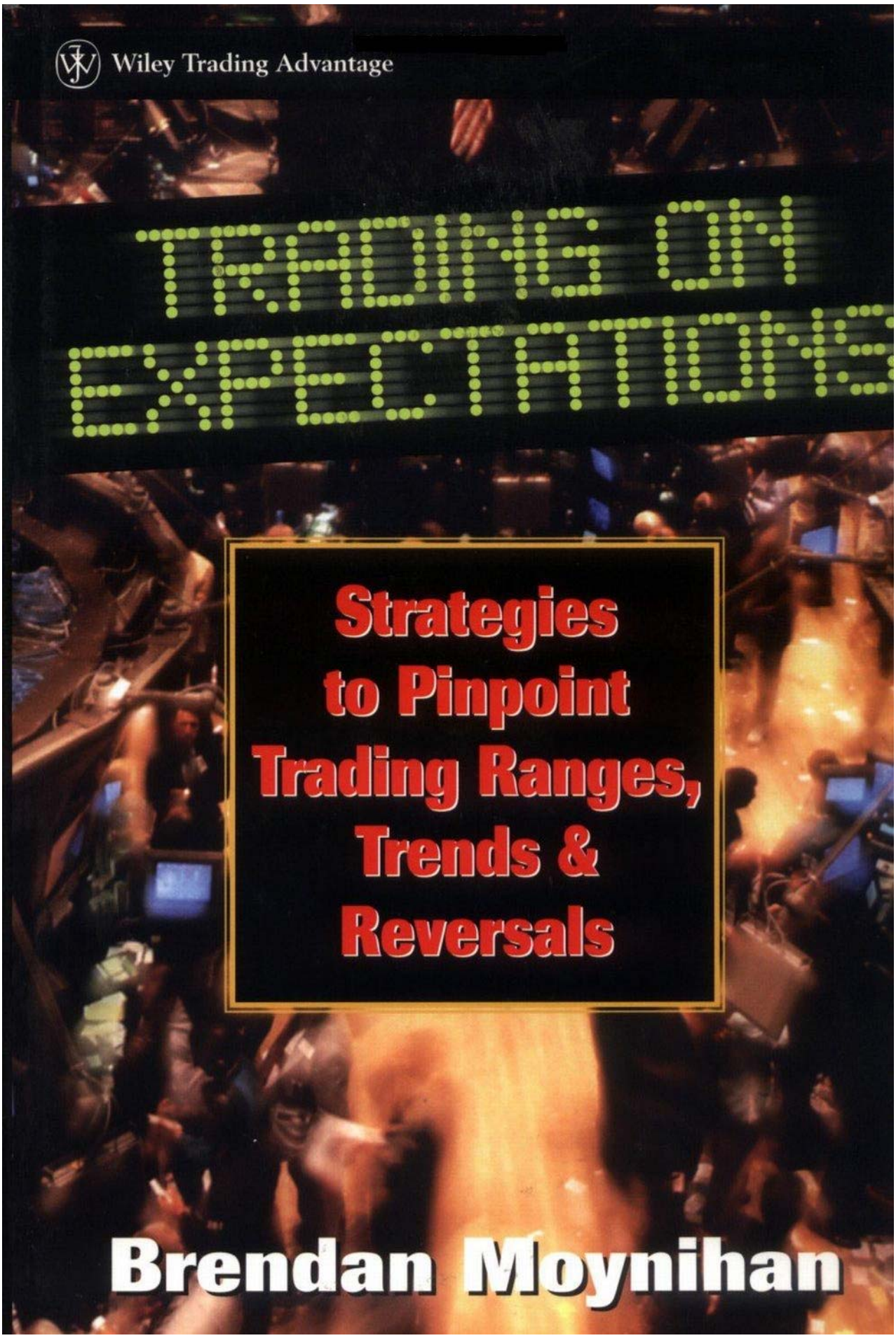

Wiley Trading Advantage
TRADING ON EXPECTATIONS
Strategies to Pinpoint Trading Ranges, Trends & Reversals
Brendan Moynihan

# CONTENTS

Introduction ..... 3
Economics ..... 5
Psychology ..... 12
Expectations ..... 18
Sentiment ..... 32
Markets ..... 37
Market Activity ..... 44
Long-Term Market Activity ..... 63
The Coherent Market Theory and the Sentiment-Activity Model ..... 74
Application of the Sentiment-Activity Model ..... 82
Treasury Bonds ..... 107
Soybeans ..... 125
Deutsche Mark ..... 144
Crude Oil ..... 157
Appendix ..... 169
Notes ..... 170
Bibliography ..... 173

# Introduction

*Trading on Expectations* is the product of several years of observing the behavior of both financial market participants and financial market prices, and trying to reconcile those observations with my formal education and the conventional wisdom about markets. Academics assume market participants are rational and economists assume an air of scientific precision with complex mathematical formulas, while fundamental and technical analysts deride each other's methods. However, at different times each of these methods explains what the market is doing. Sometimes market prices can be predicted using the economists' models. Sometimes market prices follow a "random walk" as the academics claim. Sometimes price is responding to the fundamental news developments and sometimes to the price patterns, trendlines, and breakout levels identified by technicians. This book draws from the different approaches and develops a coherent theory of price movements in the financial markets.

Often lost in most approaches to the markets is the fact that individuals are at the root of markets. Individuals' transactions create the data which the academics analyze, respond to fundamental data releases, and create the chart lines which technicians scrutinize. People introduce some unique factors to market analysis, factors which the "natural science" approach does not accommodate. Economics is not open to the same type of analysis as the physical sciences with which economics strives so hard to equate itself, because of the human element aspect of the markets.

Asserting that people are at the root of markets, Chapters 1 through 3 establish the need to address the "social" in the social science of economics and highlight the role that the subtleties of the human element introduce to the market. For example, in the speculative markets most transactions are not prompted by a need for the instrument itself—the way most transactions in consumer markets are prompted—nor are the instruments "consumed." Rather, speculative market transactions are driven by what participants think prices will do in the future.

The resulting premise is that the combination of participants' *actions* and *expectations* about the future determines the direction of prices in the markets. Today's buy and sell decisions are a function of traders' expectations about future prices which, in turn, are determined by today's buy and sell decisions. This back and forth interaction between traders' actions and expectations explains the emergence of price trends when both market activity and sentiment are going in the same direction, trading ranges when the expectations are mixed, and trend reversals when the variables are at odds.

Chapters 4 through 7 explain the concept behind Contrary Opinion and the Chicago Board of Trade Market Profile® as methods of measuring the expectations and actions of market participants. Both methods are participant-derived; the former by surveying trader sentiment (i.e., expectations) and the latter by identifying and monitoring buying and selling *activity* (not just prices going up and down). Taken together these methods provide the components of a coherent theory of price movements, reconciling the discrepancies between the academics' and practitioners' perspectives. As Nobel Laureate Merton Miller wrote, "The CBOT Market Profile is a unique attempt to bridge [the] communication gap between the doers and the watchers."

Chapters 8 and 9 put the two approaches together into a single model, the Sentiment-Activity Model. By monitoring participants' activity (Market Profile) as well as their expectations (Sentiment numbers), one can detect when the market is in a random-walk state (trading range), a coherent crowd-behavior state (trend), and when

a chaotic crowd-behavior transition (trend reversal) is occurring. The model describes the conditions—as they unfold—which determine the three states of the market. Chapters 10 through 13 apply the Model to four markets over the course of time when the book was being written.

During the past 10 years, I have had the opportunity to do some teaching both inside and outside academic institutions. In the process, I have found that the most effective way of conveying an abstract idea is to demonstrate the point with real-life examples. Fictitious or contrived examples selected specifically for the occasion fail to have the same impact. Therefore, throughout the book I have, where possible, used real-life examples which actively demonstrate the abstract ideas set forth.

Because of my occupation, many of the examples involve the currency markets and the interest rate market. Some of the examples were selected simply because I was living through the event as it was happening. I made notes and filed them under the appropriate heading, then pulled out the file when I sat down in the spring of 1996 to write the book. Other examples were selected completely at random, citing news and events reported on the day I was writing a particular section of the book.

# Chapter 1

## Economics

There is an old fable, believed to have its origins in the country of India, in which six blind men acquaint themselves with an elephant for the first time. Each man gropes a different part of the animal; shortly thereafter, as the men discuss what an elephant is like, arguments break out among them. Each man claims all the others are wrong. The animal is alternately described as being like a wall, a snake, a spear, a tree, a fan, or a rope, depending on what part of the animal a particular man groped. The Rajah overhears the arguments and points out to the blind men that the elephant is a big animal, that each man only touched one part, and that they must put all the parts together to find out what an elephant is like. The moral of the story is that there is an element of truth in each of the blind men's "observations." While each man's description may be accurate, based on his vantage point, the elephant is not accurately described until all of the blind men's "observations" are taken into account.

Similarly, the financial markets are "a large animal," so to speak, and described quite differently depending on whether one is talking to an economist, an academic, a technical analyst, or a fundamental analyst. Sometimes the market seems to adhere to the principles set forth in conventional economics. Other times the market seems to follow a random walk as the academics maintain. At other times still, technical analysis seems to describe the market perfectly.

Economists use reams of data about a particular market as input for computers and complex mathematical models which will spew forth a prediction for what prices will be in the future. Academics reject this approach, claiming that financial markets are efficient and that no one can generate "abnormal returns" as a result of such analysis. Technical analysts use past prices, charts, patterns, and cycle analysis in an attempt to predict which way and how far prices will go in the future. Fundamental analysts (like economists) use past data to make projections of supply and demand, and forecast prices. Fundamental and technical analysts seem to take great pleasure deriding each other's respective approaches to the markets— and academics seem to delight in deriding both of these groups' approaches.

As in the fable of *The Blind Men and the Elephant,* there is an element of truth in each of these perspectives on the markets. Sometimes market prices can be predicted using the economists' models. Sometimes market prices are a random walk as the academics claim. Sometimes price is responding to the fundamental news developments and sometimes to the price patterns, trendlines, and breakout levels identified by technicians. This book draws from the different *observations* of these different vantage points to develop a coherent theory of price movements in the markets; it is an attempt to describe the elephant more fully and more accurately.

It is not being suggested that market observers are blind, or even blind-folded, merely that many market observers are wearing blinders which prevent them from seeing the beneficial elements of truth in the other approaches to the markets. This book attempts to remove those blinders so that each may benefit from what the other has to offer.

More than mere fable, this approach has been successfully used in other fields. For instance, in the early 1990s a new fighter jet was developed for the U.S. Navy.

The plane, the FA-18E, was the first fighter jet designed entirely on a computer. But more importantly, it was the first time that the engineers and the manufacturers worked side by side on designing and building a plane. In the past, engineers created elaborate drawings, plans, and specifications which were passed on to the manufacturers who followed the instructions and assembled the craft. This time, however, the engineers were on the assembly room floor, side by side with the technicians, welders, and riveters as the plane was being built. It enabled the assembly teams to convey their perspectives to the engineers on what's involved in building a plane. It enabled the engineers to see and sit in a plane they had previously only been able to see on paper.

Likewise, this book brings together the theoretical perspective of markets advanced by academics and economists with the perspective of the practitioners who do the trading, in an attempt to describe more accurately and more fully what drives prices in the financial markets.

**Brief History of Economics**

The study of markets per se is a relatively new arena when viewed in the broad sweep of human history, making economics as a discipline the youngest of the "sciences." While it is true that since the end of the Middle Ages many "new sciences" have emerged from disciplines which were familiar to the ancient Greeks, they are merely autonomous versions of previously known fields of study. Economics, on the other hand, was an entirely new field which did not exist previously. The study of exchange, production, and consumption conveyed knowledge that could not be categorized as math or physics or biology.

For centuries, philosophers had been intent on learning the ends which some Deity or Nature was trying to achieve in the course of human history. Even those who were not religiously bent in their investigations failed in their quest because they dealt with humanity in *groups,* like nationality or race or religious persuasion, not as *individuals.* But as the Middle Ages drew to a close, all that was about to change, as would man's understanding of the foundations of society. Until the end of the Middle Ages, transactions and prices were dictated by custom and religious beliefs which held that it was unfair, unjust, and immoral to make a profit. In the sixteenth century, philosophers began to question the status quo in the political realm. Dynasties fell, kings were beheaded, and religious authority was called into question. This set the stage for challenging the notion that it was unjust to try to produce a better or cheaper product than one's neighbor and enabled the political changes which set the wheels in motion for the industrial revolution.

"In the seventeenth century, the West developed a model of scientific procedure conventionally associated with the names of Bacon and Galileo. It was based upon observation, reason, and experiment."[1] Interestingly enough, Bacon was a philosopher and Galileo was a scientist (an astronomer and physicist). In challenging the established order, the philosophers were able to pave the way for great strides in science (which contradicted religious views of the world), which in turn paved the way for the improvement in material circumstances of those living in the West. In the eighteenth century another philosopher, a political and moral philosopher, wrote a book which would forever change the way man viewed society. What Bacon did for the natural sciences, Adam Smith did for the social sciences. His most famous book, *The Wealth of Nations,* made two key points: the beneficent effects of the self-interest of individuals and price as a signal-sender in the self-regulating market mechanism. Adam Smith was a social scientist in the broadest sense. His breakthrough understanding about price regulating what is consumed and what is produced in the

economy came about because he understood the *social* aspect of the market interactions; the motivations of self-interested *individuals.*

Thus, economics began in the eighteenth century with the study of the psychology and motivations of individuals. Gradually, the focus of economics shifted to the study of individual firms (i.e., microeconomics) in the nineteenth century and finally to a study of the aggregate economy at large (i.e., macroeconomics) in the twentieth century. By the end of World War II, economics was treated as a science, as a natural science. The new-found penchant for government intervention in the economy and reliance on economists to predict the future persuaded the economists that they were full-fledged "scientists," no longer philosophers. Thus, economists clamored to use formulas and mathematical equations to prove their legitimacy.

**Is Economics a *Science?***

Economists and academics tend to approach the markets as though the data which result from market transactions were the starting point, as though the data were an irreducible primary. The data are collected, arranged, averaged, massaged, and plugged into formulas much the way chemists, physicists, or mathematicians process the information of their investigations. However, while the chemist, mathematician, physicist or any other natural scientist can rely on the results, the person trying to make such definitive pronouncements in the realm of economics has no such advantage.

While the *natural sciences* are ultimately able to create mathematical formulas which explain natural phenomenon and to create models which predict the outcome of events in the natural world, the *social sciences* are not able to accomplish such a feat. The subject matter of these "soft sciences," namely people, is not open to examination by such equations.

While the natural sciences study the *givens* in the universe (i.e., facts), the social sciences study the man-made processes in the universe. Markets are not a given. Rather, they come into existence as a result of individuals seeking to improve their condition in life. People are not automatons, consistently delivering a proscribed, predeterminable set of actions and reactions to the same set of circumstances. Consequently, economics does not lend itself to the same methods of analysis as those available to the natural sciences because of the human factor which, by definition, is ever-present in the social sciences and completely absent in the natural sciences.

The natural sciences explain and predict natural phenomenon using facts. Economics, on the other hand, is the art of understanding human behavior in the realm of production, consumption, and exchange. There are no *facts* per se in economics as there are facts in physics, chemistry, and mathematics. For example, in physics, the force exerted by a lever is directly proportional to the distance from the fulcrum; in chemistry, potassium nitrate, charcoal, and sulfur combine to create a combustible compound called gunpowder; in mathematics, 2 + 2 = 4. Economics cannot provide the predictive powers available to natural sciences. Under a given set of circumstances, economics is not equipped to determine what the outcome will be, particularly with regards to market price. "Economics analyzes the market process which generates commodity prices, wage rates, and interest rates. It does not develop formulas which would enable anybody to compute a 'correct' price different from that established by the interaction of buyers and sellers."[2] (Emphasis added)

The theories advanced by the natural sciences are not "provable." Rather, they are accepted as fact based on the unanimous evidence which led to and supports the theory. The unsubstantiated report of an occurrence of a phenomenon is not enough to have it called a fact. In 1988 two scientists *reportedly* succeeded in generating more

heat than energy that was input in a cold fusion experiment, yet other scientists were unable to duplicate these results.

Cold fusion was not accepted as a scientific fact. Therefore, rather than being *provable,* theories of natural science are only *disprovable.* To disprove a theory one need only cite a single instance which contradicts what has, until that point in time, been accepted as fact. Once Magellan circumnavigated the earth, the "fact" that the earth was flat had to fall by the wayside. Once a single incident fails to correspond to the theoretical construct's predicted outcome, the theory falls into disrepute since it no longer accurately describes the natural world it claimed to have described. It is no longer considered as scientific fact.

Clearly, once evidence is presented which disproves a theory in the realm of natural science, no amount of repeating the old theory will add currency to its claims nor attract adherents. In 1803 the French Academy of Sciences insisted that "stones [meteorites] could not possibly fall from the sky"; this is hardly a view the Academy would espouse today. Yet in the social sciences, economics in particular, an equivalent rejection criteria does not seem to exist. It would appear that the social sciences selectively embrace the principles of the natural sciences. For example, the geocentric theory of the universe is an historical curiosity, just as the flat earth theory is. But in the social sciences, presenting evidence to disprove a theory does little to prevent its adherents from chanting their mantra over and over again, ad nauseam. For example, the collapse of the Union of Soviet Socialist Republics has not quelled some people's yearning for socialist, central planning to address their every economic need. The idea that the government holds the key to social ills, or economic growth, or can solve the problem of unemployment has not fallen by the wayside in the face of "evidence" to the contrary.

**Academic Double Standard**

Academics tend to treat the financial markets differently from the markets in the *real* economy. In this context, financial markets refer to the markets for financial assets and instruments, the derivative instruments on these underlying assets and instruments, as well as derivatives on raw material commodities; the short list includes: stocks, bonds, currencies, futures, and options. While academics acknowledge that analysis of businesses and companies, firms and industries in the real economy can be used in order to make better decisions, such analysis is all but ruled out for the financial markets. The Efficient Market Hypothesis (EMH) or Random Walk Theory (RWT) holds that the financial markets are efficient and that price movements therein are random. Therefore, technical analysis or fundamental analysis cannot produce returns above the market averages.

So enamored are academic economists with claiming natural science stature, they have even borrowed some terms from the natural sciences to make their theories of the financial markets sound more "natural-science-like." Consider that there are four forces in the universe: electromagnetism, gravity, strong form and weak form. Coincidentally, the academics have a *weak form* EMH and a *strong form* EMH. The weak form says you cannot predict future prices based on past prices. The strong form says that nothing, neither published information nor unpublished developments, can be of use in predicting future prices.

Rather than take issue with each and every aspect of the efficient market theory, it is sufficient to take issue with a few of the fragile assumptions which underlie the theory. Once it is demonstrated that the assumptions are unrepresentative of reality, the theory's conclusions fold. For example, the theory asserts perfect pricing: The present price of the financial instrument reflects all available information, discounting

all of it into one neat little price. The theory also holds that market information is immediately disseminated to everyone.

While some of the assumptions obviously do not reflect conditions in the real world (i.e., with regards to transactions costs, taxes, and instantaneously available information), the assumption about individuals being rational must be considered in some detail because individuals are at the root of the market. Besides, as will be shown later in the book, irrationality holds the key to understanding price movements in the financial markets. The point is: A theory purporting to describe the behavior of prices in the financial markets but which fails to take into account that individuals' actions comprise the data of the market, is missing the most important aspect of the market. The theory may accurately describe the world of a model heavily laden with unrealistic assumptions, but once the assumptions are removed in order to accurately reflect the real world, the model's conclusions become questionable.

**A Dismal Record**

As a group, the practitioners of the dismal science have a pretty dismal record. As an example, consider a study done by Jim Bianco of Arbor Trading in Barrington, IL which examined the country's top economists' predictions for interest rates for the 30-year Treasury bonds. Since 1982 *The Wall Street Journal* has conducted a semi-annual poll of the nation's leading economists' predictions on what the 30-year Treasury yield will be six months hence. Bianco's study of 14 years of the poll revealed that the average forecast missed the actual level of interest rates by an average of 100 basis points. Furthermore, these experts, some drawing million-dollar salaries, got the actual direction of interest rates wrong fully 73 percent of the time. Considering that the direction of rates can either be up or down, this distinguished group fared worse than a coin toss. The purpose of citing these examples is not to deride those involved; it is merely to point out how difficult it is to use computer programs to predict as precisely as natural scientists in a realm where the actions of human beings are concerned and to demonstrate how things often do not turn out the way the consensus expects them to.

If an economist had access to tomorrow's government statistics on the relative strength of the economy before those numbers were made public, he would not be able to tell you how bond prices would respond, much less at what price the market would close on the day of the data's release. And if the economist were privy to that government statistic each month on the day before its public release, he would still not be able to tell you with certainty which way bond prices would go, nor where they would close. Even if you gave him *all* of the statistical data releases for the *entire* year ahead of time, he *still* couldn't tell you what prices would do. (This is true for all markets, not just the bond market.) But if you gave a chemist or physicist or mathematician the variables of components of a problem, any of these three natural scientists would be able to tell exactly what the outcome will be. Yet market prices are influenced by so many factors that it is impossible to know how to appropriately weigh each one and predict with precision how much influence each will have in determining the direction or extent of price moves. If economics were a science in the strictest sense, like the natural sciences, it would offer formulas and models which predict the outcome of every event, every time. Since it does not—since it merely is able to explain after the fact—it must be considered an art not a science. If economists are not very good at predicting what the markets will do, they are excellent at explaining market movements after the fact.

The reason the markets don't lend themselves to the precise input-output, cause-and-effect analysis of the physical sciences is because market data do not produce consistent, repetitive responses. There are unchanging physical principles which

guide matter and organic chemistry—nonesuch in economics. Market prices don't respond the same way to the *same type* of data. For specific microeconomic examples, consider the following:

- On March 10, 1995 employment data showed +313,000 non-farm payrolls. If you follow this market at all, you know this was a big number, indicating strength in the economy which should translate into higher interest rates and lower bond prices. Yet, the bond market surged 1½ points.
- On May 20, 1996 the United Nations and Iraq announced an oil-for-food agreement wherein Iraq would be able to sell oil provided the proceeds be used for food and medicine. For the first time since August 1990 Iraqi oil would flow into the world oil markets. This additional supply of oil should have pushed oil prices lower. Yet, crude oil rallied $1.84 per barrel that day.

For specific macroeconomic examples, consider these examples:

- Trade deficits are supposed to make a currency weaker, yet the dollar strengthened between 1982 and 1985 while the U.S. trade balance was deteriorating.
- In the early 1980s, the U.S. budget deficit was blamed for the strong dollar. In the latter part of the 1980s, the budget deficit was blamed for the weakening dollar.
- Interest rate differentials are often cited as the prime mover of price changes in the foreign exchange market. But in December 1993, short-term interest rates in the United States were 238 basis points *below* short-term German rates and the dollar/mark exchange rate was 1.70. In April of 1995, U.S. rates were 130 basis points *above* German rates, yet the dollar was trading at 1.40 marks.
- In the late 1970s, the Swiss offered negative interest rates, yet still couldn't prevent capital from pouring into the country, pushing the Swiss franc up and the U.S. dollar down.
- In 1994, after several years of interest rate reductions, the Federal Reserve began to raise short-term interest rates. According to conventional wisdom, this should have made the dollar go higher. But instead, the dollar proceeded to fall out of bed.

The explanation for these and all the other apparent contradictions about fundamental data lies in the fact that *individuals* can have *contradictory interpretations* of the news and concomitant differing expectations about the future price of the market.

Market data, news, and fundamental information does not produce predictable responses because human beings are at the root of market transactions. Moreover, there are almost always two interpretations of the news and fundamentals. As a general example, gross domestic product data showing strong growth in the U.S. economy can be bullish for the dollar because the higher interest rates resulting from the strong economy will attract capital to the dollar. On the other hand, the strong data could be bearish for the dollar because the strong growth will increase imports and increase the trade deficit which will pressure the dollar. Which way should traders and investors interpret the data? There is no pat answer. But they will interpret it. Which way it's interpreted will be evidenced in their actual transactions in the market. As you will see, which way it's interpreted will be based on their expectations.

**Economics as Psychology**

In their effort to put economics on par with natural science, academics and economists have resorted to complex mathematical formulas to describe and explain the markets, especially the financial markets. In the process, one of the most

important elements of the markets has been overlooked—that markets are comprised of *people.* To truly be science, the subject matter must deal with facts, must be able to explain phenomena, and must be able to predict the outcome of events. On at least one count then, economics fails the litmus test of qualifying as a science. At its roots economics deals not with facts, but with the behaviors and motivations, actions and expectations of individuals. While economics may be able to explain a variety of events after they occur, it is not able to predict the outcome of events in the markets the way the natural sciences are able to predict.

Often lost in modern-day approaches to the financial markets is the fact that economics is the study of human behavior just as psychology is. Even though it is a specialized version of psychology— namely, people's actions in the realm of exchange—it is a study of human behavior just the same. People are purposively trying to make some change; therefore, this differentiates the subject matter from the natural sciences.

What was true in Adam Smith's time is still true today: Individuals are the basic unit in the market and the economy—not firms, not companies, not industries. The actions of individuals generate the data which economists collect, analyze, and study. As you will see, economics is not at its root *numerical* logic, plugging numbers into formulas. Rather, it is *psychology-logic* of trying to figure out human motivations and behavior. Trying to express market phenomena solely in mathematical terms is as much a misuse of math as the tendency of traders trying to couch their trades in risk/reward ratios is a misuse of probability and statistics. The markets are not heavenly bodies with predictable responses to forces; risk/reward ratios are not expressions of the probability that either event will occur. In the past, when the individual was taken into account in studying the financial markets, he was considered an infallible assessor of risk and a being solely motivated by monetary remuneration. Realistically, one must take issue with such presumptions. As Aristotle wrote in *Ethics* about the sciences which deal with the human element: These are not precise, calculable sciences and we must deal with them in the most precise way in which they permit. That is, we must deal in probabilities and generalizations, not absolutes, as one can with geometry and mathematics.

# Chapter 2

## Psychology

The past few years have witnessed several colossal risk management disasters: Orange County, Barings Brothers, and Codelco, to name just a few of the most recent fiascoes. On the day I sat down to put this chapter in the book, reports of another disaster hit the news wires and plastered the front pages of the financial press: Sumitomo's copper-trading debacle. These highly publicized cases have riveted media, management, and academic attention on the strategies and controls of the risk management business.

While the many postmortems have offered valuable lessons, most notably in the areas of internal controls and hedge strategy selection, these autopsies have largely overlooked what went on in the minds of the individual traders actually pulling the trigger on the trades. While lax controls may have *enabled* these losses to occur and questionable hedging strategies may have *contributed* to the losses, neither factor *caused* the losses; traders did. Human beings are making decisions and pulling the trigger and, in the process, forming the market. The market is not a thing, or a place, or a construct. Rather, it is a process, a process created by the interactions of individuals. Dealing with the markets on any level other than this primary one means the query is addressing symptoms not causes.

These celebrity cases will be used to demonstrate certain key traits of human participation in the market. If I created fictitious examples, the reader would be hard-pressed to get the message. By using actual and well-known instances, the reader is in a position to more easily grasp the lessons.

The academic assumptions about investor rationality have been repeated so often that it has become a widely held belief. In those circles, repetition of a mantra makes it so. However, can the blanket statement be made that market participants are rational? It can not be made when all it takes is one case where someone wasn't rational and certainly not when evidence can be offered which clearly illustrates that people are quite often irrational in the market. That being the case, we need to build a *model* which describes human behavior in the markets and which takes into account this irrationality because, as you will see shortly, irrationality is responsible for much of the activity in the financial and commodity markets.

### Are Market Participants Rational?

Academic studies of the previously mentioned financial fiascoes cling tenaciously to the *rational investor* assumption by claiming that the behavior of the traders involved can be explained simply by looking at their compensation incentives: The trader receives a percentage of the profits he generates, but does not have to pay a percentage of any losses he incurs. According to the proponents of this argument, this lopsided incentive structure is what causes the trader to take excessive risks. The pay-off for him is huge if the risk pays off and there is no penalty if it doesn't—as though the pursuit of more profit as against less profit were the only measure of rationality for market participants. Some of the advocates of this line of reasoning claim this situation stems from the Right to Privacy Act which prevents employers from saying anything bad about a former employee. According to this logic, a trader can lose an enormous amount of money—with impunity. If he gets fired, he simply walks across the street to another firm and applies for a job, secure in the knowledge that the new employer will not find out about his losses at the previous firm.

These arguments, however, are not consistent with the evidence: Traders are not immune from the consequences of their actions (i.e., their losses), and not all traders who have *blown-out* had the compensation incentives previously cited. Let's look at these one at a time. First, traders are not likely to risk their jobs, or possibly even entire careers, based on the Right to Privacy Act—if they are even aware of the act, much less its provisions. (Besides, employers are well within their rights and the law if they truthfully answer questions about a former employee's job performance.) Moreover, traders know that in the highly interactive trading community, (1) word gets around because traders have a great deal of daily phone contact and (2) looking for a job while you are still employed is quite different from doing so when you have been fired or, more euphemistically, resigned from a firm.

Second, lopsided compensation incentives do not explain the disasters in which the traders involved were *not* paid a percentage of the profits: Orange County and Odessa College, for example. There are thousands of cases in which people trading their own money, and therefore fully exposed to the risk of losing the money, behaved the same way Leeson and Citron did and with similar, albeit smaller-scale, results. But both groups of traders made the same mistakes; this defies the assumption that market participants are rational. Remember, if economics were a science, these examples alone would be enough to make the Efficient Market Hypothesis as much of an anachronism as the flat-earth theory.

The central thesis of this discussion is that traders are not always responding to the *objective* monetary incentives which economists' models assume. While it's true that traders are like everyone else and do respond to incentives, not all incentives are employer-generated and not all incentives are monetary. When traders create and respond to more personal incentives, such as image, ego, or reputation, they take a subjective view of the market and are, therefore, not behaving in a rational manner as defined by economics; that is, they are not responding merely to money.

**Models of Human Behavior**

Human behavior does not lend itself to mathematical formulas as do the variables and constants in the natural sciences. Instead, a variety of models have been developed in an attempt to understand and predict human behavior. To be useful, such a model must satisfactorily explain a wide range of phenomena. But, according to Professors Michael Jensen and William H. Meckling, in an article published in the *Journal of Applied Corporate Finance,*[1] most models of human behavior do not accurately depict and predict human behavior. Consider the following major models in current use:

1. *Economic (or Money-Maximizing) Model* views man as a maxi-mizer of only one want: money income.
2. *Psychological (Hierarchy of Needs) Model* sees man as having absolute needs and trade-offs or substitution is not part of human behavior.
3. *Sociological (Social Victim) Model* sees individuals as the product of their cultural environment.
4. *Political (or Perfect Agent) Model* sees the individual as the perfect agent who seeks to maximize the public welfare, even at the expense of his own happiness. (So according to this model, a person could be equally satisfied working to save the whales as working on an assembly line or writing a play.)

Drawing from the best aspects of each of the ones previously listed, these professors have created their own model which views people as Resourceful, Evaluative, Maximizers (REMM).[2]

As an example of how people function as REMMs, the model's architects cite the introduction of the 1974 55 m.p.h. speed-limit law designed to conserve gasoline. One response of drivers was to defy the law by driving at speeds exceeding the 55 m.p.h. limit because "people understand the value of their time quite well."[3] The time lost by driving at slower speeds was valued more highly than the gasoline saved. Some people bought radar detectors to reduce the likelihood that they would get caught speeding. But not everyone bought detectors for the simple reason that they had different expectations or assessments about the probability of getting caught.

More importantly, however, the fact that people value their time more than gasoline explains why *some* people speed, but not why *everyone* who speeds does so. Not all speeding is explained solely by "monetary value of time" incentives. Teenagers speed to be cool, to show off, to impress the girls. Some adults do the same thing, for the same reasons—especially 40-year-old males and especially if the car is red. So there is more than mere remunerative considerations when considering what motivates people to act. Two major types of reward are money and recognition. In the markets, recognition can come in the form of self-congratulation or impressing those around you by demonstrating how smart you are. The psychological reward of *gold stars* for appearing smart *can* be more important than the financial reward *of gold coins.* (This paves the way for irrational behavior.) The point of these examples is to demonstrate that sometimes the blinders inherent in academic assumptions about market participants prevents seeing what is actually driving those participants.

The REMM at least acknowledges that "... people are motivated by things other than money."[4] Furthermore, these wants, these incentives are substitutable and "... do not have to be money or even material goods."[5] In other words, people are not always *incentivized* solely by money. Often they are responding to other self-generated incentives; personal and subjective incentives which have nothing to do with money—respect, ego, or image. For example, a *Harvard Business Review* case says, "An essential quality needed by a good salesman is a particular kind of ego drive which makes him *want* to make the sale in a personal or ego way, *not merely for the money to be gained.* His self-picture improves dramatically by virtue of making the sale and diminishes with failure."[6] (Emphasis added) But the proponent of the presumption of rationality would say, "If we assume the salesman is rational and prefers more money to less money ..." this is an example of the academic double standard mentioned earlier.

Like the salesman, a trader can want to make the trade in a personal or ego kind of way in order to impress others, not merely for the money. Similarly, the trader may refuse to take a loss when it is small since *taking* a loss diminishes his or her self-picture. So the trader refuses to *take* a loss, choosing instead to wait for the market price to move back in his or her favor. Riding out a loss until it turns into a profit improves his or her self-picture and adds to the *cool factor.* The small loss becomes a big loss, which, in turn, becomes a disaster.

**The Juan Pablo Davila Case**

One recent case illustrates how a trader's subjective incentives can cause behavior in what can only be described as nonrational: the case of Juan Pablo Davila, former chief futures trader for the Chilean state-owned copper company Codelco. It is Chile's largest company with 20,000 employees and $3 billion in annual sales. In a few months at the beginning of 1994, Mr. Davila lost over $200 million, or

0.5 percent of Chile's annual gross national product (GNP), trading futures contracts on industrial metals. According to *The Wall Street Journal,* "While typing a record of overseas futures transactions into his computer, he recorded several contracts to sell as contracts to buy."[7] By the time he realized the error, the loss was

$30 million to $40 million. "In a *panic,* Mr. Davila set about trying to *win* back the money in a frenzy of about 5,000 speculative metals futures trades on markets in London and elsewhere," taking short positions in copper.[8] (Emphasis added) Some analysts contend that he was trying to use the sheer volume of his trades to push metal prices lower. But the price of copper rallied anyway and he lost another $180 to $210 million—and was fired.[9] Was he more interested in trying to avoid looking stupid for making the error than trying to rectify the situation? Was he behaving rationally according to the academic theories? If he was rational and preferred more money to less money, and preferred a job to no job, wouldn't the rational thing to do have been to report the error? What prompted his seemingly irrational behavior?

Professor Jensen writes, "REMM provides great predictive power . . . but it is not complete. It fails to acknowledge the essentially dualistic nature of human behavior—the fact that the same people exhibit *non-rational* as well as rational behavior."[10] (Emphasis added) Therein lies the problem with most approaches to the markets: They do not allow for the human element and all of its irrationality. Davila's actions, and those of countless other traders, becomes clearer when considered in the light of another of Jensen's models which explains nonrational human behavior that arises under conditions of fear: the Pain Avoidance Model or RAM.[11] "While attempting to avoid the pain associated with acknowledging their mistakes, people often end up incurring far more pain, and making themselves worse off, than if they had simply recognized and responded to their errors."[12] This certainly describes Mr. Davila and it certainly reinforces the assertion that the human element plays a large role in the decision-making process and, therefore, the results of those decisions, namely changes in prices.

To be valid, any general assertions about human behavior must be observed across a variety of human activities and endeavors. (I will hold to this tenet as I introduce assertions about how people behave in the markets and substantiate those claims with examples from nonmarket environments.) As an illustration of how personal incentives precipitate nonrational behavior, even in a nontrading environment, consider a study published in the *Journal of Accounting Research*[13] on the topic of companies divesting themselves of money-losing units which concluded that managers are "reluctant to give up on projects they begin because to do so would convey a negative signal about their ability." Moreover, a "manager might not choose to sell the assets because the potential sale would convey negative information about him personally." The study also found that when such a manager was replaced, his "replacement who does not care about the first manager's reputation, would have no such reason for holding onto the assets, and will tend to sell them relatively quickly." The replacement manager had an objective incentive—money; his predecessor had a subjective incentive—ego. So managers and corporate executives can also become too attached to a project and personalize it, substituting subjective evaluative criteria for objective ones in the same way traders and investors often do with a market position.

**The Midas Touch Syndrome**

There is, I believe, a mirror image of Jensen's PAM model, and I add that dimension here: If excessive *fear* about what might happen in the future can push someone into the nonrational behavior of a "personal panic" (as in PAM and as with Mr. Davila previously mentioned), then the nonrational behavior of a "personal mania" can be precipitated by excessive *hove* about the future.

Like the panics, these manias can spring from incentives that are personal, subjective wants. In other words, panics and manias are not exclusively prompted by monetary incentives. The trader can become more interested in wanting to be right

and being perceived as smart, than he is in making money. Personal manias tend to affect people who have had a string of successes or profits and who then come to believe they will always have success. For the trader, it's no longer that he made *x amount of dollars profit,* but that *he* made x amount of dollars profit. He thinks he has the Midas touch.[14]

A look at some of the recent financial fiascoes will document that market participants are not always rational and demonstrate the need for a model of human behavior to better understand the markets.

**Barings Brothers**

Within a year of joining Barings Securities in Singapore as a trade settlement specialist to help unravel some back office problems, Nicholas Leeson joined the Barings trading team on the floor of the Singapore International Monetary Exchange (SIMEX). His responsibility was to execute trades on behalf of clients, arbitraging the Nikkei futures contracts traded in Osaka and Singapore. Eventually, he became chief trader. In the fall of 1994, the firm praised him for his prowess as a salesman. "He was doing such a good job it was decided that he should begin trading his own account," says a Barings executive.[15] So highly regarded was the 27-year-old Mr. Leeson that in January 1995 he was flown to New York to meet with the head of Barings derivatives department. Leeson had been selected to become a member of an 18-member management committee for the global derivatives group. *Now there is a nice string of successes.* A former colleague says, "In recent years he became a success. It sort of went to his head."[16]

In an interview in mid-February 1995, Leeson told the AP-Dow Jones News Service he was heavily involved in arbitraging the Nikkei futures contracts. According to a regulatory official, however, Leeson "took a one way bet" that went wrong.[17] Leeson had actually constructed an option strangle, a strategy which would be profitable if the Nikkei stayed between 18,000 and 20,000 until the options expired. When the market fell below 18,000, thereby producing a loss, Leeson began buying futures on the Nikkei, apparently trying to push it back into the range. The attempt was futile. The resulting $1 billion loss caused the collapse of Britain's oldest and most respected merchant bank, Barings Brothers PLC.

Leeson had the Midas touch syndrome, personalizing his accomplishments and profits, and thought *he* could make the market and create the profits.

**Orange County**

Robert Citron was a 20-year veteran of the investment business and treasurer of Orange County, California. Citron had several highly profitable years in the early 1990s when he borrowed money and leveraged the county's bond portfolio in a strategy designed to benefit in a declining interest-rate environment. "We have perfected the Reverse Repo procedure to a new level," Citron said in one annual report. "We are exulted that we are continually able to earn high interest earnings way above the current market," he said in another. "The evidence strongly indicates that the investment policies of Orange County Treasury are superior to the vast majority of other public portfolio managers," he wrote in yet another.[18]

According to *The Wall Street Journal,* his assertions that he knew better than other investment advisors were legendary among people who dealt with him. In early 1993, Merrill Lynch, the firm which sold him the bonds in his portfolio, offered to buy back nearly $3.5 billion of the portfolio—which would have left the county with a $100 million profit. Citron declined the offer, claiming to be aware of the volatility of the market. A few months later, in the middle of 1993, an investment banker who dealt with the county called Citron and asked him what would happen to his highly

leveraged portfolio if interest rates rose; Citron insisted they wouldn't. When the investment banker asked him how he knew, Citron shot back, "I am one of the largest investors in America. I know these things."[19]

Then in October of 1994, executives at Goldman Sachs, one of Wall Street's most prestigious firms, voiced criticism of Citron's investment practices. Citron penned a harsh letter claiming that Goldman's bankers "don't understand the type of investment strategies that we are using. I suggest that you do not seek doing business with Orange county."[20]

When interest rates did begin to rise in 1994, Citron's vaunted $7.4 billion investment portfolio lost $2 billion, plunging the county into bankruptcy. In court Citron held himself out to be uneducated and unsophisticated; yet, in interviews with dozens of people who know him, a picture emerged of a man brought down by hubris—or more accurately, from personalizing his success and coming to think that *he* was making the profits happen as opposed to capitalizing on a profitable opportunity presented by the market. Citron is an example of a person who personalized his previous successes, whose primary incentive was the prestige, image, and ego gratification as opposed to any compensation incentives.

The same phenomena which affected the traders in these high-profile cases affect all traders, though not necessarily on the same scale, and illustrate that participants are susceptible and even inclined to booms and busts.

The purpose of this chapter has been to lay the groundwork for the need to take into account the human aspect of the market when analyzing the markets and to illustrate the ways in which those human participants can behave in irrational fashion when participating in the markets, particularly in the form of manias and panics; (i.e., excessive optimism (hope) and pessimism (fear), respectively). Any serious analysis of the markets must take these factors into account.

# Chapter 3

## Expectations

In testimony before the House Banking Committee, noted financial editor James Grant of *Grant's Interest Rate Observer,* stated that "Because the future is always unfathomable, there are always buyers and sellers in every market. If the socialists were right—if the future could be accurately divined—markets would disband because nobody would ever take the losing side of a trade."[1] Grant's observation is apropos at this juncture because it succinctly conveys the vital role that the uncertainty of the future plays in the development of markets and financial market decision-making, a topic taken up in this chapter. However, a caveat to Grant's statement is needed in order to more fully explain the role the uncertainty plays in the markets: The markets would not disband *completely.* Grant's statement implies that the *only* reason people come together in the market (given his profession and the context in which the comment was made, one assumes he was referring to the financial markets) is because of the uncertainty of the future. But this is not entirely true. Some participants are simply transacting routine business.

The subtle differences between speculative and routine transactions become clearer when one considers that markets satisfy the needs and wants of consumers. Note that transactions occur in a market, any market, as a result of people either doing routine business by meeting basic sustenance *needs* or because they *want* to take pro-active steps to capitalize on a potentially favorable event taking place in the future (or to avoid a potentially unfavorable event). So uncertainty of the future is not the only reason people come together to trade. It's an important one, but not the only one. Even if people could divine the future, they would still exchange their respective surpluses with each other; the routine, everyday transactions would still take place in the market. But the *speculative element* of markets would certainly disappear. It would be pointless to speculate if everyone knew the future.

According to the late Austrian economist Ludwig von Mises, gambling, engineering, and speculating are three different ways of dealing with the future. Gamblers know nothing about the event on which the outcome of their gambling depends; they simply trust their good luck. Engineers, on the other hand, know everything they need to know to arrive at a technologically satisfactory answer to the problems they face.[2] Speculators, when facing their own special form of uncertainty, know more than gamblers but less than engineers. That is, speculators know some of the things but not everything about the factors that influence the events on which they are taking pre-emptive action. Surely, there are "rocket scientists" on Wall Street who approach the uncertainty of the future and the markets as engineers, and clearly there are those who approach that uncertainty as gamblers. But by and large, most people approach it as speculators. Speculation comes from the Latin word *speculare,* which means "to see." Essentially, this means trying to see the *future,* to ascertain what might happen or is likely to happen, then taking action to profit from that vision or to avoid loss.

Uncertainty is an ever-present feature in the financial and commodity markets. Pick up a copy of *The Wall Street Journal* on any given day and read the regular columns on bonds, stocks, commodities, and foreign exchange and notice how often terms like "uncertain" and "uncertainty" appear. As a random example, let's look at an

article from the foreign exchange column in *The Wall Street Journal* on the date this is being written, March 7,1996.

**Dollar Advances; Market's Direction Remains Uncertain**

NEW YORK—The dollar edged higher against most other major currencies yesterday, but traders are *unsure of the market's direction,* particularly in terms of the U.S. and German currencies....

"The market is divided as to the likelihood and timing of a German or U.S. interest-rate cut as well as the overall economic outlook for both countries," ____ said. That *uncertainty,* she said, "doesn't give us much direction in exchange rates."

Not even Germany's report yesterday of a sharp rise in February's unemployment rate, marking a post-World War II high, *could help clear market cloudiness*[3] (Emphasis added)

Well, no kidding! When is the future ever *certain?* Attributing price movements on any given day to "uncertainty" implies that sometimes, somehow, some way, on other days the future market events and future direction of prices *are* certain. Implying that the future is ever certain is so absurd as to hardly be worthy of comment. From time immemorial traders have been dealing with uncertainty and trying to peer into the future by whatever means was at their disposal.

Throughout history man has displayed a fascination with the future, even to the point of wanting to know what the weather forecast is. But man has a particular fascination with the future as it pertains to his wealth. He desperately wants to know what is coming next and bestows great accolades to anyone who can forecast the future course of events—or prices. The inability of anyone to accurately predict the future with any degree of consistency has not dissuaded people from offering their opinion on the course of future events or prices. The socialists James Grant referred to do not have a monopoly on claiming the ability to divine the future and people have turned to a variety of experts to reveal its secrets: astrologers, witch doctors, prophets—*anyone* who could predict the future so that they could profit or avoid loss.

**Uncertainty and Expectations about the Future**

Uncertainty about the future elicits two primordial emotional responses: hope and fear. We hope the future will turn out well, but we fear it won't. Which of these two responses we latch onto is a function of what we *expect* the future will hold. We are likely to experience both simultaneously, but one will dominate, based on what our expectations are.

According to market lore, greed and fear are cited as the two driving emotions of market participants. However, *hope* and *fear* are primary; greed is simply hope run amok. The now-infamous trading fiascoes recounted in Chapter 2 stem from the respective traders' expectations, which in turn sprung from their hopes and fears about the future. Mr. Davila's expectation was that the copper market would turn around. Mr. Leeson expected the Nikkei to stay in a range. Mr. Citron expected interest rates to continue to fall. It wasn't greed which *got* these people. To illustrate, consider Robert Citron. He didn't lose all that money because he was greedy. Rather, he lost it because he hoped the market would keep going in the direction it had been going. Greed is the intense desire for more of something. If Citron wanted more money, the greedy thing to do would have been to reverse his position and capitalize on the market when it reversed course. But the reason he didn't is because the opposite of what he expected to happen is, in fact, what occurred. Expectations kept the traders in the market despite deteriorating positions. Remember that Citron refused Merrill Lynch's buyback offer, thereby demonstrating his excessive hope

about the future. Expectations about the future direction of prices dictate what people in the speculative element of the market do, or fail to do, in the market today.

