces the central bank as general “prosperity manager”⁵² with its policies of money printing, interest rate suppression, and asset price manipulation.

The present monetary infrastructure is not only inherently unstable, it is unsustainable. Before we explore the potential endgames and discuss the future of money, we take a look at the beneficiaries of present arrangements and at the mainstream belief system that continues to support what will finally prove untenable.

Notes

1. Joerg Guido Huelsmann, *The Ethics of Money Production* (Auburn, AL: Ludwig von Mises Institute, 2008): 29–33.
2. Most of the information in this paragraph is from Gordon Tullock, “Paper Money: A Cycle in Cathay,” *Economic History Review*, 9, no. 3 (1957): 393–407; and Peter Bernholz, *Monetary Regimes and Inflation, History, Economics and Political Relationships* (Cheltenham, UK: Edward Elgar, 2003): 52–63.
3. Tullock, “Paper Money: A Cycle in Cathay.”

4. Murray N. Rothbard, *A History of Money and Banking in the United States: The Colonial Era to World War II* (Auburn, AL: Ludwig von Mises Institute, 2005), 51–56; and Peter Bernholz, *Monetary Regimes and Inflation*, 45–47.
5. Rothbard, *A History of Money and Banking in the United States*, 54.
6. Vera C. Smith, *The Rationale of Central Banking and the Free Banking Alternative* (Indianapolis, IN: Liberty Press, 1990), 11–12.
7. Murray N. Rothbard, *Classical Economics: An Austrian Perspective on the History of Economic Thought, Volume II* (Cheltenham, UK/Northampton, MA: Edward Elgar, 1995), 159.
8. Niall Ferguson, *The Ascent of Money: A Financial History of the World* (London: Penguin Books, 2009), 139.
9. *Ibid.*, 139–158. See also Friedrich August von Hayek, “First Paper Money in Eighteenth-Century France,” *The Trend of Economic Thinking*, vol. 3 of *The Collected Works of F. A. Hayek*, W. W. Bartley III and Stephen Kresge, eds. (London: Routledge, 1991): 155–163.
10. Richard Cantillon, *Essay on the Nature of Commerce in General/Essai sur la Nature du Commerce en General*, Henry Higgs, trans. (New Brunswick, NJ: Transaction Publishers, 2001): 5–130.
11. Friedrich August von Hayek, “Richard Cantillon (c. 1680–1734)” in *The Trend of Economic Thinking*, 245–294; and Murray N. Rothbard, *Economic Thought before Adam Smith* (Cheltenham, UK/Northampton, MA: Edward Elgar, 1995): 343–362.
12. Rothbard, *A History of Money and Banking in United States*, 59–62.
13. The paper notes carried the inscriptions “The law punishes the counterfeiter by death” and “The nation rewards the denunciator.” John Laughland, *The Tainted Source: The Undemocratic Origins of the European Idea* (London: Warner Books, 1998): 212; and Smith, *The Rationale of Central Banking and the Free Banking Alternative*, 28–29.
14. Bernholz, *Monetary Regimes and Inflation*, 8; and Steve H. Hanke and Alex K. F. Kwok, “On the Measurement of Zimbabwe’s Hyperinflation,” *Cato Journal*, 29, no. 2 (Spring/Summer 2009).
15. Mark Skousen, *The 100 Percent Gold Standard: Economics of a Pure Money Commodity* (Lanham, MD: University Press of America, 1980): 45.
16. See the quote at the beginning of this book from a letter by Thomas Jefferson to John Adams.
17. Skousen, *The 100 Percent Gold Standard*, 42–50.
18. Rothbard, *Classical Economics*, 159–161; and Smith, *The Rationale of Central Banking and the Free Banking Alternative*, 14–18.
19. Rothbard, *Classical Economics*, 157–274.

20. Smith, *The Rationale of Central Banking and the Free Banking Alternative*, 44–45; and Rothbard, *A History of Money and Banking in United States*, 72–90.
21. Rothbard, *A History of Money and Banking in United States*, 122–159.
22. *Ibid.*, 151–159.
23. Roy W. Jastram, *The Golden Constant, The English and American Experience 1560–2007* (Cheltenham, UK/Northampton, MA: Edward Elgar, 2009), 17; see also Gulio M. Gallarotti, *The Anatomy of an International Monetary Regime: The Classical Gold Standard, 1880–1914* (Oxford: Oxford University Press, 1995).
24. The quote is from an English translation of Mises's *Theorie des Geldes und der Umlaufsmittel*, quoted from Laughland, *The Tainted Source*, 243.
25. James Grant, *Money of the Mind Borrowing and Lending in America from the Civil War to Michael Milken* (New York: Farrar, Straus and Giroux, 1992): 72.
26. Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States, 1867–1960* (Princeton, NJ: Princeton University Press, 1963; ninth paperback printing, 1993).
27. *Ibid.*, 70–71
28. *Ibid.*, 192.
29. *Ibid.*, 191.
30. Quoted from Elgin Groseclose, *America's Money Machine: The Story of the Federal Reserve* (Auburn, AL: Ludwig von Mises Institute, 2009), 59.
31. Grant, *Money of the Mind*, 142.
32. *Ibid.*, 142–143.
33. *Ibid.*, 106
34. *Ibid.*, 108
35. *Ibid.*, 156.
36. *Ibid.*, 185.
37. Chatham House, *Gold and the International Monetary System: A Report by the Chatham House Gold Taskforce* (London: Chatham House, 2012): 5.
38. *Ibid.*
39. Murray N. Rothbard, *America's Great Depression*, 5th ed. (Auburn, AL: Ludwig von Mises Institute, 2000).
40. David A. Stockman, *The Great Deformation: The Corruption of Capitalism in America* (New York: Public Affairs, 2013), in particular 137–195.
41. Carmen M. Reinhart and Kenneth S. Rogoff, *Financial and Sovereign Debt Crises: Some Lessons Learned and Those Forgotten*, IMF Working Paper WP/13/266 (Washington, DC: International Monetary Fund, 2013): 15.

42. F. A. Hayek published his first English book, *Prices and Production*, in 1931, and Hayek's colleague at the London School of Economics, Professor Lionel Robbins, published his book, *The Great Depression* (London: Macmillan & Co.) in 1934.
43. Carmen M. Reinhart and Kenneth S. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly* (Princeton/Oxford, UK: Princeton University Press, 2009): 112.
44. Quoted from Laughland, *The Tainted Source*, 41.
45. Stockman, *The Great Deformation*, 481–487.
46. Board of Governors of the Federal Reserve System, www.federalreserve.gov/releases/h8/Current/.
47. Federal Reserve Statistical Release H.6 Money Stock Measures, www.federalreserve.gov/releases/h6/hist/.
48. Reinhart and Rogoff, *This Time Is Different*, 207.
49. As of December 2012, debt to GDP stood at almost 360 percent. Federal Reserve Board, Flow of Funds. See Carmen M. Reinhart and Kenneth S. Rogoff, *Financial and Sovereign Debt Crises*, 8 (“... The degree of deleveraging after the financial crisis has been limited.”).
50. *Ibid.*, 6.
51. *Ibid.*
52. Stockman, *The Great Deformation*, 427–442.

Part Five

BEYOND THE CYCLE: PAPER MONEY'S ENDGAME AND THE FUTURE OF MONEY

Chapter 8

The Beneficiaries of the Paper Money System

A system of elastic money is suboptimal, unstable, and ultimately unsustainable. Nevertheless, it has its defenders, apologists, and enthusiastic advocates. It is unlikely to disappear quietly. The measures by which the state will try to uphold it will most certainly become more aggressively interventionist and even draconian as the inconsistencies and instabilities become more apparent and pervasive. Since the recent crisis, interventionism has already had a renaissance globally, and this has been largely welcome by the wider public. Most people still believe that too much capitalism is the cause of crises rather than the ongoing monetary interventions and institutionalized market manipulations that characterize our fiat money system. The end of this system is ultimately as certain a prospect as anything in economic forecasting can ever be, for the simple reason that political will cannot

lastingly sustain what is economically unsustainable, but it promises to be a messy affair and thus unpredictable in its precise unfolding.

But still, it seems appropriate to make some kind of forecast in this book. I try to do so in the final chapter. This and the following chapter first deal with the two forces of opposition to a transition to a market-based monetary system of apolitical money: the direct beneficiaries of the present system and the widely shared system of beliefs about economics and the role of the state in the economy that dominate current debate and support current arrangements. These two forces presently stand in the way, in my view, of a rational, open-minded debate about the future of money and any meaningful deliberate change of the monetary architecture. In the end, these forces will not prevail, but they will shape events in the immediate future.

In one sense, it seems not quite accurate to speak of “beneficiaries” of the paper money system. An unstable monetary system cannot, in the long run, be to anyone’s benefit. The state and the banks certainly benefited from the advantages that a fiat money system bestowed on them for as long as the system grew and outwardly still seemed to work. And the representatives of the state and the banks may believe that these benefits can be had forever, that this paper money system can be made to last. But as it invariably approaches its demise, its contradictions will also begin to harm its apparent beneficiaries. An overextended banking sector already depends for survival on ongoing support from the central bank and state, and in return for state protection is already paying with a loss of the flexibility, autonomy, and independence that normally characterize truly capitalist businesses. Banks are now learning the hard way that banking as a free market endeavor is impossible in a system of state-controlled fiat money. Ultimately, banks become the protectorate of the state and the extended arm of its central bank. And the modern state, terminally overindebted, structurally incapable of living within its means and addicted to cheap credit, finds itself in a deadly embrace with the overstretched financial industry, which it needs to protect from market forces and on which it equally depends for its own financial survival. Growing state intervention to sustain what is ultimately unsustainable will increasingly disrupt market forces throughout the economy, weaken capitalism, and thus rob the

state of its own source of income. The parasite runs the risk of killing the host. In the end, nobody benefits.

In the following, the term *beneficiary* is thus meant in the narrower sense of temporary beneficiary. It does not imply that, if these beneficiaries had their way, the system's life could be extended—to their benefit—forever. The choice is ultimately between either a return to a gold standard or some form of free market money, which most likely will be hard money and in any case a system under which banks and state lose the present monetary privileges, or total monetary catastrophe, from which states and banks will not emerge unscathed either.

Paper Money and the Banks

It is not difficult to see how the banks and the wider financial industry benefit from the present paper money infrastructure. The fractional-reserve banks enjoy the privilege of creating money (fiduciary media) at (almost) no cost to themselves and lending it to nonbanks at interest. This is naturally very lucrative. The wider financial industry also reaps substantial benefits since it is usually the first recipient of new money. As we have seen, the early recipients of new money enjoy an as-yet fairly undiminished purchasing power while those who receive money later, when many prices are elevated, do not benefit at all. It is no surprise that since the introduction of fully flexible fiat money in 1971, the financial industry has greatly expanded. Since the late 1980s in particular, the expansion of money mainly has been channeled into the markets for financial assets and real estate, thereby benefiting the holders of such assets and those operating in the markets for these assets at the expense of other sections of society.

By replacing inflexible and apolitical commodity money with its own unlimited state fiat money, and by making its central bank a lender of last resort, the state has, to a large degree, socialized the risks of individual banks and allowed for the massive expansion of fractional-reserve banking, albeit now under the state's tutelage and control.

It would be wrong to assume that central banks and state fiat monies exist merely as a response to fractional-reserve banking. Throughout history, states have imposed their own paper monies on their populations

and have run privileged state banks, clearly with the intent to fund state spending. But the present arrangement, which, as we have seen, really came to fruition in the course of the twentieth century, constitutes the ingenious pooling of the interests of the state and the fractional-reserve banking industry. Only with the full backing of the state can the banks conduct fractional-reserve banking on the considerable scale it is practiced today. Unlimited state paper money, legal tender laws, lender-of-last-resort central banks, state-backed deposit insurance and, ironically, even government regulation, are indispensable for an extensive large-scale fractional-reserve banking industry. The state, in return, obtains (almost) full control over the monetary sphere of society and the privilege of running larger deficits than would otherwise be feasible, with the added bonus that the state's extraordinary powers in this area appear to large sections of the public as a necessary arrangement in the interest of the public. Somebody has to control the bankers and rein in their money printing!

The state-bank alliance necessarily involves the cartelization of the banks around the dominant central bank. Banks become to a large degree extensions of the state and instruments of economic policy. However, as has been shown, this system does not do away with cycles; it merely extends and magnifies them. In this system, banks are bigger but not safer. In the inevitable downturns, the banking sector receives further state protection as bank failures are now even more painful in a massively inflated banking industry than they were before. The bigger the banks get due to the institutionalized support from the central banks, the more of a claim on central bank support (and other government measures) the banks have in the next crisis. Paper money, central banking, and other measures are nothing but structural subsidies for the banking business, and it is only logical that they must create an industry in which most companies are finally considered "too big to fail." At that point it seems unlikely that the state will allow the banks to keep operating autonomously and to keep their profits private while having large losses socialized. Businesses that cannot go under are no longer free market enterprises but departments of the state, such as the post office (if not yet privatized) or the police. But in a nationalized financial system, capital will undoubtedly get allocated inefficiently and according to political objectives. If you think that banks

have often allocated credit poorly, wait until it is done by state bureaucrats! Without a functioning free market, guided by market prices, the profit motive and the meaningful prospect of failure, no economically rational allocation of credit is feasible. But all these elements, “the free market,” “market prices,” and “prospect of failure,” if not at first “the profit motive,” have been systematically weakened by a system of unlimited paper money and lender-of-last resort central banks.

Additionally, the banking sector today plays an essential role in the government’s anticrisis schemes. Any monetary stimulus has to go through the banking sector to reach the broader economy and hence it constitutes a powerful subsidy to the banks. Neither state nor banks will thus initially have to suffer the full consequences of the boom and bust cycle that is the unavoidable outcome of their money-printing privilege. Bank bailouts, including bank nationalizations, and an expanding state are innate elements of a system of state paper money.

As the financial sector gets bigger, its instability becomes increasingly threatening to the overall economy, prompting ever more extensive, yet ultimately futile, involvement of the state. The more the state takes control of money and credit through its regulators and its central bank, the less truly competitive and capitalistic the banking industry is going to be. The endgame will be full nationalization of money and credit and increasingly aggressive money creation to prevent the liquidation of the accumulated dislocations. At that point, private and competing banks may no longer be deemed “necessary.”

Paper Money and the State

As the territorial monopolist of coercion and compulsion and the ultimate decision maker in case of conflict, the state does not have to rely on voluntary exchange of goods and services to obtain resources but enjoys the privilege of legally expropriating the private property owners and market-income earners in its jurisdiction.¹ This is called *taxation* and is a unique feature of state power. In the course of the twentieth century, all states managed a ceaseless expansion of state activity, so that today the share of government spending in overall economic activity is almost everywhere higher than it was 50 years ago

and substantially higher than 100 years ago. This growth of the state has not been funded by taxation alone, albeit as a general rule, the number of taxes and the rates of taxation have risen. Governments have also relied heavily on borrowing on financial markets, in particular since the demise of the gold standard, and, as a result, the amount of outstanding public debt has also risen on trend in all major democratic states.²

Ownership of the paper money monopoly has allowed the modern state to consistently incur outlays in excess of the revenues the state obtains through taxation. The privilege of printing money has given the state an additional advantage over private borrowers and allows it to crowd them out more easily. The ability of the state to meet obligations by simply printing more money means that any shortfall of revenue will not mean default, an event that would be to the complete detriment of the state's creditors. Instead, by issuing more money and in the process impairing the purchasing power of the monetary unit, the creditors can be repaid (at least at only a small real loss to them resulting from inflation) and the burden of meeting these obligations can be socialized and spread across the entire community of money users. Society overall is made to pay not only via the direct cost of a diminished purchasing power of its monetary assets but also indirectly via the numerous destabilizing second-round effects of monetary expansion that I described in previous chapters. But to the creditor, it is evidently preferable to be repaid in money of a somewhat diminished exchange value than suffer the risk of default. There can be no doubt that fully elastic paper money under a territorial state monopoly greatly enhances the ability of the state to run deficits and borrow in financial markets. The explosion in public debt that occurred since the introduction of paper money systems is evident. That this is, in itself, a destabilizing effect of paper money systems is often not fully appreciated. If elastic money had no other consequence than allowing bigger government deficits and the accumulation of more government debt, it would be sufficient to reject it for this reason alone.

It is sometimes assumed that issuing government bonds is equivalent to borrowing from future generations. There is some truth to this, although it is not quite accurate. The present generation can obviously not transport resources through time and thus obtain, that is, borrow or steal, the resources of future generations. The present generation

has only the presently available resources at its disposal. The only question is how to allocate these resources to the various alternative uses. By issuing government bonds, the state simply claims a larger control over the currently available amount of resources than it already obtains through taxation. If the government bonds were not issued, more resources would simply get allocated to different uses according to the wishes of private property owners. In particular, government bonds compete with privately issued debt claims (corporate bonds) and privately issued equity claims for the existing pool of savings. However, this competition does not occur on a level playing field, as we have just seen. The government can crowd out any private competition for savings. Unlike the private issuers of bonds and equities, who have to convince their investors that the projects they are funding stand a good chance of generating an attractive market income by producing something that the buying public will voluntarily purchase, the government is under no such scrutiny. The government simply invites its investors, not to share in entrepreneurial risk and opportunity, but to participate in the lucrative government privilege of taxation and the printing of money. As long as the government finds enough private property owners and market income earners to expropriate in the future via taxation, and as long as it finds enough takers for its state paper money, it can repay its bonds, regardless of what it did in the meantime with the funds that were raised through the issuance of the bonds.

A large part of state expenditure today is used for funding redistributive programs. To the extent that this is how the funds raised via the issuance of government bonds are spent, government borrowing channels savings back into consumption, rather than into investment. A society with a large number of outstanding equity claims and corporate debt claims can reasonably be expected (if we exclude for a moment the possibility of this being the result of extensive money creation in previous periods) to have a large stock of voluntary savings that has been channeled via the financial system into a substantial stock of productive capital. How productive that capital will prove to be is of course uncertain. In any human endeavor, there is uncertainty. But if there were not at least a reasonable chance that these investments lead to positive returns on capital in the future, investors would not have provided the funds for them. By contrast, a society with a large

amount of outstanding government debt can reasonably be assumed to have enjoyed a period of substantial consumption, which was to a large degree government funded, so that a considerable portion of its accumulated savings are now backed by mere promises of the state to let the bondholder partake in the state's privilege of future expropriation. It is therefore clear that high levels of government spending, which have to coincide with high levels of taxation and/or high levels of government borrowing, will undermine the wealth-generating capabilities of the economy.³ As we have seen, the ability to print money allows the state to borrow more heavily and thus increase government spending beyond the levels supported by taxation. The results are further distortions in resource allocation, in particular the diversion of scarce resources from building a productive capital stock to government-directed present consumption.