Expectations about the future play a large, yet largely overlooked, role in determining prices of individual financial instruments. Oddly enough, expectations are given quite a bit of currency in other areas of the financial markets as well as in the markets in the real economy. For example, it is widely accepted that inflationary expectations play a role in determining the level of interest rates, as evidenced in the economics textbook formula:

**nominal interest rates = real interest rates + *expectations* of inflation**

**Monitoring Expectations**

Additionally, expectations are routinely monitored in the real economy in the form of surveys of purchasing managers and consumers. Consumer sentiment surveys are watched particularly closely by economists trying to ascertain whether consumer spending will increase, decrease, or remain about the same in the near future. Two of the more noted measures of the consumer sentiment are the Consumer Confidence surveys: one conducted by the Conference Board and the other by the University of Michigan. Both surveys ask five questions, two of which pertain to current conditions and three of which pertain to *expectations.*

*Conference Board Questions*

1. How would you rate the present general business conditions in your area— good, normal, or bad?
2. Six *months from now, do you think they will be: better, the same, or worse?*
3. What would you say about available jobs in your area right now — plenty, not so many, or hard to get?
4. *Six months from now, do you think there wilt be more jobs, the same, or fewer jobs?*
5. *How would you guess your total family income to be six months from now— higher, same, or lower?*

*University of Michigan Questions*

1. We are interested in how people are getting along financially these days. Would you say that you (and your family living there) are better or worse off financially than you were a year ago?
2. *Now looking ahead, do you think that a year from now you (and your family living there) will be better off financially, worse off, or just about the same as now?*
3. *Now turning to business conditions in the country as a whole, do you think that during the next twelve months we'll have good times financially, bad times, or what?*
4. *Looking ahead, which would you say is more likely: That in the country as a whole we'll have continuous good times during the next five years or so that we will have periods of widespread unemployment or depression, or what?*
5. With regard to the big things people buy for their homes— such as furniture, refrigerators, stoves, televisions, etc.— generally speaking, do you think now is a good time to buy major household items?

The expectations component of the Michigan index is even used to calculate the widely watched statistic on the U.S. economy, the index of Leading Economic Indicators. Obviously, economists think there must be some value in asking

participants in real economy markets what they think about the future direction of the economy and what they think some of their spending plans will be. The idea of these surveys is to gauge spending by consumers and purchasing managers in the coming months. But all markets are basically the same; if it is acceptable to survey participants in the real economy's markets on their expectations about the future, then it is just as acceptable to survey participants in the financial markets about theirs. To further demonstrate how important expectations are, consider the following quote taken directly from the minutes of the Federal Reserve's Federal Open Market Committee (FOMC) meeting of January 31 to February 1,1995:

> Some tightening of policy at this meeting was generally anticipated *[expected]* in the markets, and a failure to take action now was likely, in the view of a number of members, to raise questions about the credibility of the Federal Reserve's anti-inflation resolve. (Emphasis added)

If expectations influence calculation of interest rates, the calculating economic indicators, and the setting of monetary policy, surely expectations influence other areas of the financial markets as well.

**The Speculative Element of the Market**

It must be understood that people enter market transactions for one of two broad reasons: because they *need* to or because they *want* to— and in the process they satisfy their needs and wants, respectively. This is just another way of looking at the *routine* business and the *speculative* business in every market. The needs are satisfied with the routine transactions, ignoring the future and what it might hold. Wants are satisfied with speculative transactions and are keenly attuned to expectations of the future.

To illustrate this point, consider the transactions in a grocery store. People go into the grocery store everyday to buy the basic necessities. But in the mid-to-late 1970s when inflation was raging, people not only bought the necessities, they also stocked up on certain nonperishable items such as toilet paper, paper towels, and canned goods. Today, in cities where snow is not common and therefore road-clearing equipment is limited, a weather forecast of snow will cause people to converge on the grocery stores to stockpile food—whether the snow ever comes! These speculative transactions are triggered by participants' expectations.

As another example, consider the real estate market. During a given month, a certain amount of land may change hands. But the prospect that a foreign auto manufacturer might come to build a factory outside of town leads to a rash of speculative purchases by those who hope to capitalize on the situation by re-selling the land to the auto company at a higher price. *So all markets have some degree of normal everyday business transactions and some element of speculative transactions. The speculative transactions arise out of the uncertainty about what will happen in the future* (toilet paper might go to $10.00 a roll) *or people's expectations about what might happen in the future* (land prices will skyrocket).

Most of the transactions in the housing market are from people looking for a home to live in, rather than from someone buying solely for subsequent resale, as shown in Figure 3.1. However, another market with a large speculative content is the futures market, as shown in Figure 3.2. Considering that only 4 percent or so of all contracts are actually delivered upon, clearly a large number of transactions in the futures markets are speculative in nature. On the other hand, the real estate market has a smaller speculative component so expectations play a lesser role in determining prices in that market compared to the foreign exchange market or the futures markets.

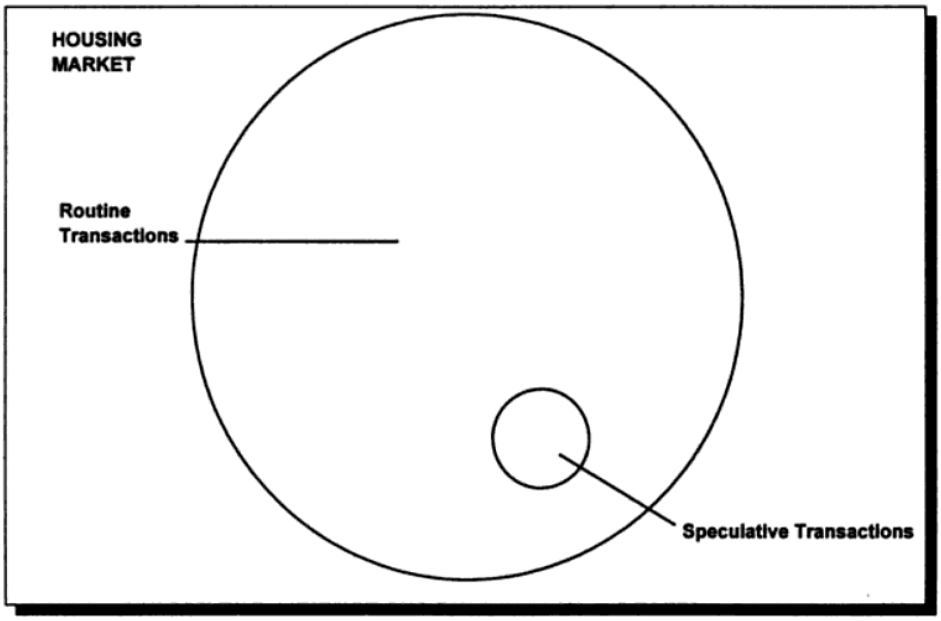



Figure 3.1 The housing market does not have a large number of speculative transactions in it.

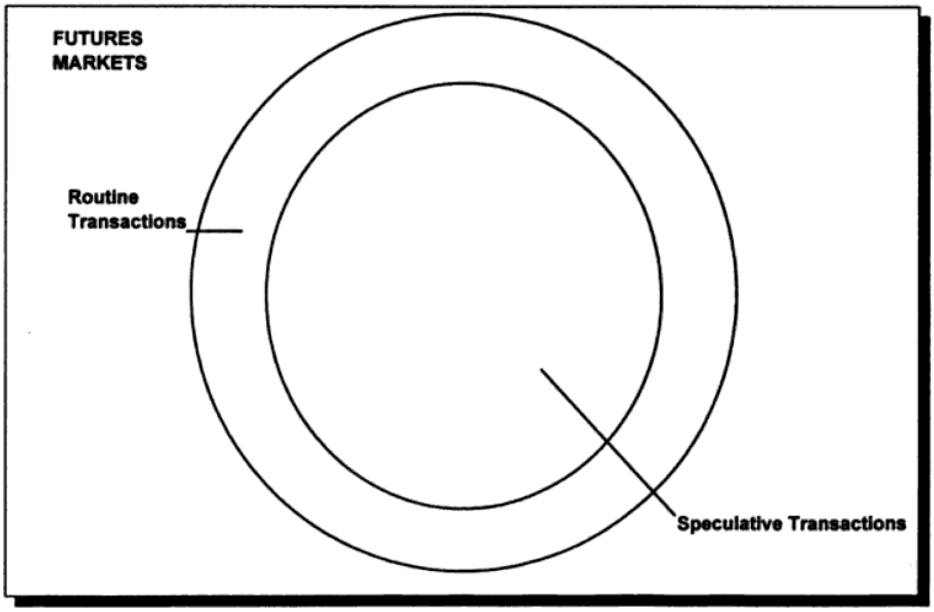



Figure 3.2 The futures market has a large speculative element.

While speculative transactions can and do occur in any market, they play a larger role in some markets than in others. In the financial markets, speculative transactions comprise a relatively large percentage of the total transactions on any given day. Consider the world's largest market, the foreign exchange market (see Figure 3.3). Some of the fundamental factors commonly believed to drive prices in this market are: interest rate differentials between countries, relative inflation rates, relative gross domestic product, and trade imbalances. Consider that the annual world gross domestic product (GDP) is about $30 trillion. Let's make a liberal estimate that half of this figure is comprised of international trade. (As a point of reference, approximately 24 percent of U.S. GDP is trade-related; roughly 40 percent of Canada's GDP is trade-related. So the 50 percent of world GDP is surely a liberal estimate.) The Clearing House Interbank Payments System, affectionately referred to as CHIPS, is the main global interbank computer network and today tops volume of $1.3 trillion per day. At that rate, in less than 15 days, enough foreign exchange trades hands to finance the

entire year's needs for currency trading to finance the world's needs for import and export activity. The rest is investment flow and speculative capital flow.

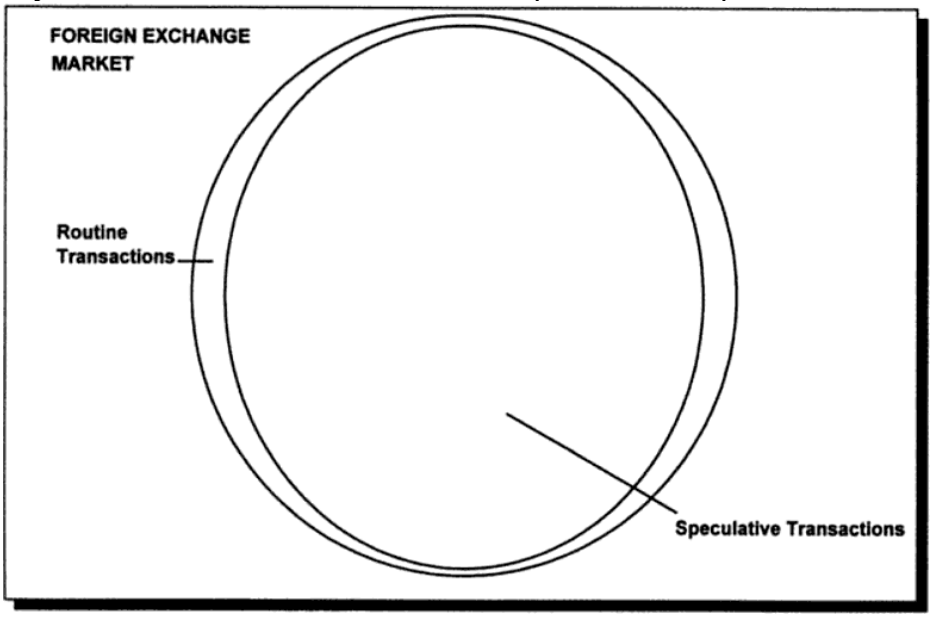



Figure 3.3 In the foreign exchange market, speculative transactions are responsible for virtually all of the transactions on any given day.

This *speculative* element introduces participants' *expectations* of the currency's future price (rate) to the equation. Think about it. When a currency can move enough in one or two days to wipe out any interest rate advantage that country might have, the interest rate differential is relatively unimportant to the market participants. They're not buying for the interest rates or the dividends; they're buying for the capital appreciation of the currency which, in turn, is dependent on expectations of what the price of the currency itself will be in the future. In other words, today's buy and sell decisions are based on expectations about the future direction of prices—but at the same time, future direction of prices is based on today's buy and sell decisions.

Referring back to the sentiment surveys previously mentioned, recall that the purpose of the polls is to gauge the expectations of survey participants and purchasing managers with regard to their spending plans. However, sentiment may not actually result in purchases. An expectation about the future is irrelevant unless coupled with action — an actual transaction, actually putting one's money where one's mouth is. Just as the results of the consumer confidence surveys do not *necessarily* lead to the consumption which they hope to gauge, so opinions about the future direction of prices in the financial markets do not *necessarily* lead to higher or lower prices. It takes actual transactions to move prices. Therefore:

**Expectations + Transactions = Prices in the future.**

Bearing in mind that we are focusing primarily on the speculative element of the markets, especially the financial markets, the circular diagram in Figure 3.4 illustrates the seamless relationship between expectations, buying and selling, and price. The dynamics illustrated in the diagram are particularly important in markets with a large speculative element. As you will see, it is the speculative business which has the greatest influence on prices in the markets.

Since one of the premises of this book is that the "elephant" of the financial markets and the "elephant" of the markets in the real economy are basically the same, decision-making in these markets ought to be the same as well. The decision-maker in

a real economy market is either deciding *whether to* or *whether not to* follow some course of action. When there are more than two alternatives, the decision involves which, if any, of the courses to follow. It is no different in the financial markets. Therefore, the principles of decision-making are essentially the same across the continuum of markets. Management guru Peter Drucker writes extensively on the topic of management and decision-making; his work illustrates the assertions this book will make about decision-making in the financial markets. He wrote that "Most books on decision-making tell the reader: 'First find the facts.' But managers who make effective decisions know that one does not start with the facts. One starts with opinions."[4] According to Drucker, then, the effective decision-maker begins with an opinion then tests his opinion against the facts as they materialize. As you will see, the same process applies to effective decision-makers in the financial markets whose *opinions* take the form of expectations. In all likelihood, the reason decision-makers in markets, whether real economy or financial, start with opinions is because there is no other choice. Remember, economics failed the litmus test for inclusion in the natural sciences for that very reason. Economics doesn't have facts; it has people and, concomitantly, opinions, expectations, hope, fear, irrationality.

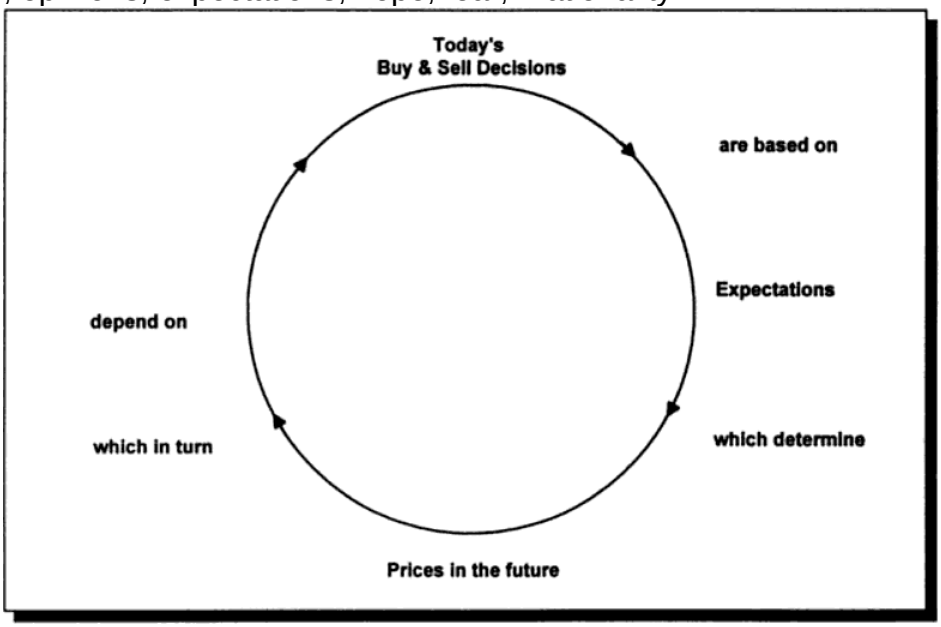



Figure 3.4 In markets with a large speculative element, expectations play an inordinately large role in determining whether people buy or sell today.

**Expectations as a Special Form of Opinion**

There is a subtle difference between facts and opinions. The *American Heritage Dictionary* defines a fact as something which has been objectively verified. An opinion, on the other hand, is a personal assessment of the facts; either with regards to some fact about the past or in reference to a fact yet to unfold in the future. Opinions are deemed "right" when they correspond with the facts, and "wrong" when they do not. For example, you might say the Space Shuttle *Discovery* exploded on December 28, 1986, and I might say you were wrong, claiming it was the *Challenger.* We have different opinions about the facts (i.e., the name of the shuttle involved in the disaster). But there is a way to ascertain who is right and who is wrong, simply by checking the history books to determine the facts. However, it is impossible to determine whether opinions about the future, about facts which have yet to unfold, are right or wrong. These opinions about future events are *expectations;* they are what we expect the facts to ultimately be.

Needless to say, for economists, market participants, and weather forecasters alike, expectations do not always come to pass. For example, perhaps only a handful of people actually *predicted* the drastic decline in the dollar during the first quarter of 1995. In fact, most analysts were expecting the dollar to rally. One major Wall Street firm made the following forecast for the U.S. dollar on December 19,1994 (see Figure 3.5):

> We expect the dollar to be broadly stable, with the dollar/mark rate to go to 1.70 in the first quarter and the dollar/yen rate somewhere in the 100-105 range.

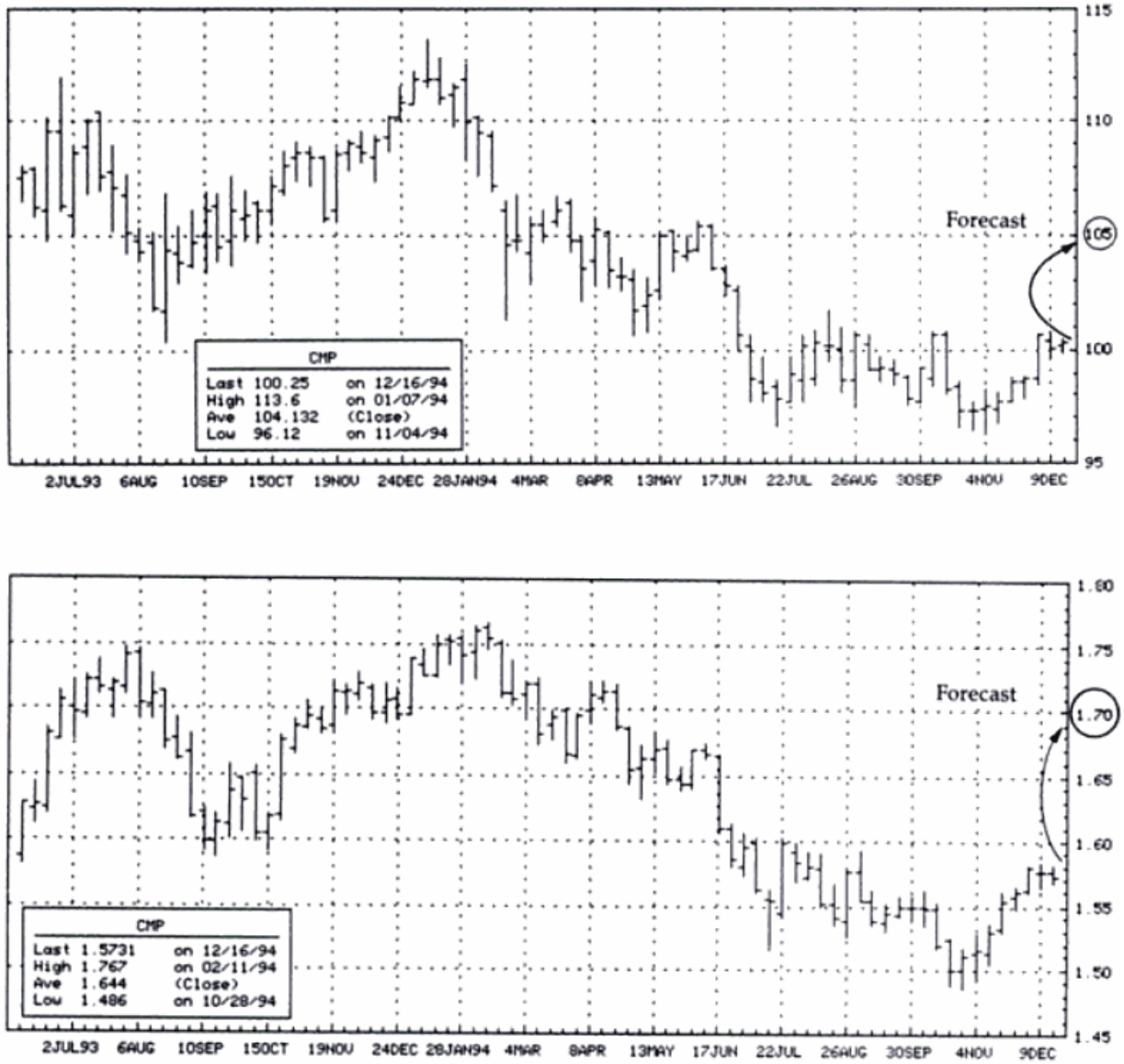



Figure 3.5 The U.S. dollar versus the German mark and Japanese yen the day of the forecast. (Source: Bloomberg Financial Markets.)

On the day the Wall Street firm published its forecast, the dollar was trading at 1.5750 Deutschemarks and 100 Japanese yen. A few days later the dollar traded up to DEM 1.5850 and JPY 101.50, then collapsed to DEM 1.3450 and JPY 79.75 in the first few months of 1995 (see Figure 3.6).

The purpose of this example is not to poke fun at the brokerage firm nor the analyst who wrote the comment. Rather, it is to provide a concrete illustration of how difficult it is, even when equipped with high-powered technology and highly paid economists, to predict accurately and consistently in a realm where human action is responsible for the outcome of the events. We have already seen that uncertainty is a

priori in the markets. This means that the expectations (i.e., the hopes and fears) of individuals are an integral part of the process which ultimately makes transactions occur and prices result in the markets. Pick up a newspaper on any day and note how many times comments like the following are offered to explain market behavior:

"Better than *expected* report on spring crop plantings ..."

"... better than *expected* harvest pushed prices lower."

"... in line with economists' *expectations.* "

"... in reaction to weaker than *expected* U.S. data."

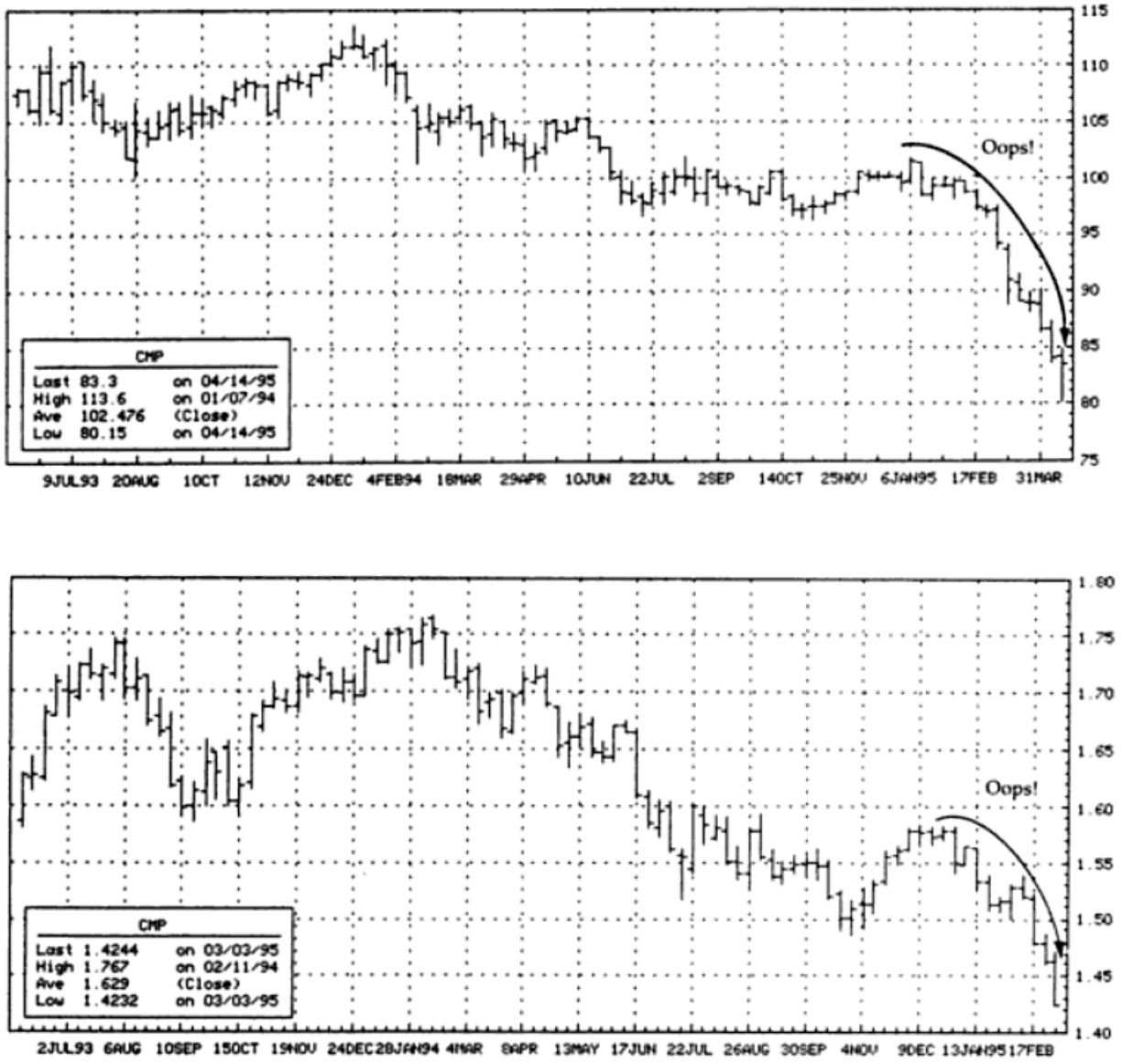



Figure 3.6 What the dollar actually did during the forecast time period. (Source: Bloomberg Financial Markets.)

Clearly then, expectations are part and parcel of all of the speculative transactions in the financial markets. This is particularly important when one considers that it is impossible to know exactly how the market will respond to any given set of circumstances or to a given economic data release. The market price does not respond in a single, repetitive manner to similar data or identical *official comments* or to the same *type* of news or event in the same fashion every time. Otherwise, how could the markets sometimes respond in two different and opposite ways to the "same" news on two different days? How can the same piece of news be ignored or

be bearish one day and bullish another? Developments in the markets have to be *interpreted*—which makes economics more *art* than *science.*

Think about it. If two top-ranked economists can look at the same data and arrive at diametrically opposed views on what the data means for the economy and the direction of interest rates, then economics is not science. This is precisely what is happening as this chapter is being written. Yesterday, I listened in on a conference call with the chief economist of a major Wall Street firm and today I met with the chief investment strategist of another major Wall Street firm. Each man looked at the same data, cited cyclical trends and secular trends, and arrived at completely opposite conclusions for the direction of the economy, interest rates, and the stock market. They are *interpreting* the data differently. And this isn't happening merely because they are economists or because they work on Wall Street. It is the very *nature* of economics that its datum has to be interpreted. If this dual-interpretative feature of market news afflicts economists and analysts, it surely affects investors and traders who are putting money on the line.

**The Dual-Interpretation Phenomenon**

The *dual-interpretation* phenomenon results from the fact that it is the nature of economics to have two different interpretations to the same piece of news. It follows that there are two different, opposing—though each perfectly logical—economic interpretations of data, news, and events. Perhaps that's where the proverbial expression about economists saying, *"On the one hand ... , on the other hand"* came from. The market may react in typical textbook fashion or it may react in a *perverse,* though still technically textbook, fashion. Either way, economics gets to claim victory since its *explains* what happened. Therein lies the problem and the reason for all of the jokes about economists having so many hands.

Consider the example in Figure 3.7 which shows a continuous daily bar chart for crude oil futures. Recall from Chapter 1 the example of the UN-Iraq oil-for-food agreement. The typical market response to this additional supply of oil should have pushed oil prices lower. Yet, the perverse response occurred instead and crude oil rallied $1.84 per barrel that day.

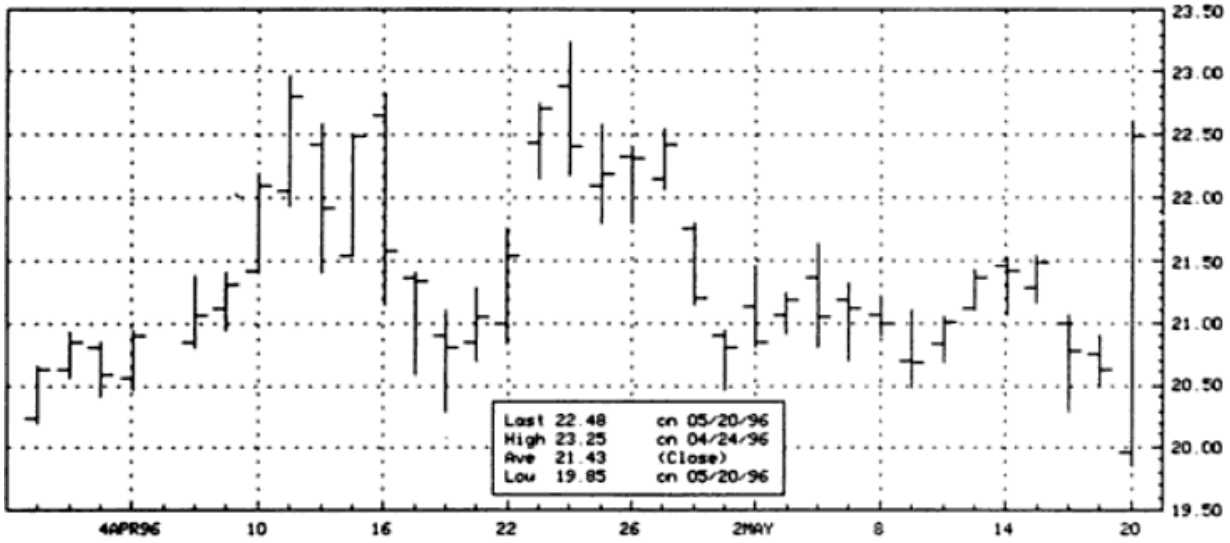



Figure 3.7 In a *perverse* textbook response to the news, crude oil rallied sharply on the report of the UN-Iraq agreement to sell crude oil on the open market. (Source: Bloomberg Financial Markets.)

So, in addition to doing the exact opposite of what the experts are expecting over longer time horizons in terms *of forecasts* and *predictions,* as was the case with the

dollar in early 1995 (as detailed earlier in this chapter), the same phenomenon happens over shorter time horizons in terms of how the market often fails to respond to news events in a manner in which, given the news, one would expect. As noted in Chapter 1, the market often confounds the expected response based on textbook interpretation of the news and what the market *should* have done. Some of the examples cited were long-term phenomenon. For example, we saw that the U.S. federal budget deficit was responsible for the strong dollar in the early 1980s, but was also blamed for the weak dollar in the late 1980s. Other examples were short-term in nature, often lasting less than one day. For instance, we saw that the bond market sometimes rallied even in the face of strong nonfarm payroll data.

This variability in the participants' response to news, data, and events is what precludes economics from being a science in the strictest sense. Economics cannot offer formulas and models which predict the outcome of every market situation. The potential for a dual response occurs for every type of news which hits the market.

Some of the news comes in the form of regularly scheduled releases of economic or particular-market data. As we know, traders respond to this type of data in terms of its relative strength when compared to the previous release of the same data the month or week or quarter before, as well as when compared to the *consensus* forecast. Other news comes from out of the blue in the way of comments from government or company officials, or weather developments, and so on. But regardless of which type of news any particular piece is, the market either

- responds in typical textbook fashion,
- shrugs it off, or
- responds in perverse textbook fashion.

When the market reacts in the typical textbook manner, the explanation is obvious. But if the market responds in one of the other ways, invariably the Monday-morning-quarter back analysts will offer up such enlightening explanations as:

1. The market had already discounted the news.
2. It was a classic buy the rumor, sell the fact.
3. That number represents history, what's coming next?

Regardless of whether the market responds in a typical or a perverse fashion to a piece of news, ultimately the market price responds to actual buying or selling imbalances by market participants. When the market responds according to the perverse textbook interpretation, it is because the buying and selling which is what moves prices around, does not materialize in a manner that would widely be *expected.* And if buying and selling does not come into the market, the typical textbook interpretation does not count for much. In the financial markets themselves, what has to be interpreted is people's actions (buying and selling) in light of the developments. That hinges on people's expectations; but what market participants were expecting to happen often influences their decisions to buy or sell.

So, if the data itself is open to interpretation, something must be influencing which way the data is interpreted. That *something* is ***expectations.*** When market participants are bullish, they will put a bullish spin on the data or news event, and vice-versa when they are bearish.

**A Picture of Interpretations, Expectations, and Behavior in the Markets**

Consider another arena in which people's behavior can take one of two tacks: taxes. As tax rates increase, people will work harder to maintain their prior level of net income. But if rates continue to increase, people will opt for more leisure time instead of working more after a certain point.

Despite politicians' attempts to boost revenue by raising taxes further, since the 1970s most economists in most countries have figured out that raising taxes beyond a certain point (beyond a certain socially acceptable level) will produce no new additional revenue because people change their behaviors, opting for leisure instead of work. This idea became popularized as the Laffer Curve, so named after economist Arthur Laffer and eloquently explained in Jude Wanniski's book, *The Way The World Works.* According to Wanniski, "The idea behind the Laffer Curve is no doubt as old as civilization."[5] Wanniski goes on to cite several authors dating back centuries who conveyed the same concept, even though Laffer's predecessors didn't even know his name. (This is just another example of the point made earlier about how ideas are often synthesized by someone other than the originator.)

"There are always two tax rates that yield the same revenue," Laffer observed. When, in the winter of 1974, an aide to President Gerald Ford asked him to explain his statement, Arthur Laffer drew the curve shown in Figure 3.8 to illustrate his point.[6] When government taxes income at 0 percent, it obviously collects no revenue. When it taxes at 100 percent, it also collects no revenue because no one is going to work for $100, or $1,000, or even $10,000 per day if he has to turn all of the money over to the government. Much is made about the Laffer Curve only having two numbers on it: 0 and 100. The magic number, located on point E on the chart is not designated with a number because the rate which produces the maximum revenue collection for the state is elusive. Point E is not necessarily 50 percent. Rather, it is the rate at which society wants to be taxed.

One of the interesting things about Wanniski's explanation is that he resorts to an example of human behavior from everyday life to help convey the principles of the curve. "A father who disciplines his son at point A, imposing harsh penalties for violation of rules major and minor, only invites sullen rebellion, stealth and lying (tax evasion). The permissive father who disciplines lightly at point B invites open, reckless rebellion, the son's independence and relatively undisciplined growth coming at the expense of the rest of the family."[7] The point is that the parabola in Figure 3.8 visually depicts much of human behavior ranging from workers' response to tax rates, to a child's response to punishment, even to traders' and investors' response to the news.

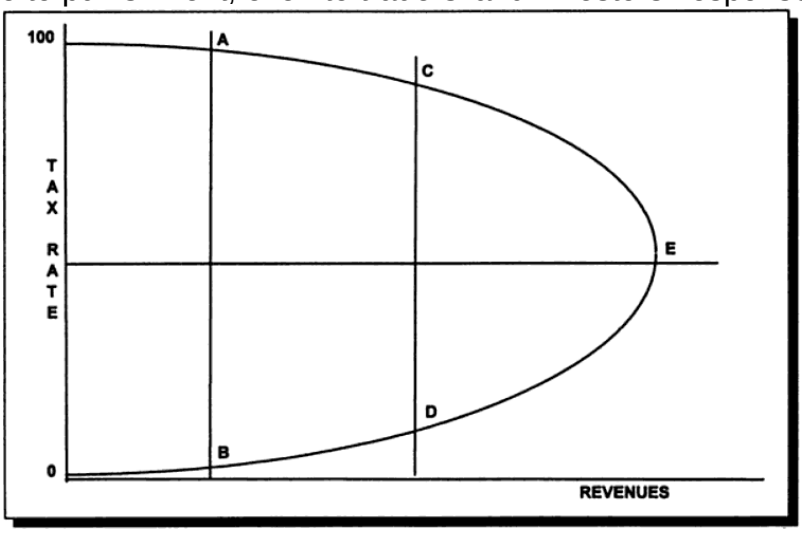



Figure 3.8 The Laffer Curve. Initially, tax collections increase as the government raises the tax rate. But there is a point beyond which additional increases in the tax rate actually reduce the revenues collected. (Reprinted with permission from Polyconomics, Morristown, NJ.)

The parabola depicts the changing pattern of human behavior which can result from either *incentives* (such as the REMM and Laffer Curve) and *expectations* (such

as whether speeders expect getting caught and if taxpayers expect rates to increase next year). For example, when a trader is making money, there is a point beyond which his incentive is no longer money but ego, as was the case with Robert Citron and Nick Leeson. Similarly, when a trader is in a losing trade, there is a point beyond which the incentive driving his actions is no longer one of money, but one of pride and wanting to be right. So the reference point from which one defines rationality cannot always simply be money, because many times the trader is being motivated by something else. While within that frame of reference his actions may be rational, they do not appear so within the context of another frame of reference.

The curve also depicts behavior which is responding to expectations. People's work habits and investment decisions will change at the prospect of an expected change in tax rates. As the Laffer Curve illustrates, it doesn't require getting all the way to that 100 percent marginal tax rate to discourage people from working. That point of inflection comes long before 100 percent. At some point the tax rate is not socially acceptable and people either work less or economic activity begins to move *underground.* Likewise, when some other influence on human behavior is plotted in the diagram—bullish news for example—there is a *point of inflection beyond* which the bullish news is interpreted and responded to bearishly; it is a point beyond which market participants begin to interpret the news in a manner opposite of what one would expect—from the *other side of the curve* (see Figure 3.9).

Applying the Expectations Curve to the market, consider that there is a point beyond which rising interest rates do not attract capital to a country's currency, but instead scare capital away, as shown in Figure 3.10. The high interest rates are viewed as a sign of trouble, a bribe to finance government deficits or to support the currency.

The Expectations Curve can be applied to a variety of market situations. Consider the following, for example:

- There is a point beyond which good news in the U.S. economy could actually be perceived as bad news for U.S. financial markets and, therefore, for the U.S. dollar, or bonds, or stocks.
- Initially, higher grain prices lead to *higher* cattle prices as the increased feed costs are passed through to the consumer. But there is a point beyond which the higher grain prices lead to *lower* cattle prices because ranchers slaughter their herds and sell the beef rather than continue to pay high prices for feed.
- There is a point of inflection at which a bank moves from being a lender to being an equity partner. That switch-over changes the bank's perspective on the business venture. Instead of looking at certain conditions with the skeptical eye of a creditor, it begins to look at them through the rose-colored glasses of an owner. The same data is being interpreted differently.

Once these respective points of inflection are passed, participants will pursue the line of interpretative reasoning associated with the downside of the curve with the same rigor and intensity as they had on the upside—though obviously, in the opposite direction. This intensity is the excessive hope or fear previously discussed. Remember, Citron and Leeson lost all that money because they were *hoping,* then *fearing* the market would not do a certain thing. The excessive hope and fear is the filter through which the news and data is going to be interpreted.

So, in addition to the expectations of individuals, there are expectations of analysts whose opinions influence the actions of many market participants. There are also expectations in the form of *consensus estimates* of what the market expects government releases of key economic or crop reports. Expectations also exist about how the market prices should react when the actual numbers are released and these expectations play a critical, though often overlooked or misunderstood, role in

determining market prices—especially the speculative transactions in the markets. Any serious examination of the markets must take into account the role which expectations play in people's decisions to buy and sell.

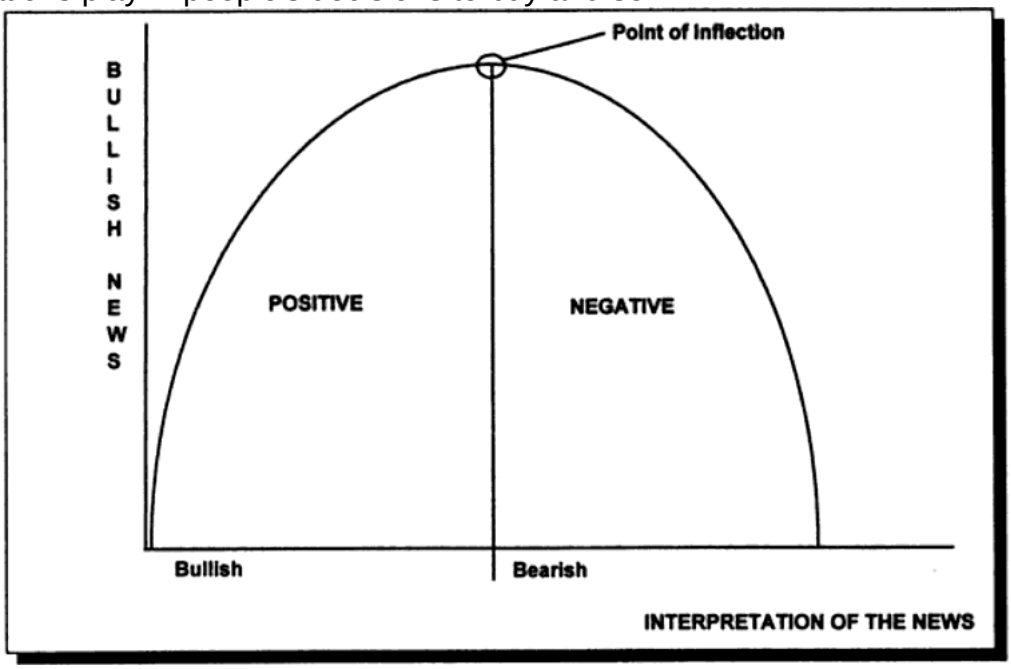



Figure 3.9 The Expectations Curve.

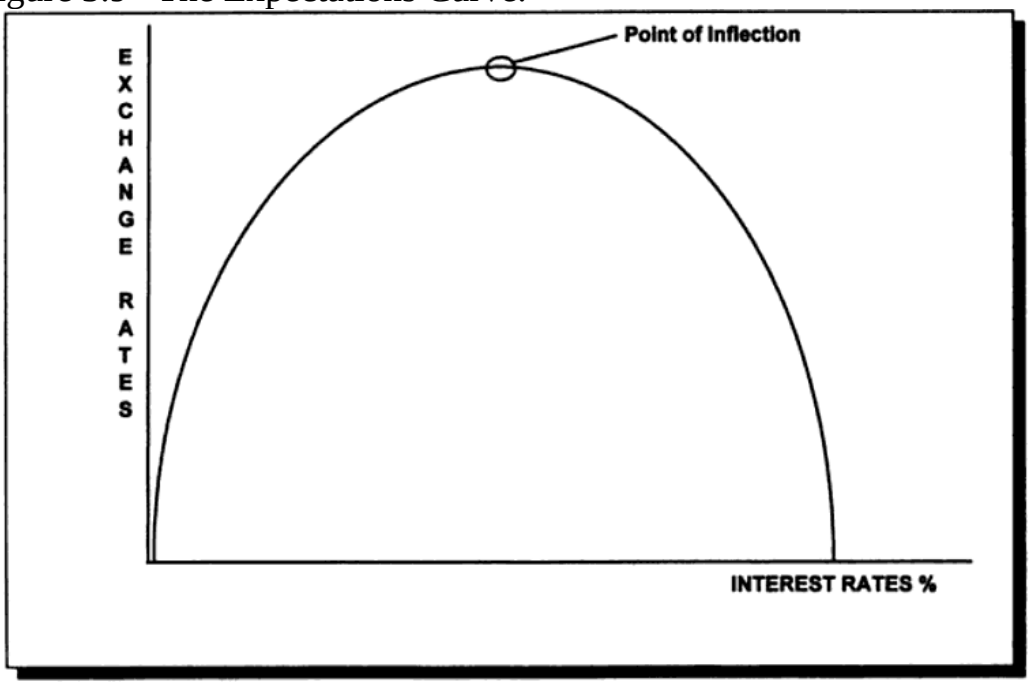



Figure 3.10 The Expectations Curve plotting the influence of interest rates on exchange rates.

# *Chapter 4*

## Sentiment

Recall the example from the last chapter in which the large Wall Street firm's expectations for the dollar in the first quarter of 1995 turned out to be completely opposite to the market's actual direction during that time period. That firm was not alone in its expectations for the dollar at the time; in fact, most analysts were expecting the dollar to rally. Consider this report from BLOOMBERG Business News on April 12, 1995:

> One of the worst three months on record for the dollar was also one of the worst for currency forecasters. The *consensus* prediction among analysts polled by Bloomberg was the dollar would rally in the first three months of 1995. The reality: the currency slumped to all-time lows vs the Dmark, Swiss franc and Japanese yen. (Emphasis added)

Such a completely wrong forecast would be newsworthy except for the regularity with which analysts' predictions turn out to be wrong; especially when most analysts are predicting the same thing. For instance, on March 28, 1995 Reuters News conducted its routine poll of 20 economists to get their opinion as to whether the Bundesbank, Germany's central bank, would lower interest rates two days later at its regular biweekly meeting. The economists' opinions were unanimous: The Bundesbank would not lower interest rates. As Reuters noted when the results of the poll were released, it was the first time in that interest rate cycle that the results of a poll were unanimous. Two days later the Bundesbank cut the discount rate 50 basis points and its repo rate 35 basis points—so much for unanimity.

These are not the first instances in which people were so completely, and unanimously, wrong about what the future course of events would be in the financial markets, nor will they be the last. At the virtual peak of the stock market in 1929, the distinguished Professor Irving Fisher "offered his soon-to-be-immortal opinion that stocks had reached what looked like a 'permanently high plateau.'"[1] These are just a few classic illustrations of what is popularly called the Theory of Contrary Opinion. Most people understand it as: "fade the crowd" or "do just the opposite of what everyone else is doing." However, there is a great deal more to the theory.