Here is another aspect to the interest of the state and the banks in a system of continuous inflation: As has been shown, in a commodity money system with no or limited fractional-reserve banking and thus a fairly static supply of money, the monetary asset will provide its holders with a moderate return in the form of its gradually appreciating purchasing power. This allows those who have a low tolerance for risk or limited expertise in investing to obtain at least a marginal return for their savings if they save by accumulating money. In a paper money system with ongoing inflation, this option does not exist, and the closest alternative available to those who have a low tolerance for risk or limited knowledge of investing are bank deposits and government bonds. The members of the public who would, in a commodity money system with secular deflation, save through holding cash are turned, in a paper money system, into the natural holders of savings deposits and government bonds and the reliable source of funds for the banks' fractional-reserve banking activities and the state's spending. Herein lies potentially another reason for why the representatives of banks and states uniformly favor inflationary paper money and are always very keen to portray deflation as a great social evil. Money that has an essentially stable or on-trend appreciating purchasing power would be powerful competition to fractional-reserve deposits and government debt.

Other components of the paper money infrastructure further enhance the state's control over economic resources. There is

the state-owned central bank. Central banking is usually profitable. The central bank creates money at almost zero cost and lends it to the banking sector at interest or it buys interest-bearing securities with the newly created money. This gain usually goes to the state. Obviously, to the extent that the central bank buys government bonds, the government pays interest to the central bank first and then collects the central bank's profits later.

Furthermore, the direct monetization of government debt has been a constituting feature of central banks from the beginning. We have seen that it was one of the key objectives behind the founding of the Bank of England.⁴ Central banks create money by buying things and paying for them by crediting the account of the seller with newly created money, thus monetizing whatever the central bank buys. Although this could, in theory, be practically anything, the state usually encourages the central bank to buy sovereign debt. The official reason is that the central bank should not risk incurring losses by buying risky assets, and that it should thus mainly monetize safe government bonds. As we have seen, government bonds are indeed safer because of the state's monopoly of taxation. They do not have to be repaid through the uncertain process of meeting the changing demands of the buying public but can be met by taxing those who have, in the preceding period, taken market risk and have succeeded in an entrepreneurial endeavor. This, by itself and under the condition that all else is equal, makes government bonds safer than comparable corporate loans, at least for as long as government debt is not excessive. There is certainly a limit to how much any government can realistically expropriate from the productive part of society. Consequently, there are limits to the supposed safety of government bonds. There is undoubtedly a point at which the additional negative effects on the economy of higher taxes would be so overwhelming that the government may contemplate not meeting its obligations to bondholders rather than taxing the productive part of society further. The ability to also print money and to have the central bank monetize government debt thus provides an important second layer of safety to the bond investor. It is therefore not without irony that central banks are allowed to monetize government debt for the reason that government debt is supposed to be safe, when it is precisely the monetization of this debt by the central bank that, to

a considerable degree, adds to government bonds' safety. Furthermore, according to the government-imposed rules and regulations, the fractional-reserve banks in its jurisdiction are usually allowed to hold more government bonds and other public-sector securities on their balance sheets for each unit of capital than riskier loans to private-sector entities.

We see here the extensive interdependence between the state and the financial sector of a monetary system based on state paper money. Government bonds are declared safe and can thus provide the basis of money creation by the central bank, but it is precisely this monetization that substantially reduces risk of outright default. Fractional-reserve banks can extend credit on the basis of money creation, a process that, to the extent it is practiced today, requires substantial state backing. At the same time, the entity to which fractional-reserve banks can provide that credit most easily (that is, with the least drain on regulatory capital) is the state itself.

The paper money infrastructure allows the state to grow in any economic climate. During good times the state collects more tax revenue, and during recessions its central bank lowers interest rates and injects reserve money into the banking system by buying government securities. Low rates and higher reserves encourage the banks to expand their balance sheets, but as loans to private entities are always risky, and particularly risky during recessions, and as the cost of capital is lower for holding government securities, it is likely that a lot of the new and artificially stimulated lending will again benefit the public sector.

One of the important and often underestimated benefits of the money-printing privilege for the state is the ability to create short-term booms in economic activity. As we have seen, growing government expenditure, which has almost become part of life in modern mass democracies, involves rising taxation and government borrowing, which in turn weaken the productive capacity of the economy. It has therefore been vital for governments to combine growing expenditure, taxation, and borrowing with ongoing inflationism, with the suppression of interest rates through money injections, thus creating the illusion of higher levels of voluntary savings and allowing for artificial investment booms.

Paper Money and the Professional Economist

To put professional economists next to the state and banks as beneficiaries of the present monetary system may appear strange at first. The latter two are powerful sectors of modern society with substantial control over economic resources. Professional economists are simply not in that category. But a system that is built on privilege and state protection requires an intellectual support structure, a widely shared belief system that secures public acceptance. We will analyze this intellectual foundation of the present system in the next chapter. It should already be clear, however, that the intellectual guardians of the contemporary monetary architecture are the professional economists. As will be explained shortly, it is not the entire body of economic theory but rather a specific subsector of it that provides, in its popularized form, large sections of the population, of the state bureaucracy, the political class, and the media with a framework for interpreting and debating economic phenomena today.

It would be naïve to simply assume that the exalted position of these theories in present debate is the result of their superiority in the realm of pure science. This is not meant as a conspiracy theory in the sense that professional economists are being hired specifically to develop useful theories for the privileged money producers in order to portray their money printing as universally beneficial. But it would be equally wrong to assume that the battle for ideas is fought only by dispassionate and objective truth seekers in ivory towers and that only the best theories are handed down to the decision makers in the real world, and that therefore whatever forms the basis of current mainstream discussion must be the best and most accurate theory available. No science operates in a vacuum. The social sciences in particular are often influenced in terms of their focus and method of inquiry by larger cultural and intellectual trends in society.

This is probably more readily accepted in the other major social science—history. What questions research asks of the historical record, what areas of inquiry are deemed most pressing and how historians go about historical analysis is often shaped by factors that lie outside the field of science proper and that reflect broader social and political forces. Moreover, ever since mankind began writing its histories,

they have served political ends. History frequently provides a narrative for the polity that gives it a sense of identity or purpose, whether this is justified or not, and the dominant interpretations of history can be powerful influences on present politics. Similarly, certain economic theories have become to dominate debate on economic issues because they fit the zeitgeist and specific political ideologies. This is not to say that economics cannot be a pure, objective science. It certainly can and should be. Whether theories are correct or not must be decided by scientific inquiry and debate, and not in the arena of politics and public opinion. But it is certainly true that many economists do depend for their livelihoods on politics and public opinion, and that they cannot operate independently of them.

We will shed light on today's dominant economic doctrines, at least in their popularized forms, in the next chapter. Here, we look at the benefits that the present monetary infrastructure has to offer to the economics profession. There can be little doubt that many economists truly believe that this is the best possible system, but it is also clear that it is in their own interest to do so. The alternative to the present financial infrastructure would be a system of denationalized inelastic commodity money. This would be a system without monetary policy and therefore without the need to constantly analyze, discuss, predict, and advise policy, which is how most economists earn a living today.

Many economists work in sectors that owe their size and importance if not their very existence to the fiat money system and its extensive bureaucracies, like the numerous central banks, the International Monetary Fund (IMF), the Bank for International Settlement (BIS), the World Bank, and the wider financial industry. Here, the economists are either policy makers themselves, advise policy makers, or provide research for policy makers. In the private sector, professional economists help investors, traders, and bankers anticipate what the policy makers are likely to do next. The highest paid jobs for economists are frequently offered on Wall Street or in the City of London and are thus provided by companies that directly or indirectly benefit from the paper money system, either by being paper money producers themselves or by being consistently early recipients of newly created money. Furthermore, these jobs often go to professionals who earned their stripes in government central banks or in institutions like the

IMF, and whose special knowledge of the extended financial bureaucracy is precisely what makes them interesting for their private-sector employers. But even purely academic economists will find that their work achieves broader recognition if it can claim direct relevance to the present institutional arrangements.

This development is fairly recent but representative of what happened to the economics profession at large, as it has, in the course of the twentieth century, adapted to the needs of the large and ever-growing interventionist state. While the economist once strived to discover the laws that guide the cooperation of otherwise unconnected individuals on markets and that allow everyone to benefit from the extended division of labor—an endeavor that put him often in conflict with political powers and earned economics the epitaph “the dismal science”—the modern economist is now frequently a government adviser and an accomplice in ongoing market intervention. Economists themselves rarely work in a truly free market. In 2008 in the United States, the federal, state, and local governments accounted for more than 50 percent of total employment of economists.⁵

This is not to say that economists are simply mouthpieces of the policy establishment. Many of them can be critical of policy makers, and many of them want to contribute to a better understanding of the system or genuinely strive toward its improvement. Yet they work within self-imposed limits. Mainstream economists have little incentive to question the system itself, and they will rarely think outside of it.

Of course, none of these observations can tell us anything about the validity of the theories that these economists advocate. As made clear here, whether a theory is correct and valid or flawed and erroneous can be decided only by thorough theoretical investigation. A theory is not wrong because it serves those who propose it and is not correct because it is being advanced by disinterested truth seekers. Only careful examination can reveal the merit of any theory, and this is what we aimed for in our systematic analysis here. However, it is a simple fact that a return to a system of inflexible commodity money, such as a proper gold standard or any form of apolitical free market money, would deprive not only the state and banking industry of a source of power and profit but also the economics profession of positions of influence and income.

Notes

1. Hans-Hermann Hoppe, *Democracy—The God That Failed: The Economics and Politics of Monarchy, Democracy and Natural Order* (New Brunswick, NJ: Transaction Publishers, 2005): 45.
2. *Ibid.*, 55–60.
3. Ludwig von Mises, *Human Action: A Treatise on Economics*, 4th rev. ed. (Irvington, NY: Foundation for Economic Education, 1963/1998): 224–228.
4. See Chapter 7.
5. United States Department of Labor, Bureau of Labor Statistics; National Employment Matrix; and Occupation Report, <http://data.bls.gov:8080/oep/servlet/oep.nioem.servlet.ActionServlet>.

Chapter 9

The Intellectual Superstructure of the Present System

When crises occur, they lead to debate, and debates always take place within an established framework, within a set of widely accepted theories and beliefs that are themselves no longer the subject of inquiry but are treated as established truths and are therefore being used as intellectual tools. In respect to economic crises, this framework is not, as many might believe, the science of economics as such but rather a specific subset of economic doctrines, a body of theories that have become dominant and that in their popularized form today provide the basis for most economic discussions.

The dominant trends in economic thinking in the twentieth century were the rise of macroeconomics and the related spread of mathematical and statistical techniques in economic analysis (econometrics).

These trends brought not only new theories but also new ways of looking at economic phenomena, of framing economic problems and conducting economic analysis. Whether they constitute an improvement over earlier modes of economic thinking is a valid question that has to be answered in the realm of pure science. There can, however, be little doubt that in many ways a narrowing of perspective relative to older modes of economic thinking has occurred, mainly as the result of the strong emphasis of the “new” economics on large aggregates, in particular those that can be followed conveniently by national account statistics. Theories that center on the large entities of gross domestic product (GDP), the price index, the unemployment rate, and so forth are fundamentally unable to capture the crucial processes of resource allocation and of the alignment of economic activity with consumer preferences. These processes, by definition, operate beneath such aggregates. The statistical aggregates can, if anything, give only a faint and often misleading image of them.

Nevertheless, these theories provide the theoretical paradigm that is now shared by the majority of those who participate in discussions on economic matters. Today, almost everybody who participates in economic debate, whether he or she is a politician, central banker, or journalist, is, first and foremost, a macroeconomist and thus tacitly adopts a series of usually uncontested notions of the macro paradigm. While the wide acceptance of the mainstream doctrines provides everybody with a ready language to discuss economic problems in, it certainly poses an obstacle to the recognition of rival and less well-known theories that use a different paradigm.

Two representatives of the modern macro paradigm are central to a discussion of the fiat money system because they continue to have the biggest influence on the policy establishment, the media, and the financial industry whenever the topic is crisis and recession: Keynesianism and monetarism. More than any individual aspect of these theories, it is the overall worldview behind them, the specific set of notions about what a market economy is and how it works, and about the origin of crises, that shapes today’s debates on economic problems.

There is an alternative economic paradigm which does not hold similar sway over public economic debate. This alternative system is older. It has provided the basis for the analysis in this book and it will

be presented first, before we take a look at the paradigm that the mainstream uses and that dominates discussion today.

The Alternative View: Individualism and Laissez-Faire

The analysis of money injections presented in earlier chapters started from the key function of money as a medium of exchange and developed all its conclusions via logical deduction from this starting point. This approach has been called methodological individualism¹ as its basis is the individual economic actor and what he is trying to achieve by his actions. In this case, an analysis of money started with individual money users, why they use money, and the effects that the use of money must have. The analysis did not rely on an interpretation of historical data (statistics) but was nevertheless empirical in the sense that its starting point was the empirical fact that we use money to facilitate transactions. All further insights followed from there.

This methodological individualism, the focus on the individual decision maker as driver of economic processes, is consistent with a view of the market economy as a form of voluntary human cooperation, in which people participate to improve their supply with goods and services. The development of a complex market economy can be understood entirely from the actions of rational individuals.² The foundation of the market economy is the realization on the part of its participants that division of labor enhances productivity, which benefits everybody, and that the wider this division of labor is, the better. If people had been content to live in self-sufficient isolation and enjoy only the fruits of their own labor and those of the labor of their immediate family or clan, the economic cooperation that is the market economy would not have come into existence. In order to extend the division of labor, new modes of human cooperation had to be developed. The narrow and hierarchically structured family or clan, in which, to a considerable degree, uniformly shared goals existed and work was coordinated by command, was supplemented with and partially replaced by the extended, decentralized, and contractually organized market economy, in which people cooperate via the exchange of

goods and services, and in which activity is directed by market prices and the calculation of profit and loss. The precondition for trade to occur was the recognition of private property, of an individual's personal sphere of exclusive control over resources. Once these essential building blocks were in place, other institutions and practices followed logically, each of them justified in its existence by recognizably benefiting those who used it: indirect exchange through money, saving, and investing, capital formation, capital markets, and so forth. The market economy exists and is maintained by its members because they see the benefits of participating in it.

The use of a medium of exchange, the introduction of indirect exchange through money, constituted a fundamental change in human cooperation, and indeed a giant step forward. Individual human action can operate on ordinal systems. In order to act, I need to know only that I like "A" more than "B." The same holds for a simple exchange economy. In a barter economy, when one farmer trades with another farmer one cow for two sheep, all they need to know is that one prefers owning two (additional) sheep to owning the extra cow, while the other prefers the cow to the two sheep. (It may be added here that, contrary to a widespread view, the two farmers *do not agree* that one cow is *worth* two sheep. Indeed, the trade takes place only because the two farmers value the one cow and the two sheep *differently*. That is why both of them gain from the transaction.) But once goods are traded for money, money prices are generated, which provide a common denominator for the vast number of exchange relationships between a multitude of goods and services traded in the wider economy. Economic activity can suddenly make use of cardinal numbers and of calculation. Costs and revenues can be computed and profit and loss calculated.³ Private property and market prices are the precondition for rational economic activity, "rational" meaning the employment of scarce resources according to the valuations of the many individual members of society.

If the market economy is, rightly understood, a tool that can be used for the purpose of those who participate in it, it is clear that it fulfills its purpose as long as it provides a functioning framework for voluntary cooperation in pursuit of individual plans and ambitions. This is its only purpose. The market economy is not a superior organism

that has its own goals. There is no overriding or unifying purpose. It is not the purpose of the market economy to generate positive GDP growth. It is just a tool, a framework, albeit the most important framework mankind has ever discovered, that allows everyone to better realize their own plans, and it is their own plans that matter.

It is probably true that most people prefer more goods and services to fewer goods and services, and this is precisely the reason they use the tool “market economy” to cooperate with others. And because of this, the growth in the statistical aggregate of GDP (national income) is, as long as the market is entirely uninhibited, a decent indicator that the economy is operating smoothly. But it is just that, an indicator. A higher GDP as such is not the goal of any of the individuals participating in the economy. Nobody will be made happier just because this statistical aggregate is higher in this period than in the previous period. People have specific goals and plans, and getting closer to realizing these plans is why they cooperate with others on markets. Government intervention can, for a short time but only for a short time, lift the GDP statistics. We have shown that this is possible through the discretionary injection of new money. However, in the process government intervention must obstruct the coordinating function of the market economy and thus frustrate many of the plans of those who participate in the economy. A smoothly functioning market economy should lead to a rise in GDP, but a state-manufactured rise in GDP does not lead to a smoothly functioning market economy, or a higher degree of individual plan fulfillment and want satisfaction.

What constitutes a crisis? According to this understanding of the market economy, the crisis is an unusually high rate of plan failure. It has been called a “cluster of errors.”⁴ Errors are obviously a part of life. Even during so-called good times, many entrepreneurs fail. They may misjudge consumer tastes or technological change; they may invest too little or too much, or for other reasons get replaced by more efficient competitors. Failure and bankruptcy are part and parcel of even the smoothly functioning market. What constitutes a crisis is the exceptional accumulation of errors, and this is what any good cycle theory needs to explain. It is clear that the type of collective misjudgment that results in a crisis can realistically only occur if the market’s essential pricing process, which normally provides constant feedback to decision

makers and helps avoid persistent miscalculation, has been corrupted. An elastic monetary system must produce such large-scale disturbances and it systematically disrupts the pricing mechanism.

Once an economy has developed an unsustainable structure of production and prices and has entered a recession, only one solution is logically possible for returning the economy back to stability, and that is to allow the complete and uninhibited liquidation of any unsustainable investment projects and the full correction of prices distorted by the previous money injection. If the root cause of the economic crisis is a distorted allocation of resources as a result of misleading price signals, only a reallocation of resources can logically constitute a solution.

The advisability of strict *laissez-faire*, even and in particular during recessions, does therefore not follow from any personal value judgment but is the logical consequence of the understanding of the market economy as a tool for large-scale human cooperation in a contractual society. By contrast, a policy of interventionism is not rational because it cannot improve upon the coordinating power of voluntary interaction on markets. Its goal of boosting the GDP statistics does not constitute a solution to the underlying problem because the underlying problem is not an insufficient number of transactions (a subpar GDP), but the accumulation of capital misallocations, which only a free market can lay bare and correct.

There exists another common misconception. It is sometimes presumed that those who advocate a policy of strict *laissez-faire* in a recession assign positive effects to deflation, or that they advocate deflationary policies. This is not necessarily the case. Once money injections have distorted prices and resource allocation, the damage is done. What is needed is not a new deflationary policy but simply a stop to the previous policy of injecting money and artificially lowering interest rates. Of course, the correction of inflated prices must be allowed to proceed, wherever and to whatever extent needed. A temporary drop in the statistical average of all prices cannot be excluded. Additionally, rising uncertainty in the crisis may lift the demand for cash holdings, which, in the absence of further money injections, will lead to a rise in the purchasing power of money. These deflationary processes must be allowed to proceed. They are part of a necessary readjustment of prices

away from money-induced distortions and back toward market-clearing levels. However, no specific policies are necessary, such as shrinking the money supply or lowering prices to return to a specific price average or a previous gold price. All that is needed is simply a complete stop to money injections followed by the abstention from any interference with the market process.

Another misconception is that opposition to interventionist policies after a crisis must be based on considerations of moral hazard. According to this idea, interventions are bad because they allow those who made errors during the boom to escape the full consequences of their mistakes. State intervention always socializes the cost of business failure and thus encourages more reckless risk taking in the future, which will lead to more crises. The incentives for prudent risk taking are lowered if profits remain private but losses are socialized.

It cannot be denied that this is a problem. Yet, it is not the most important or even an essential argument for the noninterventionist position. The crisis occurs because resources have been misallocated and prices have been distorted. The market must be allowed to correct these dislocations. This is the only solution to the underlying economic problem. Providing short-term relief through interventionist policies must mean distorting prices again by keeping interest rates artificially low or by maintaining an inappropriate capital allocation by bailing out failed companies. These policies cannot logically constitute a solution but must obstruct a return to more sustainable economic structures. Allowing the economy to cleanse itself of the misallocations of resources from the previous boom and to reorient itself according to consumer preferences is the only rational position, the only position that cannot simply be rejected on logical grounds.

The Mainstream View: Collectivism and Interventionism

Present-day discussions on economics and economic policy are based largely on a very different intellectual paradigm with different ideas about the market economy, the correct approach to economics and the

role of policy. The methodological foundation of today's consensus is macroeconomics:

*The macroeconomic approach looks upon an arbitrarily selected segment of the market economy (as a rule: one nation) as if it were an integral unit. All that happens in this segment is actions of individuals and groups of individuals acting in concert. But macroeconomics proceeds as if all these individual actions were in fact the outcome of the mutual operation of one macroeconomic magnitude upon another such magnitude.*⁵

Macroeconomics is part of the broader intellectual trend of methodological collectivism, which treats “wholes like society or the economy, capitalism (as a given historical ‘phase’) or a particular industry or class or country as definitely given objects about which we can discover laws by observing their behavior as wholes.”⁶ Naturally, the macroeconomic approach lends itself to statistical and mathematical techniques, and also appeals to those in politics.

On the foundation of methodological collectivism, the view of the economy has largely changed from that of a decentralized framework for voluntary, contractual human cooperation to one of an organism that has its own life and purpose. This organism has a quantifiable performance potential and in any given period it can be determined whether it achieves this potential or not. Thus, crises are no longer clusters of errors or high degrees of plan failure, which result from previous disruptions to resource allocation, but a suboptimal path of measured GDP. It takes only a small step from the idea that a set of statistical aggregates can tell us whether the economic organism is working at its full potential or not, to the notion that anything that brings those aggregates back to where the economist thinks they should be is already a solution to the underlying problem. A sudden drop in economic activity as measured by GDP is, to the individualist microeconomist, a symptom of the problem of distorted resource allocation that has now been exposed resulting in drastic adjustment of individual plans, but, to the mainstream macroeconomist, it is what constitutes the economic problem itself and what thus requires a solution through intervention.

Once the economic problem has been redefined like this, the natural next step is to conceive of means to “stimulate the economy,” a phrase that has become a standard, uncritically used term in economic

policy debates but that is meaningless within the framework of an individualist concept of the economy. The term has its origin in physiology and psychology, where it relates to external influences on the operation of body and mind. First, it conveys the false impression that the recession is simply a form of fatigue of the economic organism that can be overcome if the organism is restimulated to a higher degree of activity. Second, it obfuscates the true effects of government intervention. In the case of a stimulus in biology, for example, the nerve cells that are subject to stimulation have only one clearly defined purpose and all that the stimulus does is to initiate the execution of the cells' unchanging faculties. Whatever is subject to external stimulus in biology will perform only the tasks that it is genetically designed to perform. This is not, and cannot, be the case with government intervention in the economy. "Stimulating" an economy, for example, by injecting new money into it, will change the economy. It is not the case that the same things be produced as before, only in larger quantity. New money will alter the economic process and lead to a different allocation of resources and a different income distribution. The same is necessarily true of fiscal policy, which always involves the redirection of resource employment from private use to public use. Nothing new is being added to the economy. Fiscal policy merely rearranges the already available resources away from how private property owners would have used them and toward how state officials and their economic advisers want them to be used.

The extent to which the public has accepted the notion of the policy stimulus is most certainly the result of its false portrayal as a process by which the government somehow vitalizes the economy and harmlessly encourages processes that would unfold anyway, albeit less vigorously, without the intervention. But unlike the stimulus in physiology, the economic stimulus is an intervention that changes procedures rather than merely sets them in motion or amplifies them.

The goal of the policy stimulus is evidently to increase overall economic activity, to generate a positive growth in GDP statistics. The traditional Keynesian approach is to "stimulate aggregate demand" mainly through government spending programs. The typical monetarist crisis measure is aimed at avoiding a drop in the money supply or at actively increasing the money supply and thereby avoiding deflation. How can

the success or failure of these programs be measured? Obviously, these programs achieved their declared aims if, after their implementation, the money supply is expanding, the price level is rising, and GDP statistics show higher growth than in the previous period or even positive growth. As the obvious crisis symptoms have eased or disappeared, the depression is over.

However, a certain change in GDP statistics cannot say anything about efficient allocation of resources and the degree of individual plan fulfillment. We have seen this very clearly in our models of money injections, in which frequently new transactions were initiated by money injections, with these transactions simply shifting control over resources but failing to add to overall wealth and failing to improve the use of available resources. Indeed, a temporarily higher GDP as a result of intervention, including money injections, will have been bought with further resource misallocations and the distortions of market signals, meaning ultimately with further frustrations for those who use the market as a tool to meet their goals.

The Political Appeal of Mainstream Macroeconomics

This view of the economy and of the origin of crises is attractive to those in politics. First, there is intellectual appeal. Although in reality economic interaction does not stop at political borders, the macroeconomist views the economy through the prism of national account statistics. Those, of course, are perfectly congruent with areas of political control. Second, the political mind in general tends to struggle with the concept of the decentralized market order in which common goals are absent and in which a multitude of individual plans and aspirations are being coordinated spontaneously through market prices. The problem for the politician is that this system does not need politics. The market economy is indeed the very antithesis of politics, which depends on the existence of common goals, common values, and a common strategy. The politician must establish an agenda that unites people behind specific overarching purposes that all can share and identify with. Sociologically, it is tribal and closer to earlier and more

primitive forms of human cooperation, like the hierarchically structured family or clan, rather than the decentralized contractual society based on voluntary market exchange.

But the macroeconomic concept of large units, of collectives that can be juxtaposed against one another, is much more appealing to political thinking, in particular if one can use this concept to formulate collective goals, like the need for a larger national product (GDP), increased levels of consumption or investment, a reduction in unemployment or a “socially beneficial” inflation rate. The decentralized complexity and spontaneous order of the market, with its multitude of individual plans, suddenly disappears and is replaced with a few statistical aggregates that can be monitored, to which targets can be assigned, and that can then be manipulated for the greater public good.

Third, there is the undeniable appeal to those in politics of the idea that anything is good that has the potential to instantly boost GDP. Keynesianism has introduced and popularized the notion of “aggregate demand” and the idea that what is at the heart of an economic recession is a lack of such aggregate demand. Obviously, the number and size of economic transactions that occur in aggregate over any specific period is of no benefit and, indeed, of no consequence whatsoever to the individual economic actor. Everybody uses the market economy to his or her own specific advantage, to realize or advance personal goals or the goals and objectives of a group of people that one belongs to or that one cares for. If, for whatever reason, certain economic transactions that boosted GDP in the previous period are discontinued in the present period by those who previously voluntarily engaged in them, the specific benefit that those actors used to derive from these activities cannot be generated by some other activity conducted or initiated by the state bureaucracy with the aim of keeping the statistical average of economic activity up. The peculiar notion that GDP is, in and of itself, the benchmark for economic health can be used to justify practically any activity of the state bureaucracy.

The concept of aggregate demand is closely linked, albeit not identical to, another feature of the Keynesian framework that appeals to the state bureaucracy, and that is the antipathy toward saving. The idea that recessions are caused by too much saving and lack of consumption is hardly an invention of Keynes or his followers. It has, indeed, a very

long tradition in economics. Not surprisingly, it appeals to politicians, who often see it as a suitable excuse to run budget deficits and extend the state's control over economic resources beyond what is available through taxation. We will revisit this notion when we discuss the theory of the "saving glut" later in this chapter.

Every market intervention must inevitably conflict with the framework that allows the coordination of private plan fulfillment. Every intervention replaces to a certain degree the spontaneous and multilayered interaction of all members of society on free markets with the targeted direction of resources by the state, which will inevitably benefit some at the expense of others. The state is by definition the monopolist of coercion and compulsion in society. Whenever the economist calls upon the state to use its powers to influence resource use directly or through a manipulation of prices (such as interest rates) to bring about the desired constellation of macro variables, he acknowledges that the voluntary interaction of private property owners would bring about a different constellation and one that, in the view of the economist, is inferior. By definition, any intervention in the market must direct resources away from how private property owners would have employed them and toward how state officials and their economic advisers would like to see them employed. This is necessarily so because if the resource allocation and prices resulting from intervention reflected private preferences, no intervention would be required in the first place. The rationale for any intervention is that if private property owners were left alone to decide how to employ their resources, a suboptimal outcome would ensue. But how can one define what is a suboptimal and what is an optimal outcome? Obviously, this is impossible if we understand the market economy as a tool for voluntary economic cooperation. Then, no single collective goal exists, other than the general principle that economic resources should be employed according to the most urgent wishes of the buying public, the consumers. But what, in each specific instance, these preferences are and how they can best be met, can only be discovered in a competitive market, through uninhibited price formation, and with free enterprise vying for the consumer's patronage under full risk of loss and with the equally important opportunity for profit. To any actor in such an economy the same rule applies: Economic success requires

the efficient satisfaction of consumer needs. It follows that the voluntary cooperation of private property owners is always preferable to any state directive. But, in abandoning this view of the market economy and in defining a set of statistical aggregates (GDP, nominal GDP, the price index, the unemployment rate) as not only indicators but also as politically desirable outcomes, the modern macroeconomist has laid the intellectual groundwork for the state-directed economy. As Keynes himself declared in his preface to the German edition of *The General Theory of Employment, Interest, and Money*, published in late 1936:

The theory of aggregate production that is the goal of the following book can be much more easily applied to the conditions of a totalitarian state than the theory of the production and distribution of a given output turned out under the conditions of free competition and of a considerable degree of laissez faire.⁷

The Myth That Everybody Benefits from “Stimulus”

The idea of common economic goals is of course an illusion. Let us take the policy actions in response to the crisis that commenced in late 2007 in the United States as an example. It is only rational to assume that not everybody in U.S. society wanted house prices to stay at elevated levels or, indeed, to rise further. Marginal buyers of new homes would have certainly preferred them to be lower and would have been natural beneficiaries of a house price drop. Likewise, not everybody wanted interest rates to remain low or fall further. Savers benefit from higher rates. Not everybody wanted a very large part of society’s resources allocated to the construction and maintenance of private homes. Many entrepreneurs have different ideas about the potential use of society’s scarce resources, and many consumers may benefit from their ideas and support them. If it were in everybody’s interest to have high house prices, low interest rates, and an ever-expanding housing stock, there would be no market pressure in the direction toward lower house prices and higher rates. There would simply be no crisis.

The liquidation of what was suddenly revealed as the excesses of the preceding credit and property boom was undoubtedly very painful

for those who had benefited from the boom and hoped to continue to do so. These people saw their previous expectations disappointed and their plans fail. In the housing crisis, these were mainly the owners of property, in particular those who had bought houses during the boom, not as long-lasting consumption goods for their own use but for the purpose of selling them later at higher prices, and those who had given them credit to do so. But it is an undeniable fact that the voluntary cooperation of all members of society no longer supported the previous expansion. It is lamentable that, in the years preceding the crisis, the injections of substantial amounts of money distorted interest rates and thus made it appear as if the personal plans and the voluntary decisions of the rest of society indeed warranted further real estate investment, even at rising prices. Those who suffered in the correction could, with some justification, claim to be victims of misleading signals. Low interest rates had indicated a level of future orientedness of consumers and willingness to forgo present consumption that was simply not there. This made it appear as if more resources could be committed to the provision of long-lasting consumer goods. Given this evidently low time preference, it seemed reasonable to shift resources accordingly into areas such as housing, which deliver their full use value only over a long period. Once the money expansion began to slow (partially triggered by the central bank's tightening monetary conditions, although a slowing of the money flow would in any case have been unavoidable at some stage), it became apparent that true preferences were different from what low rates had signaled. In terms of its size, structure, and prices, the housing market turned out to be out of sync with the real preferences of the public. There was simply no alternative to a meaningful correction.

Coming to the aid of those whose expectations have been disappointed necessarily means maintaining a resource allocation and a price structure that was built on distorted signals and erroneous assumptions, and that is not supported by the wishes of the rest of society. Yet, after 2007, the U.S. state has taken it upon itself to keep interest rates again artificially low and, via political means, keep resources committed to the housing and mortgage market by, among other measures, the de facto nationalization of mortgage insurance (through the conservatorship of the Federal National Mortgage Association [FNMA] and the

Federal Home Loan Mortgage Corporation [FHLMC]) in 2008 and the buying of mortgage-backed securities by the Federal Reserve. These measures did not succeed in stopping a sharp correction in house prices and a liquidation of the associated credit structure entirely. But to the extent that they did have an impact—and it is, of course, very likely that they did and still do—that impact would have been to avoid a full cleansing of market dislocations and the establishment of proper market prices. Such measures can only address the symptoms of the crisis, never the root causes.

These measures were “sold” to the public as being in everybody’s interest because they are aimed at avoiding a near-term correction of GDP. But the idea that all of us share one single goal—a higher GDP—is false. There is always a multitude of competing potential uses for society’s limited means, and only the market can coordinate among them. Consequently, these measures will never solve the underlying problems. By obstructing the market from liquidating these misallocations of capital and correcting the mispricing of assets, these policies create an illusion of normality. They simply postpone the painful and inevitable liquidation into the future but, in the meantime, make the problem worse by continuing to distort market signals and further encouraging the accumulation of imbalances.

As a rule, the biggest beneficiaries of government intervention are usually the very same sectors that benefited disproportionately from the false boom, as these are now the sectors where the correction is most severely felt. Due to the ruling macroeconomic theories, policy is always concentrated on revitalizing the very same drivers that were behind the preceding expansion, or at a minimum, to shield them from adverse market pressures. There is an inevitable element of conservatism in market intervention in that it always opposes the redirection of activity and the reallocation of resources to alternative employment. In the process, the interventionists must suppress the legitimate views and preferences of large sections of society. Those consumers, savers, and producers whose preferences favor alternative uses of resources, and who could voice their personal choices only through buying or selling in a free market where they would, on the margin at least, contribute to lower house prices, take a back seat to the existing owners of property and the existing lenders in the real estate market. Only the state

as monopolist of legalized force can sideline these “uncooperative” economic actors and ensure that resources continue to be allocated to where they created the preceding boom. And to the extent that this state intervention comes in the form of money printing and low interest rates, which it usually does, many of these sidelined constituencies are likely to end up the future victims of false market signals themselves. Entrepreneurs will again be disoriented by low interest rates and scale their investment projects to unrealistic assumptions about the availability of voluntary savings. Many of their projects will inevitably end in disappointment, too. The effect of every intervention is necessarily that old dislocations persist and new ones are generated.

Monetarism as Monetary Interventionism

In academia and among think tanks, Keynesianism and monetarism are regularly presented as archenemies but, in respect to the topics discussed here, the differences are at most marginal. Monetarists claim to be advocates of the free market and are generally critical of the heavy fiscal interventionism and deficit spending of the Keynesians. However, they combine their defense of the market order in most areas with the promotion of a state-run monetary system, which includes state paper money issued by the central bank and constant, albeit controlled, inflationism to aid growth.⁸ Not surprisingly, most government advisers and financial market economists today are as happy at times of stress to advocate Keynesian deficit spending as they are to advocate monetarist easy monetary policy. Consequently, in recent crises, most governments have fully embraced both sets of recipes. The media and the public have learned to accept both policy prescriptions as the inseparable twins of modern anticrisis management. Deficit spending and money injections are now simply the things to do in recessions, and most economists and central bankers look with barely concealed ridicule and pity on earlier generations of policy makers who still felt obliged to respect the confines of a gold standard and balanced budgets, and were, by today’s standard of policy activism, not much of policy makers to begin with.

Intellectually and methodologically, the two schools are very similar, too. Both are part of the twentieth century’s trend toward

methodological collectivism and macroeconomics just described. Milton Friedman himself clearly perceived their common methodological foundation when he said that “in one sense, we are all Keynesians now; in another, no one is a Keynesian any longer. . . . We all use the Keynesian language and apparatus; none of us any longer accepts the initial Keynesian conclusions.”⁹ Furthermore, he declared: “I believe that Keynes’s theory is the right kind of theory in its simplicity, its concentration on a few magnitudes, its potential fruitfulness. I have been led to reject it not on these grounds, but because I believe that it has been contradicted by experience.”¹⁰

Somewhat ironically, Friedman’s monetarism became, in the eyes of the public, the main representative and even the benchmark of free market ideology in the last third of the twentieth century, although it had completely abandoned the traditional libertarian position on money. Defense of freedom and personal liberty had for centuries been synonymous with the defense of apolitical commodity money. If political power should be restrained, politics had to be kept out of money and banking, and bankers had to be tied to hard money. This was possible only if money were a depoliticized and denationalized inflexible commodity, outside the influence of politicians.¹¹

For the sake of completeness it should be mentioned that Friedman rejected fractional-reserve banking and proposed the introduction of 100 percent reserve requirements.¹² However, Friedman seemed to see the problem with fractional-reserve banking less on the side of the banks, whose practice of issuing uncovered claims against themselves (fiduciary media) somewhat unsurprisingly led to problems when customers demanded redemption in gold as promised by the bankers, but rather on the side of the bank customers, whose willingness to hold fiduciary media seemed so frustratingly unstable over time. Be that as it may, the goal of his proposal for 100 percent reserve banking was not to provide the economy with hard and inflexible, let alone denationalized, money but to increase the level of control the central bank has over total money supply. Friedman’s proposals are therefore fundamentally different in spirit and objective to those of the Austrians, but very close to those of two other Chicago economists, namely, Henry C. Simons and Irving Fisher, who also recommended 100 percent reserve requirements.¹³ Fisher published his proposals at

the height of the Great Depression, evidently motivated by the specter of collapsing banks and a shrinking money supply during a crisis. Like Friedman, Fisher advocated state-controlled paper money and its controlled expansion under a policy of moderate price-level stabilization.¹⁴ Similar ideas of state-enforced full reserve banking and tighter, discretionary control over the money supply by the central bank have recently gathered renewed interest. We will address them briefly toward the end of this book.