### Historical Illustrations of Contrary Thinking

Perhaps the first written account of incidents in history when people lost their collective head, so to speak, was compiled by Charles Mackay in his 1841 book, *Memoirs of Extraordinary Popular Delusions and The Madness of Crowds.* The book details such events as the Crusades, witch hunts, prophesies, for tune-telling, and several other such topics. However, the book is remembered most for its coverage of three financial episodes in history in which crowd behavior gripped a large population causing stock prices to soar, then sour: Britain's South-Sea Company, France's Mississippi Company, and Holland's Tulipomania. However, according to modern-day economic academic theory, the events and phenomena in Mackay's book are not supposed to have happened; nor, for that matter, are any speculative bubbles or panics. But they do happen. For example:

- The 1983-1989 Tokyo stock market bubble and 1989-1991 crash
- The 1987 U.S. stock market crash
- The soybean market in 1973

- The stock market in the 1937 crash
- 1925-1929 bubble in U.S. stocks and crash in 1929

One of the most famous instances of a market bubble and bust is the South-Sea Bubble. Founded in 1711 by Harley, Earl of Oxford, the objective of the South-Sea Company was to restore public credit in England. Harley and a group of other merchants took 10 million pounds sterling in public debt upon themselves in return for the monopoly on the trade to the South Seas. Everyone was aware of the immense riches of the eastern coast of South America, predominantly in the form of gold and silver in the mines of Peru and Mexico. In 1720, the company's directors offered to take on the entire British national debt, 31 million pounds sterling. When the company's directors presented its proposal to the British Parliament, South-Sea's stock surged. However, *"Contrary to all expectations,* South-Sea stock fell when the bill received the royal assent."[2] (Emphasis added) Some things change and some things don't; it would appear markets have been confounding participants' expectations for hundreds of years.

In describing the South-Sea Bubble, Mackay wrote that "Men were no longer satisfied with the slow but sure profits of cautious industry. The hope of boundless wealth for the morrow made them heedless and extravagant for today."[3] (This is another illustration that markets have two elements driving the transactions which take place: the routine and the speculative.) Nothing could be more ironic, in terms of assuming investor rationality as mentioned in Chapter 1 and in terms of economists wanting so badly to be perceived as scientists, than to learn that one of the greatest scientific minds of all time. Sir Isaac Newton, lost a pile of money in the mania and subsequent panic of the South-Sea Company. After the bubble burst, Newton is reported to have said: "I can calculate the motions of heavenly bodies, but not the madness of people."[4] The madness he was referring to is crowd psychology—manias and panics.

While Mackay may have been one of the first, if not the first, to catalogue some of the earliest instances of boom and bust, the first person to dissect and codify the phenomenon was Humphrey Neill. In 1954 Neill published *The Art of Contrary Thinking,* in which he notes that "popular *expectations* at the time of major world events were exactly opposite of what actually occurred."[5] (Emphasis added) Neill was interested in taking into account what he called "crowd opinions" when considering and arriving at conclusions about political and economic events such as the intervention of Red China into the Korean War and the post-WWI economy in the United States, for example.

He read reams of newspapers and magazines to gauge popular opinion about an issue and fashioned the dictum: "When everyone thinks alike, everyone is likely to be wrong."[6] To the question, "What is the Theory of Contrary Opinion?" he answered:

> Primarily, it is a method of ruminating over a broad range of public questions; political, economic, and social. The object of contrary thinking is to challenge generally accepted viewpoints on the prevailing trends in politics and socio-economics. In sum, opinions are so frequently found to be untimely, misled (by propaganda), or plainly wrong.[7]

Chapter 3 detailed how important a role expectations play in determining the future direction of prices; that expectations emanate from many different sources: individuals, economists, brokerage firm analysts, and so forth; and that sometimes expectations do not come to pass. So any serious analysis of the market must take these into account. Since we are interested in developing a model of human behavior, expectations must be a component. The question becomes how to gauge expectations in the financial markets,

As is often the case with new discoveries and new theories, successors follow in the principal architect's footsteps and improve on the originator's work. This is no less true in the field of studying market sentiment than in other fields. Seeing the merit of applying Neill's theory to the stock market, Abraham W. Cohen came up with the idea in 1962 of using investment advisors' opinions as a proxy for that of individual investors. At the time, it would have been difficult, if not impossible, to conduct a timely survey of individual investors. Given their leverage in influencing individual investors via recommendations, advisors offered a logical gauge of public opinion and of expectations on the future direction of prices. In his newsletter *Investors Intelligence,* Cohen began publishing the Sentiment Index (which reported the percentage of advisors who were bullish, those who were bearish, and those who were neutral) and offering stock market recommendations based on the survey.

In 1964 James H. Sibbet began to apply the theory of contrary opinion to the futures markets and weighted the advisors' opinions according to the number of clients each advisor influenced, thus giving him a more accurate reading of market sentiment. Then, he devised a single index which classified everyone (bullish, bearish, neutral, and no opinion) on a single scale of 0 to 100 percent—0 percent for bearish, 50 percent for neutral, and 100 percent for bullish—and called the new index The Bullish Consensus. Sibbet formed a company called Market Vane to publish his new approach to market sentiment.

**The Theory of Contrary Opinion**

Earl Hadady, also of Market Vane, penned a guide titled *Contrary Opinion* which lays out the details of the theory. To wit, when the index is at a high level on its scale of 0 to 100 percent, the majority of bulls are long, expecting prices to go higher. With no one left to buy, prices have only one way to go: down. While it is true that for every buy there must be a sell, the number of people long does not, nor is it likely to be, equal to the number of people short. Therefore, when the bullish consensus registers a high reading, 80 percent for example, the implication is that the 80 percent who are long bought from a mere 20 percent of the market. Obviously, the 20 percent must be at least as well, if not better, financed than the 80 percent—especially if prices have risen while the shorts added to their positions. The central thesis of the method, as it pertains to the futures markets, rests on the premise that these markets are a zero-sum game; for every profitable contract, there is a losing contract of equal dollar amount.

An analogy to another zero-sum game is instructive. In a poker game with five players, one of whom has $1,000 and four of whom have $100, who is going to win the game? No, you don't need to know the cards in each player's hand. The guy with the $1,000 will win because he can continue to raise the bet and outlast the other four players.

The zero-sum characteristic of the market has important implications for prices, especially since most futures contracts are not held to delivery but rather, liquidated before expiration. In the futures markets where positions are routinely 90 percent to 98 percent leveraged, once everyone is in the market, prices have only one way to go—the opposite way the overwhelming majority expect prices will go.

In his book, Hadady explained the concept of contrary opinion positions with an illustration of a fictitious wheat market consisting of 100 traders—95 of whom slowly but surely at first, and frantically at last, get long the market amid reports of bullish news and higher prices. These 95 have all bought from the remaining 5 market participants who must have enough money to meet margin on so many contracts and margin calls in the midst of rising prices on their shorts. As Mackay said, "Men it has been well said, think in herds; it will be seen that they go mad in herds, while they

recover their senses slowly, and one by one."[8] As the traders begin to regain their "senses slowly, and one by one," some decide to sell out of their long positions. Then, others start getting out of the market. The trickle becomes a cascade of sell orders as traders bail out, (whether immediately or after waiting for awhile) only to find prices lower. Some won't get out, because they are still bullish on the market. But this time continued buying activity is not accompanying the still overwhelming bullish expectations.

The observations about "one-way" thinking and contrary opinion made by Mackay, Neill, and the others do not need events with population-wide involvement in order for the phenomenon to occur; it can occur on smaller scales — much smaller than the ones they described. Even the most casual perusal of price charts in the futures markets will reveal the occurrences of mini-manias and mini-panics. According to the *American Heritage Dictionary,* a *mania* is an inordinately intense enthusiasm or *hope* for something; a craze, a fad, or a behavior which enjoys brief popularity and pertains to the common people or *people at large.* It defines a *panic* as a sudden, overpowering *terror* often affecting *many people* at once. It also says "see synonym, *fear."* Notice that the definitions of both mania and panic make direct mention of *hope* and *fear* and *the crowd.* Recall Mr. Davila, the copper trader at Codelco. The news reports of his travails cite that "In a panic, Mr. Davila ...,"[9] In fact, intense hope or intense fear is responsible for the actions of each of the people mentioned in the financial disasters in Chapter 2. Hope and fear are also at the core of the speculative transactions in all markets; hope or fear of what the future holds.

**The Phenomena of Booms and Busts**

While Neill initially used his theory to arrive at conclusions about major world events, in time he also saw "that any *crowd,* such as stock or commodity traders, could frequently be carried to extremes of *action* and *opinion."*[10] (Emphasis added) Recall from Chapter 3 that hope and fear are our primary responses to the uncertain future. Since crowd behavior is marked by its extreme nature, once people become members of the crowd they will always take these two emotions to extremes. When people's expectations about the future combine with crowd behavior, hope and fear (their primary response to the uncertain future) are taken to an extreme; manias and panics result. In the markets these are booms and busts—both on a macro-scale over a period of months or years as well as on a micro-scale over a period of days or weeks.

These phenomena of booms and busts are the epitome of the speculative element in the market mentioned in the past chapter. In a panic, crowd behavior combines with fear of losing money or fear of missing an opportunity to profit, and becomes the primary reason for acting or failing to act. In a mania, crowd behavior combines with intense hope for profit or hope that a losing position will turn around, and becomes the primary reason for acting or failing to act.

It is important to note that the Theory of Contrary Opinion does not claim the crowd is *always* wrong—quite the contrary (no pun intended). Rather, the crowd is usually "right" for most of the price move in a market and only wrong at market turns. The crowd's participation in the market is what enables the initial price move to happen in the first place. In what is almost a self-fulfilling prophesy, the crowd's overwhelming opinion that prices are headed higher is often the fuel for just such a price move to occur. They rush headlong into the market, pushing prices higher in the process. This interplay between expectations of higher prices and buying creates a virtuous circle of higher prices encouraging more buying, resulting in higher prices, and so on. But the virtuous circle will reverse course and become a vicious circle when the speculative element starts getting out of the market.

So when opinions are consistent with the facts as they are borne out, consensus trading is called for; that is, going with the crowd. When opinions are *not consistent* with the unfolding facts, contrary opinion trading is called for; that is, going against the crowd. (Sounds logical enough and simple enough, but it's harder than it sounds. The model presented later in the book will make it a great deal easier by distinguishing between actual buying and selling activity and merely higher and lower prices.)

The examples from Reuters and BLOOMBERG Business News mentioned at the beginning of the chapter are just a sample of how expectations do always match the events of the future as they unfold. We already know, from our basic equation of expectations + transactions = prices in the future, that expectations by themselves do not change prices. Only when accompanied by transactions do those expectations influence prices. Humphrey Neill put it like this: "It seems to me that the long history of economic forecasting clearly demonstrates that 'psychology' is the missing key. You may have all the statistics in the world at your fingertips, but still you do not know how or when people are going to act."[11] There's the rub: The missing link is coupling sentiment with observable and definable action.

In Chapter 3 we saw that expectations are opinions about the *future.* We learned that expectations play a critical role in determining prices in the future and these expectations are particularly critical to the speculative element of the market, the element which we are most interested in monitoring. Routine business is basically of little interest; it is business being done because it *has* to, not because it *wants* to. That's not to say the routine element doesn't impact the market; it's simply that the speculative element is enormously more important since it reflects pure expectations as opposed to use and so on.

In this chapter, we learned that expectations are a special form of opinion and can be expressed in the sentiment surveys conducted by various firms. What's needed is a way to identify and express the actual buying and selling activity of the speculative, expectation-rich element of the market. That is the topic of the next two chapters.

# *Chapter* 5

# Markets

It has already been pointed out that most approaches to the financial markets take as their starting point the *data* which the market produces as a result of its functioning and, in doing so, these approaches often miss the prime mover in markets—the actions of the individual. Likewise, economics tends to approach *all* markets as if they were a given. I am not sure whether this stems from the presumption that economics is a natural science, but I know it is the prevalent view. The natural sciences take their subject matter, the universe, as a given — asking neither *why* it exists nor *who* created it. Asking the questions or even knowing the answers will not alter the validity of the natural sciences' observations, assertions, and explanations of natural phenomena. However, in economics, since it is a social science, knowing the origins of the market is imperative to make its observations, assertions, and explanations valid.

Markets are not given, nor in most cases are they planned. Throughout the broad sweep of history, markets have arisen, spontaneously, in response to individuals' attempts to improve their condition. People exchange to improve their lot — whether from excess or preference for something other than what they have. In the course of history, once a society had progressed to the point of occupational specialization and division of labor, markets arose spontaneously as individuals sought to exchange the surplus fruits of their labor.

The initial occupational specialization stage of the division of labor enabled man to begin to satisfy more than simply subsistence *needs* — it enabled him to begin to address and satisfy *wants.* That is why people exchange, why markets come into being in the first place, and why they have continued throughout history. This brings us to an irreducible primary: People exchange to improve their lot.

The sole motivation for entering into exchanges in the first place is to improve one's *material condition.*

Since the *catalyst* for markets coming into being is the result of people exchanging—trading with one another to improve their lot — it stands to reason that the *purpose* of a market is to facilitate trade. Depending on the type of market, this is accomplished in different ways. A little indulgence on the part of the reader will go a long way toward explaining the critical role price plays in facilitating trade in the financial markets.

### The Role of Price in Markets

In the real-economy markets, businesses vie with each other for the attention and dollars of consumers. Generally speaking, to attract customers firms make use of some combination of what are called the 4Ps of Marketing: product, packaging, price, and place (or distribution, but that destroys the alliteration). Every firm uses some mix of these elements to target a certain segment of the buying public, to convey valuable information to consumers in terms of the product's benefits, and ultimately to generate transactions. In most of these consumer-type markets, goods flow in one direction, from producer to consumer. Moreover, price is usually fairly stable and companies use various combinations of the remaining 3Ps to differentiate their product from others on the market and to generate transactions. For example, in consumer goods markets packaging will change to make the product more attractive; a new-and-improved

version of the product will be introduced to the market; "10% more, FREE" is also a favorite marketing tactic. Homebuilders tend to prefer to offer free upgrades rather than lower the price of a new home. In these real-economy markets price is kept steady, for the most part, to instill a sense of the product's "monetary value" to consumers so that during a promotional sale when prices are temporarily discounted, consumers will respond appropriately. If price were in the habit of fluctuating a lot in these consumer markets, it would be difficult to gauge what was value and when a product was on sale.

The different marketing mixes employed by firms producing similar types of products are designed to target a certain segment of the buyers in the market, attract customers, and facilitate trade. For instance, some firms may want to cater to the low-income discount market, others to the middle-income market, and others still to the upscale, snob-appeal market. The quality of the products varies in the respective markets, as does the packaging, place of distribution, and price.

In markets which have highly standardized (virtually identical) products and where packaging and distribution offer little in the way of distinguishing one product from the next, the only element in the marketing mix remaining to facilitate trade is price. To illustrate, in the real economy consider the market for air travel where, for the most part, consumers regard the product as being standardized; it is a means of getting from one place to another. Non-price competition in this market is virtually nonexistent these days. Pretty much all airline food is bad, so it's not even missed on the no-frills airlines which don't have in-flight meals. Packaging does little to differentiate the products; the airplanes used by the different airlines are all made by the same manufacturers. Place is the same—airport to airport. Basically, regardless of which airline company provides it, consumers view the product as identical. So the only thing left to promote trade is price. And boy, do fares ever change! There are as many as 600,000 fare changes every day in the United States.

One of the earliest illustrations of how the buyers in the airline market perceive the product as homogenous came during the waning days of U.S. government regulation of the industry. In November 1976, Texas International Air announced it was going to seek government permission to reduce fares by 50 percent in a few city-pair markets. These would be the new standard fares, not merely a short-term holiday sale. Permission was granted and without any advertising at all of the new "peanuts fares," Texas International's passenger loads doubled in each of the first two days and by the end of the first week had experienced a 600 percent increase.[1] Another example is the upstart, no-frills airline People Express, started by entrepreneur Donald Burr; it had such low fares and brought so many people into the market that "by 1984 some 6,000 potential passengers a day failed to get through to People Express by phone."[2]

Perhaps the best illustration of air travelers' sensitivity to prices is the "value pricing" strategy American Airlines introduced in May of 1992, which was designed to reduce the number of complex rules and restrictions on air fares. American hoped that the other airlines would mimic the strategy, bringing some semblance of order to fares — stabilizing prices much the way prices were stable in consumer markets. Reportedly, "An advertising budget of $20 million was set for the first two weeks, believed to be an industry record."[3] For a few days the strategy worked, as several other airlines introduced similar pricing grids. But it didn't take long—only a matter of weeks — for an airline to break ranks: Northwest introduced an "adults fly free" promotion on its fares. American retaliated by abandoning its new fare structure and announced a "50% price cut on every leisure seat on every plane flying every route."[4] The price cuts unleashed a buying frenzy the likes of which the airlines, and the telephone company, had never seen. It was calculated that during those few weeks in

the summer of 1992, eleven percent of the households in the United States had at least one member who flew.[5]

> The long-distance telephone system of the United States literally locked up on calls to the airlines. On the peak day of the frenzy AT&T alone handled a record 177.4 million calls—1.6 billion over an 11-day period. American's Sabre [reservation] system in one day created 1.2 million new reservations. People who couldn't get through by phone simply drove to the airport to buy tickets, often two, three, and four tickets.[6]

Price reductions alone, not alterations in the product, packaging, or distribution, generated this huge influx of business thereby demonstrating consumers' perception that the airlines product is highly standardized, and how sensitive buyers are to price in markets with standardized products,

**Types of Market Participants**

In markets with standardized products, price is used to segment the buyers into two groups: those who, due to their specific circumstances, are willing to pay a higher price for the product, and those who are not.

This is simply another way of saying that firms segment the market into those who *need* the product and those who *want* it, which corresponds to the reason for markets coming into existence in the first place (i.e., to satisfy wants and needs). Distinguishing between these two groups of buyers is a function of determining the sense of their urgency to transact business. This translates into categorizing market participants as:

- Those with *short-term time horizons* for making their purchase
- Those with *long-term time horizons* for making their purchase

Those who *need* the product act quickly and are categorized as short time-frame participants (STFP). These participants are not price-sensitive; rather, they are simply looking for as fair a price as possible, given their time constraints. Those who *want* the product, but are not in immediate need of it, have more time to act and are categorized as long time-frame participants (LTFP). Unlike STFP, the LTFP are price-sensitive and are seeking an advantageous price.

Let's return to the airline market to illustrate the different timeframe perspectives of the participants. People travel for a variety of reasons, but the major ones can be classified as either leisure or business. Business travelers need to travel and leisure travelers want to travel, so airlines charge full fare to the former and offer an array of discounted fares to the latter.

Broadly speaking, airlines segment the "needers" from the "wanters" by attaching restrictions to low-fare tickets such as 14- or 21-day advance purchase and Saturday-night stay-over, and/or non-refundability. The discounted fares are aimed at leisure travelers, the segment of market participants who are flexible and price-sensitive. On the other hand, business travelers are charged a higher fare because they are not thought to be price-sensitive since they often travel on short notice and usually on an expense account. Restrictions on tickets are effective in preventing the business traveler from taking advantage of the inexpensive fares, because business travel usually arises in response to specific, and sometimes urgent, problems or opportunities—often with short notice and usually not requiring a weekend stay. Given the short notice, the business traveler simply pays the going fare for the ticket, unable to take advantage of any sales which are available to the leisure traveler who is operating from a longer time-frame perspective.

The airlines attempt to facilitate trade with as many participants as possible by trying to fill the plane with as many high-paying business travelers as they can, then filling the rest of the seats with leisure travelers at as high a fare as they are willing to pay, but in any case lower than business fares. The more passengers they have, the better—as long as the airlines segment the passengers into STFP and LTFP charging them appropriately (i.e., by time-frame perspective).

To illustrate how important time-frame segmenting is, recall Donald Burr and his fare-pricing strategy at People Express. Burr didn't segment the buyers into STFP and LTFP. Instead, in any given market (i.e., for any given city-pair) People Express had the same fare every day on every flight. The strategy certainly succeeded in getting people to fly with him; remember, 6,000 people per day failed to get through to the People's reservation operators. But look what it cost him. As Burr himself noted, ". . . the demand for our product is outstripping our ability to produce it."[7] People Express ran into financial difficulties, because Burr made no effort to segment the passengers. Instead, he offered the same price for all of the tickets on a given flight, a strategy which didn't maximize the company's revenues. He lost money every time he left people standing at the gate; people who would willingly have accepted some restrictions and paid more than the single stated fare, just to be sure they had a seat. Failure to distinguish between the time-frame horizons of market participants by providing this pricing structure deprived the airline of what turned out to be badly needed revenues.

To illustrate how the gradually increasing and important role price plays in facilitating trade as a product becomes more homogenous, consider the diagram in Figure 5.1.

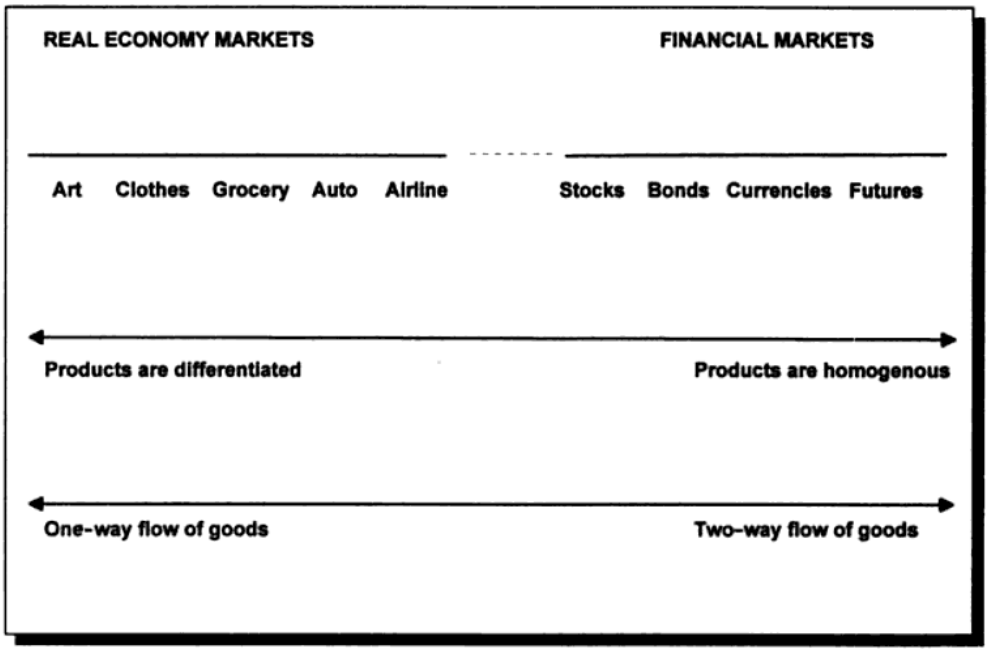



Figure 5.1 Continuum of product homogeneity.

Out to the left of the continuum, price is relatively steady and the other 3Ps are used to facilitate trade. It is clear that as one moves from left to right, price becomes an increasingly more important variable in the marketing mix. On the extreme right hand side of the continuum where the products are standardized, price is the only variable in the mix used to facilitate trade. Also, out to the right, price moves all over the place because the other 3Ps have little to no influence on facilitating trade.

**Auctions**

Refer again to Figure 5.1. There is another observation which must be made with respect to how the goods on the continuum are offered for sale. As we have seen

throughout history, markets have arisen in response to individuals seeking to improve their lot by exchanging any surplus they have produced. This is true whether the transactions took place via direct (i.e., barter), or indirect (i.e., via money) exchange. People either sold their goods at a local auction, put them on display and haggled with potential buyers until they settled on a price, or left them with small shop keepers to sell on consignment at a stipulated price. Either way, the goods were being auctioned; the only question was whether the goods sold in a passive auction or an active auction. To this day, products are sold in the same way.

In a passive auction, the buyer chooses from a range of available prices for a good or service, with each price representing a certain degree of quality. For instance, consider a jewelry store display case with a wide array of watches: Some have calendars built in, others do not; some have leather bands, others have metal bands; some are made by companies with well-known names, others are made by lesser known companies. Prices for the watches range from $50 to $500. In this environment the consumer is essentially faced with a passive auction. Price is set. Seeing the choices laid out before him, he merely "picks his poison," so to speak, paying the posted price for the watch which meets his wants or needs. Either the customer pays or passes, but there is generally no active role in determining the price.

In an active auction, buyer and seller (or their representatives) actively negotiate the price at which a transaction will take place. Typically, the word "auction" conjures up the one-way bidding process witnessed in an auction house like Sotheby's or Christie's. Rare pieces of art or collectibles are put on display and an auctioneer starts the bidding at a "suggested" price. Then, in an attempt to arrive at as high a selling price as possible for the item, he begins a process of offering successively higher prices in an attempt to reduce the number of active bidders until only one remains. Again, this is an example of a market where the goods flow in one direction. Another example of a one-way auction is a livestock auction. However, cattle are more common and more numerous than most of the items sold at Sotheby's. Therefore, high prices received for cattle at a local auction can attract the attention of other cattle owners who may bring their herds to the next auction. This additional supply may result in a lower price for cattle at the next auction.

The same phenomenon exists to some degree with Van Gogh paintings. In the mid-to-late 1980s the Japanese paid extremely high prices for paintings from the Renaissance masters. In response, private collectors of similar types of paintings began to put them up for sale. So the phenomenon of price-moving to attract buyers and sellers occurs in all markets, but not nearly to the extent that it does in markets in which the product is standardized; higher prices *tend* to attract producers (sellers) to the market. In the airline market, any airline can offer service between virtually any pair of cities simply by renting gate space and notifying the respective airports of the new service. Prices in the form of high fares offered by competitors are usually the factor which attracts an airline to a market in the first place; and it uses a lower price to gain customers. Nevertheless, the principles of auctions are the same, even though the outward operational procedures of the individual markets may differ.

A Sotheby's auction is an example of one-sided competition among buyers. The mirror-image of a Sotheby's-type auction is, for example, a municipal government considering bids from private contractors to provide goods or services. When the municipality announces its plans for a sewer project, private contractors submit the price at which they are willing to sell their services. This auction is a one-sided competition among sellers.

The financial markets combine these two types of auctions into an active, two-way dual auction; a two - way competition among buyers and sellers; not just sellers as is the case in most consumer markets and not just buyers as is the case in

Sotheby's auction house. There is a two-way flow of goods and everyone is a potential "consumer" and "producer," so to speak. (Since the product is never truly consumed, the participants are more accurately described as "buyers" and "sellers," respectively.) Moreover, this dual auction process is continuous in nature as opposed to coming to an end when the auctioneer raps his gavel at Sotheby's or when the city accepts a contractor's bid. All of these features combine to make price extremely important, and its movements more exacerbated, for the products on the right hand side of the continuum.

Price becomes even more important as a means of segmenting participants into STFP and LTFP when, as is the case in the futures markets:

1. The goods are completely standardized.
2. Anyone can create supply (i.e., not limited to producing firms), which enables prices to rise and fall attracting both sellers and buyers, as opposed to basically falling to attract buyers in the real economy markets.
3. The product is never consumed, per se - every buyer can become a seller and vice versa.

Moreover, these characteristics of the futures markets make price extremely important in terms of facilitating trade by segmenting the time-frame participants in the market, but they also make price fluctuate more than is the case in other markets. In a standardized product market which relies solely on price to facilitate trade, the interplay between short and long time-frame buyers and sellers creates what can only be accurately described as a *dual auction.*

In the futures market, goods do not flow only one way as they do in the consumer markets; rather, anyone can be a seller (producer) and anyone can be a buyer (consumer). With the combination of a standardized product and two-way flow of the product where virtually unlimited numbers of buyers and sellers can enter the market with ease, price is *the* single item promoting trade. This creates a *sale* when price is offered lower than it has been of late and the *opposite of a sale* when price is offered above what it has been.

**Who Trades with Whom?**

Before going any further, a key observation needs to be made about the interplay between the LTF buyers and sellers. LTF participants do not exchange with each other at the same price at the same time. In the housing market, for example, LTF buyers are looking for a "deal" on their purchase and LTF sellers are looking for an "attractive" price to sell their house. Since neither participant is pressed by a time constraint to execute a transaction, trade with each other is probably not going to happen. The LTF buyer has a price in mind which he is willing to spend for the house and is trying to get an advantageous price—a "price below value" situation. The LTF seller, on the other hand, also has a price in mind and his price is "above value." The LTF participants will not be able to agree on price for transaction. It will take a STF buyer, who is willing to "pay up" for the house, for a transaction to occur. The STF buyer's time-frame perspective is short for some reason (i.e., he was just transferred to town and must buy a house, or his children are starting school in a month and he must live in that neighborhood for his children to attend a certain school) and he is willing to pay the LTF seller's price for the house. The ideal situation for the STF buyer would have been to find a STF seller who was moving out of town on short notice and was willing to part with his house at a price less than the LTF seller was. In this ideal situation the STF participants are transacting at a "fair price."

So here are the combinations of who will, and who will not, trade with whom:

STF buyers and sellers trade with each other. STF buyers and sellers will exchange with LTF buyers and sellers. LTF buyers will *not* exchange with LTF sellers at the same price at the same time.

The reason LTF buyers and LTF sellers don't exchange with each other is because they are both trying to secure an advantageous price. The LTF buyer wants to buy at a bargain price and the LTF seller wants to sell at a premium price. Thus, they will never be able to agree on a price at which to transact with each other. As you will see shortly, the futures markets are no different in this regard.

Since there is a buyer and a seller in every transaction, prices going higher or lower do not necessarily mean there is "buying" or "selling," respectively, in the market. We know that the reason the two participants take opposite sides of the trade is either the result of simply conducting routine business as consumer and producer, or the result of the speculative element in the market and therefore a function of expectations about the future. The $64,000 question becomes: How does one determine whether there is "buying" or "selling" in the market? The answer is the subject of the next chapter.

# *Chapter 6*

## Market Activity

Recall the basic observation that Expectations + Transactions = Prices in the future. The transactions (i.e., actual buying and selling by market participants) part of the equation presents a unique problem for the simple reason that in every transaction there is a buyer and a seller. Therefore, buying and selling is taking place at each and every reported price, making it impossible to declare that prices going higher *means* there is buying or prices going lower *means* there is selling. There are always both. Besides, asking if there is buying or selling in the market merely begs the questions: Buying and selling by whom? By what type of participant? Are they routine transactions or speculative ones?

To provide the necessary data for the transaction part of the equation, we need to isolate actual buying and selling activity— from the market's multitude of reported prices. We are specifically interested in the speculative activity in the market as opposed to the routine business being done on any given day because, as noted in Chapter 3, speculative transactions (based on expectations) determine prices in the future. Therefore, the routine business done each day is basically done by STF participants meeting their immediate needs, while the LTF participants are trying to satisfy their wants (i.e., profits). So the LTF traders in the futures markets represent the speculative element of the market, and therefore the element we want to monitor. We have identified that the LTF participants are present in every market; now we need a means of recognizing and isolating their activity in the futures markets. We don't have the luxury of asking how long they plan on being in the trade the way airlines essentially can by requiring a Saturday stay-over. So then, how do we do it?

The time-frame perspective of a market participant is not determined by the size of his transaction. A floor trader may trade 10, 20, 50, or even 100 contracts at a time, but is still a STF trader because he intends to trade during that day's session. On the other hand, a large institutional trader who trades from an office away from the floor might also be considered a STF trader because he, too, is operating in the day time-frame. So reports that a well-known name in the pit is buying, or a well-known institution is buying, actually doesn't mean much because you don't know what the time-frame perspective is, nor what off-setting positions may be taken in parallel markets. Just because one of these well-known entities bought it, does that mean there is buying going on? No, consider that someone must have *sold* to the well-known name. So why would the buyer's actions *necessarily* be interpreted as there having been buying in the market? There was selling too. Besides, what if the large purchase was merely a hedge-related transaction expressing no particular opinion on market direction, but merely locking in today's price?

As noted previously, in the financial markets and particularly in the futures markets, price is the element in the 4Ps of the marketing mix which is used to promote trade. But with the hundreds or even thousands of prices reported in each of these markets every day, how is one supposed to determine whether there is actually buying or selling in the market? For instance, consider the following example: Assume the Wheat market opens at $5.85 per bushel (which is where it is trading as this is being written in May 1996) and proceeds through the following sequence of price changes: up one tick, down one tick, up one tick, down one tick, down one tick, up one tick, down one tick, up one tick, down one tick, up one tick, up one tick, down one tick, up one tick, up one tick, down one tick, up one tick, down one tick, down one tick, down

one tick, down one tick, up one tick, down one tick, up one tick, down one tick, up one tick, down one tick, up one tick, down one tick. How does one interpret the sequence? How do we translate these price movements into actual buying or selling? Remember that at every price in every trade, someone buys and someone else sells.

Obviously, price in isolation can be deceiving. The previous price sequence resulted in a net - 2 ticks (or ½ cent). Does that mean there was net selling in the market? The net change won't tell much because the higher *close* could merely have been the result of STF traders flattening their positions before the close. Besides, in most of the financial markets these days some sort of *after-hours* trading environment is available to traders. So the close does not actually exist. Seamless trading around the clock for many markets clouds the issue of a benchmark price from which to gauge net changes in prices. There is buying and selling going on at each price, some of it by STF traders and some of it by LTF traders.

**Supply and Demand**

Behind all the different methods of market analysis lies one simple goal: to detect changes in the relationship between supply and demand in the market. Economists pour over reams of statistics on the economy or a particular market to try to figure out how it all will affect the supply and demand for goods in the economy as a whole, or a market in particular. Fundamental analysts dissect historical data on what is widely accepted as the key components of supply and demand for a given market. Technical analysts, those who study the supply and demand for a stock or financial instrument or futures contract, itself, as opposed to the goods in which the market deals, do the same thing. The ultimate goal of all the different methods of market analysis is to detect changes in the relationship between supply and demand in the market.

In fact, the bible of technical analysis, *Technical Analysis of Stock Trends,* says "The market value of a security is determined solely by the interaction of supply and demand."[1] Every one of the chart patterns in that book is explained precisely in terms of supply and demand. Edwards and Magee, the authors, simply had a different set of diagrams than those typically used by academics and economists. But that, in and of itself, does not make their claims any less valid than those of economists who are also trying to gauge supply and demand.

Economics books call a market with a standardized product and two-sided competition among buyers and sellers who can enter the market with ease a *perfectly competitive market.* As the language of economics is diagrams, economists have created a simple snapshot of the market intended to explain what happens to prices in a perfectly competitive market. Figure 6.1 is the basic framework of a perfectly competitive market.

The perfect competition model assumes:

1. A large number of buyers and sellers.
2. No single participant is a large enough factor in the market to influence price.
3. Product homogeneity.
4. Rapid dissemination of accurate information at low cost.
5. Free entry into, and exit from, the market.

From these assumptions the model makes certain assertions about how price will behave. Most importantly, the model asserts that in a perfectly competitive market, price finds an equilibrium level, all other things being equal.

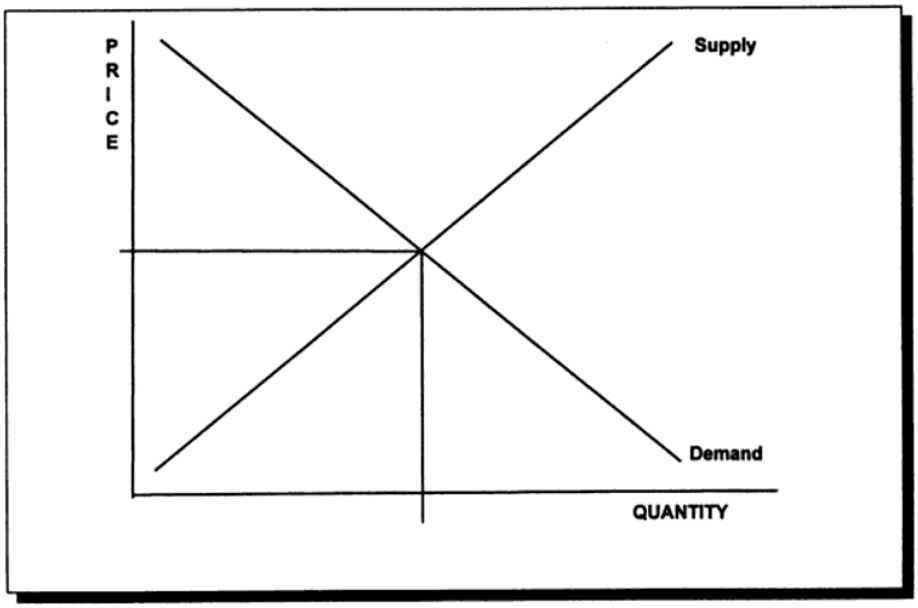



Figure 6.1 A simple supply-and-demand curve in a perfectly competitive market.

A more careful look at the economics texts and the economists' model reveals that there are actually pressure arrows on the supply and demand curves as shown in Figure 6.2, which tend to force price back toward the *equilibrium* market clearing level. That is, prices tend to stray from equilibrium in the short run, but tend toward equilibrium in the long run.

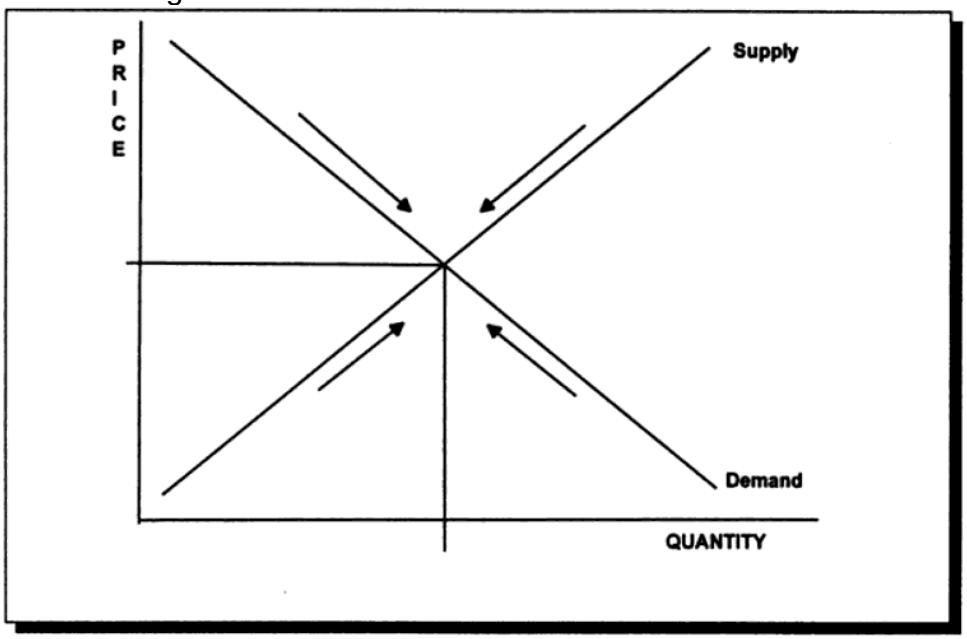



Figure 6.2 A simple supply-and-demand curve in a perfectly competitive market showing the tendency for prices to be pressured to a single equilibrium price which clears the market.

Of all the markets in the world, the futures markets come the closest to replicating the perfectly competitive market category. According to modern academic theory, the financial markets are assumed to be efficient. This efficient market hypothesis (EMH) assumes, among other things:

- No transactions costs
- Perfect pricing

- Free flow of and instantaneous dissemination of news and information
- Rational participants

In short, the EMH asserts that the combination of all the previous assumptions serves to make the market immediately, accurately, and perfectly discount all news, known and unknown, into one neat little price. But, as anyone can see by observing the financial markets and looking at price charts, one price does not clear the market on any given day. Instead, a whole range of prices clears the market. However, if all available information is already reflected in the market price, why would the price change throughout the day? If bullish news comes out during the day, and the market supposedly has the infallible insight to interpret it, why would there be a transaction at all? Why would anyone sell if the news was uniformly interpreted as bullish and investors were rational? Why would the specialist or the local on the floor sell? Wouldn't investors and traders simply simultaneously assign the stock or futures contract a new, higher price and declare that any trades that day would, of course, take place at that price? But why would any trades take place? Why would anyone buy or sell at all? The answer lies in understanding that the buyer and seller have different time-frame horizons.

***Note:*** For those who would argue that the closing price is the market clearing equilibrium price, consider the following observations:

- In all futures markets, if the closing price was the only price available for exchange to take place on that day, many transactions would not take place. A single price, periodic auction does not even begin to allow the amount of trade to take place which occurs in the continuous, dual-auction market.
- Many financial markets and futures markets do not really close per se anymore. Twenty-four-hour trading is available on many futures contracts, so the daily close has become a meaningless concept for some of the biggest markets. As the financial markets have gone more global, the twenty-four-hour market has come into its own. Some markets only close for the weekend. The EFP (Exchange for Physical) market in foreign exchange, the night session for debt instruments at the Chicago Board of Trade, and Globex have all combined to make the trading day around the world virtually seamless. One lots trade as easily as larger orders in these markets, enabling the smallest of speculators to enter or exit positions in *after-hours* trading. Thus, the closing bell at the exchange does not actually *close* the market until Friday afternoon.

**Organizing Market Prices**

The supply-and-demand diagram is a graphic representation of the market clearing at an equilibrium price, a snapshot of the market for a specific point in time. But price has a nasty habit of moving around, refusing to alight at some arbitrary intersection of supply and demand. In every market it takes many prices to generate business, to facilitate trade; this is *especially* true in the markets with standardized products and *particularly* true in financial markets. Since a single price does not clear the market on any given day, something else must be happening within the supply-and-demand curve snapshot.

Since price is the only part of the marketing mix used to generate business, it is almost always moving around in the financial markets, auction markets that they are. The continuous dual-auction nature of the financial markets creates lots of prices, not just one equilibrium price. Throughout the day, as prices move up and down the two curves, supply and demand in the form of orders enter the market and push price back toward its equilibrium area.

So price moves higher and lower to entice participants and facilitate trade. Some traders buy, which places upward pressure on prices. The higher prices attract selling and the price moves back down the supply-and-demand curves. The two-way competition among buyers *and* sellers causes prices to move up and down, higher and lower throughout the day in the never-ending job of facilitating trade.

Looking at the supply-and-demand curve in Figure 6.3, one can see that transactions actually take place in a number of different places and prices along and around the supply-and-demand curves. In order to make the data more intelligible, it is helpful to plot all of those transactions in a different fashion.

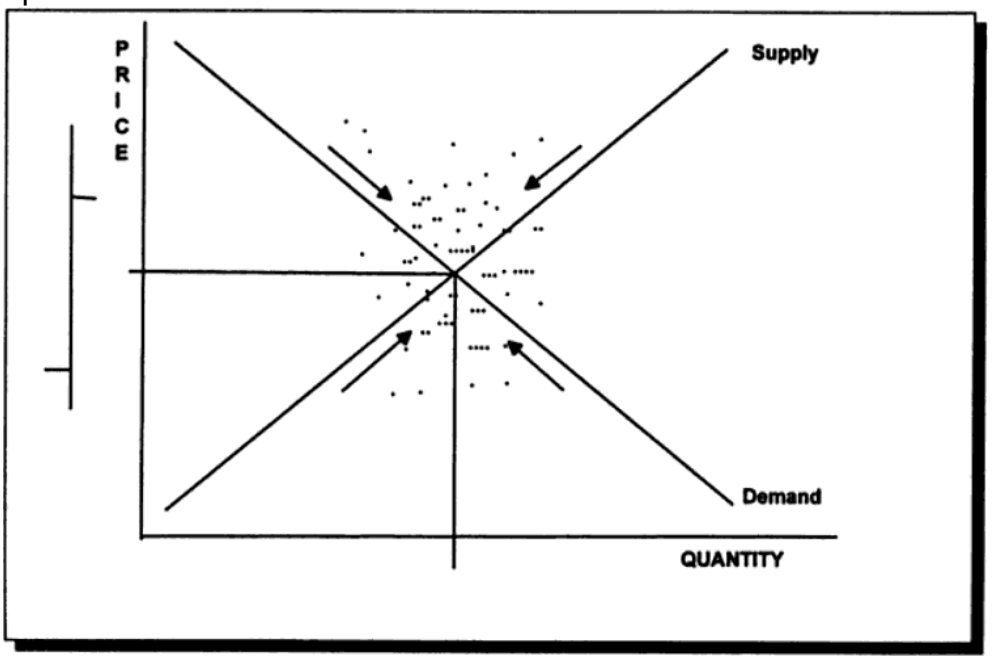



Figure 6.3 The familiar daily open, high, low, close bar chart is a one-dimensional graphic presentation of the day's reported prices. The day's range is actually comprised of many prices, some trading more times than others.

As you can see, the transactions which took place along the supply-and-demand curves fall into the rough formation of a bell curve distribution (see Figure 6.4). Essentially, the market data has arranged itself into a distribution from which certain deductions can be made. Most populations with continuous data, like market prices, arrange themselves into these *normal* distributions or some variation of the normal distribution. The bell curve is often used in the social sciences to arrange data, test hypotheses, and so on. But most important, when applied to human action where choice is involved (as opposed to height or weight), the bell curve provides a visual representation of what is being accepted and what is being rejected. In statistical terminology, the bell curve even has an *acceptance region* and two *rejection regions* (or *rejection tails).* The acceptance region is broken down into standard deviations from the average of all the data, a concept which will become important shortly.

Similarly, in the course of the dual-auction process in the futures markets, prices auction higher and lower throughout the day and form areas of price acceptance and sometimes price rejection, depending on how the data comes in. As with all auctions, interest declines (or tails off) as price moves too far in one direction. In the dual-auction process price rotates back and forth from balance to imbalance to balance again, creating these areas of acceptance and rejection.

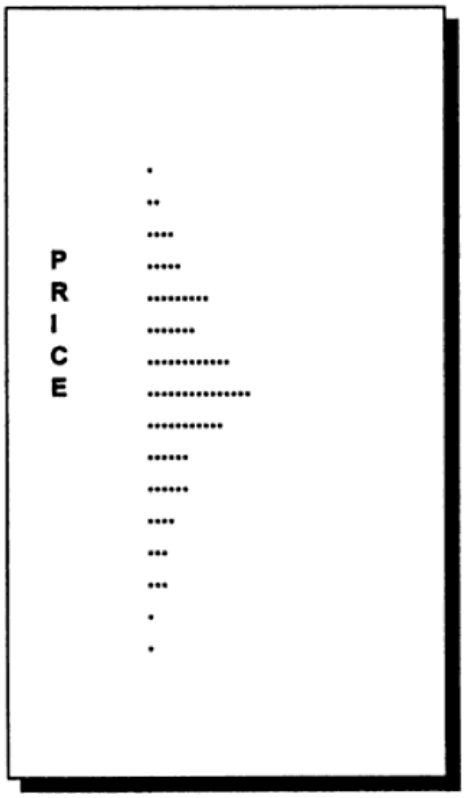



Figure 6.4 The recurrence of prices which form the familiar daily bar charts arrange themselves into a bell curve distribution.