Friedman's influence on today's monetary policy establishment can hardly be overstated. His theories, again in a somewhat popularized form, shape public debate on monetary matters to a large degree today. They have a particularly strong hold on central bankers. With their attention to overall inflation and their proposal for measured growth in the money supply, these theories appear to address the main dangers of the elastic money system, while simultaneously legitimizing elastic money and central banking in principle. The most widely accepted tenets of modern central banking can be characterized as essentially monetarist: the notion that a stable or moderately rising inflation rate indicates monetary stability; that this can be achieved by controlled and moderate expansion of the money supply; and the idea that at times of crisis, when inflation risks are low, the central bank should ease monetary policy aggressively in order to avoid a contraction of the overall money stock and deflation. The latter was the result mainly of Friedman's interpretation of historic events around the stock market crash of 1929 and the Great Depression of the 1930s, events to which the U.S. Federal Reserve should have responded, according to Friedman, with a more aggressively expansionary policy.¹⁵ Friedman's lesson from history was that at times of panic and sharp asset price falls, the central bank needs to inject substantial amounts of reserve money to stop the contraction of the supply of deposit money and a rise in the purchasing power of the monetary unit. This has become, in central bank and financial market circles, a largely uncontested notion today.¹⁶ To the extent that these policy prescriptions are debated at all today, the discussion focuses mainly on the technical aspects of their implementation rather than on the underlying concepts. At what point should a central bank interfere, and how aggressive can and should it be? For how long should the stimulus be implemented, and at what

point should the central bank tighten again? Elastic money itself, however, is seen, if handled correctly, as an important tool for stimulating the economy, for avoiding or shortening recessions, and as a means to achieve higher economic stability.

However, as we have shown, money injections always affect the relationships between individual prices and not just some overall price level, and they must therefore disorient the economic agents by sending wrong signals, in particular with respect to the true extent of available savings. Consequently, they will encourage a price formation, a resource allocation, and a direction of economic activity that are not in synch with the true underlying preferences of society. Money injections always lead to economic dislocation. The ongoing moderate inflationism that monetarism prescribes is far from benign. By sanctioning the ongoing injection of new money into the economy, a monetarist policy will lead to the accumulation of dislocations that make a crisis at a later stage unavoidable.

Before we try to look into the future of money, we will take a brief detour and consider an alternative explanation the mainstream has developed for how the present dislocations came about. According to a popular view, phenomena such as low interest rates, excessive borrowing, and substantial rises in the prices of certain asset classes may not be the result of monetary expansion but, ultimately, of excess savings. It seems worthwhile to examine this alternative narrative for two reasons: First, it will be shown that the level of savings can never provide a satisfactory explanation for why an economic crisis occurs. Second, an analysis of the “savings glut theory” provides a good illustration of international aspects of the current monetary infrastructure. In particular, it can show how domestic inflationism can be substantially extended via a de facto international coordination of inflationary policies.

The Savings Glut Theory and the Myth of Underconsumption and Underinvestment

The notion that recessions occur because people save too much and consume too little has a very long history. It has intuitive appeal to the broader public, who perceive the recession in the form of a drop in

the quantity of goods and services sold and the accumulation of excess inventories. They therefore believe that these symptoms of the crisis are also the root causes of the crisis. If everybody simply went back to previous levels of spending, would the economy not be in better shape? Many economists over the past 250 years have proposed various “underconsumption” theories to explain business cycles, among them Robert Malthus, Thorstein Veblen, Waddill Catchings, and William Trufant Foster.¹⁷

Despite their intuitive appeal to the public and their appeal to politicians as excuses for running budget deficits, these theories did not stand up to scientific scrutiny, and by 1928 Ludwig von Mises claimed with some justification that the only business cycle theory then generally accepted as a basis for serious discussion and research was the monetary theory of the cycle, first expounded by the economists of the British Currency School and then further enhanced by Mises and Hayek.¹⁸ Recessions were the consequence of capital misallocations that had their origin in the previous expansion and the sphere of money. But underconsumption theories were not dead. They once again rose to prominence in the form of Keynesianism in the 1930s, which has since been the most influential underconsumption theory.

The notion of underconsumption or oversaving is difficult to match with a proper understanding of the role of saving and of the coordinating faculties of the pricing mechanism. First of all, saving is the basis for prosperity. No society has ever risen, nor could any society conceivably ever rise, out of poverty and into prosperity via consumption. It is saving and production that generate wealth. By shifting resources from meeting present consumption needs and by allocating them to productive uses to meet future consumption needs, that is, by saving and investing, society generates the capital stock that raises the productivity of labor and allows a larger supply of goods and services, and also different and better goods and services. What is being saved does not drop out of the economy. Of course, it exercises “effective demand.” To save is to spend; it is simply spending on different things. He who saves does not *never* want to consume. He wants to consume later. And those who take his savings in the meantime and use it to build productive capital sell their produce practically to the same saver at the point when he finally wants to consume. Saving means

postponing consumption, not nonconsumption. Therefore, saving, consumption, and investing are necessarily interconnected and usually coordinated via market prices, most importantly by interest rates. To explain the cause of recessions it is not sufficient to point to the level of savings, which by itself can never constitute a problem. One needs to explain why the pricing mechanism that coordinates the various activities in the economy fails, and for this, money, and particularly elastic money, is the prime candidate.

The so-called savings glut theory became popular before the recent financial crisis, not least because Ben Bernanke embraced it in a speech in 2005 before he became chairman of the Federal Reserve.¹⁹ In this speech, Bernanke did not deal with the financial crisis, which at that time had not commenced, but with a set of perceived or real imbalances, which were widely debated at the time, in particular the large and widening U.S. current account deficit. A current account deficit results when the value of imports of goods and services into the domestic economy exceeds the value of exports of goods and services to foreign countries. This is called a trade deficit. As the domestic population consumes goods and services from foreign countries in excess of what it returns to those foreign countries in goods and services, it needs to “pay” the foreigners the difference in the form of claims against domestic assets or future production, that is, with IOUs. The country thus imports extra goods and services by exporting capital. The extra present consumption in the domestic economy has its pendant in extra present savings abroad. There, people consume less in the present period than they produce in the present period. They save by accumulating IOUs.

Bernanke’s version of the savings glut theory stated that the primary mover of the U.S. current account deficit might not be, as was generally accepted, domestic consumption in the United States but high levels of saving abroad. The origin of the current account deficit might therefore not lie in excessively accommodative financial conditions in the United States, which encourage the consumer to borrow heavily and devour more and more goods from foreign countries for which he pays with the debt claims that the foreigners accept as payment; rather, its origin might lie in those foreign countries that save more than they invest locally and that push their “excess savings” into the United States.

The foreigners want to hold more dollar IOUs, and they pay for them with the goods that they sell to the American consumer.

In part, Bernanke's version of the theory is beyond reproach. It deals with accounting identities, as one country's current account deficit is another country's surplus. Naturally, we are at liberty to explain changes in these balances from either side of the accounts. This point is of no relevance to the topic discussed in this book. What is relevant to our purposes, however, is that the savings glut theory later, after the financial crisis had started, provided many commentators with a narrative of how the imbalances could have developed that played a role in destabilizing the economy and making a recession inevitable, such as persistent overly generous lending conditions in the United States, a low domestic savings rate, and the concurrence of high levels of consumption with high levels of investment (mainly in residential real estate). According to this interpretation of the savings glut theory, these phenomena could have resulted from excess savings abroad rather than from domestic monetary arrangements and domestic monetary policy in the United States. The theory has featured prominently in the discussion about the recent crisis for this reason.²⁰ However, as a crisis theory, it is not of much use. The reason is simply that, to the extent that these phenomena were indeed the result of true saving, they cannot explain the crisis.

In contrast to older and more standard underconsumption theories, this particular excess savings theory does not identify the problem as one of savings being too high and, consequently, consumption too low relative to the present production of consumption goods. The problem seems to be that savings are too high relative to present investment activity in the countries where people save. The surplus savings thus wash up on U.S. shores, where they cause imbalances in the domestic economy. As in previous excess savings theories, it is difficult to see such a phenomenon, if it exists, causing any problems for as long as the pricing mechanism is allowed to work. The amount of saving and the amount of investment are not two uncorrelated magnitudes that, we must hope, will somehow match. An uninhibited market and nondistorted interest rates should coordinate the two. True savings mean that real resources have been freed up from meeting present consumption needs and have become available for investment purposes. Lower

interest rates that result from true savings do not send wrong signals, but they correctly communicate that more real resources are available for investing, that at least some people have lowered their time preference, and that the element of time should now play a marginally smaller role in the employment of resources. At lower rates more investment projects will become potentially profitable and will be initiated. If entrepreneurs remain reluctant to invest even at lower interest rates, interest rates should continue to fall. All else being equal, this will then either reduce the incentive to save and thus reduce the amount of savings again, or it will finally stimulate extra investment activity, as seems to have been the case here with growing investment in U.S. housing. One may suggest that maybe the boom and the bust were the result of rising savings first, followed by suddenly falling savings, but there appears to be little evidence for this. As we explained near the end of Chapter 4, it seems much more probable that very easy monetary policy resulting in a generous expansion of credit had caused the investment boom, and that the correction was ultimately initiated by the Fed's own attempt to "normalize" interest rates again.

Saving and investing are about the intertemporal choices about the use of society's resources, and as long as interest rates communicate the propensity to save correctly, investment activity should be aligned with voluntary saving. Indeed, this should be precisely the point where a cycle theory has to locate the likely cause of disruptions, and this is exactly what the monetary theory of the business cycle does. What causes the crisis is not that there are somehow too many savings or too few savings, as "savings" simply constitute the aggregation of many individual decisions, but that the pricing mechanism that coordinates the multitude of individual saving decisions with the multitude of individual investment decisions is disrupted. As we have shown in detail, a monetary system that constantly injects money via the loan market will systematically distort interest rates in a specific direction. This is bound to lead to economic dislocations and ultimately to recessions. A rising propensity to save is by itself insufficient to cause economic disruptions, but money injections must always lead to such economic disruptions.

The international aspect of the savings glut theory is equally insufficient to help explain a crisis. If part of the global population, let us assume in Asia, decided to allocate a larger share of its present

real income to saving rather than consumption, it would mean that, on a global scale, the relationship between prices of present and future goods shifts marginally in favor of future goods. The originary rate of interest declines because time preference has declined. More projects that require time, that use resources now but deliver a pay-off only later, now stand a chance of being profitable. I assume that none of the mainstream economists who promote the savings glut theory would complain if domestic Asian entrepreneurs used the extra resources made available through saving for investment purposes locally. But why should this cause a problem if entrepreneurs in other regions, for example, the United States, took advantage of the extra savings? In an open economy, it simply should not matter whether the savings are raised locally or abroad. Whether these resources are freed up from consumption and made available for production by domestic consumer-savers or by foreign consumer-savers should be immaterial, as long as prices and interest rates reflect individual preferences correctly. Resources have been freed up for investment, and in a free market these resources should flow to where they offer the best return.

Of course, the ease with which an efficient allocation of savings occurs is dependent on the specific monetary infrastructure being used. Certain monetary arrangements are more conducive to market integration and international cooperation than others. If both the United States and China were on an international gold standard and thus used the same form of money, this shift of resources would occur fairly straightforwardly. Money could then flow from one nation to another nation just as it does today within a single country or single currency area. This would facilitate an efficient allocation of resources globally and extensive human cooperation across borders, which would undoubtedly be to everybody's advantage. A proxy might be a system with fixed exchange rates and no active monetary policy. If Asian savers buy U.S. IOUs, American monetary authorities will have to expand the domestic money supply in response (to protect the exchange parity), while Chinese authorities would have to contract theirs, thus mimicking what would happen under a common currency. I still believe that a single global currency (naturally a hard and apolitical one, not a global fiat money under the control of a global central bank) would be ideal for international human cooperation. However,

the international segregation of capital and goods markets by local fiat money monopolies, which are used by the local central banks to manipulate their domestic economies according to domestic political objectives, has become a powerful obstacle to international human cooperation, as explained in Chapter 2. Be that as it may, any disturbances that originate from this aspect of the global monetary infrastructure can hardly be attributed to an excessive propensity to save.

If Bernanke's core assumption was correct, namely, that various phenomena in the U.S. economy at the time—low interest rates, generous funding conditions, ample availability of credit—were the result of substantial foreign savings, then these phenomena would not have constituted dislocations and not initiated a crisis. (We may recall that Bernanke did not propagate the savings glut theory to explain a crisis, which at that point had not started yet.) But if one wanted to use these phenomena as the basis for a crisis theory, then attributing them only to a high propensity to save in foreign countries would not be sufficient to explain how they could have disrupted the economy. A higher propensity to save, by itself, does not explain economic disruption. One would have to elaborate how the coordinating faculties of market prices and, in particular, interest rates, had been corrupted to a degree that allowed investment and saving to be temporarily out of synch. At this point one would have again arrived at a monetary cycle theory. If the savings glut theory describes the result of voluntary savings, then it cannot explain the crisis. If one wants to build a crisis theory on what the savings glut theory describes, one would have no choice but to use the monetary crisis theory again, rendering the savings glut theory superfluous in the first place.

Inflationism and International Policy Coordination

Indeed, international capital flows and the phenomena described by Bernanke's version of the savings glut theory can be integrated with the monetary crisis theory quite straightforwardly. To do this, we may take a step back and envision a time line on which we trace how the institutional arrangements of our contemporary monetary architecture came about and how each step appears to be designed to make money more elastic and to extend the life span of the credit boom a bit more.

The starting point is an economy with inflexible commodity money. The most likely trend in prices is moderate secular deflation, while any sudden changes in money demand will have to be absorbed by a change in the monetary unit's purchasing power. This money is not neutral. Changes in its supply and in demand for it will affect the relative position of the economic agents and affect relative prices. Money can never be only a veil that passively lies over the "real" economy and does not interfere with underlying economic processes. However, a systematic distortion in the economy's workings should not originate from this form of money.

The next step of the development introduces just such distortions: Banks begin to issue uncovered money substitutes, or fiduciary media. Fractional-reserve banking begins. As the banks issue the fiduciary media through their lending business, the coordination between saving and investment is disrupted. A period of overinvestment (boom) is followed by a period of contraction and bank runs (bust). Credit-induced business cycles have arrived. However, while hardly pleasant, these cycles are constrained by the competition of independent banks, the absence of a lender-of-last-resort central bank and the inflexibility of the gold supply, which functions as reserve money (and indeed as money proper).

The next step introduces the state, which uses its unique privileges to support fractional-reserve banking and exploit it to its own advantage. A state-backed central bank is being created that cartelizes the private banks, that coordinates their money creation, and that issues its own central bank money, which the state declares eligible as reserve money for the private banks. The inflationary process of money creation—or at least the creation of fiduciary media, as money proper is still gold—can now be extended. The competition between domestic banks is substantially reduced, and the central bank provides at least a limited backstop to the fractional-reserve banks' money printing. A more extended money expansion and credit-induced boom will now occur, but as we have seen, a larger bust is necessarily the consequence. Once the accumulated misallocations of capital catch up with the speed of money creation, a recession becomes inevitable. Sooner or later, the state will thus be confronted with the overwhelming temptation to abandon the gold anchor altogether. This is likely to receive

support from the fractional-reserve banks, as it allows a further extension of the credit boom.

One of the key constraining factors for money and credit expansion, for as long as money is still essentially a commodity, such as gold, is the potential outflow of that commodity. The money-induced economic boom will increase the demand for goods and services, and in an open economy this means also the demand for foreign goods and services. But the domestically created fiduciary media will not be accepted in foreign countries. Foreign suppliers of goods will have to be paid in gold. Increasing gold outflows will soon restrain the domestic banks' ability to create fiduciary media.

An additional factor leading to gold outflows is that under domestic legal arrangements the monetary units created by the fractional-reserve banks out of nothing continue to carry the same purchasing power as the gold money to which they represent claims and which remains strictly limited in its supply. The issuance of fiduciary media thus lowers the purchasing power of all forms of money, including gold money. Thus, Gresham's law kicks in and bad money drives out good money.²¹ It makes sense for the domestic population to use the expanding supply of paper money for local transactions, naturally at rising prices, and sell the gold abroad, where its purchasing power remains higher because undiluted by the printing of paper claims to it. In any case, the outflow of gold makes the reserve position of the domestic banks increasingly precarious and will likely put the brakes on the credit expansion process. This is another factor that limits the extent of fractional-reserve banking in a commodity money system.

This restriction is overcome with the final step when redemption in specie is abandoned, both domestically and internationally. As we have pointed out, this final step toward a complete paper money system was taken in 1971, when the United States took the dollar off gold internationally. Now seemingly nothing stands in the way of ever-larger money creation. Yet, in analogy to what has been said about gold outflows, we may now add an international dimension to our analysis. The domestic credit boom can obviously no longer lead to outflows of gold and certainly not of paper money, which is not legal tender and usually not used as money in other jurisdictions. If domestic residents want to buy foreign goods, they have to exchange their domestic

money for foreign money on the foreign exchange market. This is obviously a suboptimal arrangement that introduces partial barter into the global economy and deprives international trade of the key advantages of money-based exchange (see Chapter 1). However, domestic inflationism, all else being equal, should lead to a decline of the currency's exchange value on the foreign exchange market and a drop in its international purchasing power. While this, in itself, will not have to cause domestic monetary authorities to tighten policy, it will certainly be another factor that makes the inflationary consequences of the present policy visible to the public. It is clear that the hard-to-conceal decline of a currency's foreign exchange value can be a further and important early warning signal, in particular for an open economy. Not unlike the competition between otherwise unconnected and independent fractional-reserve banks, which at the earlier stage of monetary history, before the introduction of central banks, constrained the banking sector's ability to create money, can the independence of a number of territorial money monopolists potentially provide an at least tentative check on overly aggressive domestic money creation. No country that wants to benefit from the international division of labor can entirely ignore the purchasing power of its monetary unit on international markets. To a degree at least, domestic inflationism can be exposed if other countries conduct a less inflationary policy.

Obviously, this restriction can be overcome if the monetary authorities in various countries coordinate their inflationary policies and agree, whether implicitly or explicitly, to expand the fiat money supply together in a joined effort. This is precisely what has occurred between the world's dominant paper money producer, the United States, and a number of Asian monetary authorities, most prominently those in China. This is not to say that an explicit agreement between the two sides exists, only that both sides have been able to create more of their domestic currencies for longer because they have conducted similar policies. It is this *de facto* coordinated inflationism that has led many observers to misinterpret the resulting phenomena as attributable to mythical excess savings.

Quite plainly, by pegging its currency to the U.S. dollar, Chinese authorities have committed themselves to matching United States inflationism for the sake of obtaining a larger share of U.S. consumer

spending. Mirroring U.S. inflationary monetary policy is a development strategy for China. The growing supply of dollar-denominated IOUs that is the necessary result of ongoing U.S. money production has been absorbed, not by voluntary acts of saving on the part of independent foreign individuals, but by political authorities that have accumulated them as monetary reserves, and, via a de facto currency peg, monetized them by printing matching amounts of their own paper money. Thus, a drop in international purchasing power of the initially inflating currency has been arrested. Monetary expansion in the United States could proceed further without a loss of purchasing power for the dollar on international markets. At the same time, China used its own monetary expansion to build a larger productive sector that sells into Western markets, particularly into the United States.