As Figure 6.4 illustrates conceptually, the data on the curves arranges itself into some variation of the normal bell curve. But the diagram plots a variable price against itself which in turn yields a variable answer. Such a format yields little to no information about tracking the LTF participant (LTFP). In order to turn mere observation into meaningful data and to show how the transactions—the data along the supply-and-demand curves—arrange themselves into bell curve formats, we must create at least one constant so as to generate a measurable unit of information. However, in terms of applying the bell curve format to transactions in the market, some modifications must be made. It tells us certain information, but not all that we need. The histogram in Figure 6.4 is of limited use in its present form because it is plotting the variable of price against the variable of volume, which can only produce a variable result. But by plotting a variable with a constant, a measurable unit of information is generated. So, we can either

- hold price constant and see how much volume accumulates, or
- hold time constant and see what price range develops in that period.

Either one of these alternatives will produce something along the lines of the histogram in Figure 6.5.

This is what we would expect to find in most markets, based on our earlier discussion about the need for the market to find a range of prices where "fair" two-sided trade can occur. If price is too low then it is "unfair" for the seller and vice versa for the buyer.

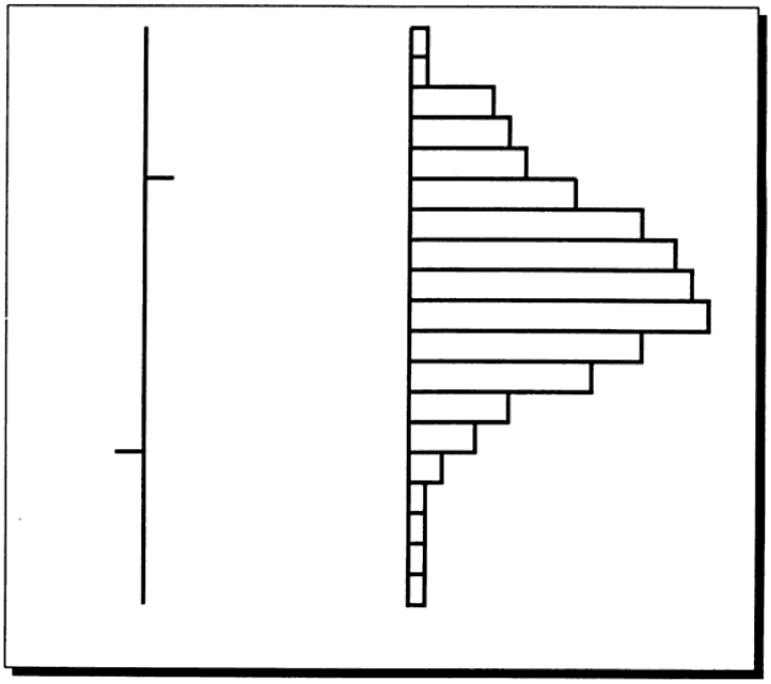


Figure 6.5 An example of how market transactions organize themselves into a distribution and show that all prices are not the same. Some generate more volume than others, an indication of which ones are facilitating trade and which ones are not.

Earlier in the book we learned that in the consumer-type markets, companies like to keep price as stable as possible and use various combinations of the other 3Ps of marketing to generate trade. One of the purposes of the strategy is to instill in consumers a sense of where *value* is for the product so that when it does go on sale consumers will respond accordingly. Additionally however, it is important to note that when a product does go on sale in one of these markets, it is only for a limited amount of time. "One-day only" sales are a common feature in retail and consumer markets. The airlines, too, are famous for offering special price reductions and getaway fares "for a limited time only." Thus, the amount of time a product is offered at a particular price or in a particular price range conveys important information to the market's participants. Basically, it tells them whether the product is being offered at a fair value price (i.e., where it is usually offered and has been offered for the past *x* amount of time) or whether it is being offered on sale (i.e., it has a limited time restriction attached to the price). In essence, time is being used to regulate the amount of business able to be conducted at any given price. This is no less true in the financial markets than it is in the consumer markets. The consumer markets with their passive auctions have managers who set prices and set the amount of time the price will be at that level. The financial markets with their active, dual-auctions have no such managers to regulate price. Rather, Adam Smith's invisible hand serves that role.

So price offered over time, and with people actually buying the product at that price, comes to represent value. Price offered below the regular price is only tolerated by the producer for a limited amount of time. There should be a high correlation between the amount of time a product is offered at a price and the amount of business (i.e., amount of volume) conducted at that price; and in fact there is. Volume transacted, even if in small individual quantities in individual transactions at the posted everyday price dwarfs volume when it's on sale, even if large quantities are bought in individual transactions on sale. Why is this? It is because of the amount of time at

which the price prevails. An area where price spends time allows volume to build and be accepted as value.

Refer to alternative #1 previously given, where we held price constant in order to see how much volume accumulated. Organizing the transactions which take place on the supply-and-demand curves into a bell curve is a snapshot, but doesn't show how the curve formed, how it took its shape. Different information about the market is conveyed depending on whether the distribution curve (i.e., the day's range) formed in a gradual one-way auction or whether it formed after initially undershooting, then quickly overshooting a fair price range. To ascertain this we need to make use of alternative #2 which holds time constant to see what price range develops in that period. The Chicago Board of Trade has two reports which organize the day's data in these two fashions, respectively: Chicago Board of Trade Market Profile® and Liquidity Data Bank®.

**The Market Profile®**

The Market Profile® is a method of organizing the day's price activity which enables the type of analysis previously discussed. Moreover, since we are interested in the basic building blocks of the market (i.e., participants' actions), the Profile, as you will see, is ideal because it identifies and monitors the two main categories of participants in all markets: short time-frame participants and long time-frame participants.

The Market Profile® uses a time period as its constant in the following manner: The 3 X 6-inch trading cards used by floor traders at the exchange to record their trades have letters of the alphabet printed across the top. Each letter corresponds sequentially with each half-hour time bracket during the trading session: A = 8:00-8:29, B = 8:30-8:59, and so on. For markets which open before 8:00 a.m. Central time, lowercase letters from the other end of the alphabet are used in reverse order, but more on that later.

Using a vertical axis for price, each time bracket's letter is plotted along the range of prices traded during that time period. Each subsequent time period records its price range. Each of these letters represents a combined time-and-price opportunity and is therefore called time-price opportunities or simply TPOs. Certain configurations of these time-price occurrences constitute market activity, actual buying and selling by the LTFP Unlike conventional bar charts which fill a computer screen from left to right as new time periods are recorded, the Profile is *left-justified.* The two charts in Figure 6.6 present identical information, though in different formats.

As the day unfolds and prices are traded for the first time, the Profile's time brackets orient themselves to the left, the vertical price scale, rather than moving off to the right the way a bar chart does. By combining price and time in this manner, a distribution of prices emerges.

As you can see, prices spend relatively less time at the high end and low end of the range. Where little time is spent, little volume can accumulate relative to the other prices in the range. As prices stray into those areas, the law of supply and demand asserts itself, creating the tendency for prices to return to the equilibrium price *area.*

Clearly, the equilibrium is not a single price; rather it is a range of prices where the market spends most of the time and transacts most of the day's volume during the day. That equilibrium range is called the *value area* and will be discussed in more detail shortly. Suffice it to say here that each day there are prices which represent value and prices which represent price away (both below and above) from value. The brief period of time spent in the rejection tails of the bell curve distributions indicates traders rushing to take advantage of that very short term "price away from value" situation.

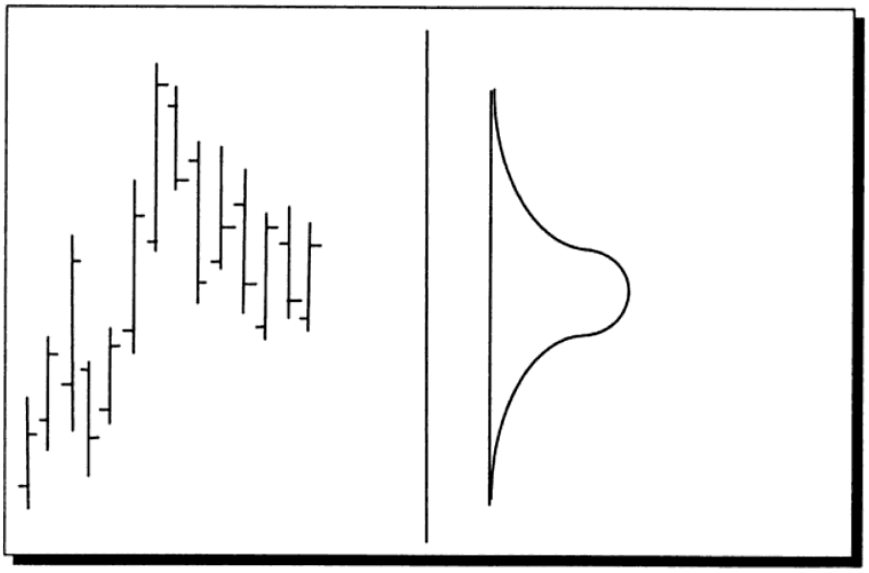


Figure 6.6 The traditional open, high, low, close 30-minute bar chart displays the ranges for the respective time periods. The Market Profile® presents a graphic of how the market regulates itself with the use of time to create an area of acceptance (value) and areas of rejection (price away from value).

The Profile not only organizes the day's price action into a distribution curve indicating what price range the market is accepting as value, but by the alphabetizing of the time periods it also conveys how the distribution is formed, the importance of which was previously noted and will be discussed in more detail shortly. Essentially, the Profile dissects the supply-and-demand curve snapshot for a given day.

**The Liquidity Data Bank®**

The CBOT has a companion report, the Liquidity Data Bank (LDB®), which, after the close each day, generates the amount of volume traded at each price and gives a breakdown of the percentage of business done at each by the following three groups:

- Locals
- Commercial members
- Commercial nonmembers

The specific parameters of analyzing the volume report have been detailed elsewhere,[2] but one piece of information is necessary to mention at this point before going into the next section. The LDB® report presents the price range for the day which generated 70 percent (or about one standard deviation, in statistics terms) of the day's volume, called the value area. Beginning at the highest volume price, the report compares the price above and the price below, and selects the higher of the two for inclusion in the value area. This process continues until at least 70 percent of the volume is included. The report is a volume histogram which holds the price range as the constant and monitors the amount of volume which accumulates at those prices. The Profile constructs its own value area, called a TPO value area, based on the price range which includes at least three TPOs. The TPO value area serves as a proxy for a volume value area for futures contracts traded at exchanges which do not release volume at price information.

The premise of the Market Profile® is the same as the premise of any marketplace, namely to facilitate trade. Therefore, analysis of volume at price (i.e., horizontal volume) is an invaluable aid for determining whether the market is facilitating trade and for monitoring the auction process for continuation or change.

When a market is not facilitating trade, one of two things will happen. Either that particular market will shut down completely, or price will move to an area where the market does facilitate trade. This purpose of markets, to facilitate trade, is true for all markets over all time horizons. The pet rock market shut down some years ago because it was no longer facilitating trade. The Consumer Price Index (CPI) futures contract introduced at the New York Futures Exchange (NYFE) in 1986 did not facilitate trade and it, too, shut down. On the other hand, when crude oil was trading at $30 per barrel in 1985 it was not facilitating trade; so price went to $10 a barrel. But it didn't facilitate trade at that price level either, so price went back into the $20 range.

**Identifying the Speculative Element in the Market**

Participants in all markets have different specific needs and motivations for transacting business but, as we have already seen, buyers can be categorized into two broad groups: those who *need* the product and those who *want* it. Accompanying these general reasons is a time-frame for operation, short time frame (STF) and long time frame (LTF), respectively.

In the real economy markets we have seen how these time-frame perspectives influence buyers in the market because goods flow one way—from producer to consumer. However, in the futures markets the goods (i.e., the contracts) are never really consumed and flow both ways from buyer to seller and back again. This means that the LTF participants readily can be found on *both* the buy side *and* the sell side of the market.

Relative flexibility is another way of looking at the market's participants. If they possess the luxury of flexibility and don't *have* to transact, they will wait for the price to move away from value before entering the market. But a participant who doesn't have that luxury must pay the prevailing rate. The leisure traveler can wait and shop for a deal. The business traveler with no flexibility who must travel on short notice to attend a meeting in another city and whose company is likely paying for the ticket, pays the going price, usually a higher one. The same phenomenon occurs in the financial markets.

Some traders are operating on a very short-term time horizon, while others have the luxury of a longer time horizon. These two categories are called:

- Day Time-Frame Traders (DTFT)
- Other Time-Frame Traders (OTFT)[3]

Those who intend to do business each day are DTFT. Generally speaking, DTFT are market-makers: locals on the floors of futures exchanges, specialists on the floors of stock exchanges, and dealers in the over-the-counter markets. The DTFT is seeking a fair price for the day at which to transact business. OTFT are those who may or may not trade that day, depending on whether an opportunity (i.e., price away from value) presents itself, or whether they are forced to act.

In carrying out its purpose, namely to facilitate trade, Adam Smith's invisible hand moves price to induce as many participants as possible to transact business. This principle is true for all markets. For instance, to maximize revenues (i.e., facilitate trade), airlines divide the seats on their flights into a variety of fare "buckets," each carrying a different set of restrictions. Then, the airlines try to do business with as many passengers as possible by filling as many seats as possible with STFP (business travelers) and offering the other seats to the LTFP (leisure travelers). Likewise, the futures markets fulfill their basic purpose of facilitating trade by involving DTFT and OTFT. The futures markets operate on the same principles as a Middle East street bazaar or any other market for that matter. People arrive to exchange, trade, improve their lot, and to satisfy their needs and wants.

When the market opens in the morning, buy and sell orders flow into the market to pit-brokers who, in turn, execute the orders with the locals trading for their own account. As these orders come into the market, the locals mark prices higher or lower in response to whether those orders are overwhelmingly buy orders or sell orders, respectively. The behavior of market-makers exemplifies the law of supply and demand. If most of the orders coming into the pit are buy orders, the locals *have* to sell to those wanting to buy; that is their job. And they do—though at progressively higher prices. As is the case in any auction, price is marked higher to shut off buying to reduce the number of buyers participating in the auction. Recall the one-way auction in an auction house in which the auctioneer starts the bidding at a "suggested" price. Then the auctioneer offers higher and higher prices to shut off the number of bidders until there is only one bidder remaining. In the two-way auction in the futures market, this "suggested" price is the same as the opening price which depends on a number of variables, such as: news events, cash market prices, rumors, prices in related markets, and so on. Then, depending on whether there is a relative abundance of buy or sell orders, locals, like the auctioneer, offer prices higher or bid them lower, respectively.

Therefore, as price moves higher, it shuts off buying and advertises for selling. Once that selling materializes, prices are marked back down to shut off the selling and check, or test, the commitment and resilience of the buyers. When the respective buying and selling enters the market, the locals have reference points to "lean against" throughout the day as they fill other orders which enter the market during the rest of the trading session. In this manner, the market carries the same purpose it has had since markets came into existence: to facilitate trade. The constant movement from imbalance to balance to testing and back to imbalance is a feature of all two-way auction markets. It can be seen by the fluctuating prices across all time horizons and it can be heard in the vocabulary of market participants, such as "I think the market is going to test lower before going higher." This interaction process creates reference points; creates a value area, a sale, and the opposite of a sale.

As with all auctions, interest declines (i.e., tails off) as prices move too far in one direction. Since we are interested in the speculative element of the market, (i.e., in those who *want),* the model we build is going to focus on that element of the market; the element with a longer time horizon than the person who is merely meeting needs. Let's look at how to use the Market Profile® to identify the transactions of the speculative element.

## Types of OTFT Activity

### Extremes

The above mentioned reference points within the day time frame can be leaned against because the respective selling and buying which enters the market at those levels comes from OTFT who perceive that price is straying from value and are taking advantage of the opportunity. In the terminology of statistics, the reference points are called rejection tails. The brief time-price relationship indicates that the price was not *fair;* it was not a price at which all participants could or did trade. It was too high for some, who didn't buy, and it wasn't there long enough for others, who didn't get a chance to sell at those prices. In a phrase, these rejection tails are "price away from value." In a word, they are called *extremes.*

An extreme is formed by a *string* of two or more single TPO prints on the top or bottom of the profile. The brief, single time-price occurrence at each of those respective prices indicates a lack of acceptance by traders. Remember, acceptance of a price level is denoted by an accumulation of time spent at that level. We know that

the OTFT is relatively flexible and is looking for an advantageous price to transact business. As the OTFT enters the market during the day session, his buying on the break and selling on the rally will cause locals to move prices the other way. In the process, price will not remain in that area for very long. Therefore, when looking at a completed profile at the end of the trading day, you will be able to detect the *footprints* of OTFTs in the form of these extremes. Looking at a completed profile for a market after the close on any given day:

- A string of single TPOs on the top indicates rejection and is called a selling extreme.
- A string of single TPOs on the bottom indicates rejection and is called a buying extreme.

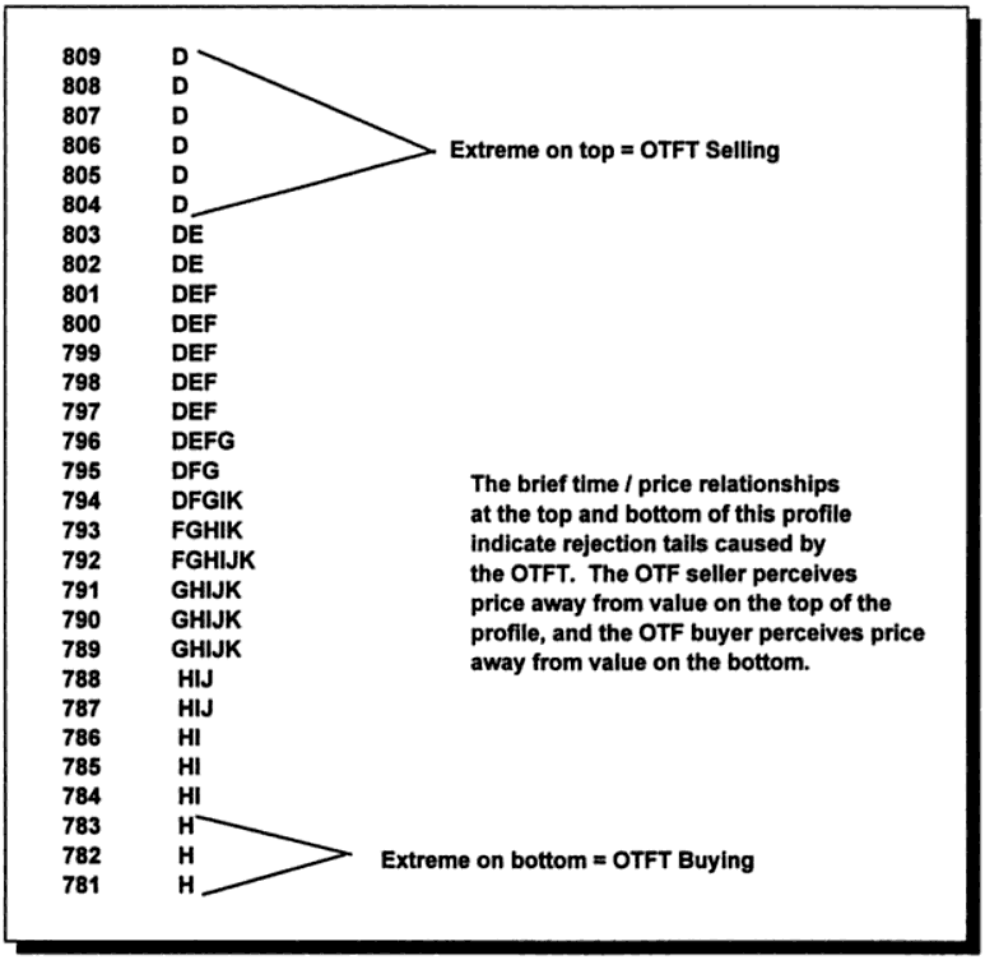



Figure 6.7 An example profile for soybeans using a one-cent scale.

There is a caveat to what constitutes an extreme: If the string of single prints occurs in the last half-hour trading period of the day, it is *not* defined as an extreme for the simple reason that the market closed and there was no time left to see if the area would be accepted or rejected.

The implications of the extreme's length are obvious. A long extreme indicates a strong price rejection; hence, strong selling of the extreme is at the top of the Profile and strong buying of it is on the bottom.

Figure 6.7 illustrates how to identify extremes on a profile. Looking at a completed profile, the extremes are easy to recognize. But when the profile is unfolding during the trading session, what starts out as an extreme in the morning may be overcome later in the day. As such, it is a temporary form of activity until the day is complete.

**Range Extension**

Sometimes the extremes take very little time in the morning to establish; other times these reference points may not be determined until later in the session. Which of the two occurs is important for determining whether the market is in a position to continue its present auction or change. Therein lies the justification for the importance of the first hour of trading. In order to determine if the market is trending through time, if it is auctioning in a given direction, some reference point must be established. The Profile's architect observed that approximately 80 percent of the time, the first hour of trade comprised 80 percent to 100 percent of the day's range. It makes perfect sense. When dealing with people and human behavior, we need a reference point of, or a baseline of, behavior from which to gauge when people start to change their behavior. If something occurs roughly 80 percent of the time, it serves as a valid reference point. For most markets this first hour's range is called the *initial balance*—the initial parameters at which OTFT entered the market to take advantage of price straying from value. For other markets, it takes longer than the first hour of trade to establish 80 percent to 100 percent of the day's range. I will identify those markets as we get to them.

Range extension takes place at a single price, the price at which the initial balance is exceeded—either the up or down. If the range extension is to the upside, OTF buyers are noted in the market. If the range extension is to the downside, OTF sellers are responsible. Range extension is the second form of OTFT market activity we are going to monitor.

Once the initial balance is established, subsequent orders from OTFT can overwhelm the initial balance area. To illustrate, assume the initial balance is established in soybeans between $6.50 and $6.55. If later in the trading session the highs of that range are exceeded, locals are being forced by orders from outside the pit to mark prices higher. The selling from OTFT which created the high of the initial balance range are no longer there and the locals are now offering prices at successively higher prices in an attempt to shut off buying and advertise for selling. That "initial balance range extension" is abbreviated as "range extension" and is attributed to activity by OTFTs. Other time-frame traders were buying in the developing value area; their repetitive buy orders forced the locals to mark prices higher to shut off the buying and try to attract selling. In the process, locals had to offer prices higher than they had earlier in the morning in order to make the buying unattractive and selling more attractive.

Range extension is a particularly important form of OTFT activity because of its permanent nature. Once range extension occurs, it is there. While an extreme formed during the trading session can be chewed up later in the session, range extension does not go away. It can be canceled or offset by range extension in the opposite direction, but even that has important implications for the type of day which is unfolding and what it portends for the market in subsequent days. In short, range extension is a form of activity which does not go away. This will become very important when the details of how to use the model are introduced later in the book.

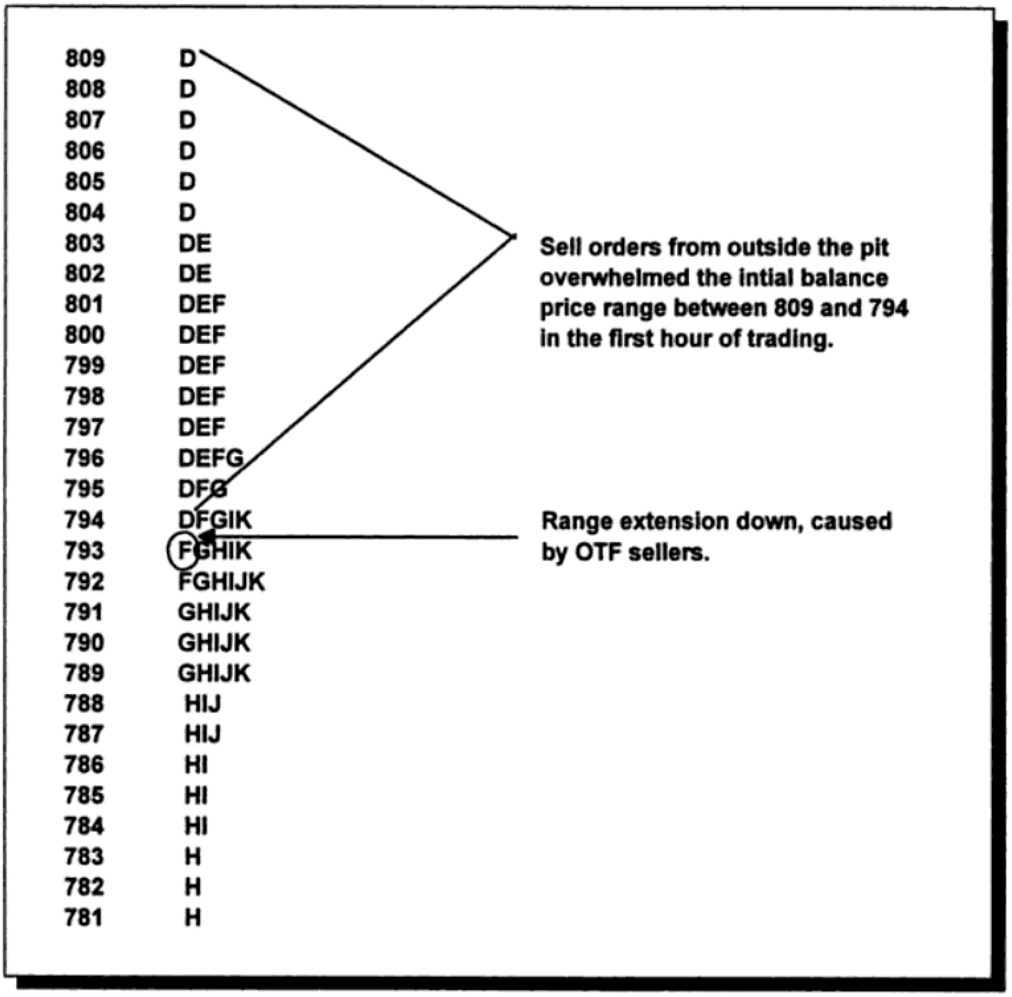



Figure 6.8 The same soybean chart as presented in Figure 6.7, with range extension down noted at 793. Range extension down is caused by other time-frame sellers.

**TPO Count**

A third and final form of OTFT activity in the Profile is the TPO count. The weakest form of OTFT activity, the TPO count is simply an indication of imbalance within the equilibrium area. Since OTFT are transacting business throughout the entire day's range, it is instructive to have an idea of whether they were net buyers or sellers in the value area. The TPO count compares the number of time-price occurrences below the mode price to those above the mode, but excludes any single TPO prints at the tops and bottoms of the Profile. As in the case of the pressure arrows on the supply-and-demand curve, there is a tendency toward balance in the Profile. Therefore, more TPOs below the mode means there is net buying in the TPO value area; more TPOs above the mode means net selling. The *absolute difference* in the number of TPOs above and below is inconsequential; it does not convey a *degree* of imbalance. A TPO count of 36 above and 27 below has the same meaning as 136 above and 27 below. That meaning is simply OTFT selling in the equilibrium area. Figure 6.9 shows the soybean profile to illustrate the imbalance of selling inside the value area.

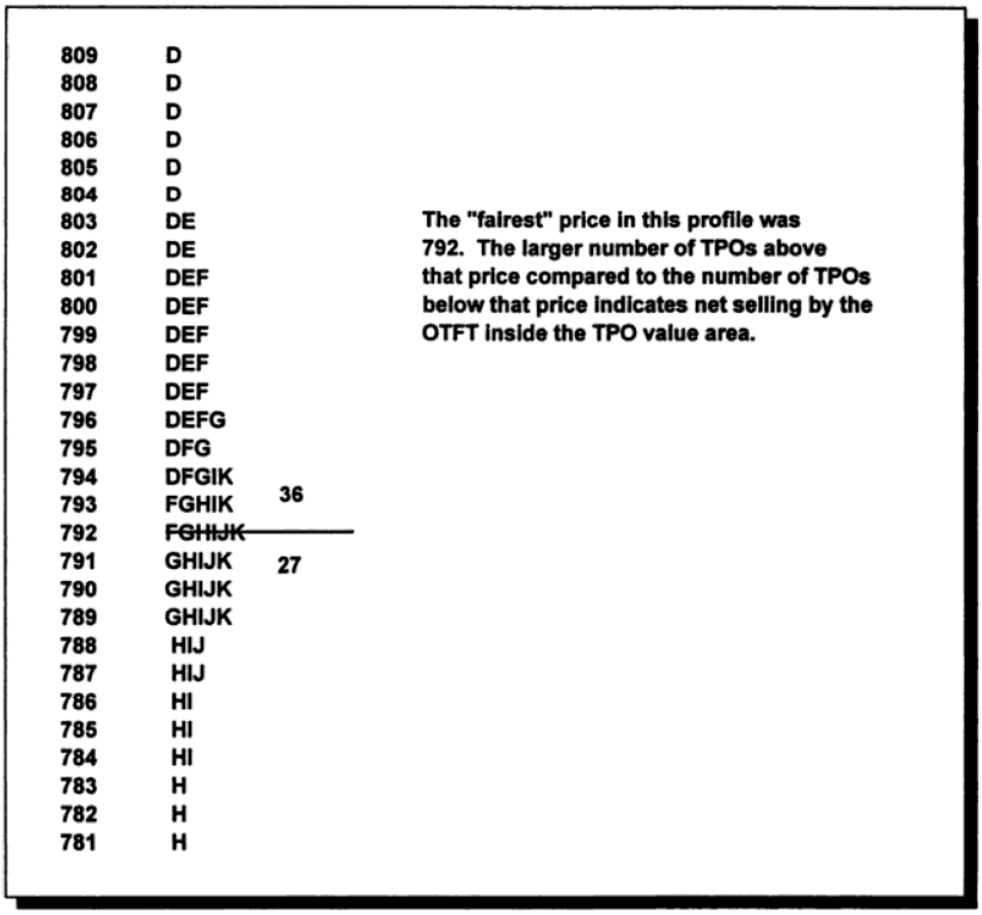



Figure 6.9 The same soybean profile presented in Figure 6.8 with the TPO count showing an imbalance of selling inside the value area.

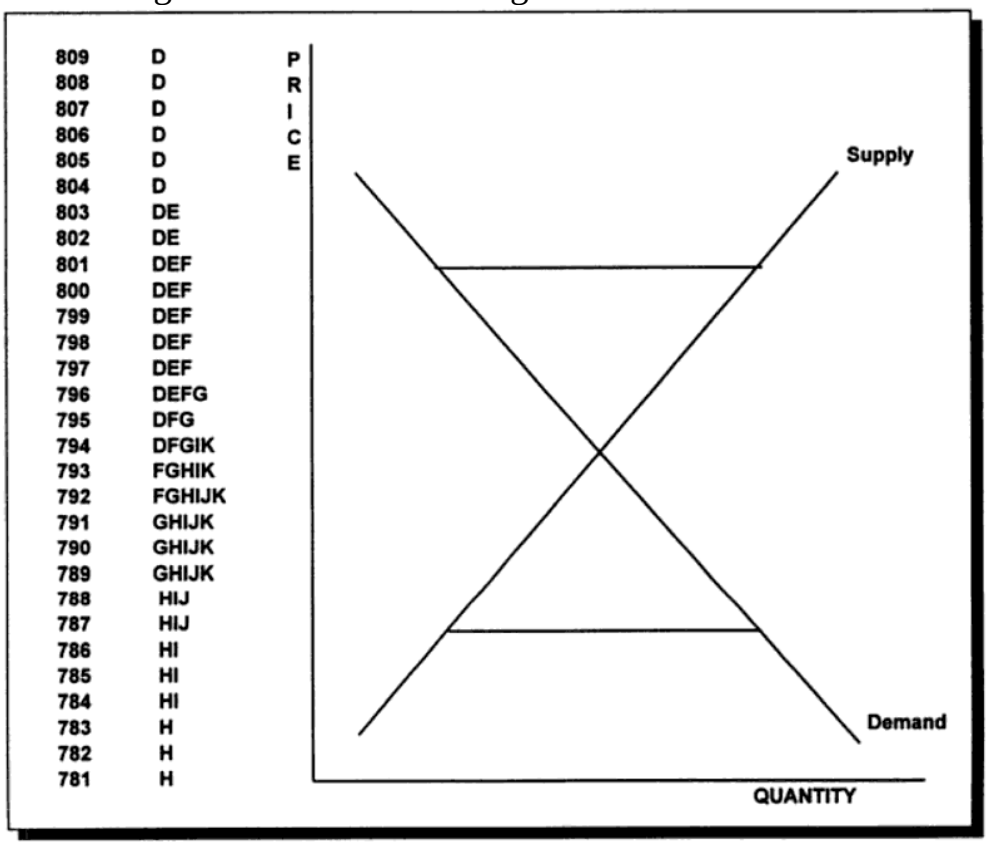



Figure 6.10 Profile juxtaposed on same vertical price scale as the Supply and Demand curves.

The Profile enables us to actually dissect the supply-and-demand curve for a given trading session (see Figure 6.10). Simultaneously, we are able to isolate the activity of the speculative element in the market, the element we need to track to arrive at the transaction part of the equation.

**Nuances of Global Markets**

Due to the changing nature of some of the futures markets over the past several years, I would like to submit some adjustments to how long it takes for the initial balance to form in a few markets. In the course of working with the Profile over the years, I have observed that in the markets which have substantial trading outside U.S. trading hours, the initial balance period is longer than the first hour of trading. In order to maintain the baseline of "what does the market do 80 percent of the time?" criterion, several markets need to be adjusted and may well need to be adjusted again in the future. There is certainly precedent for using a time period other than the first hour of trading to define initial balance. The Profile's architect, Pete Steidlmayer, used five hours in the stock indices because that's how long it took to get 80 percent to 100 percent of the day's range 80 percent of the time and because of other nuances of that market.

The initial balance period for the energy markets (crude oil, gasoline, and heating oil) is the first one and one-half hours. With active trading during London and U.S. trading sessions, it takes the first three time periods of the day to find the range where 80 percent of the day's range is established 80 percent of the time. For the currency, interest rate, and precious metals markets the first two hours of trading constitutes the initial balance.

**Day Structures**

On any given day, the OTFT can have a varying degree or sense of urgency to enter the market, a decreased sense of urgency, or be absent from the market altogether. Depending on which of these situations prevails, the market will unfold in one of six general types of bell curve distributions or day structures. Each of those types of days has its own set of *range parameters* and its own implications for continuation or change in the market's auction due to the imbalance created in the market by the speculative element's participation on the market.

Perhaps the best way to think about how these different types of day structures develop is to envision what goes on at a mortar range. Picture a soldier at the controls of a cannon from which he is shooting practice rounds down-range at a target which he cannot see; he only has a rough idea of the coordinates where the target lies. He has 15 minutes to find the target and hit it as many times as possible. He sets his coordinates and fires off a round. His sergeant radios back to him that his mortar landed short of the target. The soldier adjusts the input coordinates on his cannon and fires again. This time the sergeant radios back that he overshot the target. Well, at least the soldier knows where not to shoot. He spends his remaining minutes launching mortar rounds in between the two reference points of "not far enough" and "too far." That is what happens in the market each day, too. What all the different technical indicators are trying to capture is this process of the dual-auction and relative participation between those with routine business to do that day and those with speculative business to do.

**Normal Day**

A normal day is characterized by the initial balance comprising 80 percent to 100 percent of the day's range. The OTFT's sense of urgency is, well, "normal." Therefore, if range extension occurs, obviously it is about 25 percent or so of the initial balance

range. Later in the book you may see this type of day referred to as simply ND. Likewise, on a normal day, the locals overshoot in each direction and spend the rest of the day checking up and down as prices rotate in the developing value area.

**Normal Variation Day**

In this type of day, the OTFT steps up his activity somewhat as his urgency factor increases, either because he senses the market is getting away from him or because he senses an opportunity. The speculative element's stepped up activity causes the initial balance area to comprise roughly 50 percent of the day's range. The initial shots down the mortar range were not as close to the target as was the case on the normal day. It's as though the soldier, like the local in the pit, senses his time running out on the practice range and opens his coordinates up to a ridiculous number. Finally, he determines where not to shoot. Only by then, his time has run out so he doesn't get to shoot very many missiles at the target. Similarly, on a normal variation day, the market spends less time at all the prices comprising the day's range when compared to how much time is spent at the day's, range prices on a normal day.

Generally, due to the imbalance of buying or selling (depending on whether it is a normal variation day up or down, respectively) range extension will double the initial balance range. The increased activity of the speculative element creates a greater degree of imbalance in the market and the range has to expand to shut off this activity. Later in the book you may see this type of day referred to as simply NVND.

**Trend Day**

On a trend day, the OTFT's participation is at its maximum and occurs only about 10 percent of the time. Rather than establishing a fairly wide initial balance area, a trend day's initial balance is narrow. The market has no rotation—it doesn't go to a two time-frame mode. Instead, it is in a one time-frame mode. On a trend day, to continue the mortar range analogy, the first shot falls short so you adjust the cannon for a further distance. But the radio message comes back that this shot too has fallen short. So you adjust the cannon again and receive the same radio message. So you plug in a set of distance coordinates which you think are ridiculous only to hear the same radio message again. During your 15 minutes on the mortar range you never find the reference point of "too far" which you need so that you can fire away at the target. Your last shot was your farthest one and still you haven't hit the target.

Likewise, on a trend day, price just trends in one direction all day long. It is as if the auctioneer has opened the bidding at too low a price, but no one drops out of the bidding even as he raises the price. Trend days are denoted by a fairly narrow initial balance area, thus making it easy for the market to tip out of that range later in the morning. Typically, trend days take on a double or even triple distribution of prices within the day's range, with the market unable to spend more than two hours or so in any price area. So the trend day appears as a series of small distributions separated by a string of single-print TPOs. Later in the book you may see this type of day referred to as simply TD.

A variation of the trend day is the rare occurrence of what's called a trend-day failure. In this type of structure, the market has created the structure of a trend day as previously described; however, late in the day—usually in the last hour of trading—the market does rotate. This may or may not be triggered by news. Faced with the forcing point of the close of the day, traders begin to bail out. As the market rotates, it finds more traders abandoning their positions. The single prints separating the trend day's distributions are "filled-in" during this last hour of the day. The importance of this type of day will be covered in Chapter 7 when long-term auction charts are covered.

**Non-Trend Day**

On a non-trend day, the first half hour makes up virtually the entire day's range. The Profile is more of a parabola than a bell curve. Usually, there are little to no extremes or range extension and the only measurable activity is the TPO count. Non-trend days do not occur as often as they did in past years, but the characteristics and implications of this type of day are important to know.

Basically, non-trend days are not good for continuation in the direction of the auction. The market is not facilitating trade with a good mix of the different types of participants and usually indicates a move in the opposite direction from which prices came into the non-trend day. This type of day is referred to as simply Non-TD.

A variation of the non-trend day is when the market has spent almost the entire day with the first half hour's range, then late in the day, during the last hour or so of trade, the market *spills* or *rallies* as it breaks out of that range and runs all the way into the close. The complacency which prevailed during the entire day has been upset. The importance of this type of day will be covered in Chapter 7. This type of day is referred to as Non-TD spill (or Non-TD rally).

**Neutral Day**

Neutral days are characterized by range extension in both up *and* down. As such, they are indications of "change in ownership" type of days and occur only about 10 percent to 15 percent of the time. There is a battle between other time-frame buyers (OTFB) and other time-frame sellers (OTFS) as evidenced by range extension in one direction failing, as such, and being canceled out by range extension in the other direction. About 85 percent of the time the market will close in the middle portion of the day's range. The other 15 percent of the time the market will close to the day's highs or lows, usually in whichever direction had the last range extension.

Often times, a perfect neutral day will occur in which the market will have range extension in both directions of virtually identical amounts, then close in the middle of the day. The TPO count is that much more important on neutral days, since the range extensions cancel each other out. Neutral days often cause a change in the direction of the market. They occur about 15 percent of the time.

By adopting the adjustments for how many time periods it takes to create the initial balance in the energy, interest rate, currency, and precious metals markets, you will find that the neutral days still occur only about 15 percent of the time; if the first hour is used as the initial balance, neutral days would happen much more frequently.

**Running Profile Day**

A variation on the neutral day is a running profile. These days are basically the 15 percent or so of the neutral days which close near their highs or lows instead of in the middle of the range. They do not occur often, but they can be frustrating to try to trade when they are unfolding. In essence, the market gets range extension in one direction, then goes into a one time-frame market in the opposite direction, never really getting any rotation. It sort of becomes an intra-day trend day in the opposite direction of the first range extension. As noted, neutral days occur about 15 percent of the time and running profiles occur on about 15 percent of the neutral days.

Based on the anxiety level of the OTFT, any given market will fall into one of these types of days, with the caveat that the stock market indexes have an exceptionally long initial balance period of five and one-half hours.

The Market Profile® provides the means of segmenting market participants into the routine element and the speculative element so that we may complete the equation: Expectations + Transactions = Prices in the future. By combining the two

variables we are in a position to monitor the key factors responsible for price movements in the markets.

# *Chapter 7*

## Long-Term Market Activity

One of the assumptions of the perfectly competitive market model is that observations about prices are subject to "All other things being equal." But if all other things were equal, higher prices would always generate selling, lower prices always generate buying, and the market would establish a narrow range from which it would never deviate. And there's the rub. All other things have a nasty habit of "not being equal"; especially in the futures markets.

In the last chapter we examined how the Market Profiles dissect the supply-and-demand curves of individual market days and how, depending on the level to which the OTFT is present on a given day, the Profiles take the form of one of the six types of days identified. This chapter looks at a larger sample size of data in order to track the OTFT over a period of time longer than a single day and dissect the supply-and-demand curves over that longer time period.

We know that each day's Profile is simply a different way of plotting that day's record of transactions along the supply-and-demand curves and that ordinarily prices move lower to shut off selling and advertise an attractive price for buyers to enter the market. An unusual characteristic in futures markets is the fluid nature of the supply-and-demand curves over a sample size larger than a single day. The supply-and-demand curves for a production-consumption commodity are fairly straightforward: Higher prices encourage more production and less consumption and vice versa for lower prices. However, in the futures markets it is a fairly common occurrence for higher prices to encourage buying and lower prices to encourage selling. This phenomenon is exacerbated by certain characteristics about the futures markets previously cited, including: the two-way flow of the "product," the fact that there is no production or consumption, per se, and that the contracts can be created out of thin air and extinguished just as easily. It is even possible for more contracts to be created than availability in the underlying asset or commodity. This makes the financial markets almost purely exchange markets, not consumptive, and their supply-and-demand curves more fluid.

The phenomenon of higher prices generating buying and lower prices generating selling, is what academics refer to as *shifts* in the supply and/or demand curves. In the consumer-type markets, these shifts are attributable to such culprits as changes in consumer preferences, taste, incomes, technology, input costs, or prices of other products. Figure 7.1 illustrates an upward (or "to the right") shift in the demand curve, effectively raising the equilibrium price in the perfectly competitive market model. Figure 7.2 illustrates a downward (or "to the right") shift in the supply curve and the resultant lowering of the model's market clearing price.

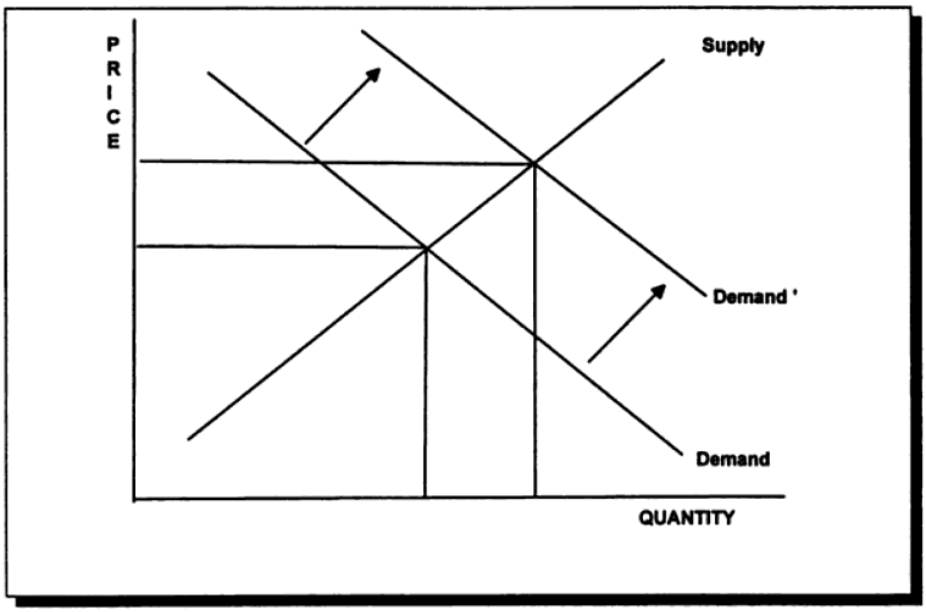



Figure 7.1 The Demand curve shifts to Demand', thus changing the market's *clearing price.*

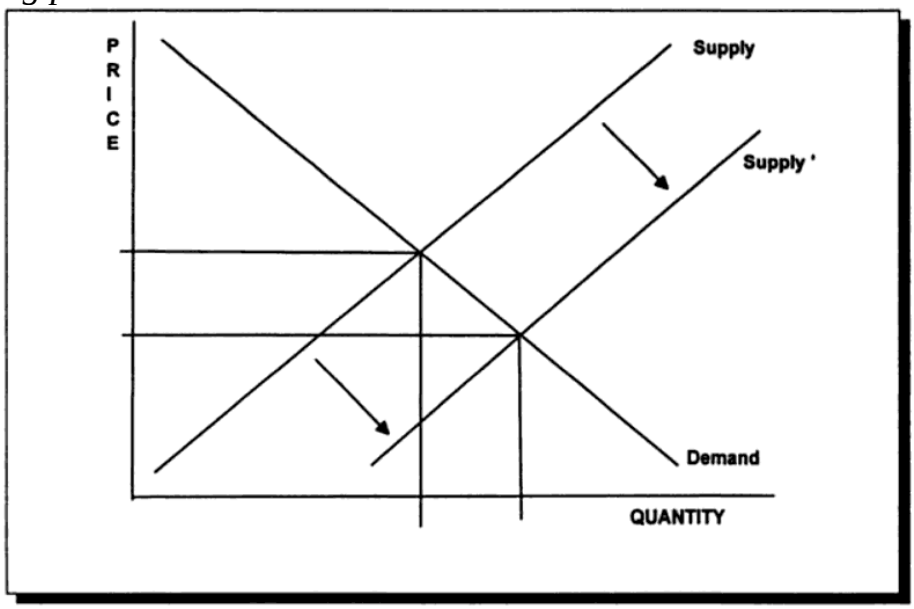



Figure 7.2 The Supply curve shifts to Supply', thus changing the market's *clearing price.*

However, *consumer preferences* as such don't exist in markets with standardized products. In such markets, the only thing influencing prices in the future is people acting today based on what they expect price to be in the future. Remember, it's not the routine, everyday business which is dependent on expectations. The routine business is done irrespective of what participants expect to happen. The routine doesn't take expectations into consideration. But the speculative element in the market relies exclusively on expectations. As we have already determined, the speculative element, the element we want to monitor, manifests itself via OTFT market activity. In order to keep track of the OTFT over a period of days and in order to begin to monitor the market for shifts in the supply-and-demand curves, we need to keep a running tally of the OTFT's activity over a period of days {see Figure 7.3).