Governments in both countries have interfered in their economies and guided the credit boom into specific sectors for political reasons. In the United States, this has been the residential housing market. The methods to achieve this include the long-standing preferential tax treatment of residential real estate and the ongoing and large-scale subsidization of mortgage lending via the government-sponsored and now government-owned agencies, FNMA (Fanny Mae) and FHLMC (Freddie Mac). Also, there is regulatory enforcement of lower lending standards in the mortgage market for social engineering purposes, such as through the Community Reinvestment Act or the Home Mortgage Disclosure Act. In China, the matching credit boom has been directed toward an aggressive expansion of industrial capacity, which has guaranteed the American consumer undiminished purchasing power for his inflating dollars, at least in terms of Chinese produce. It is this internationally coordinated paper money production that explains all the phenomena that the savings glut theorists concern themselves with: the large United States current account deficit and the corresponding Asian surpluses; the concurrence of low savings and high levels of consumption with extensive investment in real estate in the United States, coupled with relatively low levels of official consumer goods inflation; and simultaneously, on the part of China, the extraordinary accumulation of foreign currency reserves and of Treasury securities holdings, and the explosion in domestic credit and in domestic investment activity. Whether this process was the outcome of the deliberate design of U.S.

policy makers is immaterial. It may simply be that the dollar's status as a global reserve currency and the importance of the U.S. goods market for the export sectors of other countries lead to policies that furthered a de facto globally coordinated money and credit boom.²²

In the context of the stylized history of state-sponsored fractional-reserve banking just described, the pinnacle of paper money production has now (almost) been reached. All inhibiting factors that have the power to short-circuit the artificial money-induced boom have been removed: true interbank competition with real risk of bankruptcy, commodity money of strictly limited supply and outside the control of the state, and feedback from tight(er) money regimes abroad. What has become possible over the past 30 years is the global credit megacycle; the result of a global paper money system, in which fractional-reserve banking is encouraged and fully supported by state-run central banks the world over, none of which is restrained by a commodity anchor, and all of which encourage one another to pursue more or less coordinated global inflation. The only way in which this system of global inflationism could be "perfected" would be via the introduction of a form of global paper money and a global central bank. While global hard money, such as a true gold standard, would indeed be ideal for international cooperation on markets as our analysis has demonstrated at various points, a global fiat money would accommodate inflationary (and thus economically disruptive) policies to a much larger degree as the one thing that contains domestic inflationary policies today is indeed the competition between various fiat moneys on international markets.

The more the artificial credit boom can be extended, the more severe are the accumulated dislocations in the form of mispriced assets, misdirected economic activity, and excessive debt, and the larger will be the necessary and inevitable correction that must await the world at the end of this artificial global expansion fueled by paper money and cheap credit. No meaningful credit correction has occurred in the major economies (not even in Japan) since the early 1980s. Over the past 30 years, the credit megacycle has repeatedly been reactivated by central bank and government interventions, most importantly the frequent lowering of interest rates and the injection of reserve money. That this cycle has been extended for as long as it has is no reason

for complacency. To the contrary, we must be concerned that an inevitable point of no return must be reached or, more likely, has already been reached, at which neither a further extension of the cycle nor an orderly and painless unwinding of the accumulated dislocations is a reasonable option. Efforts to keep money and credit growth going have already shown rapidly diminishing returns for the past decade, despite the increasing aggressiveness of the applied policy measures. The accumulation of imbalances is now palpable. It is therefore highly probable that the crisis that started in 2007 and is still lingering could be a watershed for the present system, and that rather than think about the phenomena discussed in these pages purely in terms of recurring money-induced cycles, we must rather contemplate the potential end-games of this system. This is a topic that we turn to in the next, and final, chapter.

Notes

1. Ludwig von Mises, *The Ultimate Foundation of Economic Science: An Essay on Method* (Princeton, NJ: D. van Nostrand Co., 1962): 80–83.
2. The term *rationality* is often misunderstood in the context of economics. It does not mean that the individual actor does not make any mistakes. In his actions, he may be guided by flawed or insufficient theories, he usually has limited knowledge, has to speculate about an uncertain future, and may forecast the consequences of his own actions or outside variables that are important for his project poorly. He may also be affected by emotions that lead to actions, which will later, with the advantage of hindsight, appear foolish. But still, human beings are not solely or even predominantly guided by instinct and reflex. They are not automatons but can, and usually do, reflect about their actions. Whatever their goals are, human beings have a strong incentive to use reason and to try to go about realizing their goals in a rational manner. To assume such rationality means simply being realistic. None of this assumes perfect rationality, perfect knowledge, or perfect foresight. See Ludwig von Mises, *Human Action: A Treatise on Economics*, 4th rev. ed. (Irvington, NY: Foundation for Economic Education, 1963/1998): 19–22.
3. Mises, *Human Action*, 198–199.
4. Murray N. Rothbard, *America's Great Depression*, 5th ed. (Auburn AL: Ludwig von Mises Institute, 2000): 8–19.
5. Mises, *The Ultimate Foundation of Economic Science*, 83.

6. Friedrich August von Hayek, *The Counter-Revolution of Science: Studies on the Abuse of Reason*, 2nd ed. (Indianapolis: Liberty Press, 1979), in particular Chapter 6, 93–110.
7. Quoted from Henry Hazlitt, *The Failure of the “New Economics,”* reprint (Auburn, AL: Ludwig von Mises Institute, 2007): 277.
8. We have implicitly dealt with (and refuted) all the key theoretical arguments of monetarism in our theoretical analysis, including Friedman’s reasoning for the state’s supposedly preferable role in supplying a medium of exchange. In particular, see Milton Friedman, *A Program for Monetary Stability* (New York: Fordham University Press, 1992): 4–9.
9. Quoted from Roger W. Garrison, “Is Milton Friedman a Keynesian?” in *Dissent on Keynes*, ed. Mark Skousen (New York/Westport/London: Praeger, 1992): 132.
10. *Ibid.*, 145 (note 2).
11. “Sound money . . . was devised as an instrument for the protection of civil liberties against despotic inroads on the part of governments. Ideologically it belongs in the same class with political constitutions and bills of rights,” Ludwig von Mises, quoted in John Laughland, *The Tainted Source: The Undemocratic Origins of the European Idea* (London: Warner Books, 1998): 214.
12. Friedman, *A Program for Monetary Stability*, 66–76.
13. Irving Fisher, *100% Money* (New York: Adelphi, 1935).
14. Fisher did, however, stress that his plan could also be combined with a resurrection of the gold standard, although this did not appear to be the general thrust of his argument.
15. Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States, 1867–1960* (Princeton: University Press, 1963; ninth paperback printing, 1993): 299–419.
16. See Ben Bernanke’s speech in honor of Milton Friedman on the occasion of Friedman’s ninetieth birthday, www.federalreserve.gov/BOARDDOCS/SPEECHES/2002/20021108/default.htm; for a refreshingly contrarian interpretation of the events around the Great Depression, see David A. Stockman, *The Great Deformation—The Corruption of Capitalism in America* (New York: Public Affairs, 2013): in particular 269–272.
17. Friedrich August von Hayek, “The Paradox of Saving,” *Economica* 11 (May 1931), reprinted in *The Collected Works of F.A. Hayek* 9 (London: Routledge: 1995): 74–120.
18. Ludwig von Mises, *Geldwertstabilisierung und Konjunkturpolitik* (Jena: Verlag von Gustav Fischer, 1928): 1; and Jörg Guido Hülsmann, *Mises: The Last Knight of Liberalism* (Auburn, AL: Ludwig von Mises Institute, 2007): 585–589.

19. Ben S. Bernanke, *The Global Savings Glut and the U.S. Current Account Deficit* (Washington, DC: Federal Reserve Board, March 2005), www.federalreserve.gov/boarddocs/speeches/2005/200503102/.
20. For example, Martin Wolf, *Fixing Global Finance: How to Curb Financial Crises in the 21st Century* (New Haven/London: Yale University Press, 2009).
21. Mises, *Human Action*, 435 (n.), 450.
22. China's monetary policy is, however, not entirely passive. Since 2008, monetary expansion in China has been consistently more aggressive than in the United States. Today, China has a considerably larger exchange-rate-adjusted M2 than the United States has. Money-induced dislocations must be substantial in China.

Chapter 10

Endgames—Inflationary Meltdown or Return to Hard Money?

Most of our task is now done. The conceptual foundations of today's mainstream consensus have been exposed as fragile and defective. The now widespread belief in active monetary policy, in central banking, in lender-of-last-resort arrangements, and in a policy of ongoing monetary debasement has been revealed as unjustified and untenable. Our system of fully elastic money under state control is fundamentally incompatible with capitalism and a free society. It is a hindrance to extensive human cooperation across borders and a source of economic disruption and chaos. The real money of capitalism is international, apolitical, and inelastic.

I have no doubt that the present system must ultimately collapse under the weight of its own inconsistencies or get replaced with

something else. What is inefficient and plainly unsustainable will not survive. In this final chapter, I try to take a look into the future. This part of the analysis must be the most speculative. Our future is not predetermined, or if it is, we have no way of knowing what it is. Various scenarios seem possible, and there may be some that we cannot even think of today. However, if we have analyzed the drawbacks of the present system correctly, it is clear that after more than 40 years of unconstrained global money production, the global economy is laden with extensive distortions and misallocations of capital, and that at this point no painless and therefore politically acceptable exit exists. Any conceivable shift to better and sustainable monetary arrangements, meaning a return to hard money, must involve some market-driven liquidation of accumulated imbalances and radical adjustment of false expectations. In this sense, and despite the various recessions and shake-ups of recent years, we can think of the past four decades as an almost uninterrupted and in parts (although not entirely) artificial, money-fueled mega-boom. The question is in what form and when the bust will come. We may thus remind ourselves again of Mises's famous dictum:

There is no means of avoiding the final collapse of a boom brought about by credit expansion. The alternative is only whether the crisis should come sooner as the result of a voluntary abandonment of further credit expansion, or later as a final and total catastrophe of the currency system involved.¹

Mises gives us two options: either a voluntary end to further money printing and a return to hard money, or ongoing money printing and total monetary collapse. Either a painful but politically tolerated and most likely deflationary liquidation of imbalances under option one, or an even more painful liquidation of these imbalances in a hyperinflationary disaster under option two. In this final chapter, I will contemplate various scenarios, not all of them equally probable, for the future of money. The most likely outcome remains, in my view, the inflationary endgame.

Paper Money Collapse

At the beginning of 2014, and thus more than six years after the start of the financial crisis, all major central banks—the U.S. Federal Reserve, the European Central Bank (ECB), the Bank of England, and the Bank

of Japan—still keep interest rates close to zero and declare their intention to keep them there for years to come. The promise of zero rates for the long haul is now even considered a policy tool in its own right, called *forward guidance*. On the margin, this policy supports banks in particular and debtors in general, prevents a shrinking of credit, discourages the writing-off of problem assets, and keeps the prices of many financial assets at higher levels. It stops, slows, or even reverses the deleveraging that commenced (and appeared inevitable and necessary) at the start of the crisis. The aim of this policy is to weaken the forces of cleansing and correction, to avoid a shrinking of the credit structure, and to extend the expansion of money and credit further.

Zero interest rates, however, have not been sufficient. All central banks used their own balance sheets to either buy substantial amounts of financial assets directly (“quantitative easing”), or to extend new collateralized loans to the banks (even against collateral of dubious credit quality) to generously fund positions on their balance sheets. This has been a *de facto* subsidy to the banks and a form of direct manipulation of select financial asset prices.

This policy mix has so far been broadly successful in achieving its primary aims. “The degree of deleveraging after the financial crisis has been limited”² is the assessment from economists Reinhart and Rogoff of the state of indebtedness in advanced economies. Overall debt-to-gross domestic product (GDP) ratios are in general only marginally off their peak. Many major asset markets are back at precrisis levels and risk premiums remain remarkably low by historical standards. In fact, by the end of 2013 many developed stock markets were trading again near all-time highs. Issuance of new corporate debt in the United States was also at record levels, while credit spreads were tight and yields on government bonds still fairly low.

Optimists will argue that this reflects improving growth fundamentals but given the still extreme policies of central banks—the Fed expanded the monetary base by another \$1,100 billion in 2013 alone—it is impossible to distinguish between any natural and sustainable improvement in the underlying economy and the effects of market manipulations by the central banks. To call present policies “manipulations” may seem tendentious to some readers, but it is evidently how the central bankers themselves understand their new role.

As James Grant noted, the Fed once used to buy only T-bills as part of its monetary policy operations and refrained from buying longer-dated paper in order to not distort the structure of interest rates. Today, as part of its policy of quantitative easing (QE), the Fed buys only long-dated Treasury and mortgage-backed securities with the specific aim of changing—*manipulating*—their market prices. When the Fed embarked on its second round of QE in 2010, then-chairman Ben Bernanke explained in a newspaper article that with short rates already at zero, a more effective monetary stimulus could now be implemented by depressing long-term rates through large-scale asset purchases:

“Easier financial conditions will promote economic growth. For example, lower mortgage rates will make housing more affordable and allow more homeowners to refinance. Lower corporate bond rates will encourage investment. And higher stock prices will boost consumer wealth and help increase confidence, which can also spur spending. Increased spending will lead to higher incomes and profits that, in a virtuous circle, will further support economic expansion.”³

Contra Bernanke, this book has argued that such policies will not lead to self-sustaining growth (a “virtuous circle”) but will cement previous dislocations, create new imbalances, and set the economy up for another recession. But what is also remarkable is that, according to Bernanke, buoyant financial markets are not the result of a healthy economy but a healthy economy is the result of buoyant financial markets, and it is now the job of the Fed to make sure that financial assets behave in a way that is conducive to general optimism and thus growth. And if the Fed can legitimately buy long-dated government bonds to boost stock prices and corporate bond prices, why should the Fed then not buy stocks and corporate bonds outright, having been a major—and manipulating—force in the mortgage bond markets for many years already. The idea that the Fed, or other central banks, would use the printing press to boost equity prices directly may still look slightly preposterous today, but only a decade ago so would have been the idea that the Fed could one day be the largest marginal buyer and the largest single owner of the United States’ government debt.

Over the next few years, the Fed will probably not only repeatedly buy U.S. Treasuries and mortgage-backed securities, but will ultimately include corporate bonds, auto loans, student loans, and equities into

its asset purchase schemes, as such purchases are bound to “boost consumer wealth and help increase confidence.” Ideologically, this is fully consistent with the very idea behind the state paper money system and modern central banking, namely, that, through the flexible and unconstrained creation of money, key market prices, mainly interest rates but also risk premiums, could continuously and systematically be *manipulated* to levels that would not prevail in an uninhibited market but that are somehow “better” for the economy. The catalyst for a further expansion of the role of the central bank could be another financial accident, frustration with disappointing growth, or political pressure. For example, some people may feel that the benefits of the Fed’s present interventions mainly accrue to those who own real estate or work in the financial industry, and that for social reasons the central bank should also support students (via depressing rates on student loans) or consumers via the cheapening of consumer credit.

But what about the “virtuous circle” that Mr. Bernanke already promised after QE2? What about a self-sustaining recovery? This seems increasingly improbable. The economy is burdened with substantial imbalances that monetary policy constantly works hard to perpetuate. Among these imbalances are high levels of debt (corporate debt, household debt, and public-sector debt). That high degrees of indebtedness are powerful impediments to growth is increasingly being acknowledged by mainstream economists, too.⁴ Easy monetary policy is thus counterproductive. By depressing interest rates it encourages borrowing and discourages the deleveraging that would be necessary to improve the economy’s structural ability to grow. The central bank relies increasingly on money-induced short-lived sugar highs that are not only unsustainable but that slowly undermine the economy’s health. Ever larger doses of sugar have to be applied to have any effect at all, even temporary ones, while the economy’s natural ability to perform deteriorates. The “virtuous circle” of sustained, unaided growth, meanwhile, remains elusive. When policy-engineered growth spurts occur, there is bound to be the occasional talk of a lasting recovery and of the coming withdrawal of ultra-easy monetary policy. The prospect of an end to quantitative easing and normalization of interest rates dangles in front of commentators and market participants. Some policy accommodation may be removed temporarily but it never lasts. QE had already

ended in 2009 after QE1, and again in early 2011, after QE2. Yet, after some time, the policy was resurrected, most recently with QE3 in the autumn of 2012. This pattern is likely to continue. There is no exit.

In principle, the same trend will be observable in other countries and currency areas. Occasionally, policy stimulus may get reduced, such as when the ECB hiked rates in 2011 or drew down liquidity provisions to the banks in 2013. However, such moves are unlikely to become new trends. The ECB has already promised “unlimited purchases” of sovereign debt of struggling nations should the need arise. It is thus only a question of time until the ECB also engages in outright quantitative easing. Additionally, the possibility of negative nominal interest rates has already been discussed and remains a further policy option. The Bank of England has used quantitative easing extensively in and after the crisis and also contemplates expanding the range of assets the central bank targets directly. Purchases of corporate bonds have already been considered.

Notwithstanding some local differences, the dislocations that plague these economies are essentially the same. They have their origin in the relentlessly deforming properties of the elastic money system. Given enough time, such a system creates the same deformations everywhere: excessive levels of debt, an overextended financial sector, a bloated public sector, a widespread dependence on cheap credit and constantly rising asset values, and low levels of genuine savings. The growth-inhibiting imbalances are everywhere structural, not cyclical. The fact that all major central banks have now painted themselves into the same corner is not the result of the global nature of the recession but the logical endpoint to which the global fiat-money/central-banking model inevitably drifts.

Monetary authorities everywhere are presently digging themselves a deeper hole. The main problem with their policies is not that they will lead to broad-based inflation imminently. It is evident that they have not, although they will eventually. The main problem is that there can be no exit to these strategies. More precisely, an *exit*—a complete end to quantitative easing and a sustained normalization of interest rates—will cause bigger challenges the longer present policies are maintained. Because of the increasingly daunting consequences of an exit, it will become politically ever less acceptable.

Why has inflation not been higher so far? There are three components to the answer. First, inflation has already been higher than it probably should have been. After an extended inflationary boom, a cleansing deflationary correction would have been necessary. Some deflation could have helped rebalance the economy. Second, consumer price inflation has persistently been positive but subdued, yet many asset markets experienced substantial inflationary pressures, in particular more recently. This includes certain financial assets, real estate in various locations, prime private property, arable land in many countries, fine art, antiques, rare old cars, and so forth. Third, a host of ultimately temporary factors has boosted money demand or prohibited central bank liquidity from spreading and lifting broader price averages. For example, many assets that had functioned as money substitutes prior to the financial crisis, such as certain high-quality asset-backed floaters, became impaired and lost liquidity and thus their money-like properties in the crisis. This drastically reduced the universe of assets that market participants had used as quasi-money, which led to replacement demand for “real” money. At the same time, money demand in general grew because uncertainty was high. Additionally, banks became reluctant to lend and many private borrowers reluctant to borrow, which is one of the reasons why so much of the central bank liquidity ended up supporting public-sector borrowing, which was rampant. Moreover, central banks like the Fed created incentives for banks to maintain high cash reserves at the central bank (by paying them interest on such reserves).

To the extent that new money did not circulate widely and that many people simply held on to their cash and thereby depressed money velocity, prices did not rise but neither did the economy recover. There is thus a link between subdued inflation and the muted recovery. But many of these factors are temporary and are already fading. At the same time, policy makers are getting impatient and policy will be shifted increasingly in directions where a nominal growth effect, and thus price effect, is likely. The Fed’s first QE program was targeted at stabilizing the banks, QE2 and “Operation Twist” (selling bonds with short maturities and buying those with long maturities) were targeted at depressing long-term lending rates to stimulate borrowing (see earlier Bernanke quote), and the goal of QE3 was to lower the unemployment rate.

It is entirely unrealistic to assume that a relentless, perpetual policy of money injections into the financial system will not finally lead to higher inflation. In this respect we have to agree with the oft-quoted remark by Bernanke that “under a paper-money system, a determined government can always generate . . . positive inflation.” It is true that the accumulated imbalances from previous money and credit expansions introduce deflationary forces into the economy, and that it may thus no longer be that easy to create overall inflation. The high debt load weighs down on the money transmission channels. But it strikes me as highly improbable that central banks would now no longer even be able to destroy their own creations, that whatever amount of money they conjure out of thin air by pressing buttons on computers, it will always be willingly and patiently absorbed by the money-using public or keep circulating in a parallel universe of interbank lending and financial asset trading.

What happens if—or better, when—inflation rises?—It is very likely to continue to rise. When the public realizes that inflation is going up, inflation expectations are bound to go up even faster and the velocity of money will start rising again. Money will change hands more quickly, and this will accelerate inflation further, and in turn lift inflation expectations further. At this point, it does not matter how much additional money is being added on the margin. The existing stock of money, obscenely inflated through years of boundless stimulus policies, is entirely sufficient to accommodate substantially higher inflation rates if only velocity is high enough. Economies are sitting on giant inflationary powder kegs that are just waiting for the fuse to be lit.

But would the central banks not quickly mop up the excess liquidity and hike interest rates and stop inflation in its tracks? I do not think that this is likely. It would require high real interest rates and those are poison for a highly indebted economy and highly leveraged financial system. The central banks have taken it upon themselves to support, via low interest rates, large sections of the economy, not least the banks and the public sector, and have thus fed a dangerous debt addiction. The strike against rising inflation would have to come early and be decisive but it would evidently risk pulling the rug from under the economy imminently, and that runs entirely counter to the central banks’ newly adopted role of prosperity managers.

Furthermore, many mainstream economists are already beginning to embrace higher inflation as a “solution” to the persistent debt problem. Reinhart and Rogoff in their IMF working paper⁵ suggest that overall debt levels in advanced economies, and in particular sovereign debt levels, are already too high to be meaningfully reducible via growth or public sector spending restraint (“austerity”), and that the likely solution requires a combination of defaults, restructurings, and higher inflation, supported by measures to keep domestic investors captive through capital controls and other restrictions (“financial repression”). Whether Reinhart and Rogoff propose these policies or simply consider them likely, I cannot say. Senior central bankers have already indicated that they might tolerate somewhat higher inflation for a while for the sake of growth. But the notion that they could allow somewhat higher inflation but still control and manage that inflation strikes me as unrealistic. High inflation means volatile inflation and it is always at acute risk of spinning out of control. When the public tries to sell bonds (at least those segments of the public that will still be permitted to do so), the central banks will have to buy them in order to keep rates low and to avoid public bankruptcy. This will add more money to the system and add fuel to the inflationary fire.

All paper money systems in history that did not end with a voluntary return to commodity money have ended in hyperinflation and currency collapse. All these disasters were overseen by state-appointed monetary authorities, and it is fair to assume that none of them were particularly keen on total monetary annihilation. Yet this is what happened. As I said before, our future is not predetermined, currency chaos not inevitable. But on present evidence, I think this latest and so far most ambitious experiment with unconstrained fiat money is bound to end badly, too. The endgame is inflation.

Alternatives: Return to Hard Money

This book was, as I stated in the prologue, intended as an attack on the present mainstream consensus and an elaboration of the true problem with our monetary system. In that sense, it was mainly destructive, rather than constructive. Its main objective was to challenge widely

held notions and to offer alternative explanations to the mainstream narrative. Its main goal was not to develop a blueprint for monetary reform or a guide for personal investment strategies. Of course, when one dissects the present system it becomes quickly apparent what would constitute a better system. But in order to provide a detailed plan for a transition to such a system much work is still required. I do not pretend that I have done this work so the following section will just provide some general ideas and rough sketches. In any case, I am convinced that the dominance of the present intellectual mainstream on money and credit has to be broken first before a fruitful discussion about monetary reform can even begin. And that was my main goal with this book.

A Return to a Gold Standard

*If our civilization will not in the next years or decades completely collapse,
the gold standard will be restored.*

—Ludwig von Mises (1965)⁶

Our analysis has rehabilitated the gold standard. The popular notion that the gold standard was responsible for the Great Depression has been shown to be baseless, and the idea that a gold standard would not be suitable for a modern, growing economy unfounded. We are often told that there is not enough gold in the world to function as money but this is simply the old “shortage of money” argument that we debunked in Chapter 1. Money is always demanded for its purchasing power. How much purchasing power the monetary asset conveys is a function of the quantity of money and its price, and by adjusting the price, almost any quantity of the monetary asset can meet any demand for money.

Britain and the United States have repeatedly linked the pound and the dollar back to gold after extended and inflationary paper money periods. Of course, a return to an older, preinflation parity is usually not advisable. Such a move would in most cases be hugely deflationary, and would certainly be so after the considerable currency debasement of recent decades, and as we pointed out before, there is no need to implement an outright deflationary policy, simply

a need to end the inflationary one. Linking the paper currency again to gold would best occur at the new market price for gold, a price that should reflect the preceding paper money inflation. The problem is that at present gold prices (end 2013), and thus even after a decade-long bull market in gold, most official gold reserves seem pitifully inadequate. The state may, of course, declare a new, more suitable parity by degree, as some writers suggest.⁷ The state paper currency would thus be devalued by a considerable factor against gold and get redefined in weight of gold by statute. I assume that this might cause other and probably disruptive second-round effects, however. Maybe a look at some numbers can illustrate the issue:

The official gold reserves of the United States government are the single largest gold hoard in the world, at around 260 million ounces, which is about 8.1 tons of gold. At the end of 2013 the market price for gold stood at about \$1,200 per ounce, which means the market value of the gold of the United States was \$312 billion. By comparison, the monetary base, the core money supply that is fully controlled by the U.S. Federal Reserve, stood at more than \$3,700 billion at the end of 2013.⁸ This quantity had expanded by another \$1,100 billion in 2013 alone through the Fed's policy of quantitative easing. Thus, it would require a gold price of \$14,230 per ounce to back the monetary base of the U.S. financial system fully with the government's gold. Or, to put this differently, the U.S. government would have to officially revalue the dollar (that is, debase it) versus gold to a new parity of \$14,230 and fix this new price by statute. One dollar would be redefined as 1/14,230th of an ounce of gold. I assume that this would cause a tremendous disruption in the gold market and other commodity markets. It would certainly create substantial profits for gold investors, who would experience a drastic rise in the U.S.-dollar purchasing power of their gold. Would massive amounts of gold be sold into the U.S. market at the new parity, and would the sellers of gold snap up apartments in New York, American farmland, and U.S. equities at what must appear to them as bargain prices? Would such a dollar revaluation cause inflation? Countries like Germany, France, and Italy have substantial gold reserves (as a share of GDP and per capita these gold hoards are larger than the United States's)⁹ and would now enjoy a substantial purchasing power on their reserves in terms of U.S. assets.

But the monetary base may potentially be a bad starting point, given that it is presently massively inflated by the policy of QE. At the end of 2013, the broader monetary aggregate M2 stood at \$11,000 billion.¹⁰ Official gold reserves at then prevailing market prices therefore covered just 3 percent of the money supply. This seems low on the face of it, but it is not an unusual level if we consider the past 42 years of the post-Bretton Woods era. In 1974 and 1990, the monetary base was much smaller, but the gold price was lower, too. Gold reserves at market prices covered just 5 percent and 3 percent of M2, respectively, although they were equivalent to 44 percent and 30 percent of the base, respectively, which had not yet exploded as a result of QE. It would be reasonable to assume that the Fed would have to, in preparation for a return to a gold standard, unwind its QE positions, and shrink the base first. But the question remains if a 40 percent gold backing of the monetary base and a 5 percent backing of M2 would be sufficient to go back to a gold standard. We have seen that in a free market with gold as money proper, fractional-reserve banking would be conducted and that the amount of money circulating in the economy would most likely not be fully backed by physical gold. Unfortunately, we have not had a free market in money and banking for long, and we cannot say how low a level of gold backing a free market would bear. Still, a mere 3 percent backing of M2 appears low. Of course, a rise in the market price of gold would make the transition easier, and it could be argued that such a rise would be likely to occur if authorities were to contemplate the remonetization of gold.

The fact that gold has been trading substantially below levels that seem consistent with sufficient gold backing probably indicates that the market does not consider a full remonetization of gold likely, and that the market also remains still fairly sanguine about any imminent inflation risks for the dollar. This appears to have been very different in the late 1970s and early 1980s, when the first decade of the paper standard had led to fairly high inflation rates in consumer prices in the United States and elsewhere. Doubts about the sustainability of the paper dollar were widespread. The Reagan administration even installed a gold commission to investigate the possibility of linking the dollar back to gold. By 1980 the gold price had reached a short-term peak of \$800 per ounce, coming from \$41 dollars at the end of 1971. By the end of

1980 the gold price had retreated somewhat from its high but at the then prevailing price of \$600 an ounce the government's gold would still have covered the entire monetary base and even 10 percent of M2. At this point of crisis, the high gold price did provide a reasonably good opportunity to go back on a gold standard. A return to a gold standard may in any case become a more realistic prospect if or when the crisis of the fiat money system intensifies again, and at that point the gold price should be higher.

Based on these considerations, it seems advisable to not force a new gold-parity onto the system simply by decree. Many proposals for a return to a gold standard sensibly include market-price discovery periods. There would thus be a date of announcement of the intention to go back to a gold standard, at which point all active monetary policy ceases and from when the monetary base is kept stable (or is being steadily reduced at a preannounced rate). Over a certain period, probably even extending over years, the market would have the opportunity to adjust to the new environment of hard money. The monetary authorities could use this period to show their commitment to the new policy of "no policy," the management of the banks could adjust their strategies, and market prices would change accordingly, including the gold price. The new parity between gold and money could then be fixed later, at the end of this adjustment period. This is a key feature of the proposals for a return to a gold standard by Hazlitt,¹¹ Lehrman,¹² and Huerta de Soto.¹³

Could individual countries decide unilaterally to return to gold, or would this require an international agreement? In my view, it could indeed be somewhat challenging for small countries with open economies (and most small countries have to have open economies) to unilaterally return to a gold standard. Even under the present global paper money system, it has been very difficult for countries to stand in the way of the inflationist policies of their trading partners and some of the big fiat money issuers. Producing a local paper money that is, by international standards, less inflationary leads to currency appreciation, and while this is in many ways beneficial to the citizens of this country, as their purchasing power on the international goods and financial markets increases, it is also bound to occasionally disrupt the local industrial sector, if only in the short term, and lead to political pressure from

local exporters. In the case of gold, an additional problem exists: The gold price is presently rather volatile, as the critics of a gold standard never tire of pointing out. We have seen that this is mainly the result of two factors, the fact that gold is now to some degree demonetized, and that over the past decade it has been partially remonetized. Were gold to again play a more prominent role as money, its price could reasonably be expected to begin to stabilize. The more people consider gold a form of money and use it accordingly, the more stable gold's purchasing power would become.¹⁴ But, internationally, it may not make a big difference if a few smaller economies switch back to a gold standard. There is a risk that these countries would tie their financial system to a still volatile international commodity, at least until the trend back to gold catches on internationally.

In my view, the prospect for a return to a gold standard would be most favorable if the major currency blocs—the United States, the Eurozone, Japan, and probably China—were to agree to end domestic discretionary monetary policy completely and lock in their exchange rates. From that moment on, changes in monetary aggregates in the respective countries would occur predominantly in response to financial flows from one country to another. The domestic monetary base would no longer be under the control of the respective central bank, and the combined aggregate of the bloc's monetary bases would be stable. After an adjustment and price discovery period, a return to gold backing could be contemplated.

John Butler¹⁵ argues that the momentum for a return to a global gold standard could come from major emerging-market countries such as China, Brazil, Russia, India, and South Africa. Although these countries now play a larger role in global trade, and China has already become an economic superpower in its own right, they often consider themselves still at the mercy of financial flows that emanate from the dominant paper money producers, in particular the United States, and the dollar, the world's dominant and most important fiat currency. Finding it difficult to compete against the dollar with their own fiat currencies, it may make sense for these nations to establish a gold-backed alternative. Linking their currencies firmly to gold, probably in a joined effort, could give these currencies an international appeal and credibility that their pure fiat money versions lack. The idea seems to

get further support from the fact that China, Russia, and South Africa are among the five largest gold producers in the world, China indeed being the single largest. Additionally, China and India are the biggest importers of the precious metal. However, the official gold reserves in these countries are still relatively small. A ranking of official gold holdings as a percentage of GDP¹⁶ has Russia in 10th place, India in 16th, China in 20th (!), and Brazil in 25th (all as of early 2013). As a percentage of GDP, “old” Europe still possesses the largest gold reserves: Portugal, Switzerland, Italy, Germany, and France are the world’s top five. The situation can look even more problematic when one looks at the size of domestic monetary aggregates, which in the case of China have ballooned dramatically in recent years. While the institutional background in the two countries is different, it is still remarkable that China’s M2 money supply was reported at around CNY 110,000 billion at the end of 2013, which, at the official exchange rate equates to about \$17,600 billion and compares to a U.S. M2 of about \$11,000 billion. While China’s M2, having doubled since 2009, is thus 60 percent larger than M2 in the United States, China’s official gold reserves are less than one-seventh of those of the United States.

Be that as it may, it is clear that one of the key advantages of a gold standard remains that it provides a stable framework for global cooperation on free markets. A globalized world needs a global currency, not a group of more or less freely floating paper currencies, some of them dominant, that are being “managed” according to various domestic political objectives. International trade and global division of labor, which remain essential for rising living standards, not least in the poorer countries, need a form of hard, global, and apolitical money. Politicians and local electorates have to give up the dream of using monetary manipulation of one kind or another to “buy” themselves extra prosperity, frequently at the expense of others. We have seen in previous chapters that this is indeed a mere fantasy. At best, such active monetary policy can buy fleeting, short-lived advantages, which will ultimately be paid for later with substantial economic disruptions. Giving up the flexibility of one’s own monetary policy should be a fairly easy decision. The benefit is a more stable, internationally connected economy that produces real prosperity over time, rather than ephemeral bubble riches.

The Separation of Money and State

Under any form of gold standard, the central bank would most certainly be more confined in its monetary operations than central banks are today, and this is one of the gold standard's main advantages. In the long run, the central bank should be abolished, at least as a state-sponsored public-sector institution with policy functions, as that makes it entirely incompatible with a market economy. However, as long as there is a state-controlled central bank, there will still be considerable room for manipulation. The U.S. Fed was founded in 1913 under what was officially still the classical gold standard, but that did not stop it from funding the U.S. government's military spending in World War I and from initiating credit booms and business cycles. Furthermore, as we have just discussed, an official, government-directed return to a gold standard raises a lot of questions about implementation that are certain to invite lobbying by various pressure groups and that could lead again to the politicization of the entire process. It would be preferable to leave as many of these issues as possible to the market. If the goal of a gold standard is to take politics out of money, then it would be preferable to do this as quickly as possible.

If there was only one thing we could change about our monetary system now, it should be to completely privatize money and credit, to take the state out of money and the economy completely. How could this be done?

Step 1: Privatize the central bank.

There will be no state-sponsored return to any new officially sanctioned monetary arrangement, not even a gold standard. Instead, ownership of the central bank will be transferred officially to the banks that have an account with the central bank, with shares in the central bank being allocated to the banks according to their respective deposit bases. This is the first step for the state to exit the sphere of money. The central bank is no longer a public institution run by bureaucrats and answerable to politicians but an entirely private undertaking. It is owned and operated by the banks, which means to the benefit of the banks.

It is sometimes argued that, technically, the U.S. Federal Reserve is already owned by the U.S. banks and not the federal government. Whatever the legal case might be, there can be no question that practical and operational control over the U.S. Fed rests with the state. The U.S. Fed was installed by an act of Congress, its main policy parameters are set by politicians, and its senior staff is selected and appointed by politicians and remains answerable to them. For all relevant practical purposes, the Federal Reserve is part of the public sector, not the private sector. A full privatization would require the state to give up any involvement with the operation of the central bank. The newly privatized central bank would continue to administer bank reserves and provide certain clearing functions, which the banks have come to rely on. Simply shutting down the central bank seems problematic. But its presently most pernicious aspect is that it is a policy tool, and this would end abruptly with its full and effective privatization.

Step 2: The state revokes with immediate effect, or fades out over a preannounced but short time period, all laws and policies that relate specifically to banking and money.

Banks are again capitalist enterprises just like any other normal business. There is no lender of last resort (at least not one run by the state), there is no inflation target or other official monetary policy for which the banks function as conduits, which under the present system puts them in the awkward position of being profit-seeking enterprises and policy tools for the state at the same time. But equally, there is no longer any backstop whatsoever for the banks from the state. No guarantees, no deposit insurance or taxpayer bailouts. If a deposit insurance institution exists, it is handed over to the banks and fully privatized, similar to the central bank. Again, the state has exited the business of regulating, supervising, licensing, subsidizing, and backstopping the banking industry. Entry into the field of banking is now free. No state licenses are required and in theory not even an account with the now privately owned central bank (although without such an account, clearing with other banks might be difficult, although a group of banks might break away and start their own clearing arrangements). There are no legal tender laws anymore. The consumer

alone will decide the success and failure of banks. Monetary policy has ceased to exist.

Step 3: The state's gold reserves are handed over to the banks.

Some might criticize this step as a gift to the banks, but I disagree. This can rather be seen as a return of property to bank depositors. The bank depositors are the ones that should benefit from this move most. The present monetary system could only have come into existence because it was once based on gold as a hard and apolitical reserve asset. Deposit banking spread at a time when banks still promised to repay deposits or banknotes in specie, and when all banks were thus required to hold (some) gold reserves. Only slowly and gradually was the gold backing removed and replaced with various implicit or explicit state guarantees, all of which are now practically failing and would therefore be terminated under this plan. The banks' customers—the holders of bank deposits—may become unsettled by the exit of the state, and thus the taxpayer, from the business of underwriting the banking industry. Most people only consider their bank deposits safe because they believe the state would not allow Bank XYZ to default, not because they have any confidence that Bank XYZ is run prudently. Now that the state has exited the field of money and banking, the banks are likely to use the gold as additional backing for their balance sheets. They will use the gold as it has been used for thousands of years—to gain trust. The gold will help the banks to sustain the public's confidence in the newly privatized banking industry. This will help to reduce the risk of bank runs and therefore be to the benefit of the depositors.