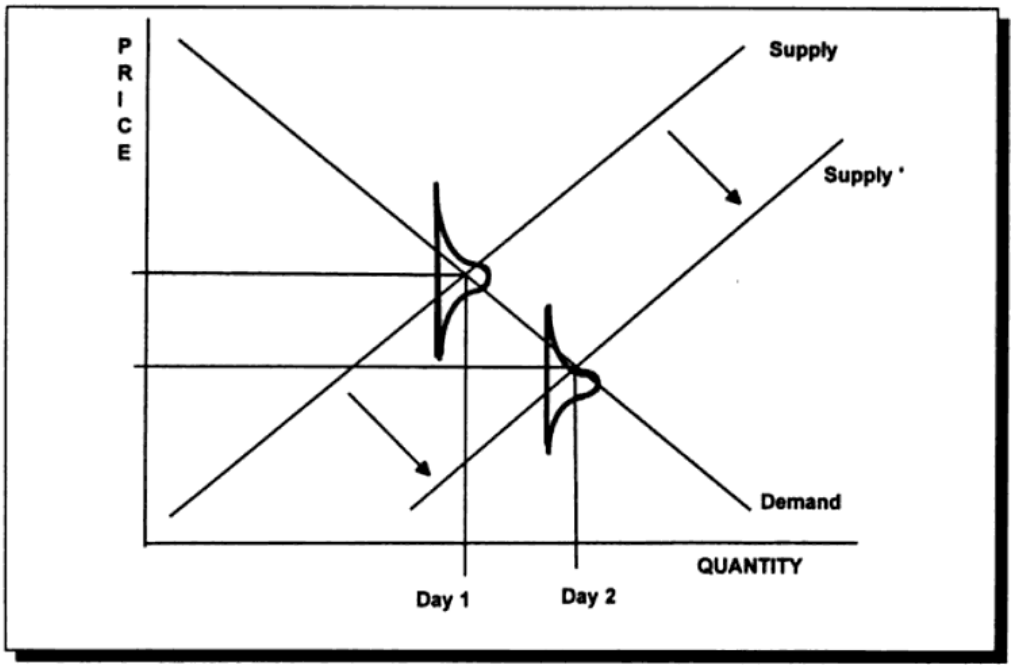



Figure 7.3 The shift down in the supply curve is seen by comparing the profile for Day 1 with Day 2. The shift is captured by juxtaposing the OTFT's activity on Day 2 to the value area on Day 1.

It is the long time-frame participant in every market who is responsible for creating these shifts and, in the process, for moving value in the market. For example, think of an auto manufacturer as being an LFTP and the local dealership being a STFP. On any given transaction, the dealership has a certain degree of latitude in haggling over a price to sell the car. When the car salesman reduces the price on a car, he is adjusting *price,* but not *value.* In a given month, prices for the same model might encompass a range of several thousand dollars from high to low, but the bulk of the business is done in the middle part of that range, with a few sold at the low end and a few at the high end. Since the dealership is a STFP, it is only in a position to move price, not value; likewise, any car purchaser does not move value.

However, the car manufacturer is a LTFP and so are its competitors. If the entry of another auto manufacturer from another country, let's say Japan, begins offering a similar product at lower prices than have prevailed for years, the price will ratchet lower and consumers will perceive this as value. Japan's decision to enter the country and build manufacturing plants indicates a major commitment to selling cars. The manufacturers are in a position to move the *value area* for a given car. If another auto manufacturer, domestic or international, enters the market with a similar model at a considerably lower price range, perceived value in the market place is going to change to this new lower level. Even if the highest dollar price paid for the new model is the same as the lowest dollar price transaction of the previous model, value has changed. Either firms meet this new competition on price or risk losing customers to competitors or are even driven out of business. There are many examples in markets in which we are direct participants, such as the airline market after deregulation in 1978. Houston-based Southwest Air began to invade Texas Air's intrastate markets in Texas, forcing Texas Air to enter interstate markets in order to regain lost business. Across the country, the value area in which most tickets were sold for a given city-pair dropped significantly. It is a phenomenon that occurs in every market city-pair which Southwest enters, even today. The point is that only the LTFP can move value, while the STFP can only move price.

All the principles of auctions previously discussed as they pertain to a single day's profile, also apply to the longer-term time horizon of several days or weeks. Each day becomes a miniauction in the intermediate term auction. In the same way price moves up and down to promote trade and facilitate trade in the day time-frame, in a slightly larger view value areas move up and down, in conjunction with actual buying and selling activity by the OTFT, to facilitate trade. If a market doesn't facilitate trade then either the market will shut down or price will move to a level which does facilitate trade. Some years ago there was an active pet rock market which suddenly shut down because it stopped facilitating trade. In 1985 crude oil at $30 per barrel was not facilitating trade and price plunged to $10 per barrel. These same principles will be applied to the several-day outlook. While tracking the value areas, the trader will ask such questions as: Is volume being done? Are transactions taking place? What is volume relative to the price range (value area) which is clearing the market?

**Initiating and Responsive Activity**

When looking at a single day's profile, the OTFT's activity can be identified in the form of extremes, range extension, and TPO count. For monitoring the OTFT over longer periods of time, these forms of OTFT buying and selling activity can be classified in terms of their relative strength—the relative aggressiveness of the OTFT over a series of days. Doing so will help in detecting the potential for shifts in the supply-and-demand curves. These three forms of activity are assigned a degree of strength by noting whether the buying and selling activity took place below, in, or above the previous day's value area. The previous day's value area is used as a benchmark because it is the most recent snapshot of a supply and demand curve, and the OTFT is, either consciously or unconsciously, using the previous day as a benchmark for trading in the current day.

The degree of strength assigned to the OTFT's activity is a function of whether the activity is the *typical* or the *perverse* response to price as it deviates from the previous day's value area. That is, when buying activity occurs below the previous day's value area the OTFTs are *responding* in a typical manner to price advertised below value. Similarly, traders are *responding* as one would expect to a price advertisement when selling occurs above the previous day's value area. Therefore, buying below the previous day's value area and selling activity above the previous day's value area are classified as *responsive.* By default then, buying in or above the previous day's value area (and selling in or below) is categorized as *initiating,* because rather than waiting for price to be at an attractive level in relation to the previous day's value area, the OTFT is stepping up to the plate and initiating a trade. Obviously, the initiating is a stronger form of activity because the OTFT is a more aggressive participant in the market. Figure 7.4 illustrates the responsive and initiating activity for soybeans over a two-day period.

**The Long-Term Market Activity Chart**

The OTFT is tracked over a several-day time horizon by extracting buying and selling activity, categorizing it as either initiating or responsive, and plotting it on a ledger called a Long-Term Market Activity (LTMA) chart.[4] The LTMA chart is designed to track and monitor the buying and selling activity of the other time-frame participant over this longer time horizon to determine if the market is facilitating trade in the bigger picture. Careful analysis, used in conjunction with the daily market activity, helps determine if the market is poised for continuation of the trend (auction) or whether it is poised for change. The chart is filled in with information extracted from the daily profiles: namely, the value area, and the buying and selling activity of the OTFT.

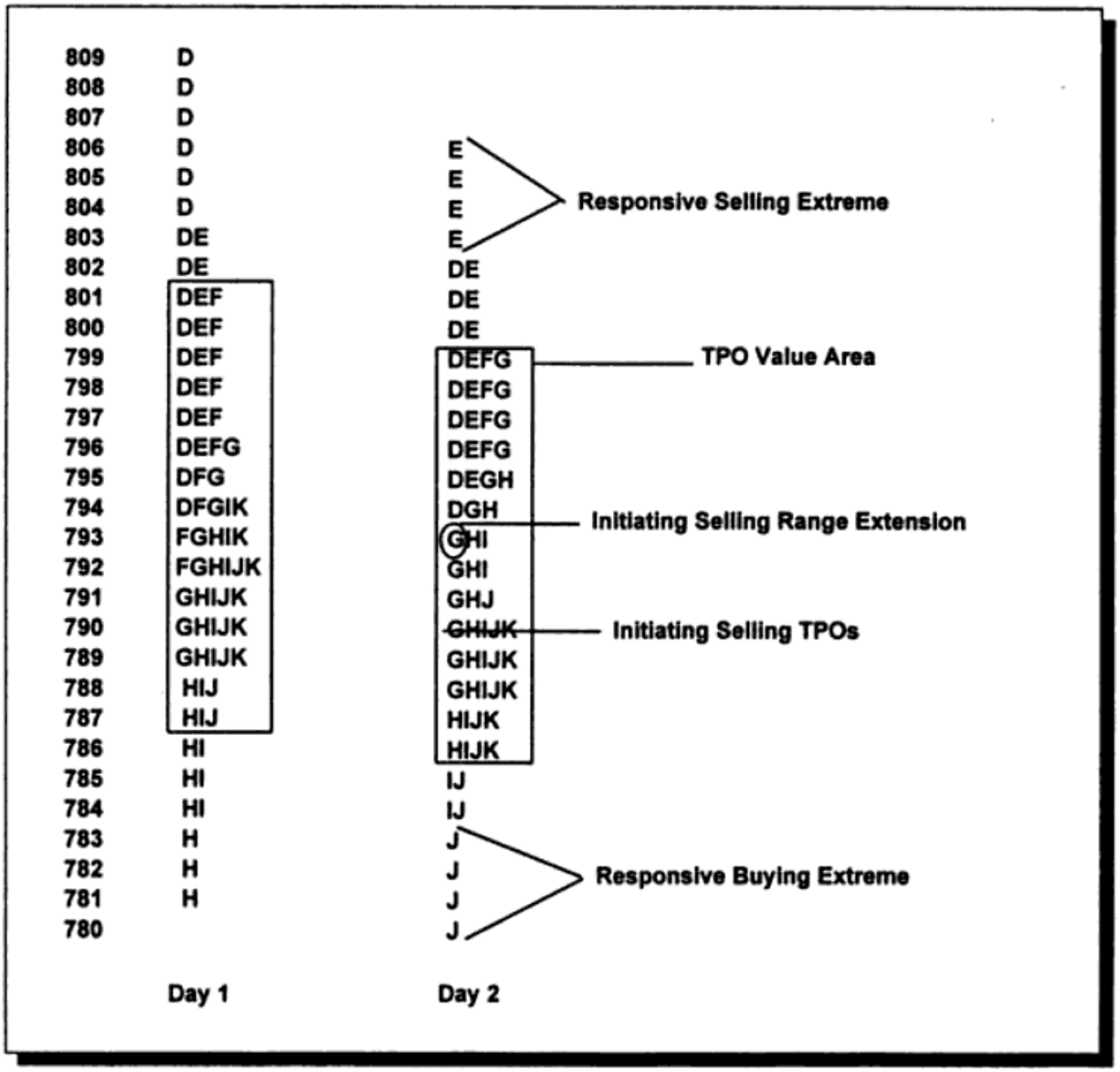



Figure 7.4 Two consecutive days of Profiles for soybeans.

## Building the LTMA Chart

As you can see in Figure 7.5, the LTMA chart is divided in half with spaces for recording selling on the left and spaces for recording buying on the right. There are six columns on each side of the balance sheet; three columns to record the three forms of responsive activity and three to record the initiating activity. In the center of the balance sheet, value areas are drawn in on the vertical price scale. The right-most column can be used for recording volume, open interest, and/or prices at which range extension occurred. The value areas used should be the volume value areas for CBOT traded futures contracts. For non-CBOT instruments use the TPO value area.

As an example of how to track OTFT activity and plot that activity on the LTMA chart, Figure 7.5 records the OTFT from Day 2 in Figure 7.4. Only the activity from Day 2 is actually plotted on the LTMA chart in Figure 7.5. Day 1 provides the reference point for determining whether the activity was initiating or responsive.

To record information from daily profile on the LTMA chart, start with the center of the chart and work out to the sides. First plot the value area as a vertical rectangle alongside the corresponding price range. To keep track of the activity as it accumulates, record the date inside the value area rectangle as shown in Figure 7.5.

On the same line the date is recorded, plot OTFT activity (extremes, range extension, TPO count) as either initiating or responsive for that particular daily profile under the appropriate column headings. To denote the difference in the relative strength of the activity, initiating activity is recorded by darkening in the box and responsive activity by drawing an X in the box.

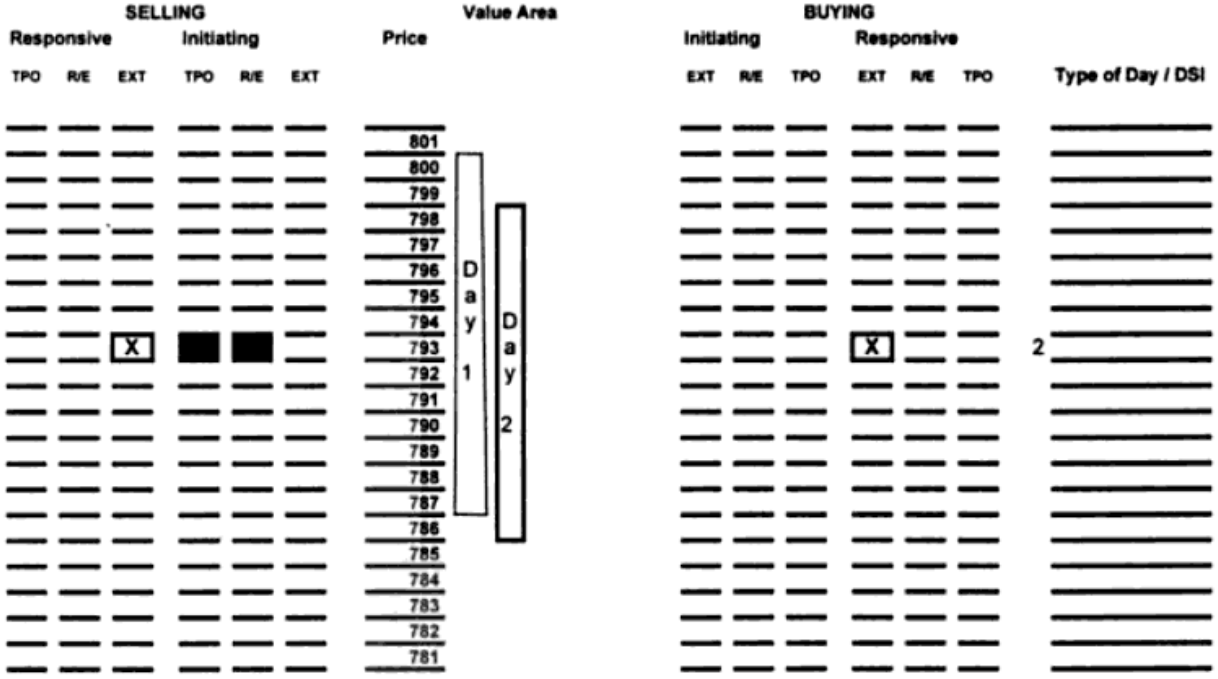



Figure 7.5 How to extract the information from a completed daily Profile and plot that activity on the LTMA chart.

In Chapter 6 we saw that a single day could have up to four forms of OTFT activity. (While a neutral day could technically have five forms, the range extensions cancel each other out.) The days are going to have different mixes of OTFT activity and differing degrees of relative imbalance from whether that activity is initiating or responsive. Before detailing how to use the LTMA chart, two particular combinations of day-market activity need to be introduced: a 3-R day and a 3-1 day. A 3-R has three forms of responsive activity, either all buying or all selling. That is, an extreme, range extension, and the TPO count are all caused by *either* the OTFB *or* the OTPS *and* all three forms are responsive. A 3-1 day is the same in that it has three forms of either buying or selling activity, but differs in that the activity is initiating. Figures 7.6 and 7.7 exemplify a 3-R day and a 3-1 day, respectively.

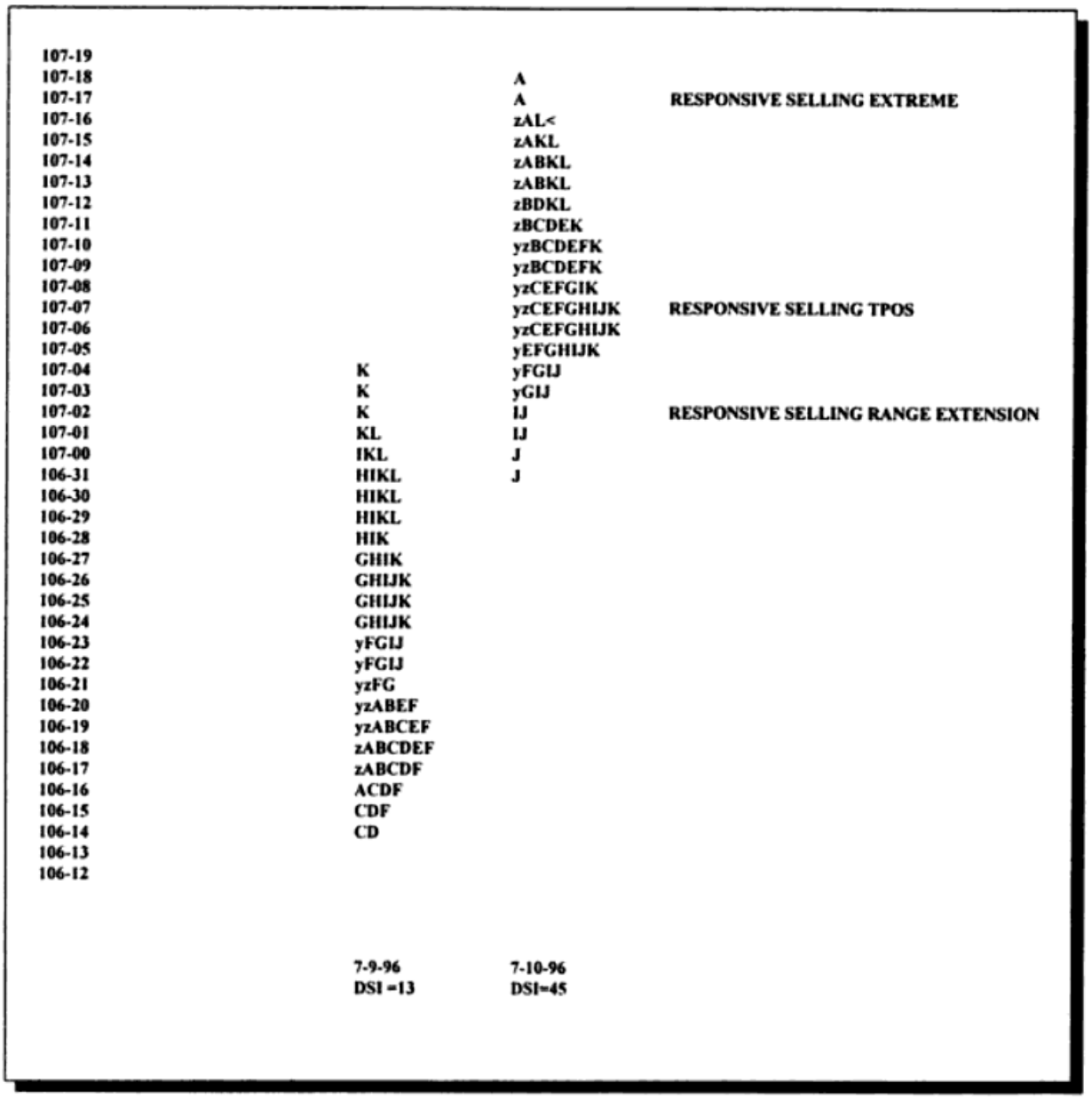



Figure 7.6 An example of a 3-R day. Three forms of responsive selling activity by the speculative element in the market, the OTFT, took place.

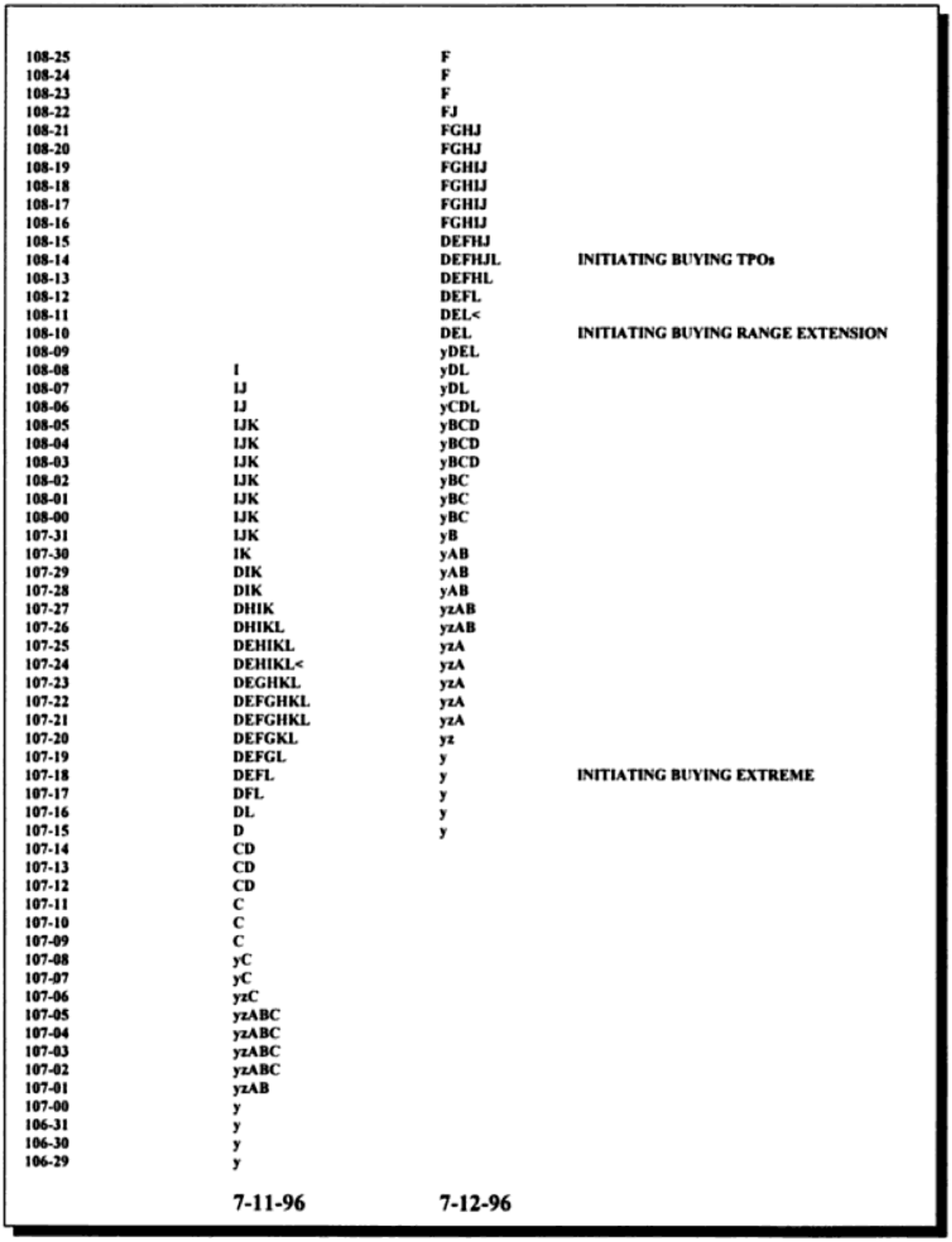



Figure 7.7 An example of a 3-1 day. Three forms of initiating buying activity by the speculative element in the market, the OTFT, took place.

## Using the LTMA Chart

When buying or selling builds up on the LTMA chart, the implication is that price and value will either remain sideways, at worst, or move directionally to shut off the accumulated activity. In the same way that price rotates in dual-auction fashion in the developing profile from a state of balance to imbalance and back again, the market does the same thing over a larger time period. Observing a series of days or weeks demonstrates this movement from states of balance to imbalance in the larger time frame. In the same way that the day's profile unfolds as a function of the market carrying out its purpose of facilitating trade, so does the LTMA chart—it merely does so over a longer period of time.

In an up auction with an uptrend on a daily bar chart, the LTMA chart unfolds in four stages. (The same stages apply for an auction down, just in reverse.) Area 1 is an area of imbalance with the OTFB building in the right-hand side of the chart. The degree of imbalance is a function of the relative number of plots on the right-hand side of the ledger compared to the left and also the amount of initiating activity. Prices move higher to shut off the buying imbalance and advertise for sellers. As those sellers surface and the market comes into balance, the market reaches Area 2, as can be seen on the LTMA chart in Figure 7.8. Conventional bar charts show this as an area of correction and consolidation. Area 3 is a test of the vitality of the uptrend. The test comes at the bottom of the horizontal Area 2; if the buyers reemerge, the market resumes its upward auction with more initiating buying activity, facilitating trade on the way up and advertising for sellers at higher levels. A new LTMA chart can be started at this point, but keep the old one for the first time the market returns to these levels.

Types of activity to watch for which indicate a *failed* test down and the beginning of the next up auction are:

- A 3-1 selling day which does not facilitate trade
- A 3-R buying day which facilitates trade
- A neutral day which closes mid-range or on its highs
- A non-trend day

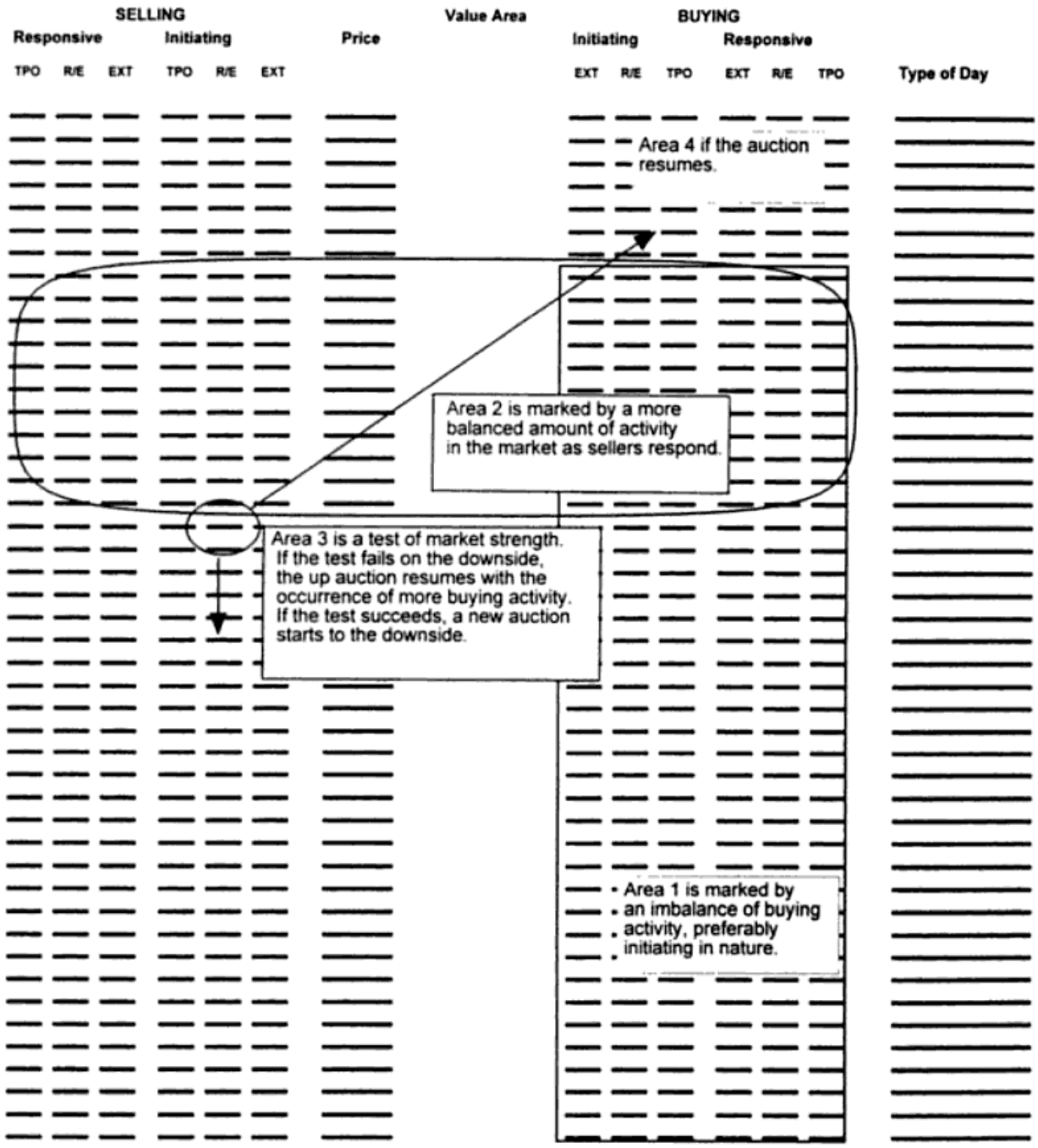



Figure 7.8 The Areas through which the market progresses on the LTMA chart in an up auction. Obviously, the Areas apply "upside-down" for a down auction.

If the test in Area 3 is *successful,* the market will start a new auction down and a new LTMA chart is started. Types of activity to watch for which indicate a *successful* test down and the beginning of the new move down are:

- A trend day, normal day, or normal variation day which facilitates trade. Any of these might be a 3-1 selling day.
- A 3-R buying day which does not facilitate trade.
- A neutral day which closes on its lows.

Conversely, in a down auction on the LTMA, the types of activity which indicate a failed test up are:

- A 3-1 buying day (as previously listed) which does not facilitate trade
- A 3-R selling day which does facilitate trade
- A neutral day which closed in the middle of the range
- A non-trend day

Types of activity to watch for which indicate a successful test down and the beginning of a new auction down are:

- A trend day, normal day, or normal variation day which facilitates trade. Any of these might be a 3-1 buying day.
- A 3-R selling day which does not facilitate trade.
- A neutral day which closes on its highs.

The purpose of the LTMA chart is to place value and market activity in a structure over the bigger picture, so that a single price isn't taken out of context—a single price dipping below a trendline, for instance. The type of market activity, the actual buying and selling, is the important thing to monitor, especially in the test Area-3 and at market turns.

At times you will find yourself keeping two LTMA charts on the same market: one covering a longer time period and the other covering a shorter one. This is a function of trying to determine if the short-term auction is developing into a longer-term auction which would, in effect, negate the longer-term chart you are keeping. If you are in the middle of a LTMA chart which has been in an up auction for several days and the market has a neutral day, you are going to start a new LTMA chart with that neutral day. But you are also going to continue to keep the previous LTMA chart, until the situation defines itself better. There will be more discussion on this later.

# Chapter 8

## The Coherent Market Theory and the Sentiment-Activity Model

We have observed that economics is a social, not a natural, science. Since we cannot accept the market as a given—the way the natural scientist can take his subject matter as a given—we returned to the origins of markets in order to deal with economics in as precise a way in which the subject matter will permit. Only by looking at how and why markets came into being and examining the essentials of what actually goes on in markets, all markets, could we understand the irreducible primary factors influencing market prices: actions of individuals (i.e., actual buying and selling) and those individuals' expectations.

We saw that people exchange in order to improve their material lot and to satisfy their needs and wants—whether in the consumer markets or in the financial markets. Satisfying needs constitutes the basic, normal, routine business conducted in the market, while satisfying wants constitutes the speculative element. Since the financial markets inherently have a large speculative element, the key to monitoring these markets is the speculative transactions, which are predominantly influenced by expectations about the future. Now we have the components we need to monitor the speculative element of the market by filling in our basic equation of:

**Expectations + Transactions = Prices in the future**

The preceding chapters presented the justification for the assertion that the key factors to monitor in the markets are opinions about the future direction of prices, and buying and selling activity (in the wake of the survey and in light of developments which might influence those expectations).

Having asserted that prices are a function of expectations and buying and selling, we investigated methods of gauging these components separately: sentiment surveys and market activity as defined in the Market Profile,® respectively. Since people are at the root of the market, and since prices are determined by a combination of their expectations and transactions, any attempt to understand, interpret, and explain market activity must take both of these factors into account. This chapter combines the components and builds a Model which takes into account the fact that individual decision-makers are responsible for creating the data on which economics, academics, and market analysts rely. Operating on the premise that people are at the root of the market, that the speculative transactions (as opposed to the routine transactions) are the more important influence in financial markets, and that expectations play an inordinately large role in determining the buying and selling of this speculative element, the Model monitors the important elements we have identified in the previous chapters, namely expectations and market activity. The Model also takes into account the other phenomena observed in the market:

The Expectations Curve Effect in response to news
Crowd behavior
that combine to form:
Trends
Reversals of Trends
Trading Ranges

The Model describes the market conditions and likely participant behavior for each of the major states of the market over several time horizons and accurately depicts the major states of the market depending on the varying influences the different mix of the variables are exerting on the market at any given time. Furthermore, the

Model codifies how people already tend to view market action and presents the framework which most people use when they explain what the market is doing and why. This makes the Model useful to both traders and analysts alike.

The Model is intended to serve as a guide to the different terrains of the market because it takes into account that the landscape changes from one day to the next. By focusing on individuals who are making speculative decisions in order to improve their lot, the model remains true to the primary purpose of markets and deals with the subject matter in as precise a manner as possible.

Earlier, I made use of previously published models as points of departure to set up the assertions about the human element in the market and to identify actual buying and selling in the market. Academic theory explains the market and market conditions some of the time, but not all of the time; likewise, REMM explains some behavior, but not all behavior. Since the objective of the book is to develop a fuller picture of the market by drawing on the conclusions of different types of market observers, we adjusted the REMM model and PAM model in order to more accurately reflect (develop) two-way irrationality; panic-fear and mania-hope. We adjusted the S X D curves by dissecting what actually goes on inside those curves.

## The Coherent Market Theory

Here is another model I ran across several years ago which crystallized some of the observations I had made about the markets in action and use it as a point of departure for presenting the Sentiment-Activity Model. In 1990 I read an article in a financial management journal in which the author likened the behavior of stock market investors to the behavior of the molecules in a bar of heated iron. At the time it seemed to be another example of economists trying to equate the social science of economics with the natural science of physics. Despite the initial premise, the article had some insights into categorizing certain states of the market. In keeping with the theme of *The Blind Men and the Elephant*—that sometimes there is an element of truth in a statement regardless of how erroneous it appears on the surface—some of the article's insights are presented here to help sharpen the developing image of the market.

The article, *The Coherent Market Hypothesis* by Tonis Vaga, was published in the *Financial Analysts Journal* and described the "theoretical basis and practical indicators of coherent markets," and concluded "that both technical and fundamental analysis can add real value to the investment decision-making process."[1] Vaga concluded that rather than merely following a passive strategy of buying and holding stocks, benefits accrued to the investor who incorporated technical and fundamental analysis in the decision-making process.

A coherent market is one in which the risk-reward ratio actually becomes inverted. In other words, a coherent market is a trending market; a low risk-low reward exists in trending markets. Confining his analysis to the stock market and drawing extensively from research by Dr. Martin Zweig, Vaga built a model which categorized Federal Reserve Monetary policy as either supportive of or curtailing economic growth. He called this variable the Fundamental Bias and used a 10-day advance-decline ratio of greater than 2 percent as a measure of crowd behavior. Examining the

data over a period of decades, Vaga analyzed total returns in the stock markets and presented the results of his research in the formula in Figure 8.1 and the diagram in Figure 8.2. (I must confess a preference for the diagram.)

$$f(q) = c\, Q^{-1}(q) \exp\{2 \int_{-1/2}^{q} [K(y)/Q(y)]dy\}$$

Figure 8.1 The mathematical formula summarizing Vaga's "model and controlling parameters"

Figure 8.2 presents a snapshot of the different *major states* in the stock market. While Vaga was looking at total stock market returns over periods of decades, the Sentiment-Activity Model presented in this chapter will look at futures prices over a period of days, weeks, and months, and use sentiment numbers for an indication of crowd behavior. The Model also takes issue with the notion that market turns are *necessarily* high risk.

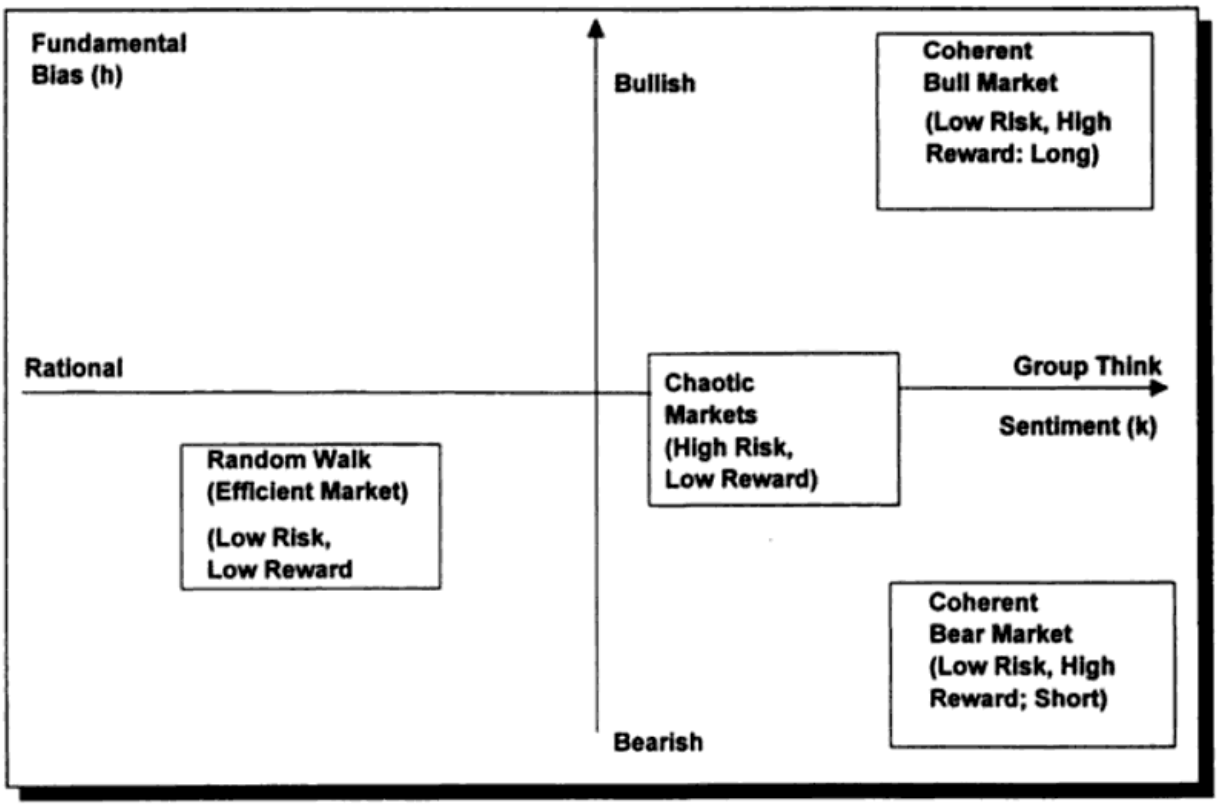



Figure 8.2 Major market states in the stock market. (Reprinted with permission from *Financial Analysts Journal,* November/December 1990. Copyright 1990, Association for Investment Management and Research, Charlottesville, VA. All Rights Reserved.)

As we have already learned, a clearer understanding of how markets work and what makes price move will come through, by concentrating on the irreducible primaries. Therefore, the Sentiment-Activity Model focuses on people as the basic component of the markets—their expectations and tendencies toward irrationality, and their actions. Combining these key factors into a single diagram, the Model illustrates how the interaction among them creates the three major states of the markets: trading ranges, trends, and reversals of trends. There is a general set of circumstances with regard to the relationship between expectations and transactions which sets up the conditions for the market to trade in a range, another set for the market to trend, and still another set for it to reverse course and begin trending in the opposite direction. As

noted, these circumstances can only be cited in general terms because economics is art, not science. Figure 8.3 illustrates how expectations and transactions combine to form the three major states of the market.

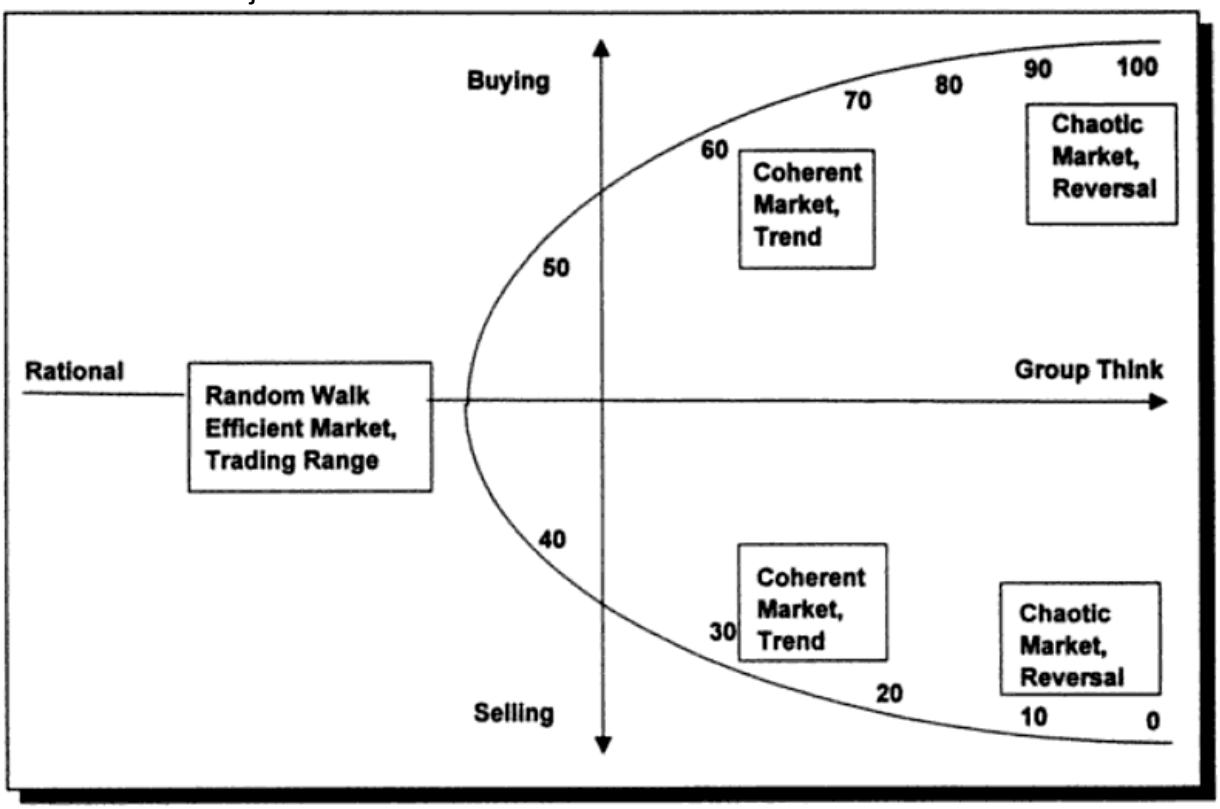



Figure 8.3 The Sentiment-Activity Model

Let's look at the Model in more detail here. Then, in Chapter 9 we will deal with the subject matter only in as precise a manner as it will permit and answer such critical questions as: What are the likely actions of the participants to be in each state? What will the combination of opinion and activity be as market moves from one state to another?

## Constructing the Sentiment-Activity Model

In Figure 8.3, the horizontal axis plots the mental state of the market and the vertical axis plots the state of buying and selling activity in the market. The horizontal axis indicates the degree to which the market is being influenced by crowd behavior or groupthink. This *groupthink* is defined as excessive optimism or pessimism, which was previously described as excessive hope or fear—the two primary emotional responses to the uncertain future.

Expectations of future price direction (i.e., opinions) find their expression in the consensus numbers; therefore, they also express the degree to which the market is in a crowd state. The Model superimposes market sentiment numbers of the percentage of market participants who are bullish over the axes in a parabola in order to reflect the (Laffer Curve Effect) Expectations Curve Effect of the market's predisposition to interpret the news. Is bearish news being interpreted bullishly? Is bearish news being ignored altogether? Earlier we covered the phenomenon conceptually, now we have a way visually to see it and see how it interacts with the other driving influences in the market.

The vertical axis registers market activity vis-à-vis buying and selling as defined by the Market Profile®, where buying is going up the axis and selling is going down. Buying and selling are not separated by the horizontal axis. Rather, the activity takes place up and down the axis. The importance of this distinction will become apparent shortly.

When market activity combines with strong crowd behavior (expectations) in the same direction of market activity, the market reinforces itself and trends; the opinion of participants is matched by their activity in the market. When opinion is matched with action, a coherent market unfolds in the form of a bull or bear trend in prices. As long as participants' actions are in concert with their expectations, the market will continue in the prevailing direction. When the market has strong expectations (extreme sentiment readings), yet participant actions continue to materialize in the market in the form of Market Profile® activity, the market will continue directionally. However, when the market has *strong* expectations of price continuing in the direction it has been trending but market activity goes *opposite* those expectations, the market is in a chaotic state and reverses course.

These assertions are true over all time horizons. However, different tools are used to apply the model to the various horizons.

The Sentiment-Activity Model presents more of a *movie,* to continue the analogy, than a *snapshot* of the market states. The Market Profile® turns the snapshot of the supply-and-demand curve into a motion picture of OTFT activity during the entire day's trading session. The LTMA chart captures the fluid nature of the (otherwise static) shifts in the supply-and-demand curves. Similarly, the Sentiment-Activity Model captures the *dynamics* of the movements between the three different *states* of the market.

## Major States of the Market

Broadly speaking, then, at any given time the market is either in a trading range, in a trend, or in a reversal of a trend. These major conditions, or major states of the market, are the starting point for understanding and applying the model.