But now that the private banks own the central bank and are not constrained in their use of it by any public policy considerations, would they not put the printing press into overdrive and create inflation? I think this would be very unlikely indeed for various reasons. First, the process of monetary expansion is not risk-free for a privately owned central bank. The central bank creates new money by purchasing assets from the banking sector. In the process, the central bank leverages its own balance sheet. The Fed currently already carries assets of about \$3,800 billion on a capital base of just \$55 billion,¹⁷ which means its balance sheet is leveraged about 70-to-1, which is higher

than at Lehman Brothers and Bear Stearns when they collapsed in the recent financial crisis. But now the banks would own the Fed and hold the central bank's capital on their own balance sheets. If anything went wrong with the central bank, it would hurt the banks directly. They could no longer present the bill to the taxpayer. Importantly, the banks could no longer dump unwanted assets onto the central bank, as they are now the sole owners of the central bank and are without public-sector support. Of course, the banks could still agree among themselves to increase the capital of the central bank (at their own expense) and then print more, but this would not be that straightforward a solution either, as we will see later.

Second, the public would probably be very suspicious of an overtly expansionary private central bank. They would know that it was now operated by the banks and entirely for their own benefit. Any inflation concerns would translate into higher interest rates and that would be detrimental to the highly leveraged banking sector. The public would begin to withdraw gold from the banking sector, and this would be gold that now functions as an essential reserve asset. I would expect the private banks, now operating without any safety net from the state but under the suspicious gaze of their own customers, to be very cautious about how much money they print. Easy money from the central bank also means expanding bank balance sheets and thus lowering reserve and capital ratios. That seemed acceptable to the banks when they could still rely on various government backstops or when meeting official regulatory requirements already gave their balance sheet strategy an official seal of approval. Now that they would be on their own, monetary expansion and thus debt accumulation and leverage, would be more of a double-edged sword. It would probably once again pay to run a bank conservatively, and even advertise higher capital and reserve ratios to the outside world to attract financially risk-averse customers.

Third, the absence of a state safety net would decartelize the banks and increase banking competition, also in respect of the use of the central bank. Relatively sounder banks would have less interest in running the jointly owned central bank for the benefit of the weaker banks. To the contrary, it is in the interest of the stronger banks that weaker banks fail and exit the market (this is also in the long-run interest of the consumer). At the same time, it would not be in the interest

of even the strongest banks to see widespread bank runs or a general distrust in banks, as that could quickly come to endanger them, too. I think it is very reasonable to assume that under a plan of complete privatization the key challenge of allowing corporate failure in banking on the one hand but avoiding a complete collapse of the banking system on the other, a trade-off that any monetary system has to manage, would be dealt with much better than under present arrangements. The reason is that this task would now be given to banker-entrepreneurs who have a keen interest in getting that balance right. As long as banking remains under the protection of the state, monetary and banking policy will be conducted for the benefit of the weakest banks, and the strongest banks will simply reap windfall profits. All of this is to the detriment of the consumers of banking services, that is, households and corporations.

An additional key advantage of this approach is that it does not require for its successful implementation any international agreement. This approach would not guarantee a completely inelastic monetary system, and anyway there is no need for such a guarantee. A private market in money and banking would certainly establish a fairly inelastic monetary system, at least in respect to the core money supply. This plan might look radical, but it addresses the main flaw in our monetary system: the politicization of money and credit. The biggest problem with monetary policy is that there is such a thing as monetary policy.

Bitcoin—Money of No Authority

The uniform, constant, and uninterrupted effort of every man to better his condition . . . is frequently powerful enough to maintain the natural progress of things toward improvement, in spite both of the extravagance of government and of the greatest errors of administration.

—Adam Smith (1776)¹⁸

The return to a gold standard and the full privatization of money and banking require political action and thus depend on changes in ideology. But what if alternative monetary arrangements emerged from the

spontaneous interaction of individuals? What if human creativity and ingenuity spawned superior alternatives to the unstable and terminally flawed monetary system the state provides? Is it not more realistic to expect change for the better from the free interplay of the market and from new technology than from the belated realization of their errors by those who run the present monetary infrastructure and who remain attached to the flawed theories that support it?

The rise in recent years of Bitcoin has truly been a remarkable development in the field of money. Bitcoin is “a peer-to-peer payment system and digital currency.”¹⁹ It is often called a *cryptocurrency* “because it uses cryptography (that is, data exchange made secure through digital communication protocols, DS) to control the creation and transfer of money. Conventionally, *Bitcoin* capitalized refers to the technology and network, whereas lowercase *bitcoins* refers to the currency itself.”²⁰

Discussions about Bitcoin have now entered mainstream media and the responses have ranged from angry rejection to confusion and skepticism to, less often, enthusiastic embrace. It is still early days for the new virtual currency and it may still fail, maybe due to as yet unforeseen technical issues, or it may get replaced by a superior competitor, or destroyed through state intervention, but I certainly do not expect the concept behind Bitcoin to simply fade away due to lack of sustained interest or potential. I am not qualified to assess it on the basis of its cryptographic and technical properties, but as a monetary economist and thus assessing its potential as money on a conceptual level, I consider it one of the most exciting developments in the field of money for a very long time. On the basis of the analysis provided in this book, it should be clear fairly quickly that Bitcoin ticks a lot of the boxes (all the boxes?) of what makes good money.

Bitcoin is a form of non-state-issued digital money. All bitcoin transactions are recorded on a public virtual ledger (known as the blockchain). Transactions take place directly between addressees (loosely analogous to bank accounts but without the need for any third party involvement). Each address is unique and is controlled by a private key (loosely analogous to a signature or PIN number). The ledger is maintained through a global, open, and decentralized network of computers connected via the World Wide Web. The algorithm behind Bitcoin is open-source software. The system is entirely transparent in

respect to the number of existing bitcoins and the specific transactions occurring in the Bitcoin economy at any moment.²¹

The idea of digital money, of money that exists purely in the form of computer code, is not new. It may be as old as computers themselves. What is truly unique about Bitcoin is that it is the first digital currency that does away completely with the need for any authority to issue bitcoins or to maintain the Bitcoin infrastructure.²² The integrity and ongoing functionality of the system is instead maintained through the interaction of the decentralized computer network. The participating computers have to constantly solve complex mathematical riddles of progressively increasing difficulty. Successful solutions will be rewarded (mainly) with new bitcoins, which is the incentive to participate. This is how new bitcoins come into being and it is why these computer operations are called “mining.” Bitcoins are thus not issued by the decree of a central authority (like paper money issued by a central bank) or as a direct claim on other forms of money (like fiduciary media issued by private banks) but are mined (like gold or silver) by participants of the Bitcoin economy. Anybody who is willing to commit the necessary computing and electrical power can become a bitcoin miner. Bitcoin is a monetary system without authority and privilege. Bitcoins can be thought of as a digital form of commodity money. Bitcoins are a sort of cryptographic commodity. To get them “out of the ground” and bring them into circulation is not free and not arbitrary, but neither is it privileged or restricted.

Furthermore, the Bitcoin algorithm is designed in such a way that the total number of bitcoins will never exceed 21 million units. Up to that point, the supply of bitcoins will increase slowly through mining, but when 21 million bitcoins are in existence, the supply of bitcoins will be fixed. Bitcoin is therefore ultimately a truly inelastic form of money. The process of mining must, however, continue, because the various mathematical calculations are still necessary to guarantee the integrity of the Bitcoin network and the ongoing authorization of bitcoin transactions. At this point, the miners will have to be compensated through transaction fees from the bitcoin users instead of new bitcoins. Already today, a small fraction of their compensation consists of a transaction fee. This component will rise over time.

Bitcoin combines elements of “old” commodity money with new electronic money. As Bitcoin is free market money and has no issuing authority behind it, it is not tied to any political entity, a nation state, or group of nation states. It is truly global and can be used as a medium of exchange by anybody in the world. Indeed, two people anywhere in the world, as long as they have access to the Internet, can engage in a financial transaction instantly and at almost no cost. Transferring even small balances from somebody in, say, Croatia to somebody in Kenya is as easy and straightforward as exchanging e-mails. (Units as small as a 100 millionth of a bitcoin can be transferred.) There are no exchange rates or the usual bank fees to consider. The Bitcoin economy never shuts down. There are no bank holidays and, importantly, no foreign exchange controls. Bitcoin accounts cannot be frozen. Bitcoins are stored in electronic “wallets” that allow Bitcoin users to be their own bankers. Conceptually, Bitcoin can connect any two people anywhere in the world, instantly, cheaply, and (as far as I can judge) securely.

Good money, as we have demonstrated at length, should be hard, global, inelastic, and apolitical money. This is precisely what Bitcoin promises to be. Nevertheless, the idea of Bitcoin has so far met with considerable skepticism, not only from those who are committed advocates of the state’s control over finance, economy, and society,²³ or who remain attached to the modern belief system that money has to be inflationary and controlled by trained economists at a central bank, but surprisingly often even from fiat money skeptics, “gold bugs,” and libertarians. It may be worthwhile to briefly consider some of the most popular objections. I will focus on objections that are essentially economic in nature. I cannot comment on technical and cryptographic issues, such as degree of anonymity, energy use, or potential software glitches.

Bitcoin must be a hoax as it is not backed by anything; it is just digital code; it is immaterial.

Most money today already consists only of digital code. Most of what we use as money today is nothing but an electronic book entry into a ledger at a bank. It is immaterial money, yet that is evidently no hindrance to its employment as money. Every day, this type of money facilitates many millions of transactions and is held by millions

of people as a monetary asset in their portfolios. It certainly meets demand for money. It is money for the simple reason that the public uses it as money, that is, as a widely accepted facilitator of trade, as a medium of exchange.

We have also seen that today's money is not backed by the state. Only a fraction of the money supply is backed by the state's physical banknotes and coins, although the state central bank usually stands ready to print more banknotes if the public wants to exchange electronic money for proper paper money. But, in turn, these banknotes are not backed by anything of particular value either (their paper or cotton content is hardly what gives them value). Fiat money banknotes are irredeemable. Fiat money constitutes no claim on anything.

As we saw in the early chapters of this book, it is always the trading public that bestows exchange value and therefore money properties on something. Whatever is used as money is used as money because the public found it useful for that purpose. Electronic fiat money is valuable to the individual money user because others in society accept it in trade, and it is generally accepted in trade because the public has found it convenient to do so. Money is the most fungible good in the economy. In principle, its physical properties are unimportant, although it could reasonably be suggested that nonmateriality is even an advantage. It aids fungibility in an increasingly digitalized world.

The question is not why today's immaterial money, or any immaterial item, has value but how certain the money users can be that it will retain its value in the future. In the case of state fiat money you have to trust those who have the privilege to issue it, and who can even do so without any inherent limits. You have to have full confidence, first and foremost, in the state central bank, which (to a large degree at least) manages the issuance of this money through its legal monopoly, but ultimately the central bank is part of the state bureaucracy and it is politicians who control the central bank. As we have seen, such a monetary system is necessarily a politicized monetary system. Fiat money is always a tool of policy. The reason why the public has for so long only trusted a monetary system that was based on gold or silver was precisely that the supply of gold and silver was fairly (although not entirely) inelastic and, even more importantly, outside of anybody's arbitrary control.

“In gold we trust” is the motto of the advocates of a gold standard. In a fiat money system you have to trust a political and managerial elite. James Grant has called our unconstrained fiat money system the “PhD Standard,” and it is not difficult to see why so many economists like it. “In the state we trust” could be its motto. Bitcoin is much closer to a gold standard. Bitcoin does not require trust in specific institutions, individuals, or centralized administrative processes. It requires an element of “trust” in the soundness of the algorithm and the decentralized and anonymous computer network that maintains the Bitcoin economy and that is guided only by the self-interest of the individual participants. The motto here should be “In cryptography and markets we trust.”

Gold and silver have intrinsic value but Bitcoin does not.

This is similar to the previous point and popular among “gold bugs.” We rejected the idea of intrinsic value when we first came across it in Chapter 1. Economic value is always subjective value. Value is never intrinsic. Certain properties can be intrinsic to a specific good, and people may value these properties but it is always an individual act of subjective valuation that bestows value on something. In economics, the term *intrinsic value* is elusive, if not meaningless.

Gold is valued for two reasons. It is valued as an industrial commodity or as a consumption good (item of jewelry) on the one hand, and that is its nonmonetary value, and as a form of money on the other hand, its monetary value. Gold possesses certain chemical properties that make it suitable for both uses. It is these properties that are intrinsic to gold but not the value that people assign to them. As to its commodity value, if other substances were to take gold’s place in industry and as an item of jewelry, if for example, the public’s taste in jewelry were to change drastically, gold would no longer be valued, or valued much less, in this respect although none of its properties, would have changed. The same is true for its value as a monetary asset. It is difficult to see how gold could ever have attained value as a monetary asset without having previously, before being first employed as a form of money, having attained value as a commodity. This point is the essence of Mises’s regression theorem,²⁴ about which we have more to

say shortly. In that sense, there was once a direct link between the two uses and the two values. However, once a commodity is used as money, it derives some of its value from the demand for money, which is a separate source of value and has again nothing intrinsic about it. If gold were to be demonetized completely, if, for whatever reason, nobody would consider gold a monetary asset any longer, and if the thousands of tons of gold that are held in the vaults of central banks and in the vaults of private investors were to be dumped on the market, the gold price would probably experience a steep drop.

Maybe those who put the intrinsic value argument forward really mean to say the following: If paper money or bitcoins were no longer accepted by the wider public as money (whether bitcoins have even reached that crucial point of wide acceptance is a different question), their value would drop to zero. Other than monetary value, these items have no value to fall back on. Gold (and silver) have, by contrast, a nonmonetary value also, and their complete de-monetization would not lead to them becoming worthless. This, however, does strike me as a small consolation for those who hold gold and silver for monetary reasons today. Be that as it may, it is not an argument against Bitcoin.

Is Bitcoin not just another fiat money?

No. Bitcoin is certainly not fiat money. *Fiat* is Latin and means “let it become” or “it shall be.” The term is most appropriate for money issued under a state monopoly because the state uses its unique law-making powers to determine what “shall be” money within its jurisdiction. It is true that most states today consider it an elementary feature of their sovereignty to determine what is money and to regulate it. “Money is what the government says it is” was how the United States’s Chamber of Commerce expressed this attitude succinctly in 1953.²⁵ It could be claimed that the founder or the founders of Bitcoin (who is really behind the pseudonym “Satoshi Nakamoto,” the creator of Bitcoin, is still unclear) also proclaimed that “bitcoins shall be money.” However, the creators, users, and promoters of Bitcoin have no means by which to give any weight to such a claim. All they can do is provide a potential form of money and hope that enough people find it useful so that it gains wider acceptance, which is, of course, the very precondition for anything becoming money. More specifically, they

cannot pay public sector employees with bitcoins nor can they demand that taxes be paid in bitcoins. Bitcoin can succeed only on the strength of its specific properties as a digital currency. Either people like those properties and use Bitcoin, or they do not and the whole thing will fade away quickly. Bitcoin is thus a form of free market money. It is entirely voluntary and thus conceivable in an anarchist (that is, stateless) society. Fiat money, however, is always state money and will always be under the managerial control of a bureaucratic elite.

Mises has shown that no good can be employed as money that did not first start out as a non-monetary commodity (the regression theorem). Bitcoin never had non-monetary use so it cannot become money.

This argument may look somewhat convoluted but it is fairly popular among some adherents of the Austrian School. It may be argued that this objection comes a bit too late. The present (January 2014) market value of all bitcoins is around \$9 billion. (There are now more than 12 million bitcoins in existence.) Numerous organized exchanges exist around the world on which one can trade various state fiat currencies for bitcoins, and vice versa, and bitcoins are being used for numerous online transactions every day. Of course, the Bitcoin experiment may still fail. The value of bitcoins may still collapse. But nobody can deny that Bitcoin has already taken many hurdles that normally stand in the way of any completely new entity becoming money (Bitcoin did not exist before 2009!). That bitcoins are exhibiting very distinct features of moneyness right now, nobody can deny. The question should maybe be a different one: What is Mises's regression theorem and how does it relate to Bitcoin?

Mises developed the regression theorem in his book *Theorie des Gelds und der Umlaufmittel*²⁶ (Theory of Money and Fiduciary Media) in 1912 to explain the key factors determining the purchasing power of money at any moment in time. This touches on themes we discussed in earlier chapters but it may be worthwhile to revisit them here. To explain how the exchange relationship between two ordinary goods (i.e., nonmoney goods) comes about in barter is straightforward. It derives from the respective value that the two parties to the trade each assign to the specific use values that these goods provide. In case of the exchange relationship between money and a nonmoney good this is

not so straightforward. Money has no direct use value, only exchange value.²⁷ Money does not fulfill any needs directly. Whether or not I am willing to exchange a nonmoney good for a certain quantity of money thus depends on the subjective value I assign to the present purchasing power that the money gives me. The only thing that money can do for me is give me purchasing power. How can I know what that purchasing power is? I certainly need some point of reference and that must be the purchasing power that was observable very recently in *previous* exchanges. It follows that we can make selling and buying decisions involving money only because we have some idea of what money's purchasing power was very recently. Without such a point of reference we could not make any valuation and could not use money properly. The reason for this is money's uselessness outside of exchange. I can grasp the usefulness to me personally of any other good directly and accordingly use my own personal value scale to rank these goods and trade them.²⁸ But money has no value other than as a medium of exchange. I need to have a reasonable idea of money's exchange value in the market place in order to determine my personal appreciation of that exchange value and use that as a basis for my own personal money demand and for using money in trade. Yesterday's purchasing power of money is thus crucially linked to today's purchasing power and to tomorrow's purchasing power.

This, however, does not solve the problem but seems to lead to an endless regress. Today's value of money is a function of yesterday's value of money, and yesterday's value is a function of the value the day before. But if we follow this chain, we must arrive to the point at which the item in question was for the very first time used as a medium of exchange, and at that moment the reference value was in fact its value as a nonmonetary commodity. From this Mises concludes:

*The regression theorem establishes the fact that no good can be employed for the function of a medium of exchange which at the very beginning of its use for this purpose did not have exchange value on account of other employments.*²⁹

This statement represents, I believe, a logically inescapable conclusion. And we should not be surprised if the case of Bitcoin does not invalidate it. Indeed, I see no conflict between the regression theorem and the Bitcoin experience thus far.