### Random Walk Market

When expectations are not extreme but instead are more evenly balanced, the market is in a *rational state:* Supply and demand are roughly in balance and price movements tend to mimic a random walk. The market is in a Random Walk state when

- there is little or no degree of buying or selling imbalance on the Profile or LTMA chart and sentiment numbers are in the 40 percent to 60 percent range, or
- there is some degree of imbalance but the sentiment numbers are in the 40 percent to 60 percent range. In this case, expectations are insufficient to spark the groupthink necessary to create a trend, thus a trading range prevails.

### Coherent Market

The market is in a Coherent state when there is a buying or selling imbalance and the sentiment numbers begin to move along the parabola in the direction of the activity imbalance. These are the requisite conditions for a trend to develop. Specifically, if an imbalance of buying activity is being registered on the LTMA chart and the consensus numbers start moving from an extreme reading up the parabola, an up-trend is forming. Conversely, if the activity imbalance is selling and the consensus numbers start moving down the parabola, a down-trend is forming.

### Chaotic Market

The market is in a Chaotic state when the sentiment is registering extreme readings, but the market activity starts to go opposite the expected direction of prices; "expected" is defined by the sentiment numbers. Market participants' actions are not consistent with their expectations stated in the sentiment survey. This is a situation in which the majority is leaning one way, yet market activity—transactions by the speculative element—is no longer reinforcing the trend which has prevailed. This will cause traders to head for the exits all at once, causing a sharp reversal in prices. These are the situations which confound analysts, reporters, and traders alike. The news was bullish, most everyone was of the opinion that prices were headed higher, yet the market comes completely unglued.

## Rational versus Irrational Market States

The phenomenon of markets being in either a rational state or varying degrees of irrational states is the nature of auction markets. For example, consider the following excerpts from a *Wall Street journal* article about the art auction market, again taken completely at random; it appeared the day this section of the book was being written.

**A Healthy, Wealthy and Wise Art Market**

> This season's impressionist/modern sales were a model of balance, between supply and demand, *confidence and caution* .... All of these sales illustrated a strong, *rational* art market.... If history has taught us anything, we know that something could cause prices to rise steeply; we could even get another *speculative frenzy.* Most dealers believe that *reason* will prevail—this time: "People may be willing to pay record prices again," said _____. "But it will never be like 1989."[2] (Emphasis added)

The *Journal* article describes the prevailing state of the market that spring as rational, evenly balanced between confidence and caution. But it also describes the state of the market in 1989 when a speculative frenzy gripped market participants, causing prices to skyrocket. To wit, knowing where along the continuum of rational to irrational prevailing conditions lie for any given market goes a long way toward understanding subsequent price action and the potential for shifts in the supply-and-demand curves.

The Model provides a framework for better understanding what goes on in the market and codifies what people already do in the market. To demonstrate, consider the following:

**Uncertain Money Managers Fuel Wall Street Volatility**

> NEW YORK, May 10 (Reuter)—Wall Street portfolio managers are under pressure to put money to work *in a market devoid of certainty,* and the result has been a wild ride for stocks.
>
> Money managers are adrift in an economic environment where there is *no consensus.*
>
> There is no *consensus* only polarized views.
>
> "I think there is a tendency to bring a lot of money into the market at the drop of a hat and to pull money out of the market just as quickly so you are nor *caught trading on yesterday's opinion.*
>
> "What you have is a market characterized by *tow long-term conviction,* so people are capitalizing on short-term moves," _____ said. "When you get a lot of short-term traders dominating the arena, you get wide swings."[3] (Emphasis added)

There is no way for people to be certain about which way prices are going to go, so any statements about "uncertain participants," "uncertainty," "uncertain future," etc., is irrelevant. But what *is* relevant is what people expect prices to do. What is being described in so many words in the article above is that until there is a reasonable degree of consensus in expectations of the future direction of prices in the market, the market is not going anywhere. The speculative element of the market, the OTFT, is not entering the market in such a way that would shift the supply and demand curves and move value. If the OTFT is operating to any significant extent at all, it is only at the edges of the prevailing trading range.

**Dollar Advances; Market's Direction Remains Uncertain**

> NEW YORK—The dollar edged higher against most other major currencies yesterday, but traders are *unsure of the market's direction,* particularly in terms of the U.S. and German currencies.
>
> "There's a real *lack of consensus,"* said _____, senior currency analyst at _____ in New York.[4] (Emphasis added)

We already know that expectations must be matched with actual transactions in order for the market to move. If people don't act on the expectations, the market isn't going anywhere. To illustrate these *dynamics,* here is a story from the financial press chosen at random, reported the day this part of the book was being written. But a casual look at articles in the financial press on any day will reveal the same phenomenon.

> "After the big rally on Friday, a lot of investors are sitting and waiting for confirmation of that move before doing anything else," _____ said. That's particularly true of European and Asian investors in the Treasury market, he said, who were heavy buyers during the rally but now seek signs that their bullishness was justified.[5]
>
> "The bias in this market right now is to the upside," said a government bond trader at one firm. "'But the question is will people be rewarded for their bullishness? I don't know."[6]

By plotting the market on the Curve the trader is positioned to begin to detect the subtle changes which lead to the seemingly elusive shifts in the supply-and-demand curves. The Sentiment-Activity Model also enables the trader to plot the market on the Expectations Curve and begin to get a sense of which way the market is going to interpret news developments.

We have all heard the admonition: "When interpreting fundamental news, the most important thing is how the market reacts to the news, not how you as an individual think it ought to react." But now, instead of relying on merely knee-jerk price reaction to news developments, the trader can use the Model, and actual buying and selling from the OTFT to determine how to interpret the news.

Recalling how the market responds to the news either *typically* or *perversely,* when expectations are strong enough *and* backed-up by action by market participants, the market will not do what the textbook says it should. When expectations are strong (i.e., excessive) and activity which is opposite of those expectations materializes in the market, traders, analysts, and reporters will attribute the seemingly perverse price movement to the market having already discounted the news or they will chalk it up to that oft-cited cliche: "Buy the rumor, sell the fact." That's great in retrospect—and economics gets to claim credit for explaining the move after the fact with such principles as the market being a discounting mechanism. However, that is little solace to a trader who lost money in such a move. The trader needs to have an inkling, if not a full-blown

indication, that the market is predisposed to interpret news in such a manner at any given point in time.

When the market is plotted on the upper portion of the Expectations Curve in the model, participants are likely to emphasize bullish news and interpret bearish news in a bullish manner if not ignoring it altogether. A similar, though mirror image, situation prevails when the market is plotted along the lower portion of the Curve. When the market is in the Random Walk section of the Curve, the relative evenhandedness of expectations tends to make prices jump around with every news item that is released. The market latches into the item and while prices may move very quickly, the market tends to remain confined to a trading range because the expectations component is insufficient to push prices out of the range. In short, news tends to be interpreted in a "typical" textbook fashion in the middle of the Curve, yet interpreted in a "perverse" textbook manner in the upper and lower regions of the Curve.

## Registering Sentiment

Sentiment surveys are conducted by several firms, and the Sentiment-Activity Model uses two: the Bullish Consensus (BC) published by Market Vane in Pasadena, CA and the Daily Sentiment Index (DSI) published by MBH Commodity Advisors in Northbrook, IL. Specific information on the companies is listed in the Appendix.

Both BC and DSI surveys are reported at 4:00 p.m. Central Time and reflect market sentiment as of the close that day. This provides an accurate reading of prevailing market sentiment for use in the following trading session.

The two surveys measure slightly different aspects of the market. As previously noted, the BC is a survey of market advisors who are making trading recommendations to their substantial client base. Market Vane calls hotlines, takes newsletters, and talks to brokerage firms to compile the BC.

MBH calls 100 small, nonprofessional traders at the end of each trading day and compiles its DSI based on what percentage of those 100 are bullish or bearish on prices in each of the markets. The DSI is directly measuring the purely speculative element of small traders in the market, while BC is measuring it indirectly because its survey audience is more of a professional audience who, in turn, influences a multitude of market participants. Each survey in its own way gives an accurate reflection of speculative element's expectations of future price direction.

Crowd behavior, or groupthink, was defined as excessive optimism or pessimism, which is described as excessive hope or fear— the two primary emotional responses to the uncertain future. Over the years, these surveys have proven to be the best gauges of crowd behavior. Now let's see how the surveys are incorporated into the Senti ment-Activity Model before looking at several markets through the Model's parameters.

# Chapter 9

## Application of the Sentiment-Activity Model

The Sentiment-Activity Model is a visual aid presenting a concrete illustration of the interaction between expectations and transactions in determining prices in the future. The phenomenon conveyed in the Model occurs over all time horizons. Depending on whether one is a day-trader, two- to three-day swing trader, or even a multi-week trend follower, data from the appropriate time horizon can be monitored to determine what state the market is in and when it is moving from one state to another. It follows that different strategies and different data are relied upon for making trades, depending on the traders' time horizon.

This chapter presents the general observations, assertions, and specific rules for applying the Model to both analysis and trading. However, there is a subtle difference between analysis and trading which requires some elaboration before going further. Analysis can be compared to describing how to ride the elephant; trading is like riding the elephant. The Model is not going to predict and forecast each and every wiggle and squiggle in the market, but it will identify the underlying conditions of the market in terms of expectations of future price movements and speculative transactions. From this you will be better able to ascertain whether the market is in a position to remain in a trading range, continue a trend, or reverse the course of one trend and start another. The goal is to identify low-risk opportunities for entering the market and, just as importantly, to identify the higher-risk opportunities so that they can be avoided. I have maintained throughout the book that all markets are basically the same. Running a profitable business cannot be automated; it takes decision-making and management. Similarly, running a profitable trading account requires decision-making and management. Judgment is called for in both arenas, so application of the Model is not going to be presented as, nor can it be constructed as, a "computerizable" trading system.

### General Observations

The single, overriding factor influencing price movements in the markets is transactions by the *speculative element* of the market which by definition are dictated by expectations. Given this premise, certain assertions can be logically deduced and certain observations can be made by overlaying graphs of expectations, price movements, and the LTMA chart. Taken together, a set of rules can be devised which will enable the trader to capitalize on this most essential characteristic of the markets: That what people expect price to do, combined with their subsequent transactional activity, determines what prices ultimately do. Both aspects are equally important.

Based on the primacy of the equation Expectations + Transactions = Prices in the Future, and given the circular, reflexive interaction between these three elements, certain conclusions can be drawn; other statements can also be asserted with regard to what constitutes trading ranges, trends, and reversals of trends, and how to detect movements from one state to another. These will be addressed in this chapter. The remaining chapters use examples from the markets to substantiate these conclusions and assertions, and to demonstrate how to use the Model to analyze and trade the markets.

## Tendency for Expectations to Extrapolate and Grow

Perhaps the most crucial observation is the general tendency for expectations to get more bullish as prices rally, and more bearish as prices break. Built into people's expectations of future price direction is the tendency to extrapolate into the future the direction price has recently been going. When prices start to rally (or break), there is an assumption that the market is going to trend. The more and/or the longer prices move in one direction, the more the natural human emotional responses to the uncertainty of the future, i.e., hope and fear, will influence participant decision-making. As hope or fear reach excessive levels the market becomes a product of crowd behavior, capable of pushing even further in the direction it has been going and simultaneously becoming vulnerable to reversal.

Figure 9.1 illustrates this tendency for expectations, as expressed by the sentiment surveys, to get more bullish as prices go higher and to get more bearish as prices go lower. Notice also that this is true for both the short time frame as measured by the DSI, as well as for the longer time frame as measured by the BC.

The format of this chart will be used often throughout the remainder of the book. The familiar open, high, low, close bar chart will be complemented with a line graph chart of the DSI and/or BC sentiment readings placed directly underneath. As you work through the other examples and charts in the rest of the book, note the pervasiveness of this tendency for high correlation between price movements and sentiment readings.

The phenomenon is not confined solely to sentiment surveys; it is easily observable in surveys because people are systematically being asked about their expectations and a percentage of respondents can be expressed in numerical terms. But the phenomenon is a general human tendency in response to the uncertain future. Consider the proclivity for analysts to extrapolate recent market trends when developing their forecasts and, just as important, the tendency to change those forecasts as the markets move.

In early 1996, as the first pages of this book were being written, interest rates shot up despite the Federal Reserve having just cut interest rates several times. Reuters publishes a monthly survey of Wall Street economists and analysts; during this time period with each monthly survey these economists and analysts revised their forecasts from the previous month to reflect the new, higher-rate environment. Never mind for the minute that these same economists were quoted in the December 28, 1995, Reuters survey as saying, "We think yields will *continue* to move lower in the first quarter of 1996 . . ." (Emphasis added). The point is that when yields were *trending* lower, analysts were expecting them to *continue* lower. When rates began *trending* higher, the April survey said, "With their predictions up by 20 to 50 basis points over last month's poll. ..." Clearly, as the market pushed interest rates higher, economists and analysts changed their forecasts for interest rates in the direction of the recent market activity.

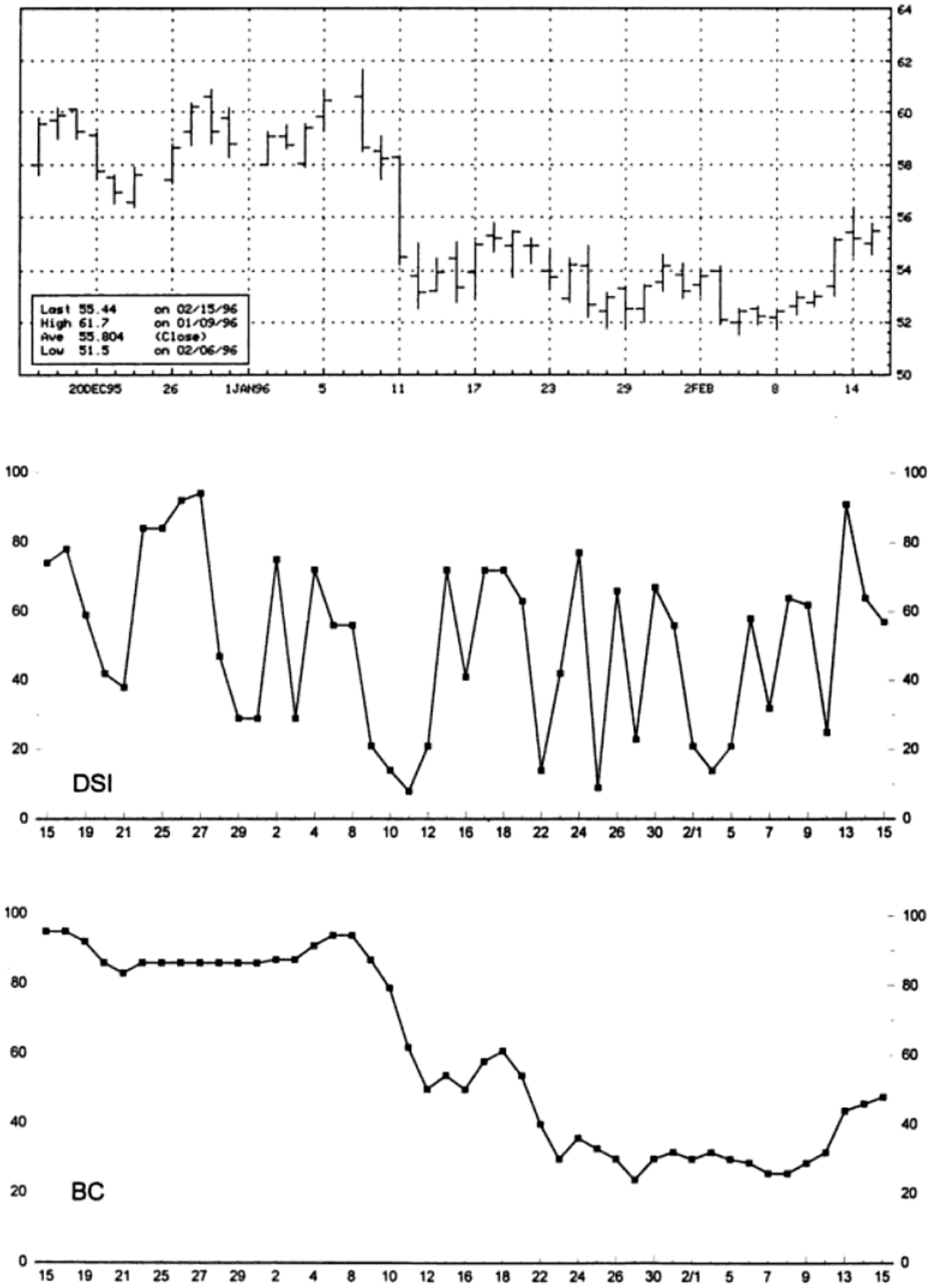



Figure 9:1 Daily continuation bar chart, DSI, and BC for Gasoline 12/15/95 to 2/15/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

Take another example. On July 30, 1996, a major Wall Street firm revised its six-month forecast for the dollar/yen rate from 116 to 106. But look at Figure 9.2 and see that the revision came immediately on the heels of a sharp reversal in the daily chart. The dollar had been trending higher and the analyst at this firm, as all people are wont to do, extrapolated the recent past and projected it into the future. Then, *after* the market reversed the trend, the analyst revises the forecast to reflect the new move in prices.

This tendency for expectations to intensify is pervasive wherever the human element is involved. Consider the data presented in Figure 9.3, again taken completely at random. This trio of charts came across the fax on the day this chapter was being written. It, as its sender noted, "sandwiches about 25 years of GDP data (quarterly changes) between the consumer confidence and expectations from the University of Michigan." Look at the chart carefully. As the economy improved vis-à-vis the changes in Gross Domestic Product (GDP), consumer expectations and consumer sentiment also improved. Moreover, to the degree that the economy's improvement increased, expectations for future improvement also increased. So the phenomenon of the tendency for expectations to intensify even evidences itself in this chart which covers a twenty-five year span of data on what today is a $7 trillion-per-year economy, and where consumers are responsible for two-thirds of that activity.


Figure 9.2 A major Wall Street firm revised its six-month forecast for dollar/yen down from 116.00 to 106.00 *after* the market sold off. (Source: Bloomberg Financial Markets.)

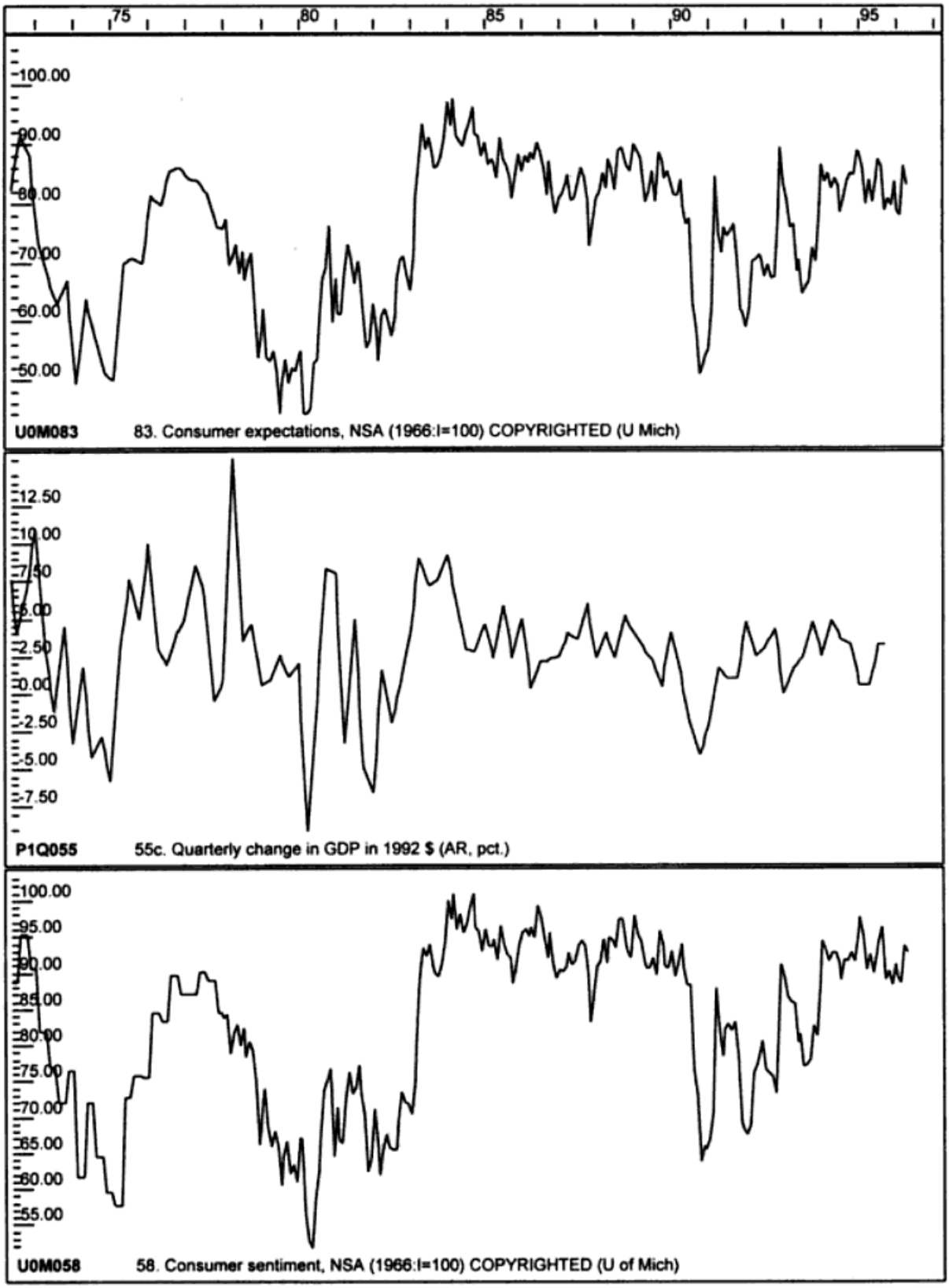



Figure 9.3 University of Michigan consumer expectations versus quarterly change in GDP versus University of Michigan consumer confidence. (Sources: Global Exposure, Los Angeles, CA, and Pegasus Econometric Group, New York, NY)

## Extremes in the BC and DSI Can Be Relative

As Hadady points out, it is wise to know what the extreme readings in bullishness and bearishness have been over the previous year. If those readings are 65 percent and 25 percent, respectively, then it is unrealistic to demand the market to hit the widely accepted textbook readings of 80 percent or 20 percent before labeling sentiment as extreme.

The concept of extreme sentiment being relative also applies to the DSI, though on a shorter time horizon since the DSI is a more volatile survey. In a correction during a bear market (perhaps with a duration of only days or weeks) the DSI may not reach the absolute nominal excessive readings of 80 percent (or 20 percent in a correction in a bull market). Rather, it may only come close, registering in the 70 to 79 percent range (or 20 to 29 percent in a correction in a bull market). This will be discussed and illustrated in more detail shortly.

One of the precepts of Hadady's *Contrary Opinion* in terms of applying the sentiment readings to the markets is that after reaching an extreme, the sentiment numbers often revert only to the mid-range 50 percent area before resuming the original trend. But since the market doesn't always stop at that 50 percent level and does not always resume the original trend, but instead continues in the new trend direction, it would, needless to say, be helpful to have an idea of which of these two events is the more likely to happen. The Model helps make this determination. By plotting both the BC and the DSI under the daily bar chart and monitoring the market for buying and selling via the Profile, the trader is in a position to *arbitrage,* so to speak, the two surveys.

Also on the topic of relativity, note that in protracted bull or bear markets the 50 percent level in the BC may actually constitute an *extreme* reading in sentiment. That is, in an extended bear market the BC may fluctuate between 20 percent and 50 percent. Corrections in the bear market are unable to get more than 50 percent or so of the participants bullish on the market. Lo and behold, the market resumes its bear trend shortly after hitting that 50 percent level; usually on an appropriately extreme level in the DSI and when selling activity materializes in the face of these readings. Technically speaking, that 50 percent level constitutes an extreme reading given the circumstances. In market parlance, the 50 percent area often constitutes support in a bull market and resistance in a bear market.

## The Crowd Is Not Always Wrong

Extreme sentiment readings alone do not automatically make a market turn, nor do they in and of themselves constitute a reason for taking a contrarian position in the market. Extreme readings in the BC numbers can and do persist for extended periods of time without the market reversing course, just as other market indicators such as valuations and the Relative Strength Index can register extremes for extended periods of time without the market reversing. It is true that the market sometimes immediately reverses the trend as soon as an extreme sentiment reading is registered, thus establishing the dictum that the "crowd is always wrong." However, at other times the market stays in the same price range, refusing to reverse; still other times the market will continue to move in the same direction despite the extreme readings. Obviously, the trick is to discern which of these situations is likely to happen.

Let's look at the bullish case for illustration (the opposite process applies in the bearish case). Indiscriminately selling short when the sentiment reading is 80 percent or 90 percent can bring a great deal of frustration and financial pain to the trader. What's happening is that despite the extreme sentiment, at a minimum no selling

activity materializes and possibly even buying activity continues to enter the market, thus confirming and possibly increasing bullish sentiment.

As long as expectations are being coupled with buying activity, or at least not being obstructed by selling, the market will continue to trend higher. Only when selling activity by the OTFT materializes, as opposed to merely lower prices, will the market be subject to a reversal. When that happens, someone in the OTFT category is selling; this can spark an avalanche of similar activity by other traders as stop loss orders are triggered or general nervousness overwhelms the market. Traders are no longer supporting their expectations with the appropriate activity. Figure 9.4 illustrates how extreme bullish readings in the BC by themselves do not bring about a reversal in the market; Figure 9.5 illustrates the same phenomenon with extreme bearish readings.

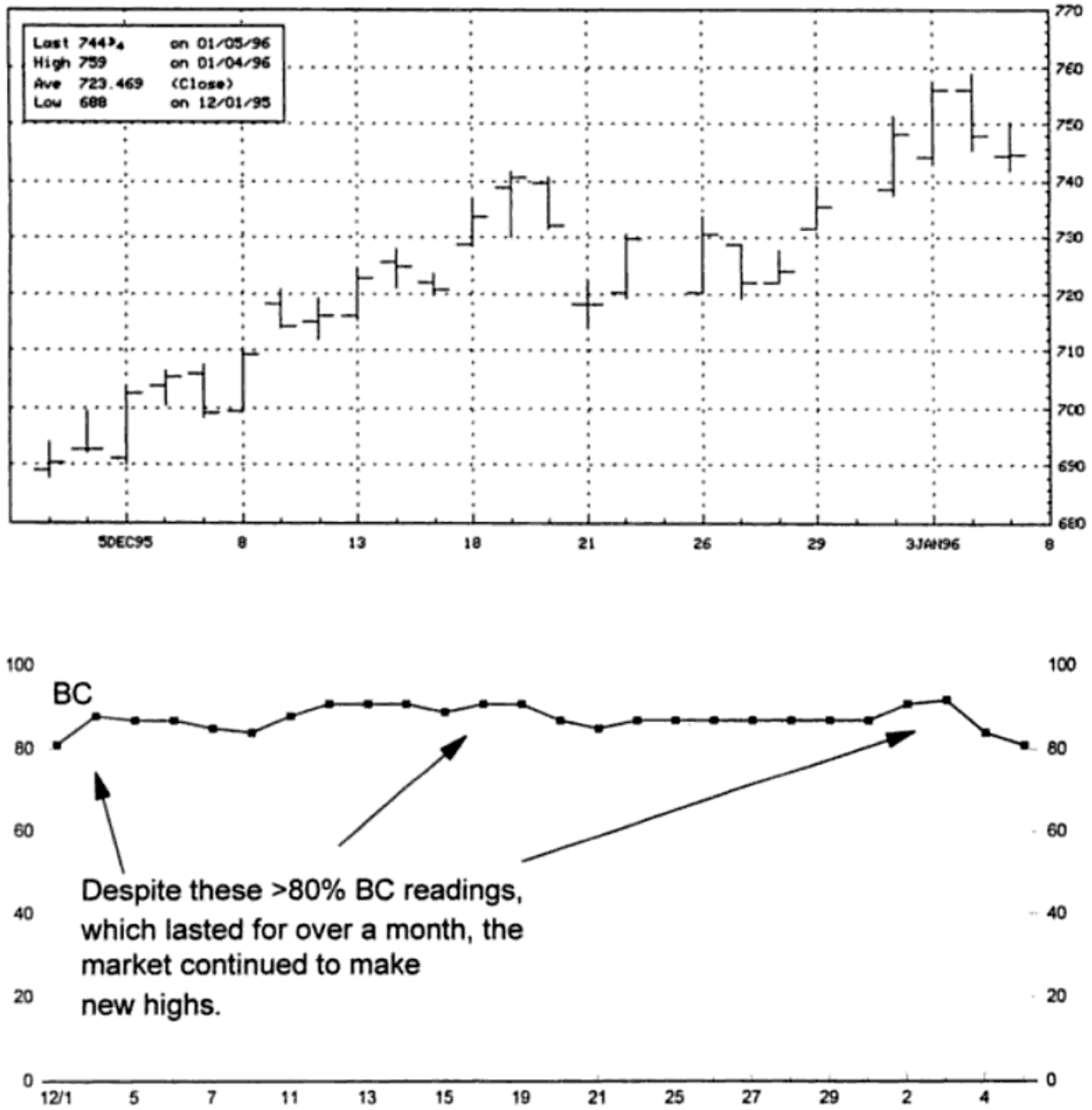



Figure 9.4 Persistent excessive bullish readings in the BC for January soybeans 12/1/95 to 1/5/96. (Sources: Bloomberg Financial Markets, Market Vane.)

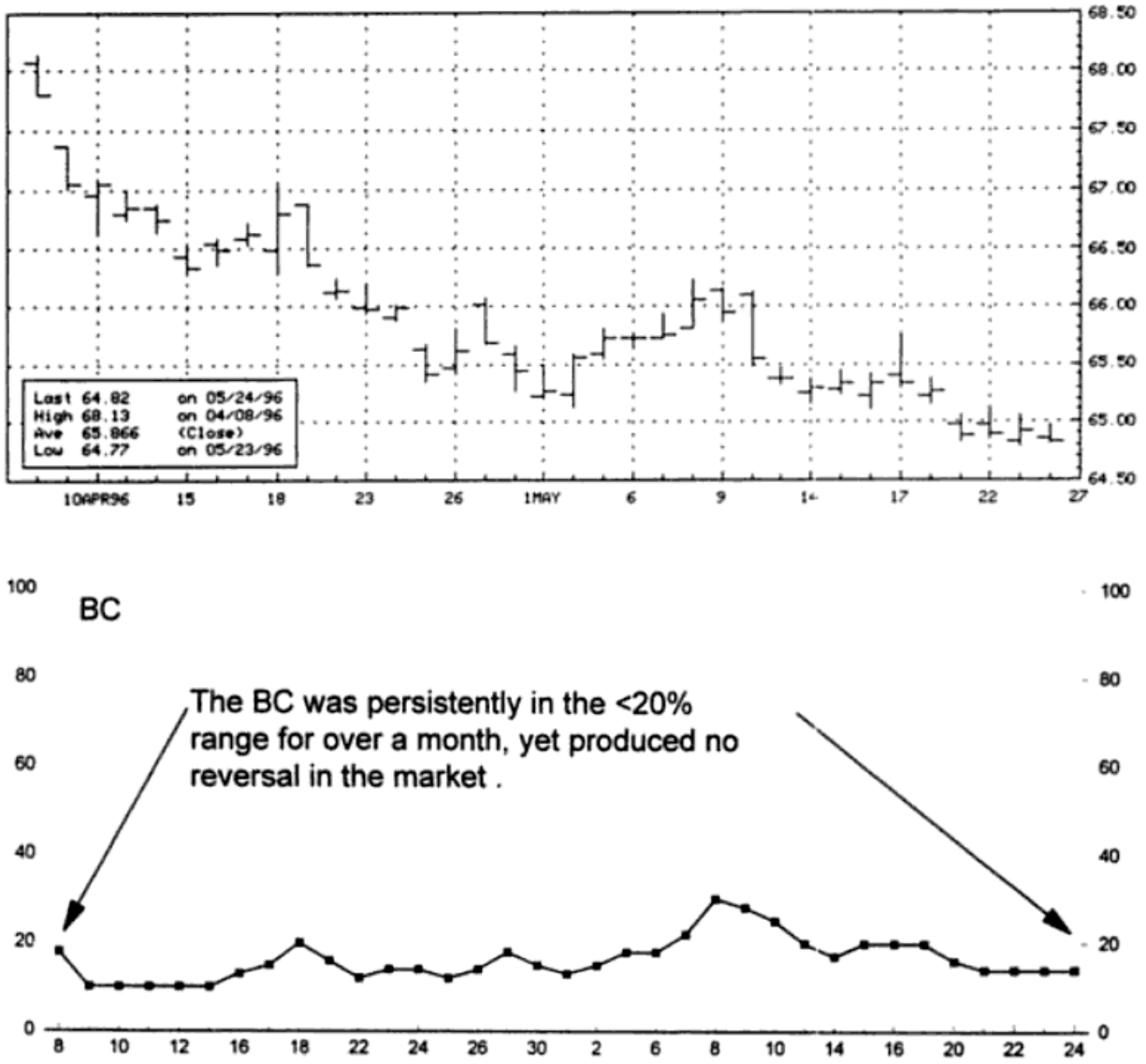



Figure 9.5 Persistent excessive bearish readings in the BC for June DM 3/29/96 to 5/1/96. (Sources: Bloomberg Financial Markets, Market Vane.)

## Trading the Parabola

While it is true that extreme readings in sentiment cannot continue indefinitely and often mark a turning point in the market, extreme readings alone are not enough to justify fading the prevailing opinion. Rather, it is only prudent to take position against the consensus when market activity opposite prevailing expectations materializes. The rest of the time it behooves the trader to trade *with* the consensus, for it is the crowd's entry into the market which enables a trend to develop in the first place. But a starting point must be defined so that "with the consensus" is not arbitrarily selected in the middle of a market move.

In this regard, it is important to realize that a trend starts with a single tick in the opposite direction of the previous trend. Usually, a trend is neither recognized nor labeled as such until after the market has moved in one direction for a period of time. While it is obviously difficult to know which tick is going to be the beginning of a new trend in the opposite direction of the prevailing trend, the truth remains. Extreme bearishness coupled with buying activity marks the beginning of a bull trend. Obversely, extreme bullishness coupled with selling activity triggers the start of a bear trend. What this means is that it is impossible to study trends without simultaneously

studying reversals; the two are intricately linked to each other. This concept is true for all time horizons. Invariably, there are going to be countervailing trends at work simultaneously in the market; a short-term bull trend will run smack into an intermediate-term bear trend and vice versa. However, the guiding principles of combining expectations and activity are the same across the time horizons.

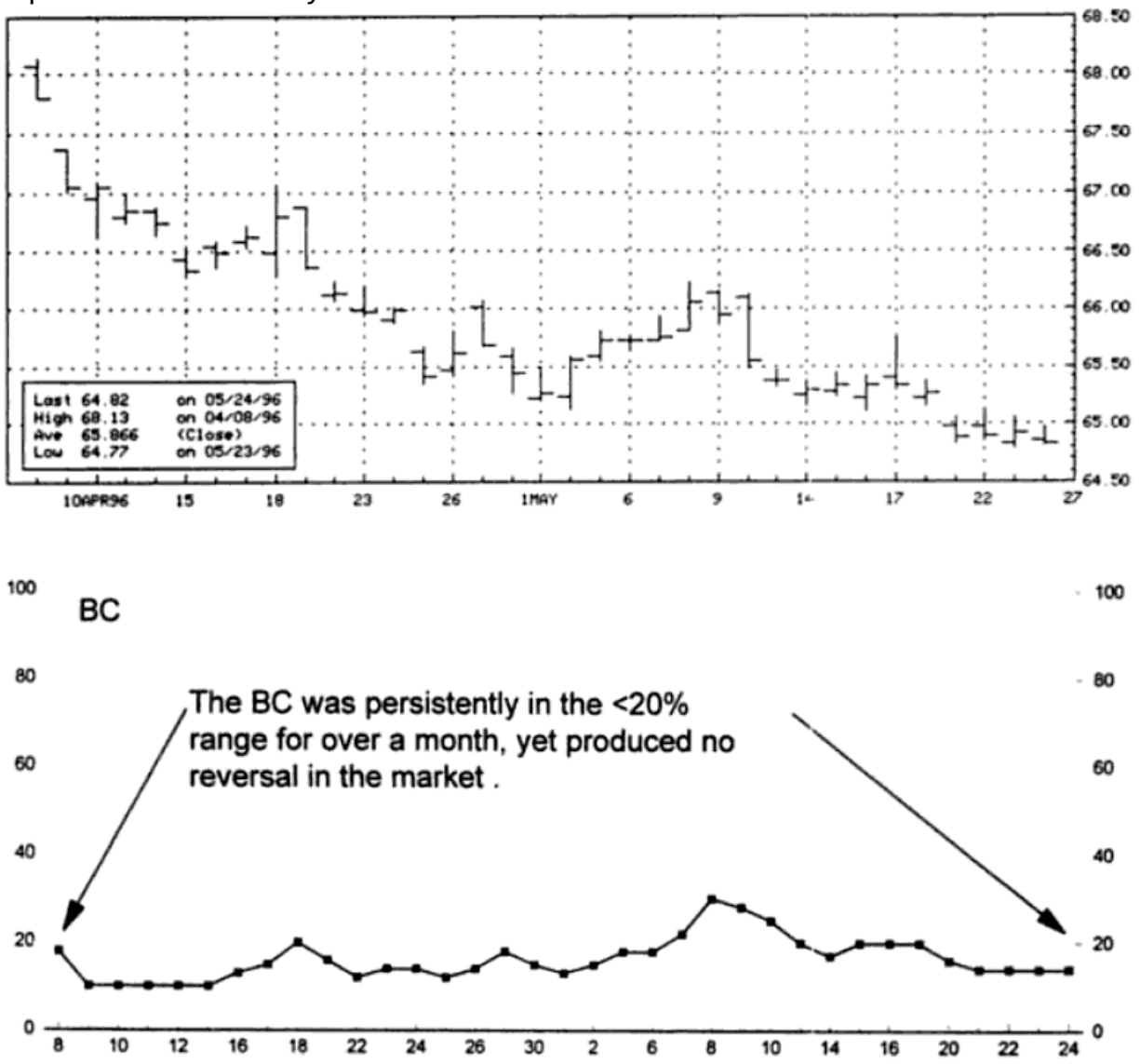



Figure 9.5 Persistent excessive bearish readings in the BC for June DM 3/29/96 to 5/1/96. (Sources: Bloomberg Financial Markets, Market Vane.)

Compare the situations of extreme sentiment just mentioned to one in which expectations are more evenly balanced. Given the lack of strong conviction when the market is in the random walk portion of the parabola, price is quick to react in typical textbook manner to news events and rumors, and whips back and forth in a trading range. In these trading ranges, the market often reacts to virtually any type of news—even items which it may have recently ignored. However, when the market is in the coherent portions of the parabola, the strong expectations of where prices are heading overwhelms the random news event which at another point in time might have influenced the market. Consequently, the perverse response prevails and the news is interpreted selectively by the speculative element of the market. In a bull trend, bearish news is ignored or even given a bullish slant; in a bear trend, the bullish news is ignored the bearish news emphasized.

## Market Reaction to News Events

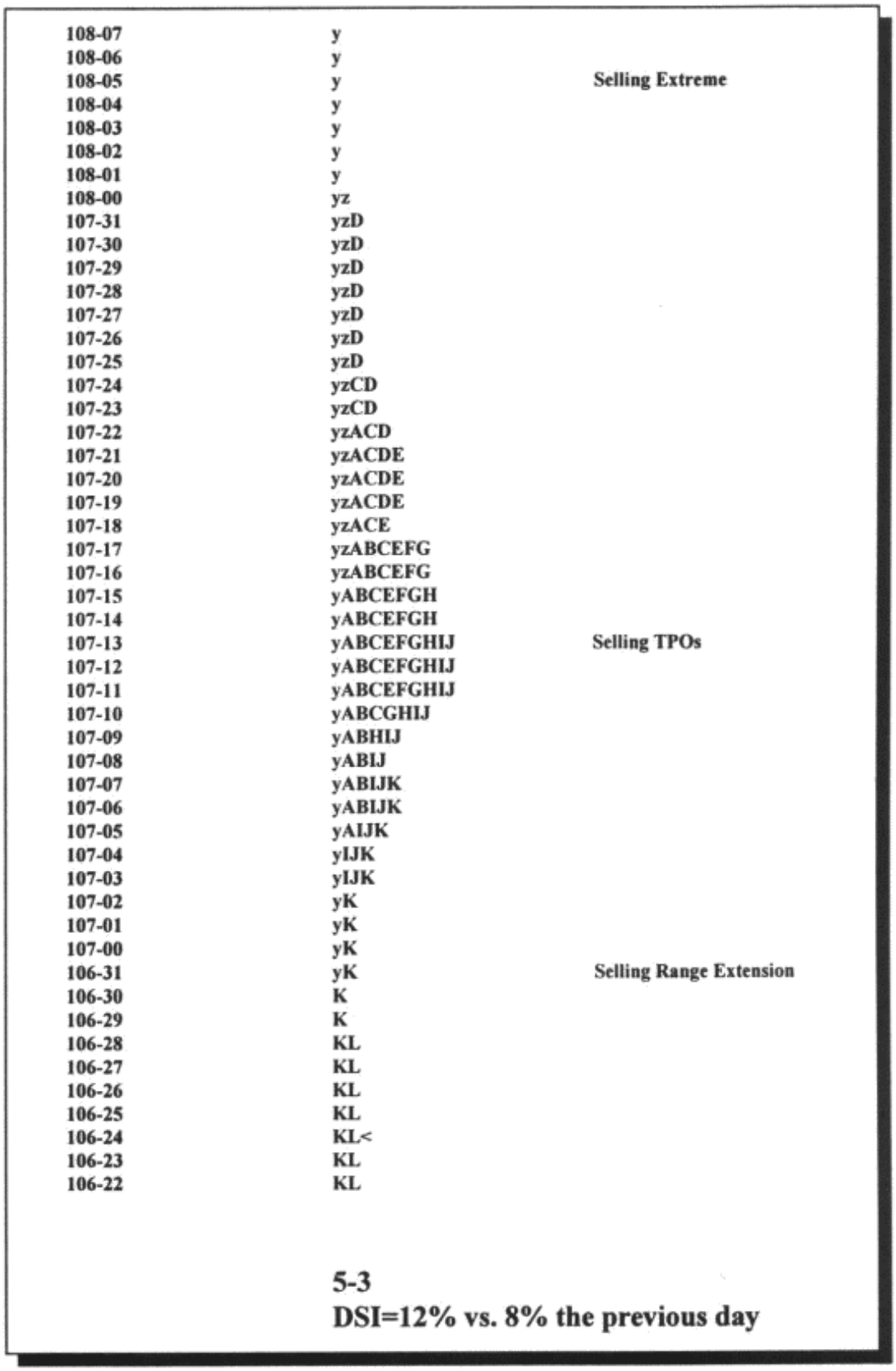
A news event may be cited as the catalyst for a reversal in the market; yet, as we know, the "market" can interpret the fundamental news in one of two general ways depending on where participants' expectations lie on the Expectations Curve. But regardless of whether the market's response to the news was *typical* or *perverse,* the activity will materialize in the Profile. So monitoring the speculative, OTFT activity in the Profile as opposed to knee-jerk price movement will alert the trader to which way the market is interpreting the news.

For instance, if the market is extremely bearish and the news released is positive, price may react positively, but if *buying activity* fails to materialize and possibly even selling activity materializes, then you know that the market is interpreting the news in a *perverse* rather than *typical* fashion. As a concrete example, look at the bond market in early May 1996. On May 2, 1996, 1st quarter GDP was reported at +2.8 percent and the bond market fell out of bed closing with a DSI reading of 8 percent. The next day, May 3rd, the April unemployment came in at 5.4 percent down 0.2 percent and non-farm payrolls were reported at +2,000 versus a consensus estimate of + 100,000. Bond prices surged in the minutes following the release of the report, but notice in Figure 9.6 that no buying activity came into the market. By the end of the day, the Profile registered selling in all three areas of the profile. So the bullish news was actually being interpreted in a perverse fashion, not too surprising since the DSI was in the extreme portion of the parabola. Only buying activity in the form of range extension up, as opposed to the knee-jerk reaction of a jump in price would have indicated that the market was interpreting the bullish news bullishly.

For the sake of argument, let's say that the reason the market sold off that day was because participants decided to focus on the household survey of the unemployment rates dropping 0.2 percent. That probably wasn't the case since prices stayed up for several hours after the release of the data—but let's assume that was the case. Even then, it doesn't matter which part of the report the market eventually decided to focus on. The point is that no buying activity came into the market while expectations were bearish; in fact, more selling came into the market to confirm those expectations. So despite the bullish news and the extreme bearish sentiment, there was no reason to buy this market. As previously noted, market activity, not merely price, in the wake of news is what counts. It counts even more when coupled with the extreme sentiment readings.

As an example of the phenomenon's occurrence over the big picture let's look at the same market but over a much longer period of time. Figure 9.7 presents a weekly continuation chart for Treasury bond futures plotted against changes in the Federal Funds rate and the Discount rate. Beginning in February, 1994 the Federal Reserve embarked on a campaign to raise official short-term interest rates which was to last for a year. As you can see, initially as the Federal Reserve raised both the Federal Funds and Discount rates, the bond market participants (currency market participants, too, for that matter) interpreted the news in the typical textbook fashion and pushed prices lower. But in the middle of November 1994 when the Federal Reserve raised both rates by 75 basis points the market had a perverse textbook response and the bond market rallied. Also, look at the beginning of 1996 when the Federal Reserve cut interest rates at its February 1 to 2 Federal Open Market Committee meeting. The daily chart in bonds didn't register a single tick higher after the Federal Reserve cut rates than it had in the moments and days prior to the cut. As you can see in Figure 9.7, the market fell completely out of bed. While this top in February 1996 will be covered in detail via the LTMA chart in Chapter 10, the point here is that the market had the perverse textbook response to bullish news. This effectively put the market at the

high end of the parabola in February 1996, just as it had been at the low end of the parabola in November 1994.



| | | |
|---|---|---|
| 108-07 | y | |
| 108-06 | y | |
| 108-05 | y | Selling Extreme |
| 108-04 | y | |
| 108-03 | y | |
| 108-02 | y | |
| 108-01 | y | |
| 108-00 | yz | |
| 107-31 | yzD | |
| 107-30 | yzD | |
| 107-29 | yzD | |
| 107-28 | yzD | |
| 107-27 | yzD | |
| 107-26 | yzD | |
| 107-25 | yzD | |
| 107-24 | yzCD | |
| 107-23 | yzCD | |
| 107-22 | yzACD | |
| 107-21 | yzACDE | |
| 107-20 | yzACDE | |
| 107-19 | yzACDE | |
| 107-18 | yzACE | |
| 107-17 | yzABCEFG | |
| 107-16 | yzABCEFG | |
| 107-15 | yABCEFGH | |
| 107-14 | yABCEFGH | |
| 107-13 | yABCEFGHIJ | Selling TPOs |
| 107-12 | yABCEFGHIJ | |
| 107-11 | yABCEFGHIJ | |
| 107-10 | yABCGHIJ | |
| 107-09 | yABHIJ | |
| 107-08 | yABIJ | |
| 107-07 | yABIJK | |
| 107-06 | yABIJK | |
| 107-05 | yAIJK | |
| 107-04 | yIJK | |
| 107-03 | yIJK | |
| 107-02 | yK | |
| 107-01 | yK | |
| 107-00 | yK | |
| 106-31 | yK | Selling Range Extension |
| 106-30 | K | |
| 106-29 | K | |
| 106-28 | KL | |
| 106-27 | KL | |
| 106-26 | KL | |
| 106-25 | KL | |
| 106-24 | KL< | |
| 106-23 | KL | |
| 106-22 | KL | |

**5-3**
**DSI=12% vs. 8% the previous day**

Figure 9.6 Treasury Bond Profile for May 3, 1996. (Source: Sky Trade.)

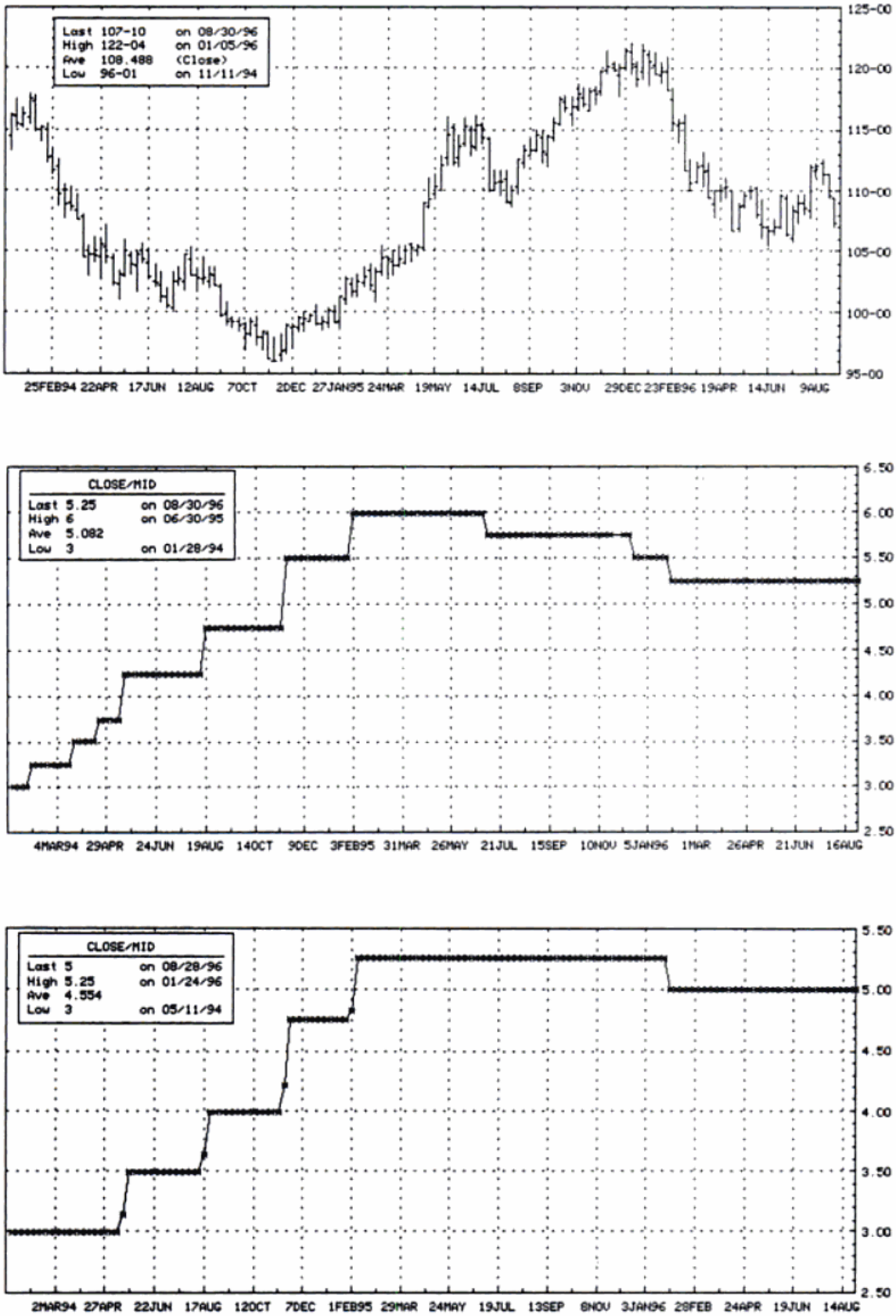



Figure 9.7 Weekly continuation T-Bond chart, Federal Funds, and Discount Rate 1/5/94 to 8/30/96. (Source: Bloomberg Financial Markets.)

Figure 9.8 plots the different ways news can be interpreted on the Expectations Curve. It provides a simple format for monitoring developments in the market in a

general sense, rather than trying to micro-analyze the specific implications of each and every news event in the market. Obviously, the duration of the impact of the news is a function of the event's enormity. A comment from a government official is likely to have a shorter term impact than an official change in interest rates. As the market ascends or descends into the extreme regions of the parabola, as measured by the sentiment readings, the trader will be on the alert for the perverse interpretations of the news which will be evidenced by activity in the opposite direction of extreme expectations.

By plotting the market on the parabola and describing it in terms of the model, the trader has a framework for monitoring the market in terms of what it *is* doing, rather than what it *should be* doing. There is no *should be* because any market response is explainable by economics. However, a natural tendency exists to try to explain and describe market action in terms of what the conventional wisdom says the market should do in light of news developments. But, as we now know, what counts is what people, especially the speculative element vis-a-vis the OTFT activity, are actually doing in the market. We already know that economics has *two* interpretations of what a *single* piece of news means for the market. By placing the market into the context of the model, market activity as opposed to knee-jerk price reaction will convey which way *the market* is interpreting the news, simply by matching up Day Market Activity on the profile with DSI over the short-time horizon and activity on the LTMA chart with the BC for the longer-term horizon.

Despite the tendency for expectations to extrapolate the most recent direction of prices and to intensify as the market trends, if you look at a large sample of charts you will find that prices do not trend that much of the time. Prices are actually in trading ranges about 80 percent of the time, in trends only 10 percent to 15 percent of the time, and in reversals the rest of the time.

The following points summarize the observations about the Model:

1. Trends are large price moves relative to the time elapsed.
2. Bull trends start at the bottom and bear trends start at the top.
3. Strong consensus coupled with activity produces these trends early on and reinforces these trends as they unfold.
4. The prevalence of strong consensus coupled with activity opposite the consensus produces reversals of trends.
5. Trading ranges are marked by balanced expectations and random walk type price behavior.
6. News is interpreted either typically or perversely, depending where the market is on the parabola.

## Entering at the Edges of the Parabola

Since the trading range portion of the parabola is marked by random walk type price behavior, trying to establish positions in the market in that zone can be frustrating—if not dangerous to your trading account. So the most logical thing to do is to enter the market at the edges of the parabola, where the conviction is, in order to get a head start on the unfolding of a trend, then monitor the subsequent sentiment and activity to see if the proper combinations unfold. This is true whether applied to the beginning of short-term trends, longer-term trends, the edges of corrections, the edges of trading ranges, or breaking out of trading ranges. It enables the trader to take advantage of the conditions in the market by trading *with* the market when it is strongest and *against* it when it is most vulnerable.

These assertions are true over several time horizons and for the respective market activity accompanying those horizons. Depending on what the trader's time horizon is, different forms of OTFT are used for making trading decisions. Consider the following two examples which illustrate the concept.

First, consider the short-term day trader who will use range extension, the only permanent form of activity, during a day session to determine if there is buying or selling in the market. (While range extension can be offset by extension in the opposite direction on the same day's Profile, it is still the only permanent form of activity in the sense that once it occurs it remains. Extremes can form temporarily during the day's session and the TPO count changes throughout the day.)

Let's take an example of a market which has rallied and is posting an extreme bullish DSL (As always, the opposite instructions apply to the down-trending market which is registering an extremely bearish DSI.) When the DSI registers 80 percent or more at the end of Day 1, the trader will sell range extension down on Day 2, *if* the market gets range extension down. Selling is coming into the market in the face of this extreme bullish reading and price is likely to move lower as traders head for the exits. If there is no range extension down, no signal is generated. The stop on the trade is placed just above the high of Day 2, since that would be the equivalent of buying activity from the OTFT. Now, while range extension up would make this a neutral day and therefore a possible change in trend day, it is also possible that neutral day would produce a running profile day which trends up into the close. Essentially, the extreme bullishness is, when all is said and done on that day, being reinforced with buying activity from the speculative element in the market and prices are going to go higher. For the short-term trader it's best to be out of the way and await the next set up before attempting to enter the market.

Second, consider that the intermediate-term trader would more likely be heartened by the neutral day, but his time-frame horizon affords him that luxury. He views the occurrence of the neutral day as the potential for the market to reverse, especially in light of the extreme DSI number. The trader with a longer time horizon will use the LTMA chart and particular types of day structures as his criteria for whether there is buying or selling in the market and will use a non-trend day, neutral day, or any other such non-facilitation of trade type day to enter the market. For most of the examples in the remaining chapters of the book I am going to look at the LTMA chart because it is the bigger picture. Within that longer time frame will be several opportunities to apply the model over the short term.

## Sentiment Readings

Before describing the specific combinations of sentiment and activity which form the three major states of the market, a final comment on sentiment readings is necessary. When determining what constitutes "extreme" in the sentiment readings, the benchmark reference is always the 80 percent/20 percent parameter. However, it is important to familiarize yourself with the characteristics of volatility in each of the sentiment readings for each market. For example, the bond market's BC routinely fluctuates in the 70 percent/30 percent range over a period of years, through bull and bear markets alike, never reaching the 80 percent/20 percent benchmark. On the other hand, in the course of a single year the BC for currencies can have a range of 90 percent/10 percent. Additionally, as previously mentioned, the BC's relative levels of extreme may actually fall between 50 percent/20 percent in a bear market and 80 percent/50 percent in a bull market. Also, the DSI may actually constitute an extreme, even though it may fall a few points short of the 80 percent in a correction to a short-

term bear trend, and a few points above the 20 percent in a correction to a short-term bull trend.

Now let's look at some of the concrete manifestations of those interactions in order to have a tool set for applying the Model to the markets.

## Trading Ranges

Trading ranges are marked by a fairly balanced mix of opinions (expectations/sentiment) regarding the future direction of prices. In these ranges, the random walk section of the parabola, price, and market activity respond to news by moving in the direction consistent with the typical textbook interpretations. Since sentiment is in the balanced area of the parabola, there is not an overwhelming degree of expectations present in the market which would prompt participants to heighten their anxiety level enough to have their activity take the market out of the trading range. Therefore, the news is interpreted in the typical manner and prices jump around in random fashion from one side of the trading range to the other in response to the random release of news items. The lack of one-way sentiment serves to dampen the impact of speculative activity—the activity we are trying to monitor since it is the element most responsible for price movements in the financial markets. Typically, there is no overwhelming imbalance of buying or selling on the LTMA chart. The market rallies to the top of the trading range and selling materializes on the daily Profiles; when the market breaks to the bottom of the range, buying emerges.

One indication of the onset of a trading range is erratic behavior in the DSI. In the course of an up-trending market, if the DSI begins to have sharp movements back and forth from one extreme reading to the other (i.e., 80 percent to 20 percent and back again) over a period of only one or two days, the intermediate term outlook for the market is to develop a trading range. The volatility in the DSI is an expression of the rapidity with which participants are trying to anticipate the next move in the market. The rapidly fluctuating opinions in the short term provide the necessary mix for buying to dry up on rallies, selling to dry up on breaks, and a trading range to develop.

Within trading ranges, the tendency for expectations to extrapolate the most recent action continues to demonstrate itself in the shorter term measure of sentiment, the DSI. Even while the BC stays in the random walk section of the parabola, the DSI increases as the market rallies to the top of the range and the DSI decreases when the market breaks toward the bottom of the range. As a result, the market is in the random walk portion of the parabola with the BC in the 40 percent to 60 percent range in the intermediate term, but due to the extreme reading in the DSI the market is also at either one end or the other of the parabola in the short term. That creates an opportunity to arbitrage the two surveys, using range extension in the direction opposite the extreme DSI reading as the signal to make a trade.

This *arbitrage* is possible because the DSI survey is a short-term indicator and the BC survey is a little bit of a longer-term indicator. The DSI survey is comprised of nonprofessional traders and the question is asked directly of the trader at the end of each trading session. The volatility in the DSI numbers is a function of the emotionalism experienced by most traders. By contrast, the BC survey is a measure of professional opinion culled from the recommendations of hot lines and newsletters. The professionals are less likely to be swayed by a sharp one-day move in price and not all of the advisory services update their advice each and every day, since their outlook is over the longer term. As a result, the magnitude in the changes in the BC numbers is not going to be as large as the changes in the DSI numbers. When they diverge, the trader has the opportunity to arbitrage any widely divergent views

between these two groups, provided the appropriate activity materializes—buying when the DSI is extremely bearish or selling when the DSI is extremely bullish.

When the market is in a trading range with BC readings of 40 percent to 60 percent and price tries to rally out of a trading range while posting extreme bullish DSI readings, it is unlikely that the market will develop into a new bull trend. It's not impossible, just unlikely. The high DSI numbers mean that most of the relatively stable number of market participants have already bought and very few people are available to come in and push prices higher. (As always, the trader must monitor the profiles and the LTMA chart for verification.) If selling comes into the market in the form of range extension while the sentiment reading is at extreme bullish levels, the market is likely to unfold down the short-term parabola, consistent with the larger picture trading range parameters vis-à-vis the BC. The short-term situation may develop into a longer term trade, but that depends on how the market unfolds since it takes a certain combination of sentiment and activity for the market to develop into a trend. The important thing is that having entered at the edge of the parabola, the trader has taken advantage of the market's vulnerability and entered into the market just as it was ready to move.

Essentially, the only time you want to be entering the market is when the market is positioned at the edges of either the short-term parabola combining DSI and range extension or the intermediate term using the BC and the LTMA chart. These are the points at which trends start, the points at which the trader takes advantage of the market's vulnerabilities. By operating at the edges of the parabola when the market is in a trading range, the traders are buying breaks and selling rallies—just what the market is advertising for. Then, if the market does break out of the range, they will already be well positioned.

Arbing the short-term parabola against the intermediate-term parabola also provides the setup for the market breaking out of a trading range. As previously noted, when the market develops a defined trading range the DSI registers traders' bullishness at the top of the range and bearish at the bottom of the range. Sometimes, however, having seen that fading the edges of the range is a good idea, traders *deviate from the general tendency* to get bullish on the rally and bearish on the break. When they deviate, the DSI actually has a relatively extreme bullish reading on a break to the bottom of the range (or extreme bearish at the top of the range). This is not to say that the traders are necessarily going to be wrong, nor right. It all depends on whether the appropriate activity follows on the next day. If so, it is great. If the opposite activity occurs, look out! If selling range extension comes into the market the following day, the market is poised to break out of the intermediate-term trading range. But note that even in this instance, in order to effect this breakout, the market has started from the edge of the short-term parabola.

## Trends and Reversals

Since trends begin with the reversal of the previous trend, it is necessary to discuss trends and reversals at the same time. Reversals occur when expectations are extremely bullish or bearish, but selling or buying activity, respectively, materializes from the speculative element of the market as evidence in the Profile's market activity. Action has not been consistent with expectations, with expressed opinions of participants. In the chaotic top, bullish news is interpreted perversely; and in the chaotic bottom, bearish news is interpreted perversely. It is as though there are mini-Expectations Curves at each end of the parabola within which the point of inflection is passed and the news begins to be interpreted in the perverse textbook manner.

The impact of a price reversal may be only at the margin at first, but it can quickly cascade into an avalanche.

Trends are formed by a combination of growing expectations and market activity in the same direction as those expectations. The complimentary interaction between these two factors serves to create a self-reinforcing process of prices and expectations feeding on each other. The fundamental news itself does not determine prices. News can be interpreted in a couple of ways, so it is the interpretation that is important—not the news itself. And as we learned earlier, expectations in the speculative markets are the primary influence on how news is interpreted.

In the coherent bull trend section of the Expectations Curve, bullish news is interpreted in typical fashion, and bearish news interpreted perversely. Similarly, in the coherent bear trend section of the curve, bearish news is interpreted in typical fashion and bullish news interpreted perversely.

Recall that the goal of the Model is to couple market activity with sentiment in order to identify times when the market is getting ready to enter a trend. For short-term trends this means combining DSI with range extension on the profile. For intermediate-term trends this means combining the LTMA chart in conjunction with both the DSI and the BC.

Using a bullish example to illustrate the short-term trend (obviously the opposite parameters apply for the bearish case), when the DSI is gradually moving higher over a period of a few days and the market has buying range extension, the market is in the coherent trend portion of the parabola and primed to move higher. Both components of the price determination equation are congruent with each other. Traders' opinions are being backed up by actions—or at least they are not acting in a manner opposite of the opinions. Likewise, to illustrate the intermediate-term trend, when the BC is gradually moving higher and the LTMA chart has an imbalance of buying activity, particularly initiating buying activity, the market is in a coherent bull trend.

The phrase "gradually moving higher" is contextual and the reference point is from extreme readings in the respective sentiment surveys. So, for the respective time horizons, BC or DSI reaching extreme readings will be the first indication for the possible development of a reversal and a trend in the new direction. If market activity in the form of a type of day which indicates a change in direction for the auction also unfolds, the trader enters the market. The trend may not unfold. But having bought a break in the face of extreme bearishness, accompanied by OTFT buying activity, the trader will have some time and some activity going in his favor. This approach enables the trader to go against the crowd when it is vulnerable and go with the crowd when it is strong. As the trend unfolds, the DSI will move in measured fashion through the parabola as opposed to jumping immediately to the > 80 percent level. A gradual increase in the DSI accompanies the rise in prices. Figure 9.9 shows an example of the gradual progression of both the DSI and the BC accompanying the coherent bull trend in the DM in early 1996.

From the reference point of the extreme sentiment levels, the market unfolds through the parabola. In a bull trend, the DSI is more likely than the BC to reach extreme bullish levels because of its short-term nature as an indicator. In an intermediate-term trend, the DSI may reach extreme bullish and extreme bearish levels several times during the course of the market move, while at the same time the BC is simply gradually progressing through the intermediate-term parabola from extreme bearish levels to mid-range. Once in mid-range, the BC is in the random walk portion of the curve and the market is apt to be entering a trading range. An exception to this would be if the market had been in a pronounced bear trend on the daily and weekly charts, in which case the mid-range 50 percent or so readings on the BC would constitute a *relative extreme* in expectations. Regardless of which of these

situations may prevail, the approach to trading the market is the same: As the BC enters the middle of the parabola, the trader will use extreme bullish readings in the DSI and selling range extension as a signal to exit long positions. That same combination will serve as a signal to get short. Depending on the aggressiveness of a particular trader, he may choose to simultaneously exit the long and reverse his position to the short side. This strategy will be addressed shortly. (Obviously, the opposite of this bull trend analysis applies for bear markets.)

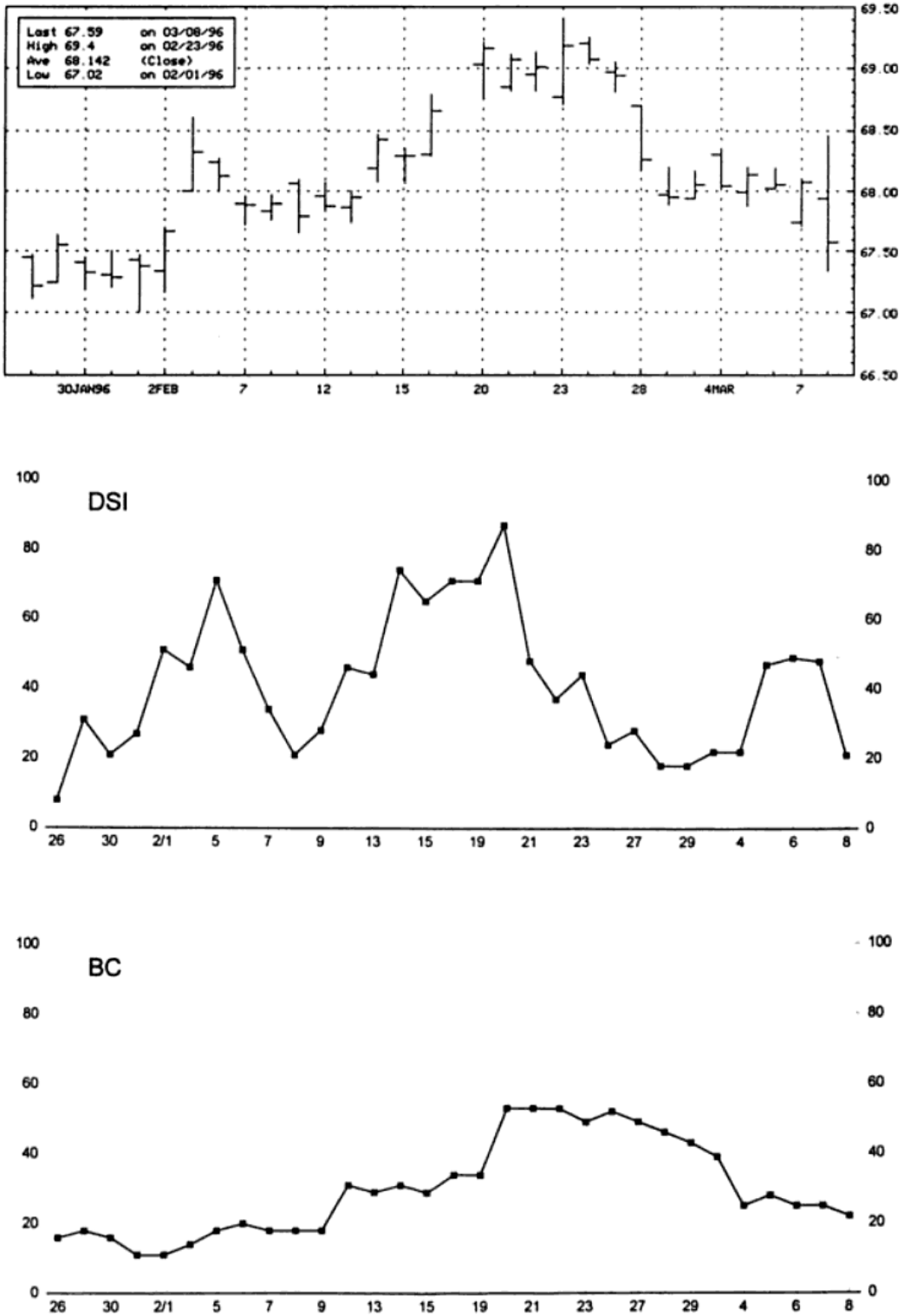



Figure 9.9 Daily continuation chart, DSI, and BC for DM 1/26/96 to 3/8/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advosors. Market Vane.)

As previously mentioned, the DSI can move back and forth through the parabola several times in the course of an unfolding intermediate-term trend. If a trader has a short-term perspective on the market, he will use range extension down the day following an extreme bullish DSI to exit the market. Likewise, he will then wait for an extreme bearish DSI and go with range extension up the next day to re-enter the market. In each case, he is operating at the edges of short-term parabolas.

In a bull trend, as the DSI reaches extreme bullish levels, the market is vulnerable to any selling range extension in the short term—specifically, on the day after an extreme bullish reading is registered. That selling may not materialize, but the trader must be on guard for it in terms of monitoring the market. Again, whether that selling materializes is irrelevant in terms of how to monitor the market with the Model. For a trend to unfold, the DSI must progress gradually through the parabola. If, however, the DSI shoots all the way to the opposite end of the parabola (with or without selling range extension materializing), then the DSI has effectively neutralized the extreme bullishness in the short term. Price may or may not accompany the DSI to the other end of the parabola, but it doesn't matter. When the DSI *neutralizes* extreme sentiment along with a correction in prices or even just a sideways move on prices, the market affords itself the opportunity to resume the original trend. The new mix of expectations enables more two-way trade to take place, as opposed to everyone being positioned the same way and no one left to participate. In the intermediate term, the trader doesn't mind seeing this type of action.

So, the day after a sharp price rally and an extreme high reading in the DSI, the market will often have a rest day or consolidation day. Often times, the DSI will drop considerably on that rest day as traders try to anticipate a break in the market. Another common scenario in the day or two following a sharp price rally is for the market to have a sharp price break and a concomitant retreat in the DSI. When the DSI has such a reversal—whether or not price breaks—back into the middle of the expectations curve or lower, the market has neutralized the excessive bullishness previously in the market and is better poised to resume its rally. This, too, is a way the market often breaks out of a trading range.

The only caveat to the DSI's sharp reversal enabling the market to rally is when the BC is also in the extreme zone of the parabola. The reason is because, in addition to arbing the DSI *against* the BC when the market is unfolding in an intermediate-term trend, the DSI will often *lead* the BC out of the extreme regions of the parabola, presaging the development of a trend. In a trading range, after several whip-saw moves from one end of the parabola 80 percent to 20 percent and back, market participants begin to catch on and the DSI stops reaching extreme level. Figure 9.10 illustrates how the DSI starts down the parabola out of the extreme bullish region before the BC does. In the process, the DSI begins to drag the BC along with it.

Since the intermediate-term trend is a function of sentiment and an imbalance on the LTMA chart, when the DSI starts to lead the BC through the parabola the LTMA imbalance must accompany the gradual progression of the sentiment readings. Figure 9.11 shows the imbalance building on the LTMA chart as the DSI led the BC down the parabola off the highs in Figure 9.10.

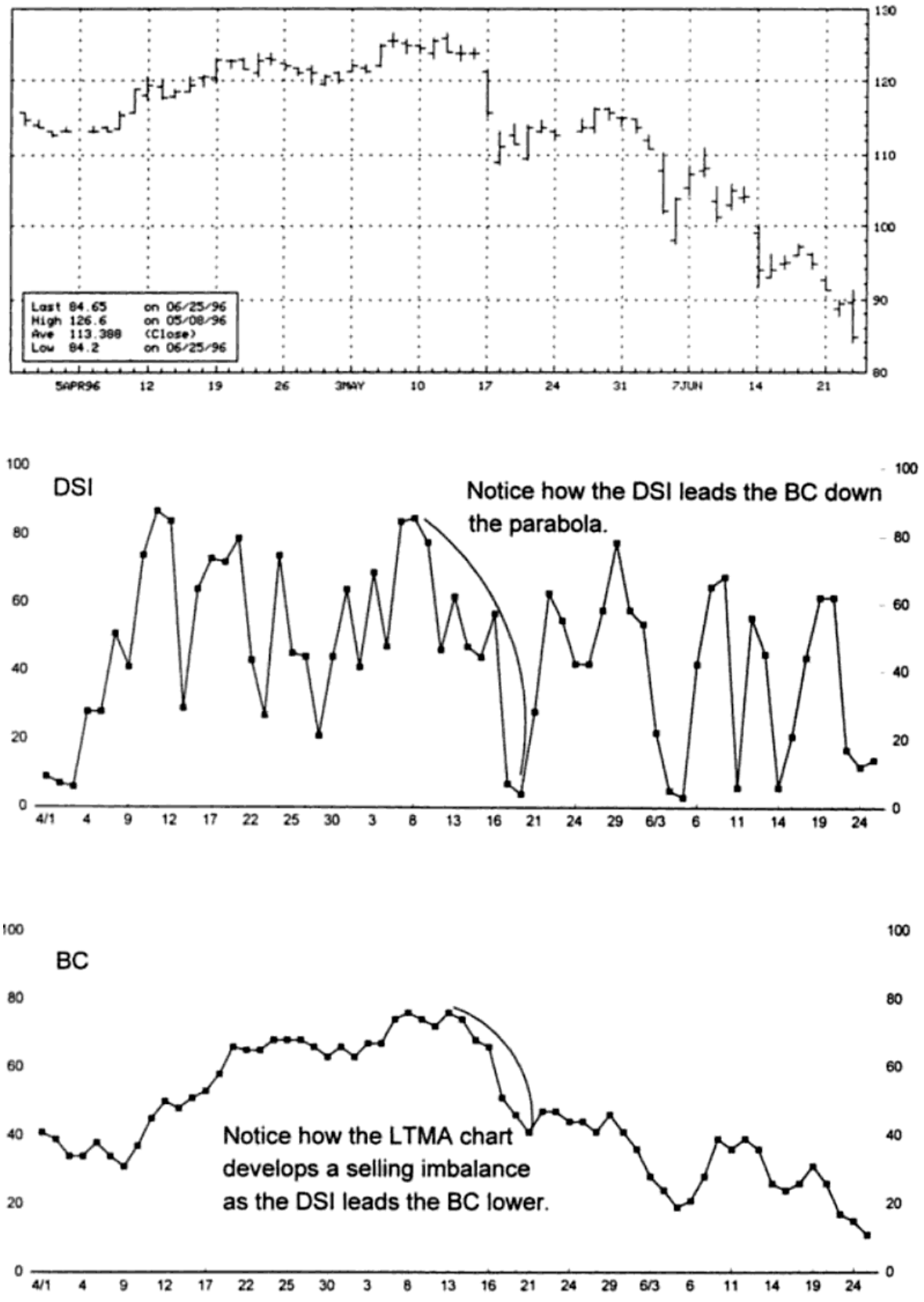



Figure 9.10 Daily continuation chart, DSI, and BC for Copper 1 /26/96 to 3/8/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advosors, Market Vane.)

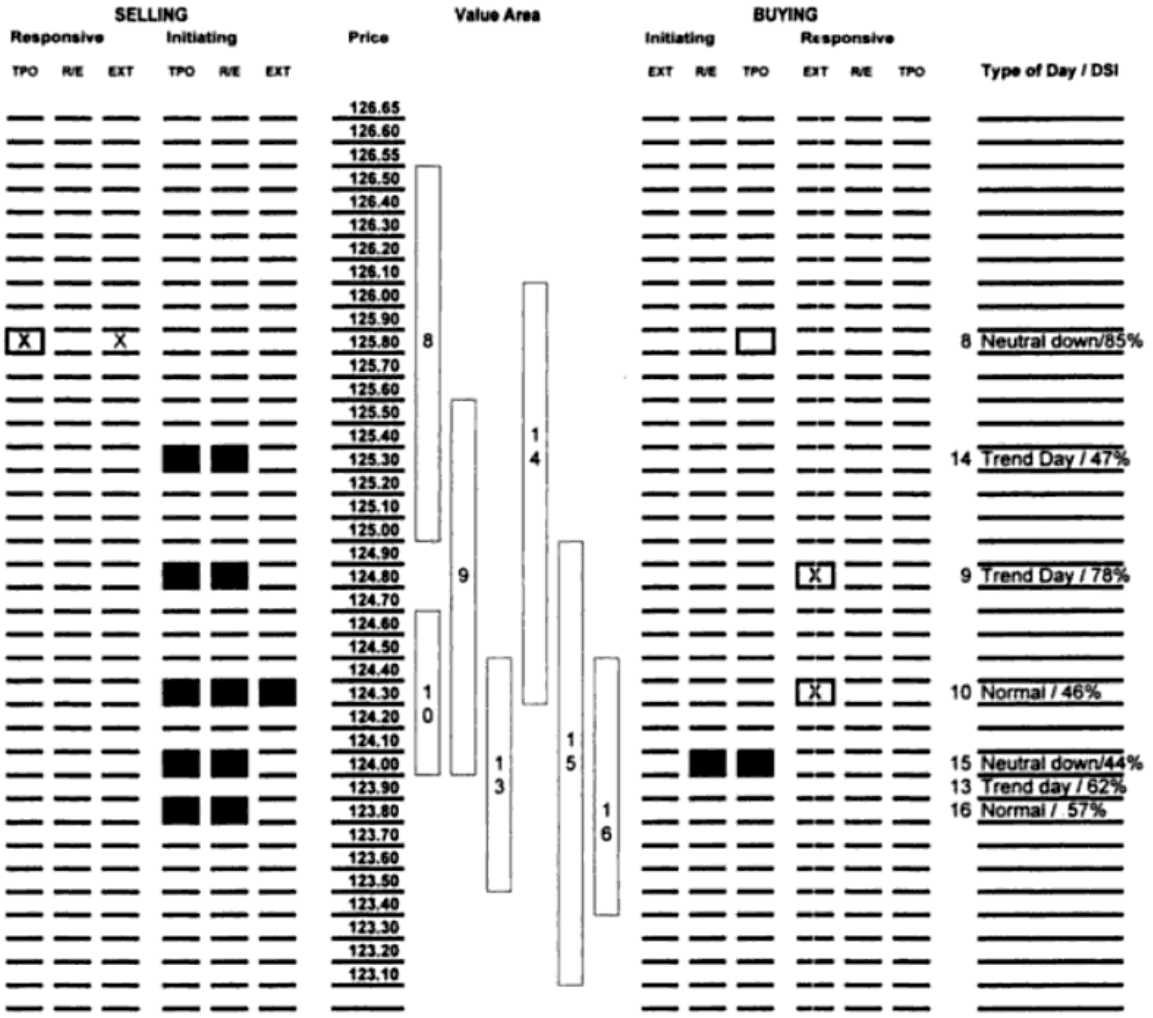



Figure 9.11 LTMA chart for Copper May 8 to 16, 1996. (Source: Sky-Trade.)

## Rules for Applying the Sentiment-Activity Model

Since we are going to be looking for the beginning of trends, we are, by definition, going to be looking at reversals in the markets. First and foremost the trader has to distinguish between whether a particular trade is picking a turn in the market or picking the edges of a correction within a larger trend. The former is trickier than the latter; the former also occurs less frequently than the latter. Both occur across several time horizons in the market, so the next thing the trader must determine is what time horizon he is operating in: short-term trader (scalper), swing trader, or intermediate-term trader. The following sections discuss the rules for applying the Model to each of these time horizons. This example will demonstrate the procedure for the long side of the market. Obverse instructions apply for the short side.

### Scalpers

For day traders who apply the Model on a short time-frame, extreme readings in the DSI data are used as a yellow flag indicator for a potential trade. The extreme reading will serve as an alert that the market is primed for a reversal. The market is in a chaotic state and is likely to reverse course, provided the appropriate activity by the

OTFT materializes during the next day's trading session. That "appropriate activity" is range extension.

When the DSI is 20 percent or lower, the scalper will go long on buying range extension the following day, placing a stop under the low of the day. Let's call the day he enters the trade Day 1. After the close of Day 1, the DSI will be reported. If the DSI has jumped above 50 percent, the trader must be careful because the *measured* move through the parabola is not unfolding. The jump in the DSI is too much, too soon. Remember, if the DSI jumps back across the mid-point, it may have neutralized the extreme bearishness and any range extension down will likely meet with success in terms of resuming the down-trend. This is not to say that the market will *necessarily* reverse back to the downside again; range extension will determine that. Rather, it is an alert that if selling range extension occurs on Day 2, the scalper should exit the trade on that selling. The market may in subsequent days still unfold to the upside; it just may not do so in a manner which corresponds to his time horizon; the scalper doesn't have the luxury of waiting around to find out.

However, if buying range extension occurs on Day 2, the market is still primed to the upside. Increasing sentiment is being combined with buying activity and the market is trending higher in the short term. As soon as the buying range extension occurs on Day 2, the stop is moved up to just below the lows of Day 2. If those intra-day lows are taken out, a neutral day has formed, selling is present, and the market may reverse back to the downside. Once again, the short-term trader doesn't have the luxury of waiting around to find out. He needs things to unfold pretty much according to script, otherwise he needs to be out of the market.

If at the end of Day 1 the DSI registers in the extreme bullish territory of 80 percent or more, the market is likely to be entering a trading range and the trader needs to have no selling range extension—and ideally to have buying range extension—in subsequent days in order to stay with the trade.

If on Day 2 the DSI increases but not above the 50 percent level, the extreme bearishness of the previous trend hasn't been *neutralized* per se. The slowly changing mix of expectations permits the more orderly progression up the parabola.

The goal of the scalper is to catch the edge of the short-term parabola so as to benefit when the short term begins to influence the longer-term parabola. This isn't going to happen every time. Sometimes the trades are going to fizzle out after a day or so. Sometimes the trade is going to get stopped out on the same day it was entered. But that is part of trading anyway and certainly part of trading in the short-term time horizon.

**Stop Strategy.** The dollar amount of exposure a trader is willing to take on has to be determined on a case-by-case basis and is commensurate with the trader's account size and exposure tolerance. But the starting point is that the trader is only going to be willing to risk *x* amount of dollars per trade. Then, using the strategy previously outlined, this dollar amount will dictate how many contracts the trader can trade on any particular position. So, in order to make full use of the Model in the short-term strategy, it is best to have a plan to vary one's volume depending on the situation.

When an extreme reading alerts the trader to a possible opportunity he is going to go with range extension the next day. On that day, Day 1, if the initial balance is relatively narrow, the trader is going to trade a multiple number of contracts. If the initial balance is wide, the number of contracts will be relatively few. In the ideal unfolding of the trend from the reversal, the market is going to have a normal day, or even better, a normal variation day or trend day in the direction of your trade.

The reason you trade lower volume on the wide initial balance day is three-fold:

1. The large distance between range extension triggering a trade and the stop at the other end of the initial balance equates to a large dollar amount of exposure.
2. On narrow initial balance days the market is set up for a possible trend day, so it would be highly profitable to have more volume on such a day.
3. The big price move may have served to neutralize the extreme expectations (sentiment reading)—but you'll only know after the close when the survey is conducted.

Therefore, the trader is well advised to vary his volume so that he is trading lightly when the market may not be poised to move a great deal, positioned more heavily when it is, and risking the same dollar amount in both situations.

**Caveats.** Several years ago some studies were done to refine the definition of range extension in order not to place too much emphasis on a *single* tick exceeding the initial balance period. Basically, the results were that in order to avoid a *fake-out,* 4 ticks of range extension were necessary to qualify as range extension. Scalpers may be more comfortable using this definition of range extension, but I don't want to get too involved in trying to "fit" the methodology to all past data. I only mention it in passing for particularly conservative traders. Again, trading is like any business and some judgment is involved in all decision-making. I'm not going to try to computerize this because I don't think a business can be run by computer.

Another caveat is that for bonds and currencies, this *signal* is generated only if the Profile registers range extension up *and* if the overnight session high is also taken out. That is, if the DSI is at < 20 percent in the bonds and the market gets range extension up the next day does not exceed the previous night session high, no signal is generated. Only if range extension and the overnight highs were exceeded would a signal be given. (Obviously, this works in reverse for extreme bullish readings.) This means that situations are going to occur which have wide parameters, but that's just the nature of trading and the nature of markets sometimes. If the stop loss price is too far away for your loss tolerance, then you simply don't play. That is another benefit of the stop loss strategy previously described.

## Swing Traders

For the swing trader operating with a slightly longer time horizon than the short-term trader, entry into the market is essentially the same as that used by the short-term trader. Because the swing trader has more time to let the market unfold, his exit strategy is designed to give the market a little more time than the scalper uses.

The swing trader will leave the stop under the low of Day 1 until a subsequent day gets selling range extension. This is viewed as the sellers' attempt to test the market on the downside. If they are unsuccessful in their attempt to push the market down, after the close of the day which got this selling range extension, the trader will move his stop to just under that day's low. While this strategy may result in getting knocked out of more trades at a loss, it will also give the market a chance to unfold into a trend by gradually moving through the parabola.

The intermediate-term trader might use the entry strategies previously outlined to enter the market, but ideally he is looking for a day which marks a change in direction for the market to start building a new LTMA chart and begin to monitor for imbalance. From that LTMA chart he is going to match up any imbalance of activity with extreme readings in the BC, as an indication that the market is getting ready to develop a new trend and progress through the parabola. The trades he enters will be less mechanical

and more judgmental in terms of establishing a position as the imbalance builds and the BC starts down the parabola—perhaps led by the DSL

This means he will be looking for a nonfacilitation of trade day like a non-trend day, a neutral day, a trend day failure, or a 3-1 exhaustion day from which to start a new LTMA chart—especially if this occurs on an extreme reading in the DSL The phenomenon might be likened to cognitive dissonance. Everyone is bullish, but the speculative buyers (OTFB) are no longer coming into the market (a non-trend day), or else the buyers are failing (a buying day which does not facilitate trade, or trend-day failure), or exhaustive buying (3-1 exhaustive day). These are also the types of action which occur at the edges of trading ranges, as dictated by the BC, and especially when the DSI is at an extreme.

From the extreme readings in the BC (or the 50 percent level when that constitutes a *relative* extreme as previously described) as the trend begins to unfold, the BC will move in the same direction as the imbalance on the LTMA chart and progress through the parabola. As the market moves through the parabola and when the BC is in the Coherent Market part of the Model but not yet in the extreme reading zone, the market is poised to continue its trend; any market activity (range extension) opposite the intermediate-term trend direction is taken in stride and perceived as a breather for the market. It is only when the sentiment numbers are in the extreme that the *opposite* market activity creates a reversal in the trend. Other activity against the trend is seen as the normal progression.

In the course of the intermediate-term trend unfolding, invariably the short-term trend is going to reach a top as marked by an extreme in the DSI and range extension against the intermediate-term trend. The intermediate-term trader *may* decide to exit the market in that range extension. However, given his longer-term horizon, he is likely to give the market the benefit of the doubt, so to speak, and wait to see if the market is going to unfold in the Area 1-2-3-4 pattern previously described. Alternatively, he will use the shorter-term strategies previously mentioned to monitor the market.

If Market Vane has extreme bullish readings but the LTMA chart is forming the top of Area 2 as evidenced by an increase in selling activity (i.e., a 3-R day, a neutral day, a non-trend day, a 3-1 day at the top which *does not* facilitate trade), then the market is entering a chaotic state and the trader is going to go short on that close, or the open the next day, or on range extension down the next day. As with all business decisions, this requires some judgment.

Let's take a look at some actual market examples to help develop that judgment. The next four chapters take four markets, one at a time, and examine how the Model applied during the time period when this book was being written: December 1995 through August 1996. As stated at the outset of the book, examples used to illustrate certain points would be taken at random, rather than seeking out the perfect example or creating fictitious examples.

An important distinction must be made before proceeding to the examples. *Analysis* is not a trading *methodology.* The markets can be analyzed to death; it's called *analysis paralysis.* No approach is going to perfectly convey the conditions of the market all the time—nor is that a trader's goal. The trader's goal is to protect trading capital and increase that capital through the judicious application of analysis. This does not mean one will always have a trade to make, nor does it mean that the Model will give instructions each and every day. Instead, the Model will alert you to times when conditions make it advantageous to enter the market and when it is propitious to stay out. In the end, that is all one can ask of a methodology.

The Model is a method of analyzing the market, but strategy varies according to the time horizon of the trader. Sometimes a trade is going to be triggered and sometimes it is not. Most of all, since one of the premises of the book is that all

markets are the same, one must apply the Model as a decision-making tool, not a computerized mechanical *system.* A restaurant cannot be run by a computer system, nor can a farm, nor can a Fortune 500 company. In each of these, as well as in trading, decisions must be made.

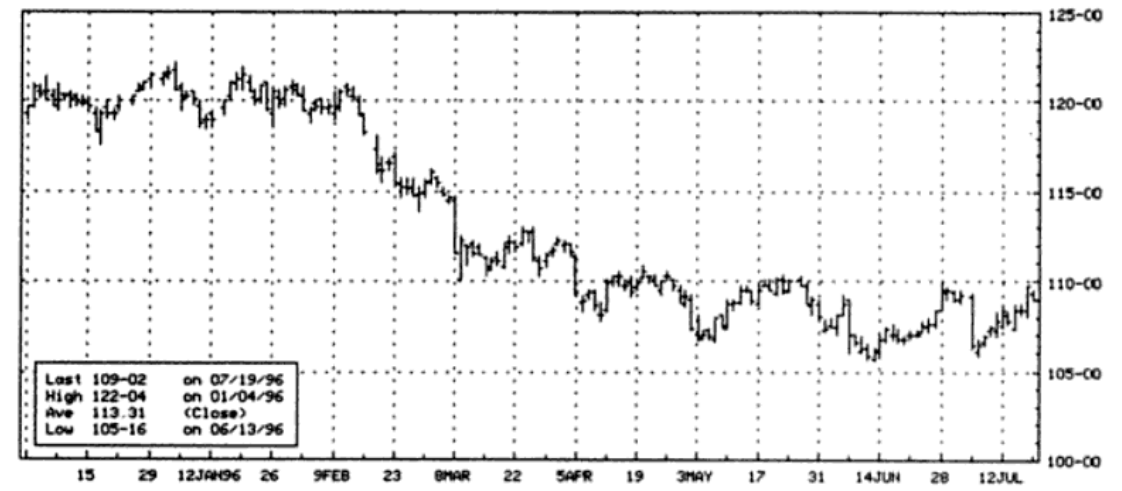
# *Chapter 10*

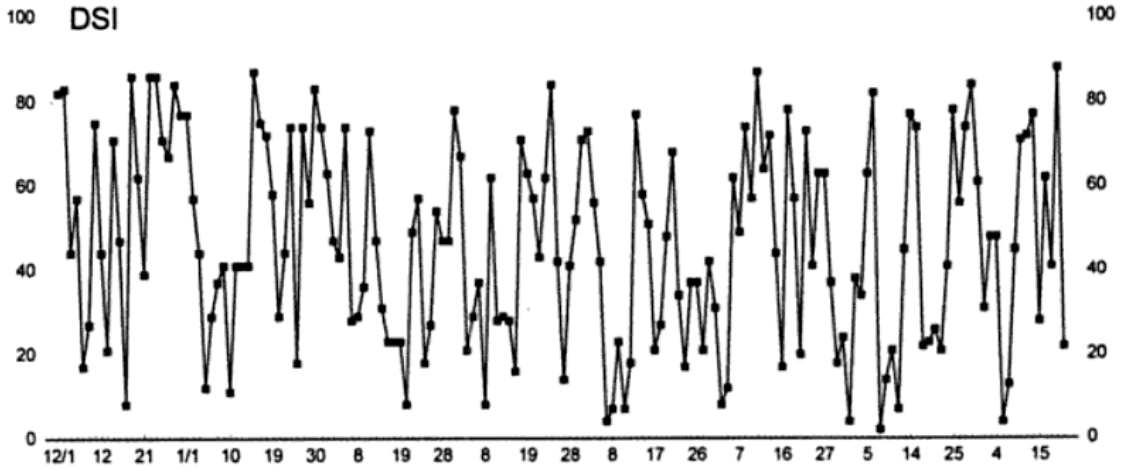
## Treasury Bonds

This chapter will look at several examples in the bond market within the larger time period covered in Figure 10.1 and apply the principles of the Model to the market. The first thing to notice about the bond market during this time period is that it spent a lot of time in trading ranges. Granted, the trend in between the two trading ranges was substantial, but the majority of the time trading ranges were the dominant theme. The BC confirms this state of the market.