The founders of Bitcoin did not pick up pebbles from the beach and proclaim that “this shall be money.” They developed a complex and sophisticated technology, a cryptographic vehicle that allows the secure transfer of distinct digital units—the “bitcoins”—in a peer-to-peer network. Bitcoins are goods in their own rights. As I stated before, they can be thought of as cryptographic commodities. This distinguishes them from banknotes, which started life as securitized claims on money proper, that is, gold, and managed to gain money status in their own right when the gold backing was removed over time. But at that point they had already been circulating for a long time. By contrast, bitcoins are not claims on anything—they are goods. Digital, nonmaterial goods but still goods. They are exchangeable, like all goods are, but they are nonredeemable. They have specific properties and they are scarce.³⁰

Although the ultimate goal of creating a new payment system and new currency was probably a motivating factor from the start, we cannot say that the first participants in the Bitcoin project mined new bitcoins in order to meet their personal money demand. At this early stage the new digital units were certainly not money. They were newly created pieces of software used by a relatively small group of computer experts to experiment with. We may think of the project at this stage as more like a game, or an experiment. A fascination with computers, programming and cryptography was probably a key motivation for early Bitcoin pioneers. Further reasons in particular for new entrants could have been curiosity, the wish to be part of something that could grow and become important, maybe antiestablishment ideas or general libertarian considerations, or even the wish to make money in the long run. Many of these motivations may still be at work today and attract people to Bitcoin. Whatever the motivations were, and I can only speculate, it is apparent that the experiment attracted more people. But those who wanted to join the Bitcoin network but did not want to mine bitcoins themselves had to purchase bitcoins from miners, either by paying for them with established fiat currencies or by offering goods or services in exchange, and it is very likely that the miners used the costs of mining as a first reference point for their asking price. Enough people were evidently attracted to this project for reasonably stable exchange relationships between bitcoins and fiat monies to emerge, and as I mentioned, by now fairly liquid organized exchanges have emerged.

Enough people are being attracted to the cryptographic experiment that is Bitcoin so that a price for the strictly limited software-units bitcoin has been established. That price was originally not very stable, and it still remains fairly volatile today, but a market price does exist, as the regression theorem demands, and from here Bitcoin has the opportunity to develop into money.

Bitcoin is useless as money because it is too volatile.

This assessment is too harsh, but there is an underlying truth to it.

We have seen that the more widely an asset is being used as money, the more stable its exchange value becomes.³¹ This also applies to any potential remonetization of gold. The more people start using gold as a medium of exchange again, the more stable its exchange relationships with goods and services will become, and the less valid will the objection be that gold could be too volatile to function as money. General acceptance in trade, a high degree of fungibility, is the key characteristic of money. Presently, state fiat money has certainly the upper hand over gold and Bitcoin in this respect. Even though it is inferior in crucial areas to both gold and Bitcoin, state fiat money benefits enormously from its present general acceptance in trade. This shields it to a considerable degree from its formidable competitors. Bitcoin is still a speck on the global monetary landscape. The growth of the Bitcoin economy in recent years has been impressive but bitcoins are still not very widely used, and as a result bitcoin prices are still volatile, and this does indeed reduce Bitcoin's attractiveness in the eyes of potential additional users. It is a classic challenge that any new entrant into the currency business faces. It is a chicken-and-egg dilemma: To be attractive to the individual money user, the potential new money has to be highly fungible, but to be highly fungible, it has to be used by many as money.

I suspect that many of today's members of the Bitcoin economy are still attracted to it because of its conceptual appeal and its long-term potential, which are truly exceptional, or for reasons of ideology or curiosity. But its success will ultimately depend on the average money user finding it immediately useful for very personal reasons. Just as the public today does not use state fiat money because it buys in to the alleged macro benefits touted by mainstream economists, such as fiat money's supposedly growth-enhancing moderate inflation, the

public is unlikely to switch to Bitcoin because it has been convinced of the opposing theories, such as the ones promoted in this book. The public uses the present fiat money infrastructure because it is convenient and the monetary units are widely or universally accepted within a given territory. Bitcoin is less widely accepted, so it has to compete with its other features in order to gain acceptability and be a challenger to established state money.

It may be said that those Bitcoin users who took advantage of its high degree of anonymity and employed it for illegal transactions did indeed use it for instant personal benefits, but this group is evidently too small to provide a meaningful enough base for the currency to build on. Bitcoin offers, of course, other tangible benefits such as the cheapness, instantaneousness, and security of digital money transfers but the question is then if money users find that these advantages distinguish Bitcoin sufficiently from inferior but still more fungible fiat money.

Of course, the more and the sooner the terminal flaws inherent in the present elastic money system come to the fore, the more fiat money users have to fear inflation, bank collapses, cash withdrawal limits, capital controls and the general erosion of financial privacy (to which not only drug dealers and tax cheats but law-abiding citizens may attach some value), the more they may be willing to entertain the use of nonstate forms of money. However, the more the state fiat money system gets into trouble, the more likely the state will crack down on any competitors to its fragile monopoly. China may be a good example. Monetary authorities there engineered a colossal expansion in money and credit since 2008, the country's state-controlled banking sector looks dangerously overextended, and its citizens and corporations are subject to capital controls. Recently, Bitcoin enjoyed a boom in China, and China-based Bitcoin-exchanges began to attract considerable business. However, the Chinese government recently took the decision to ban its financial industry from dealing with Bitcoin enterprises.

The historical track record is not encouraging. We have seen that throughout history, when the ruling state paper money system was in disarray, authorities frequently banned the use of gold and silver or tried to disrupt the markets for these metals. I assume this will not be different this time around, and then also apply to cryptocurrencies.

The state may not be able to destroy these currencies but can probably make their use more difficult and thus impair their fungibility. And unlike gold and silver, virtual monies cannot look back on 2,000 years of use.

It is difficult to assess the chances of the alternative hard money solutions presented here. For the wider public to embrace a depoliticized and free market monetary system would require some profound ideological changes. Mistrust of markets seems more common than skepticism toward state power. When new crises occur, the initial impulse will probably be to ask for yet more state action. It may ultimately take a major financial disaster to truly open up the debate. We can only hope that alternatives such as Bitcoin are sufficiently developed by then to step into the breach when the present system collapses.

Notes

1. Ludwig von Mises, *Human Action: A Treatise on Economics*, 4th rev. ed. (Irvington, NY: Foundation for Economic Education, 1963/1998): 572.
2. Carmen M. Reinhart and Kenneth S. Rogoff, *Financial and Sovereign Debt Crises: Some Lessons Learned and Those Forgotten*, IMF Working Paper WP/13/266 (Washington: International Monetary Fund IMF, 2013): 8.
3. Ben S. Bernanke, "What the Fed Did and Why: Supporting the Recovery and Sustaining Price Stability," *Washington Post*, November 4, 2010, www.washingtonpost.com/wp-dyn/content/article/2010/11/03/AR2010110307372.html?hpid=topnews.
4. Reinhart and Rogoff, *Financial and Sovereign Debt Crises*, in particular, 17.
5. Reinhart and Rogoff, *Financial and Sovereign Debt Crises*, in particular, 9 and 16.
6. Jörg Guido Hülsmann, *Mises: The Last Knight of Liberalism* (Auburn, AL: Ludwig von Mises Institute, 2007):1031
7. Murray N. Rothbard, *The Case Against the Fed* (Auburn, AL: Ludwig von Mises Institute, 1994): 149; and Murray N. Rothbard, *The Mystery of Banking* (Auburn, AL: Ludwig von Mises Institute, 2008): 261–268.
8. Federal Reserve Bank of St. Louis Economic Research, Monetary Data, Monetary Base, <http://research.stlouisfed.org/fred2/series/BASE/>.
9. IMF and World Gold Council, quoted in Daniel D. Eckert, *Alles Gold der Welt—Die Alternative zu unserem maroden Geldsystem* (Munich: Finanzbuchverlag, 2013): 211.

10. Federal Reserve Bank of St. Louis, Economic Research, <http://research.stlouisfed.org/fred2/series/M2/>.
11. Henry Hazlitt, *What You Should Know about Inflation* (New York: D. Van Nostrand Co., 1960); quoted in John Butler, *The Golden Revolution: How to Prepare for the Coming Global Gold Standard* (Hoboken, NJ: John Wiley & Sons, 2012): 115–123.
12. Lewis E. Lehrman, *The True Gold Standard* (Lehrman Institute, 2011).
13. Jesús Huerta de Soto, *Money, Bank Credit, and Economic Cycles* (Auburn, AL: Ludwig von Mises Institute, 2006).
14. See Chapter 5.
15. Butler, *The Golden Revolution*.
16. Eckert, *Alles Gold der Welt*, 211.
17. Board of Governors of the Federal Reserve System, “Quarterly Report on Federal Reserve Balance Sheet Developments,” November 2013, www.federalreserve.gov/monetarypolicy/files/quarterly_balance_sheet_developments_report_201311.pdf.
18. Adam Smith, *The Wealth of Nations* (1776; “Petersfield: Harriman House, 2011), Book II, Chapter 3, 220. I am grateful to Mark Skousen, who pointed me to this quote in a recent e-mail exchange with “Austrians in Finance,” albeit in a different context.
19. Wikipedia, “Bitcoin,” <http://en.wikipedia.org/wiki/Bitcoin>.
20. *Ibid.*
21. While the basic information about all transactions is in the open domain, it is very difficult and—with some effort on the part of the users—potentially impossible to identify specific users with transactions. Bitcoin thus offers potentially a high degree of anonymity while being at the same time extremely transparent.
22. I am grateful to David Goldstone, who explained many of Bitcoin’s features to me. A presentation by David on this topic can be seen here: <https://www.youtube.com/watch?v=pLyYU4tHWRw>.
23. Keynesian economist and political commentator Paul Krugman considers it, unsurprisingly, “evil.” <http://krugman.blogs.nytimes.com/2013/12/28/bitcoin-is-evil/>.
24. Mises, *Human Action*, 408–410.
25. Quoted in Murray N. Rothbard, “A 100 Percent Gold Dollar,” in *In Search of a Monetary Constitution*, ed. Leland B. Yeager (Cambridge, MA: Harvard University Press, 1962): p. 95.
26. Ludwig von Mises, *Theories des Gelds und der Umlaufmittel*, 2nd ed. (Munich and Leipzig: von Duncker and Humblot, 1924): 85–104.

27. See Chapter 1.
28. It should be added that in a modern monetary economy, almost everybody is keenly aware of the market prices of most goods, and when ranking goods on their personal value scale, most people will no longer do so solely on a subjective assessment of use value but also according to the goods' market values in exchange. Be that as it may, the crucial point here is that exchange value is the *only* determining factor when it comes to valuing the medium of exchange. See Mises *Theorie des Geldes und der Umlaufmittel*, 21.
29. Mises, *Human Action*, 610.
30. For much of this discussion, I found the work of Peter Surda highly interesting. See www.economicsofbitcoin.com/.
31. See Chapter 5.

Epilogue

Money, Freedom, and Capitalism

One of the worrying consequences of the recent financial crisis has been the growing acceptance of all sorts of state intervention in the economy. The public predominantly believes that the reckless lending that caused the crisis must be due to the moral failings of bankers, and does not appreciate that reckless lending is no bug but a feature of our fiat money system. State and bankers are accomplices in the money-printing business, and while many bankers surely were greedy, irresponsible, and stupid, they operated within a state-sponsored support structure that systematically rewarded debt and risk, and that socialized the downside, and they conducted their partially reckless lending with the steady support and occasional encouragement of the state central banks. Yet in the public's perception, mainly the bankers are to blame, and by extension the free market. Meanwhile, the central bankers have saved the system, or at least prevented another

Great Depression, and the state has now valiantly accepted the task of regulating banking “properly.”

It is maybe a good indicator of the underlying climate that proposals to impose 100-percent reserve requirements on the private banks and to hand full control over the money supply to the central banks, seem to be enjoying a revival in many countries. Proposals of that kind are being promoted in the United States,¹ the United Kingdom,² Germany, and Switzerland at present. The theories, ideas, and objectives of these plans are radically different from anything that my analysis suggests as sensible. A somewhat critical attitude to fractional-reserve banking seems, of course, understandable and appropriate, and is certainly widespread among Austrian School economists. In the course of our investigation, we had numerous opportunities to investigate fractional-reserve banking and its effects. We rejected the notion—popular among some Austrian writers—that it is fraudulent and would not occur under strict private property laws, and equally rejected the notion that fractional-reserve banking leads to a perfectly equilibrating elasticity of the money supply, suggested by the “free bankers.” Fractional-reserve banking has the potential to periodically distort interest rates and lead to business cycles but in an entirely free market with hard money at its core and no state intervention into banking (free banking), fractional-reserve banking will be strictly limited. The kind of colossal money and credit expansion that occurred in the run-up to the financial crisis is inconceivable in a free market/hard money system. It is true that most of the money was created by “private” banks, but banks could create money on this scale only because they operated in a soft fiat money system with a “lender-of-last-resort” supporting them. The practice of fractional-reserve banking is not to blame for the monetary deformations of the fiat money system, a system that was specifically designed to encourage fractional-reserve banking.

But these proponents of 100 percent reserve banking are usually not “Austrians,” and their theories do not start with an analysis of the effects of money and credit creation in general. Their proposals are not backed by theories of money, interest, and capital, or of business cycles. The elasticity of the money supply is not their concern, only who controls that elasticity. The basic idea behind their programs is that society

needs a constant flow of new money, a view that is popular but that we have shown to be baseless. In any case, what upsets these reformers is that “private” and profit-seeking corporations can issue money or money substitutes rather than public-spirited and democratically controlled institutions. They believe that money creation should best be a public service, fully under the control of a state bureaucracy and a group of experts (in one of these proposals called the “Money Creation Committee”),³ who ascertain the optimal quantity of money and bring it into circulation via the banks and through other channels, such as spending by government departments. Limitless money out of thin air poses no major intellectual problem for the 100 percent reserve advocates, as long as its issuance is in the “public interest” and out of the hands of bankers. A roster of wonderful projects could be realized with the constant flow of fiat money, from paying down debt to funding infrastructure spending. Money production to “the benefit of everyone,” less “speculation,” and more productive investment are being promised, with the state deciding, naturally, what is productive.

In their IMF working paper from 2012, “The Chicago Plan Revisited,”⁴ Jaromir Benes and Michael Kumhof even suggest that all debt on bank balance sheets could be wiped out overnight under their plan of the full nationalization of money production. It is telling that Benes and Kumhof do not try to justify their proposal for the state’s complete control over money and credit with monetary theory, or any economic theory for that matter, but with peculiar interpretations of monetary history. Here, we meet again the anthropologist and activist David Graeber, who we encountered in Chapter 1, and also the maverick monetary historian and activist Stephen Zarlenga. According to Benes and Kumhof, the historical origin of money can reveal to us the *nature* of money, and thus who should be in control of money. Their conclusion: Money is a creation of the state and best controlled by the state.⁵ In a brash rewriting of monetary history, the private sector is consistently the villain and responsible for all of the monetary disasters in history.

These proposals may only have a small chance of being implemented but they are symptomatic of a general antimarket attitude that has undoubtedly spread since the crisis. As the problems with our fiat money system are bound to intensify in coming years, the grip of the state will likely become tighter, and I doubt that this will meet with

much public resistance. “Quantitative easing” was once an unconventional policy tool, as it evidently involves a targeted manipulation of asset prices and as central banks may use it to deliberately lower the funding costs of the state. Today, most investors and traders in financial markets have at least made peace with it, and most macroeconomists have even happily embraced it. It is now part of the accepted central bank tool kit and almost a fixed feature of the financial landscape. It has indeed become rather conventional and attempts to castigate it on principle or challenge it legally, as happened recently in a complaint to the German constitutional court, are met with bewilderment and ridicule. “In extraordinary crises, the state has to take extraordinary measures. The end justifies the means.”

Meanwhile, the banking and wider financial industry are facing an ever-stricter regulatory framework. Not the market, not profit and loss, not the consumer are deciding what is appropriate risk-taking or what are appropriate business practices but increasingly lawmakers and state-appointed regulators. Under the gold standard the individual bank depositor might have been at greater risk of monetary loss but with that risk came responsibility and power. In those days, bankers were less under the control of regulators and central banks but instead answerable to their customers who funded their business and who had to be assured of its soundness.

The financial dealings of private citizens are also coming increasingly under the suspicious gaze of the authorities. Large cash withdrawals and foreign bank accounts are now generally suspicious. In many European countries (e.g., Italy, France), legal limits on the size of cash transactions have been introduced. In many countries, there is a concerted effort to discourage the use of cash and to encourage means of payment that are more easily recorded and thus transparent to financial regulators. International pressure on offshore banking centers, tax havens, and countries with relatively strict bank secrecy laws has been building for years, and efforts are being made for the sharing of bank customer data internationally. These measures are being justified with the struggle against money laundering, drug dealing, tax evasion, and terror funding, and they do at first sight seem unrelated to the topics discussed here. However, they fit into

an overall picture of an ever-deeper involvement of the state in the financial sphere of society. The notion of financial privacy is increasingly under attack.

As we saw in the previous chapter, mainstream economists are now contemplating higher inflation, capital controls, and other measures of “financial repression,” as a solution to the mounting debt problem, in particular that of the public sector. Attempts to “inflate the debt away” are, of course, equivalent to defaulting on the debt. Creditors will get less than what they contracted for. Savers are being partially expropriated via inflation. These policies will thus be seconded with measures to avoid capital flight. Highly regulated financial institutions, such as pension funds, banks, and insurance companies, will become captive depositories of sovereign debt.

None of these measures will make the elastic money system workable or will prevent its further disintegration. But when new crises occur, these measures will be used to prevent evasive action by wealth holders, and to impose a tighter grip on a struggling system. This might not postpone the endgame but make life considerably more unpleasant until then.

The argument presented in this book was not ideological. I hope the reader agrees with this statement. The analysis was strictly utilitarian, a mere cost-benefit analysis. If we want a well-functioning economy, we need free markets, and free markets require individual liberty, private property, and sound money. As our investigation has shown, the money of the free market cannot be arbitrarily controlled, politicized elastic money; it must be hard, apolitical, and international money. But if unsound money is incompatible with free markets, it is also incompatible with individual liberty. And at this point, the argument may no longer be just strictly utilitarian but also political. If our society still values individual liberty, it has to rediscover sound money. As the great Ludwig von Mises put it:

It is impossible to grasp the meaning of the idea of sound money if one does not realize that it was devised as an instrument for the protection of civil liberties against despotic inroads on the part of governments. Ideologically it belongs in the same class with political constitutions and bills of rights.⁶

Notes

1. Jaromir Benes and Michael Kumhof, “The Chicago Plan Revisited,” IMF Working Paper WP/12/202 (Washington, DC: International Monetary Fund, 2012); see also the American Monetary Institute, www.monetary.org.
2. Andrew Jackson and Ben Dyson, *Modernising Money: Why Our Monetary System Is Broken and How It Can Be Fixed* (London: Positive Money, 2012), www.positivemoney.org.
3. *Ibid.*, 204–218.
4. Benes and Kumhof, “The Chicago Plan Revisited.”
5. For a treatment of the theories of David Graeber, see Chapter 1.
6. Ludwig von Mises, *The Theory of Money and Credit* (New Haven, CT: Yale University Press, 1953), Chapter 21. (This quote is not in the German-language second edition that I quoted from before.) See http://mises.org/books/Theory_Money_Credit/Part4_Ch21.aspx.

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