During the previous year, the BC extreme readings were 74 percent and 27 percent, so the 70 percent or so in December was actually a fairly extreme reading. (Also note that the DSI was jumping from one end of the parabola to the other, typical of entering a trading range market.) The real item to notice in early 1996 is that the market never reached excessive bullishness in terms of the nominal numbers in the surveys, nor did the market create a spike top, it rolled over.

Figure 10.2 shows a snapshot of the top in the bond market, plotting the DSI and BC sentiment reading underneath. Within the trading range, the DSI reached extremes of more than 80 percent on several occasions. Notice how quickly those extremely high DSI readings were followed by extremely low readings in the ensuing days. This extreme bearishness coming so quickly on the heels of extreme bullishness effectively neutralizes expectations, enabling the market to rally again. The pattern is repeated several times in that trading range. This is indicative of the next longer time horizon exerting its influence on the market. The rapidity with which opinions about future price direction changed in the sell-offs from the top of the trading range made it difficult for the market to break. Instead, it actually created the conditions which permitted the market to try the upside again.



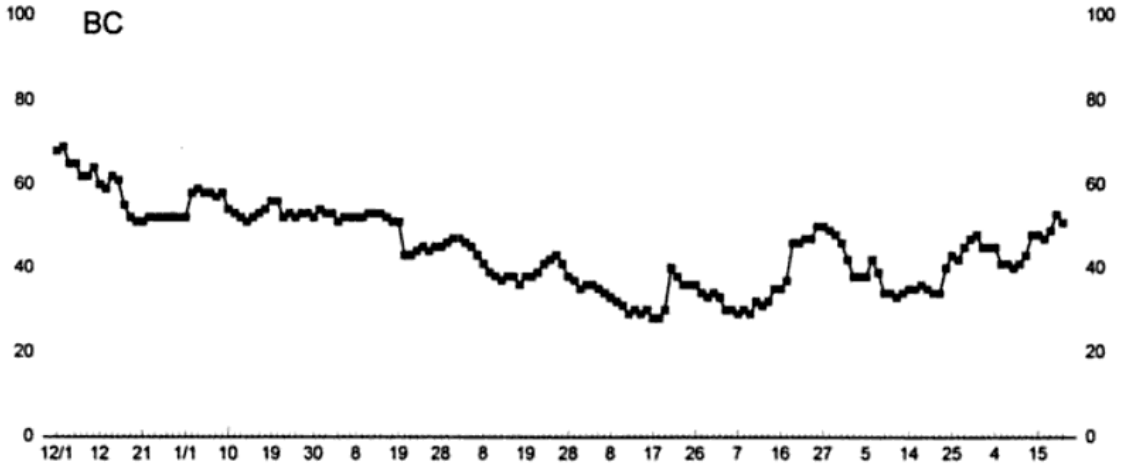




Figure 10.1 Daily continuation chart, DSI, and BC for T-bonds, 12/1/95 to 7/19/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

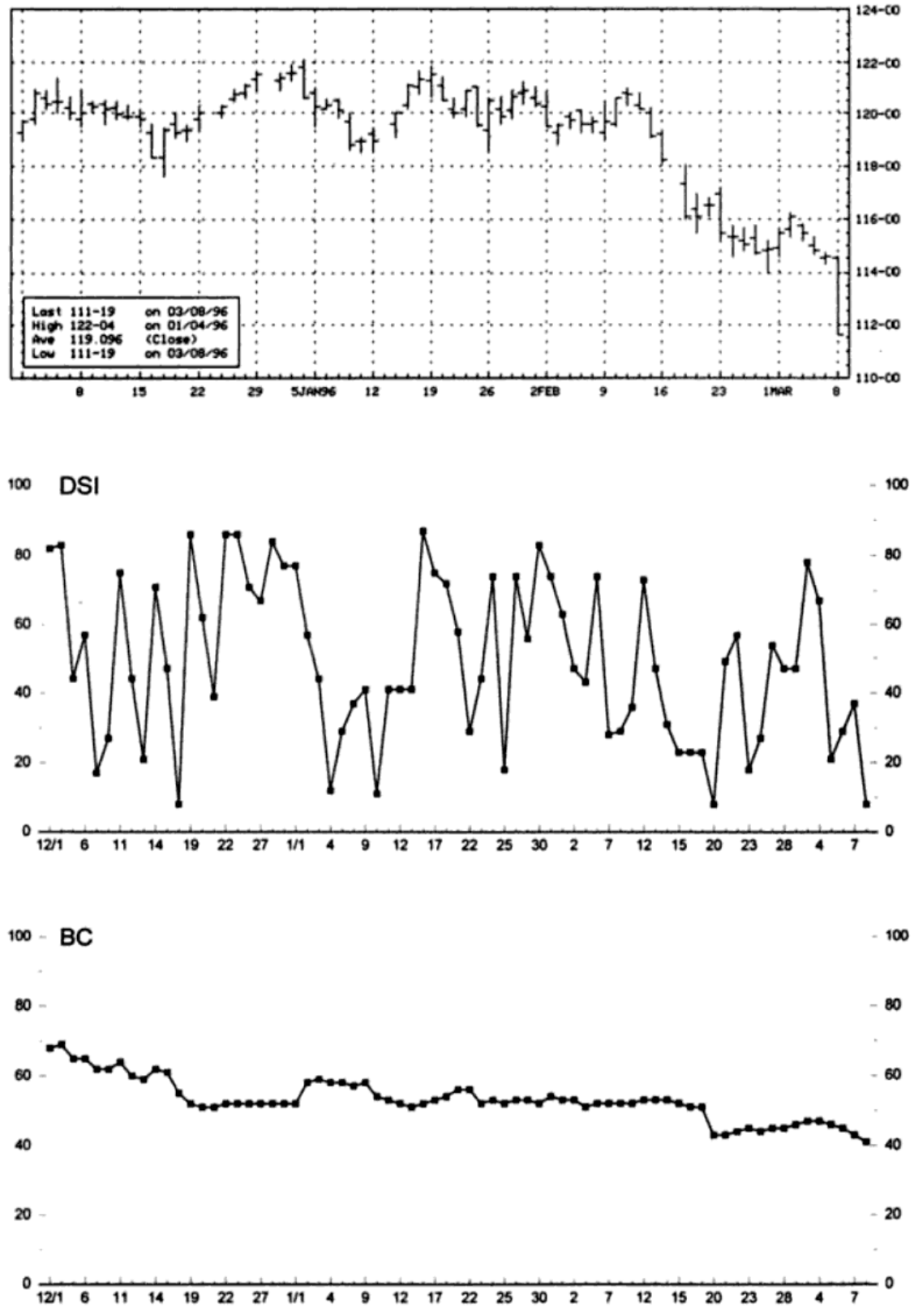



Figure 10.2 Daily continuation bar chart, DSI, and BC for T-bonds, 12/1/95 to 3/8/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

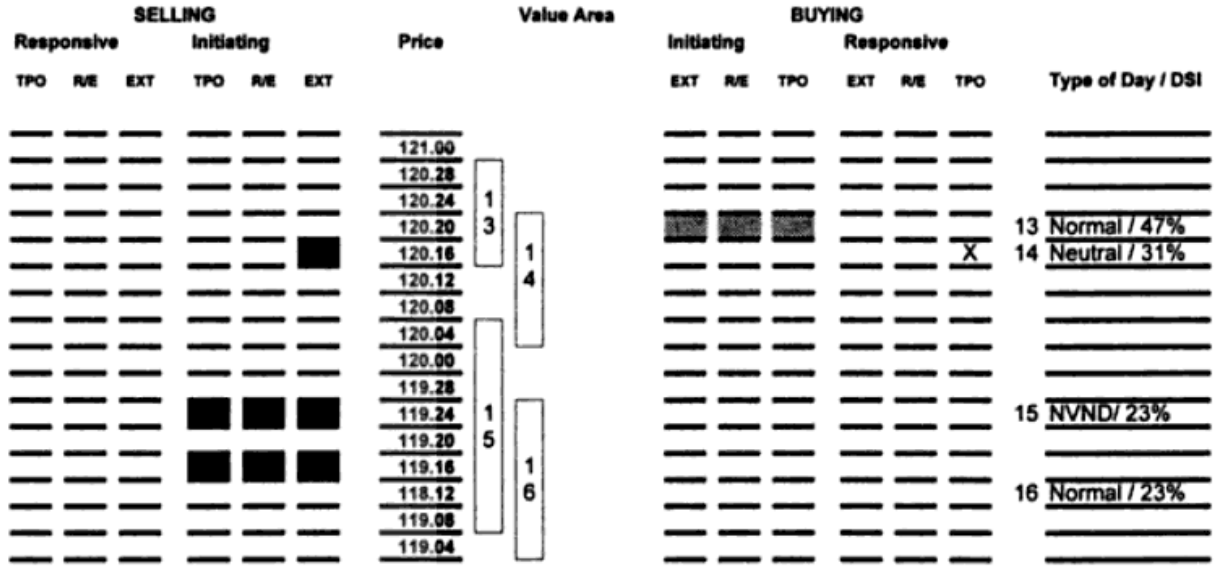



Figure 10.3 LTMA chart for February 13 to 16, 1996. (Source: SkyTrade.)

Figure 10.3 starts a new LTMA chart on February 13 because of the low volume 3-1 buying day at the top of the prevailing trading range and the neutral day on February 14. Note the imbalance of selling activity accumulating on the LTMA as the market came off the top of the trading range; prices were still sideways on the daily chart, but there was an overwhelming amount of initiating selling activity on the LTMA chart, setting the stage for a shift down in the supply curve.

Simultaneously, the DSI began to move down the parabola in an orderly fashion. Refer again to Figure 10.2 and note how the DSI was leading the BC lower. While the BC had topped in early December 1995 and reversed, the DSI continued to thrash back and forth between more than 80 percent to less than 20 percent which is indicative of a trading range. Early February was the first time the DSI led the BC lower in an orderly fashion, slipping down the Expectations Curve and forming a trend. In the intermediate time horizon, selling activity was coupling with an increasing progression of bearish-ness—the signs of a coherent market, a trend.

Figure 10.4 shows the continued building of the LTMA where Figure 10.3 left off. Notice that the activity on the 3-1 buying day which prompted the start of this LTMA chart has been shaded rather than darkened. This is done to give some perspective to the ending of the previous auction and the start of a new auction.

Having established an imbalance of selling on the LTMA chart, the intermediate-term trader would be looking for the market to trade lower to shut off the selling, advertise for buyers, come into balance, and test the upside. As the market declined, sentiment naturally fell, too. But it took a considerable drop in price before any range extension up materialized in the market. The day on which it did occur, February 21, turned out to be a trend-day failure. Additionally, even if the short-term scalper had gotten long on range extension up at 116-16 on February 21, following the 8 percent DSI reading on February 20, the market had range extension down at 116-12 on February 22 using a DSI of 49 percent and again at 116-18 on February 23 using a DSI of 57 percent. So the scalper would have scratched the trade.

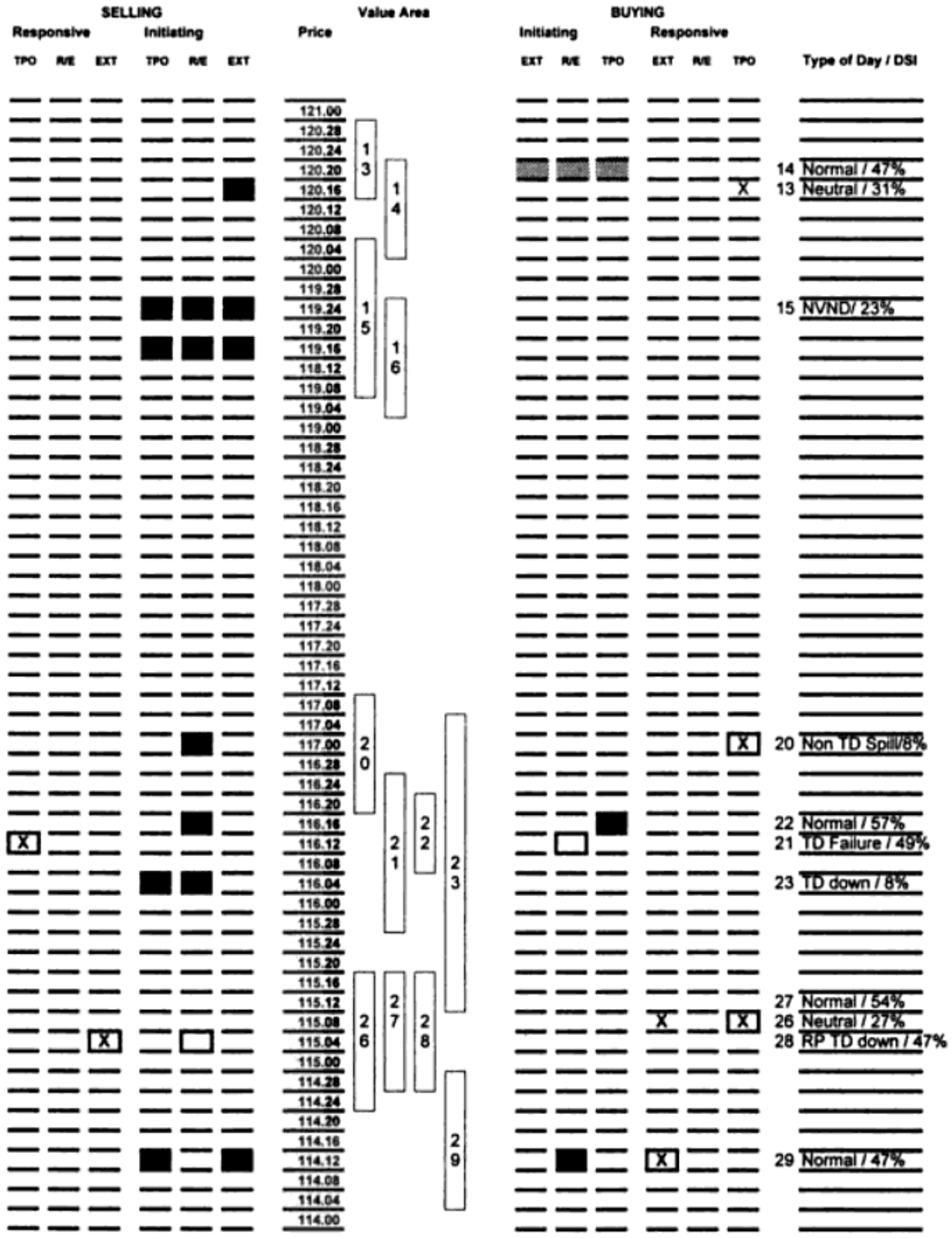



Figure 10.4 LTMA chart for February 13 through 29,1996. (Source: Sky-Trade.)

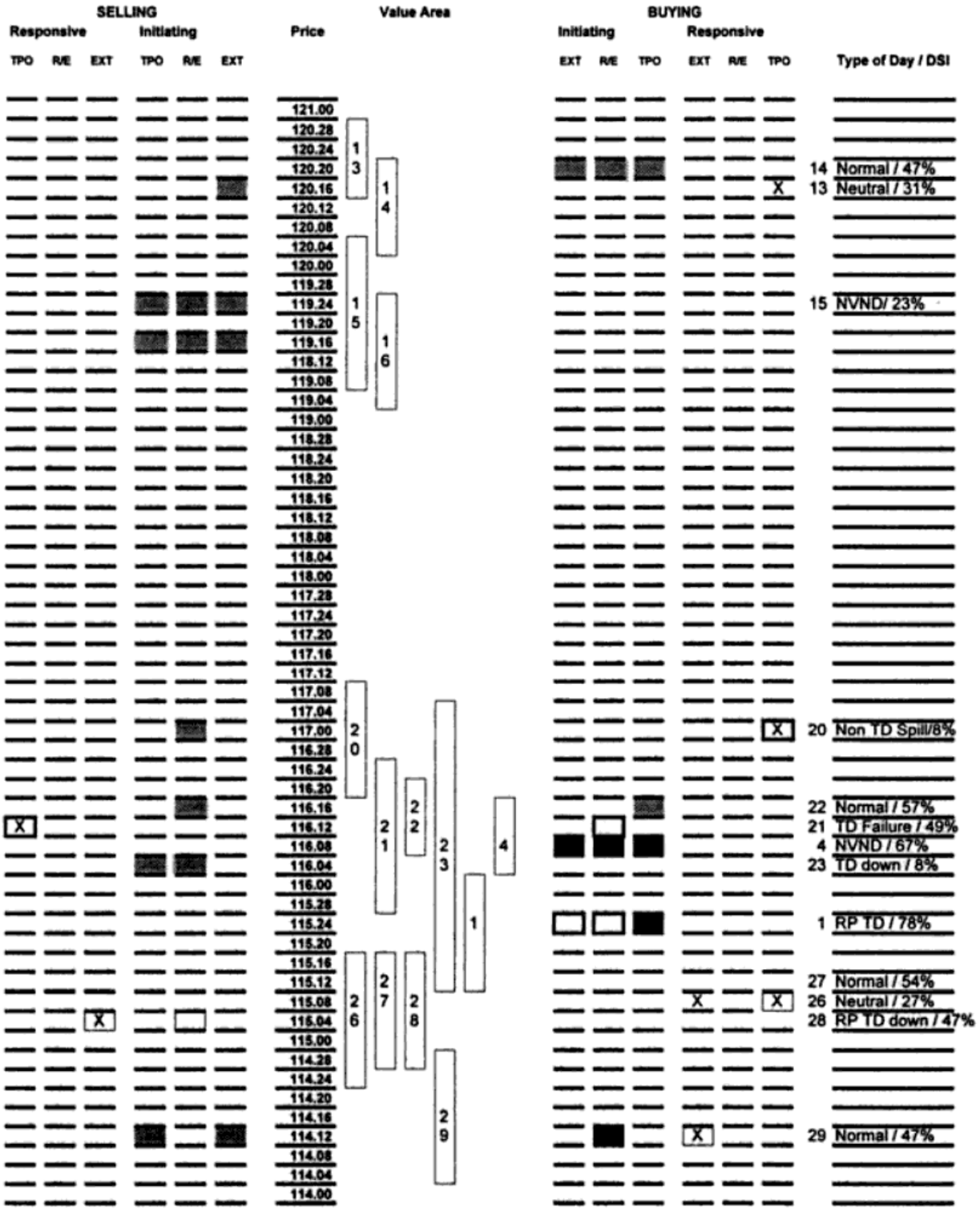



Figure 10.5 The market comes into a balance area on the LTMA chart and is in test Area 3. (Source: Sky Trade.)

Figure 10.5 continues with the same LTMA chart and includes the next several days. Notice that all the activity leading up to this point in the LTMA chart has now been shaded. This was done to help illustrate the progression of the auctions. (Subsequent LTMA charts will also use varying degrees of shading to help distinguish the unfolding sections of activity.) Observe that buying range extension occurred again on February 29 and the LTMA began to register a more balanced look as the market came off those lows. The narrow value area and low volume at a higher value area on

the 4th does not bode well for continuation. Moreover, the DSI has also *corrected,* hitting 78 percent on February 1 and 67 percent on February 4. These sentiment readings are fairly high in the parabola, particularly in the face of all the selling on the LTMA and the mid-range readings of the BC. These high readings are actually encouraging for the intermediate-term trader, as the beginning of a new move down is now a lot more likely. Refer to the daily chart in Figure 10.1 to see how the trend continued lower over the next several days.

Recall the sequence in which the LTMA unfolds as it moves through a trend. Look at Areas 1 through 4 in the development of the LTMA chart: Imbalance, Balance, Test, Resume Auction on a Test Failure (or New Direction on a Successful Test). The 3-1 day in the Test Area 3 on February 4 posted a 67 percent DSI on the close— fairly high given the unfolding bear trend. The test failed and the market resumed its decline with a 3-1 selling day on February 5 and continued lower still on February 6 (see Figure 10.6). Refer to Figure 10.2 to see what happened next in the market.

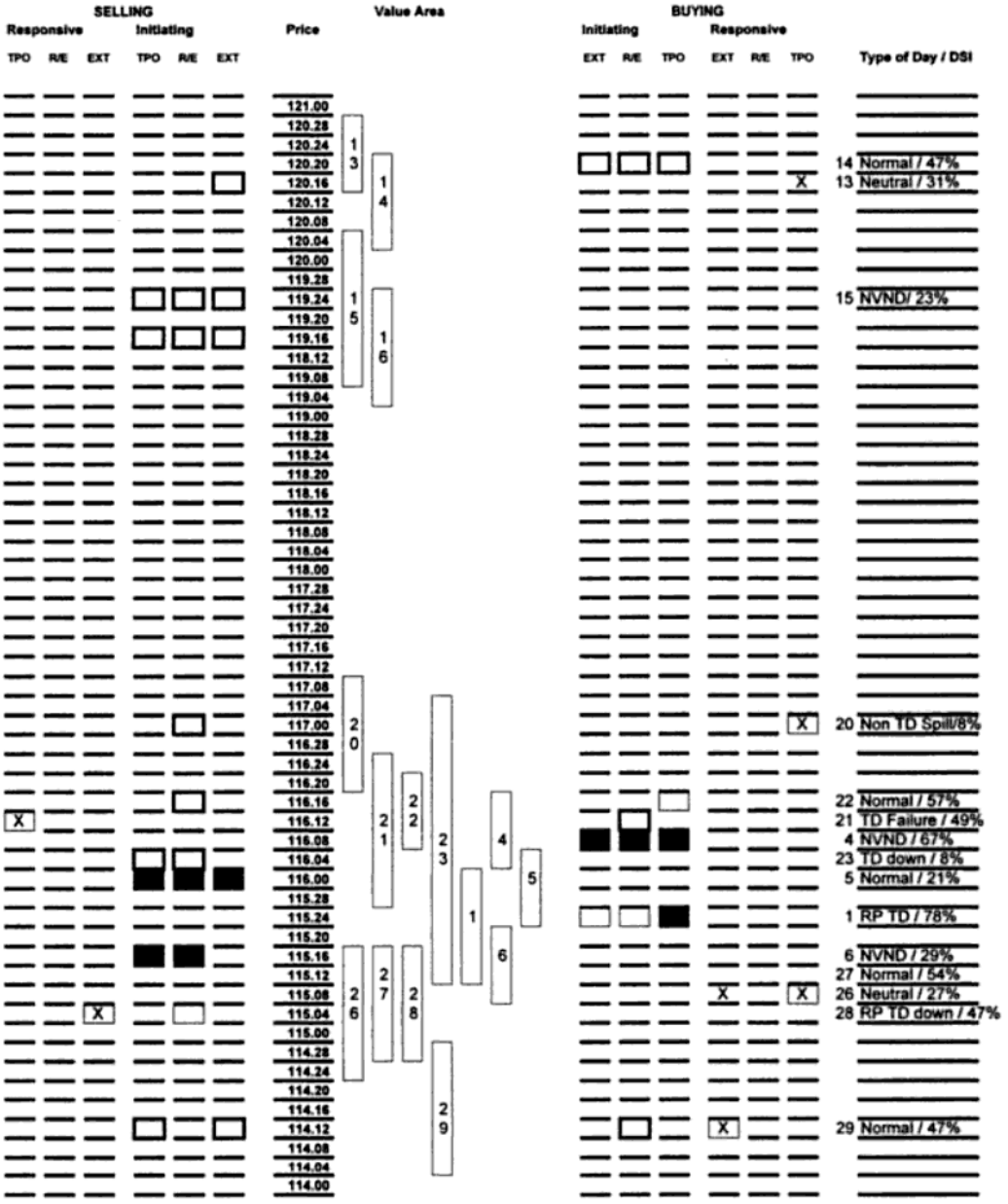



Figure 10.6 The market failed in test Area 3 and the down auction resumes on February 5 and 6. (Source: Sky Trade.)

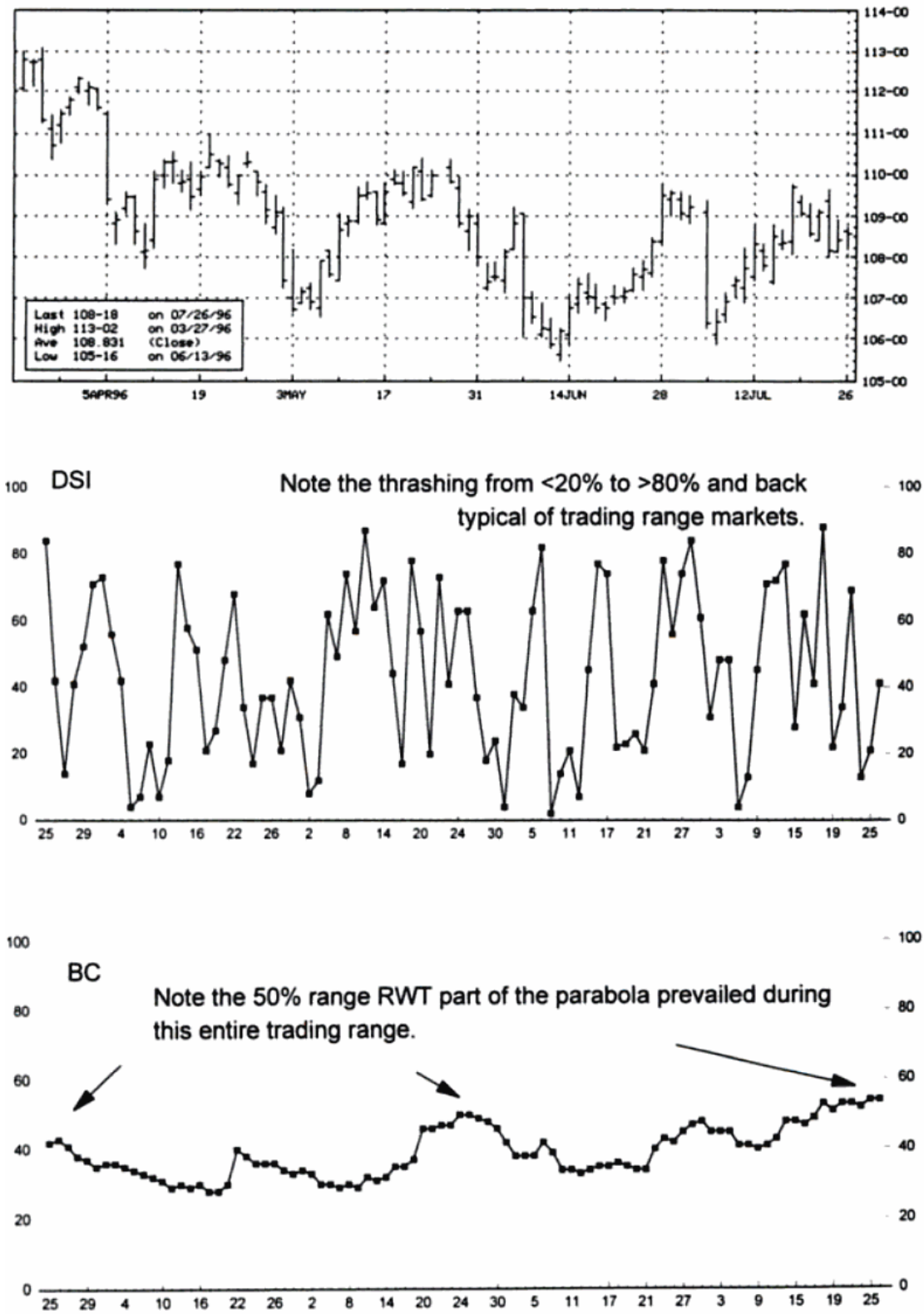



Figure 10.7 Daily continuation chart, DSI, and BC for T-bonds, 3/25/96 to 7/26/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

After the bond market's trend down, it entered another fairly wide trading range. On several occasions, the DSI reached extreme low readings: early April, early May, early June, and early July. The monthly non-farm payroll reports from the Commerce Department were released on the first Friday of each of those months. Some of those reports were stronger than expected, others were weaker than expected. But the

interpretation of the much-anticipated reports themselves was in large part responsible for the reckless selling and extreme bearishness which ensued. But looking at Figure 10.7, the market doesn't turn simply because the sentiment readings are extreme. Establishing a long position simply because of the DSI reading would have resulted in some pocketbook pain before any profits began to accumulate. Let's look at the profiles for the days forming the lows of the trading range as the extreme DSI readings were registered for the telltale clues as to whether the market was in a position to reverse course.

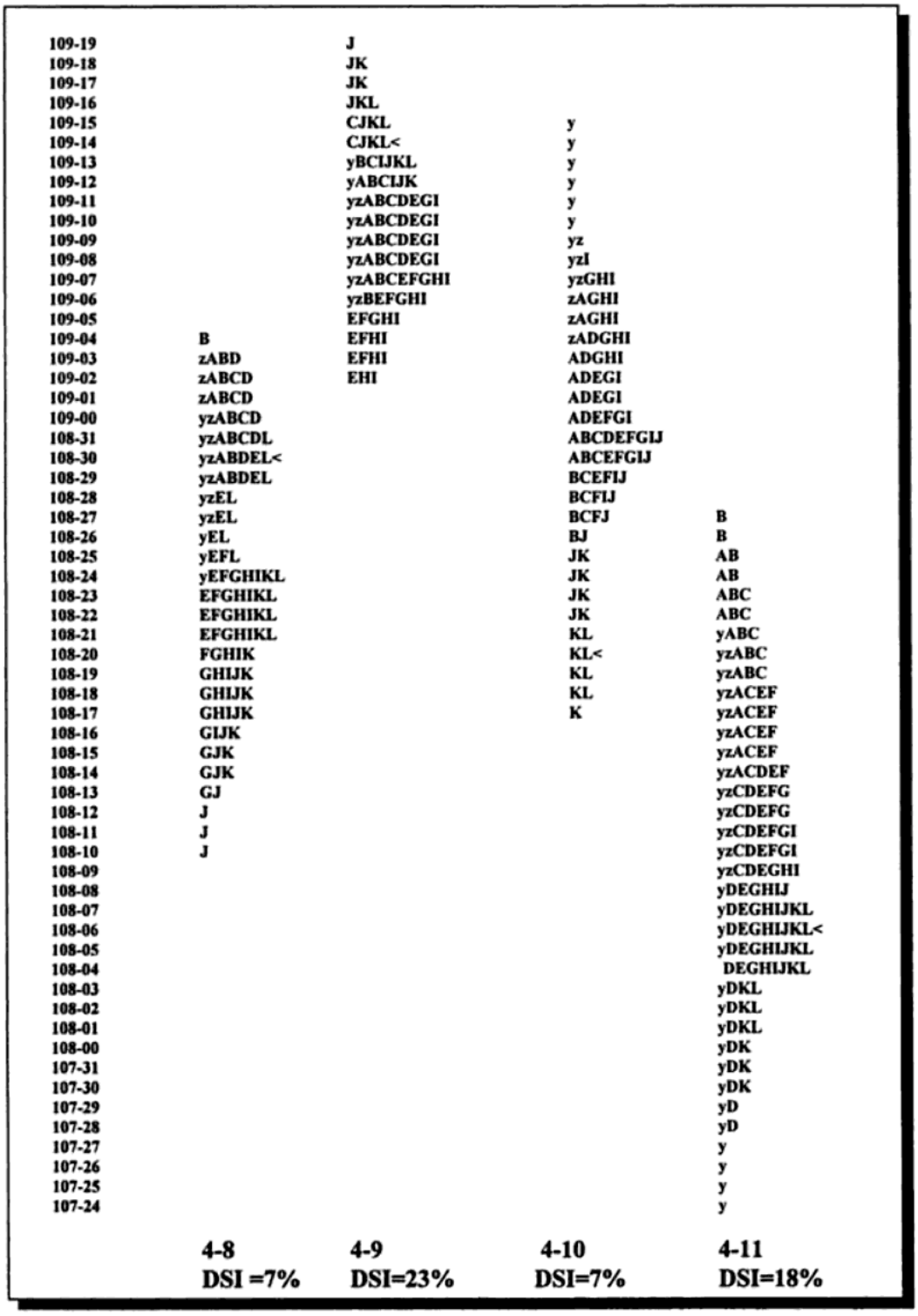



Figure 10.8 Treasury Bond Profiles for April 8 through 11,1996. (Sources: CQG, SkyTrade.)

Figure 10.8 shows the profiles for the formation of the low end of the trading range in April. The short-term trader would have had a buy signal on the 9th (i.e., range extension up on a DSI of less than 20 percent) and placed a stop under that day's lows, at 109-01. But the trade would have been stopped at April 10 when the lows of the previous day were taken out. Notice that despite the 23 percent DSI reading as of the close on April 9 (for use on April 10) the market got selling range extension. The combination of expectations of lower prices combined with selling activity to take the market a full point lower over the next day. The swing trader and long-term trader would use the non-trend type excess day on April 11 to start a new LTMA chart to see if an imbalance of buying were to develop.

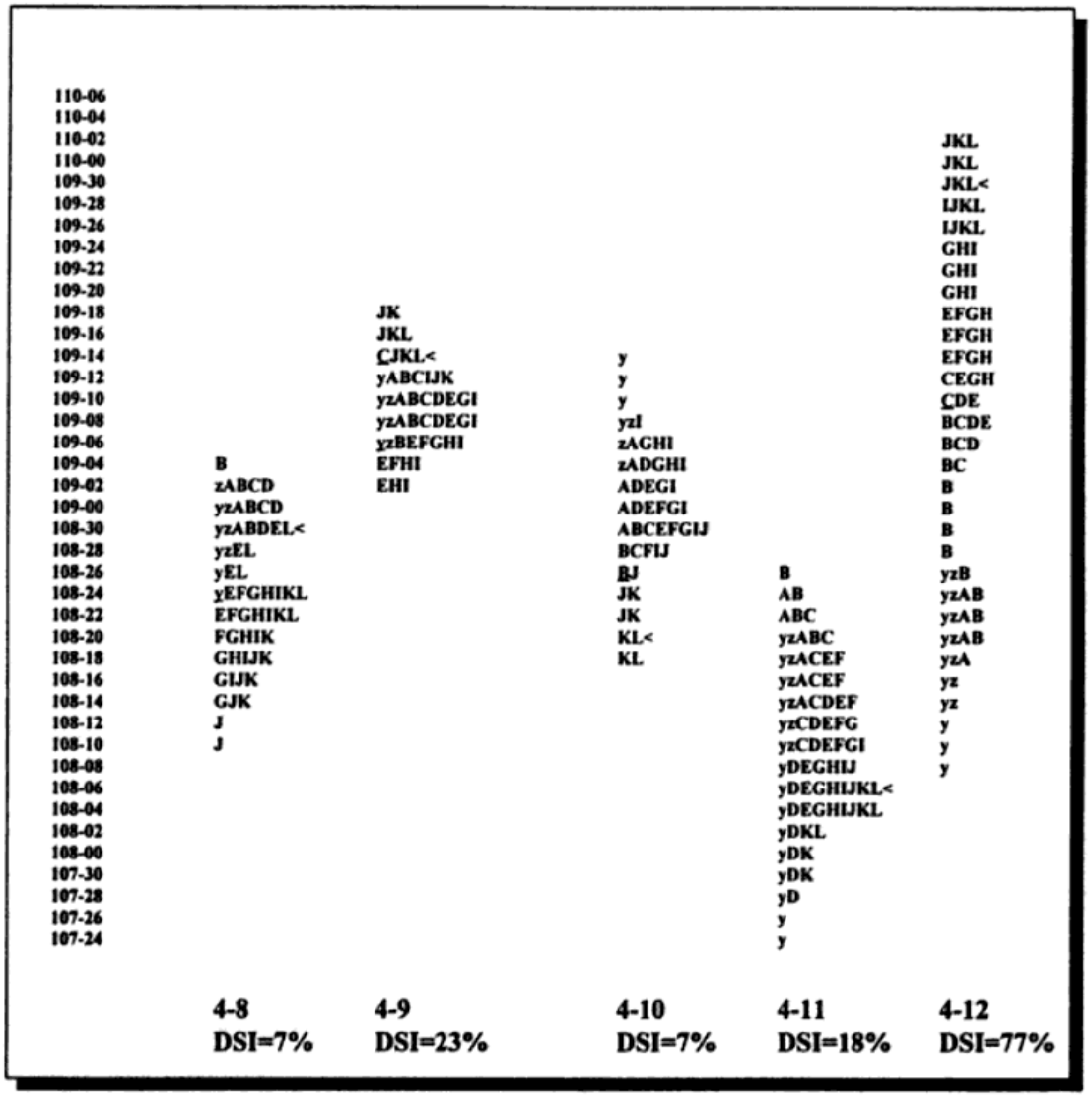



Figure 10.9 Treasury Bond Profiles for April 8 through 12 on 2 tick scale. (Sources: CQG, SkyTrade.)

The short-term trader had another signal on April 12 and would have gotten long on range extension up (see Figure 10.9). But notice how the market rapidly, too rapidly, began to expect price to continue higher as evidenced by the sharp rally in DSI from 18 percent to 77 percent. Expectations have moved too quickly through the parabola for a trend to develop. This is indicative of the market either moving into a trading range or setting itself up for a resumption of the down auction; therefore, the scalper who bought on April 12 at 109-09 range extension up would have to be on the

alert for any range extension down in the next day or two. Refer to Figure 10.7 and see how the market did move into a trading range, then did resume the down auction.

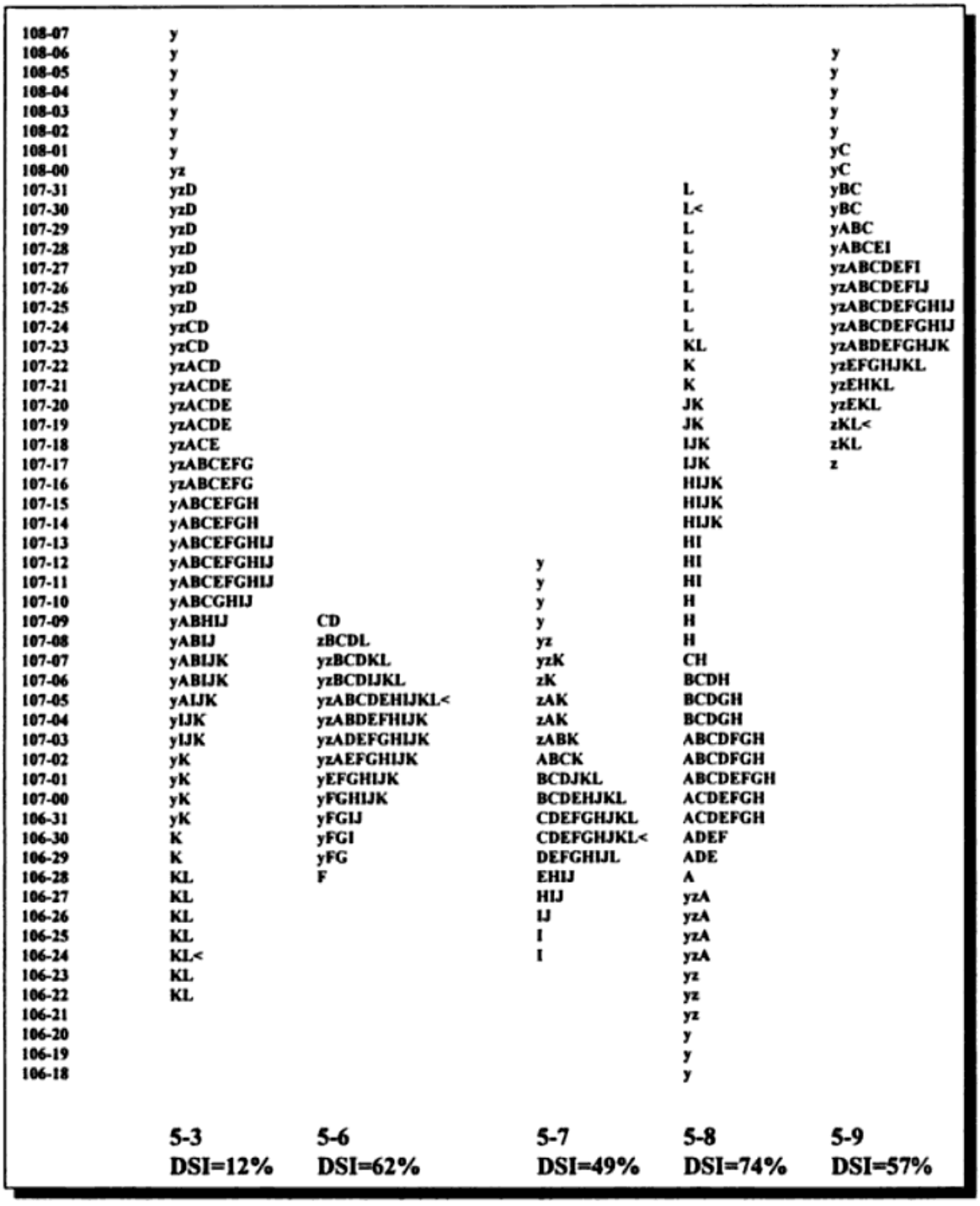



Figure 10.10 Treasury Bond Profiles for May. (Sources: CQG, SkyTrade.)

Figure 10.10 shows the profiles at the May lows of the trading range. On May 2, 1996, first-quarter GDP was reported at +2.8 percent and the bond market fell out of bed closing with a DSI reading of 8 percent. The next day, May 3, non-farm payrolls were reported at +2,000 versus a consensus estimate of +100,000. Bond prices surged in the minutes following the release of the report, but the market never got range extension up, so the buy signal for the short-term trader was never triggered. The OTFT did not enter the market on the buy side; in fact he was a seller all day long

as the Profile from that day illustrates. The Profile had a selling extreme, selling range extension, and a selling TPO count.

May 6 was a neutral day, a sign to start a new LTMA chart for monitoring. Traders actually got fairly bullish at the bottom as evidenced by the DSI. The DSI was leading the BC up from the bottom of this range. Refer to Figure 10.7 to see that the BC was in the 29 percent area while the DSI was chugging higher. In July, unlike the previous lows of the trading range and unlike the way the market had responded after the pattern of strong employment reports, the market leapt off the lows. That report was released on Friday, July 5; at the close of that day the DSI was 4 percent.

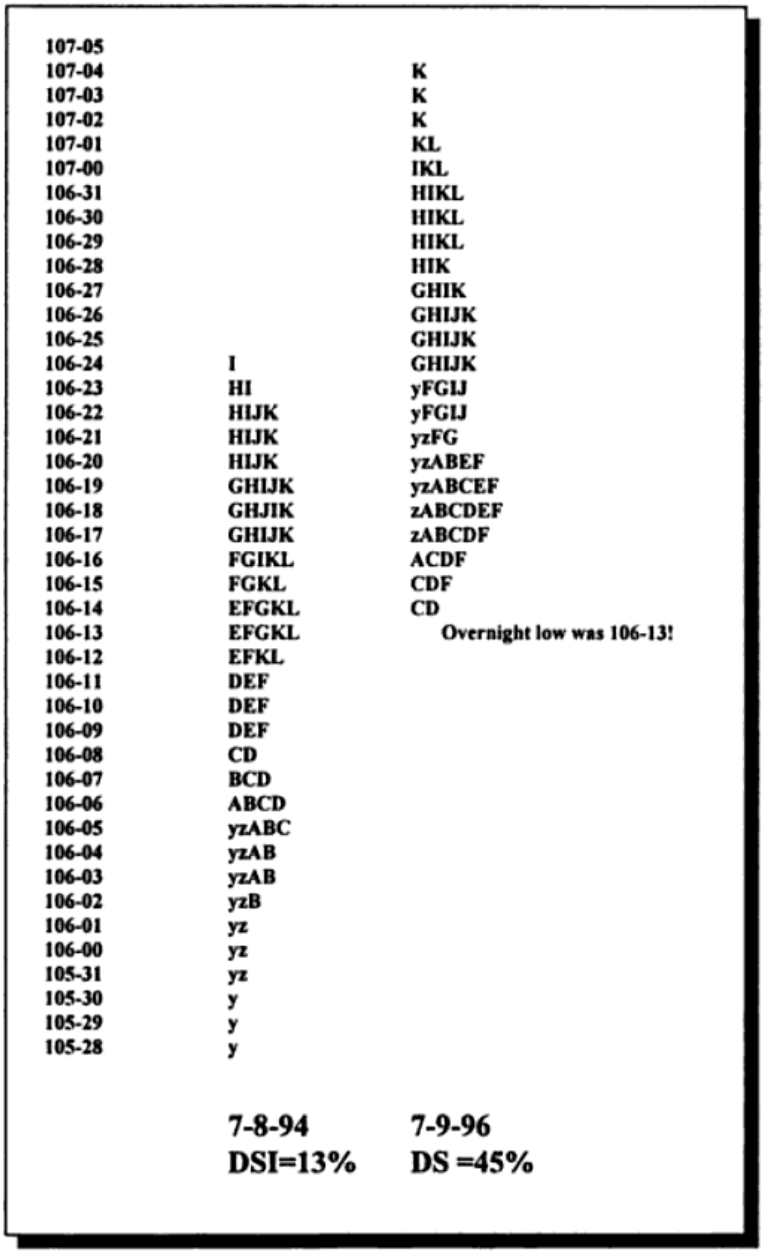



Figure 10.11 Treasury Bond Profiles for July 8 and 9. (Sources: CQG, SkyTrade.)

Figure 10.11 shows the profiles for the subsequent two trading days: July 8 and 9. The model signaled a long position on July 8 with range extension up at 106-09 with a stop under the day's lows. On July 9 the market had range extension down, but did not take out the low of the night session, and the DSI was moving higher in a measured fashion. Therefore, the potential for an unfolding bull trend was still in tact.

The coherent bull trend did unfold. The DSI progressed gradually and OTFT buying activity dominated the LTMA chart. Even as the DSI moved into the 70 percent range, buying activity continued to materialize on the profiles, as shown in Figure 10.12. On July 10 the market closed with a DSI reading of 71 percent, yet the market had buying range extension up on July 11. And it didn't stop there. The DSI of 72 percent on July 11 coupled with buying range extension on July 12 to take prices even higher.

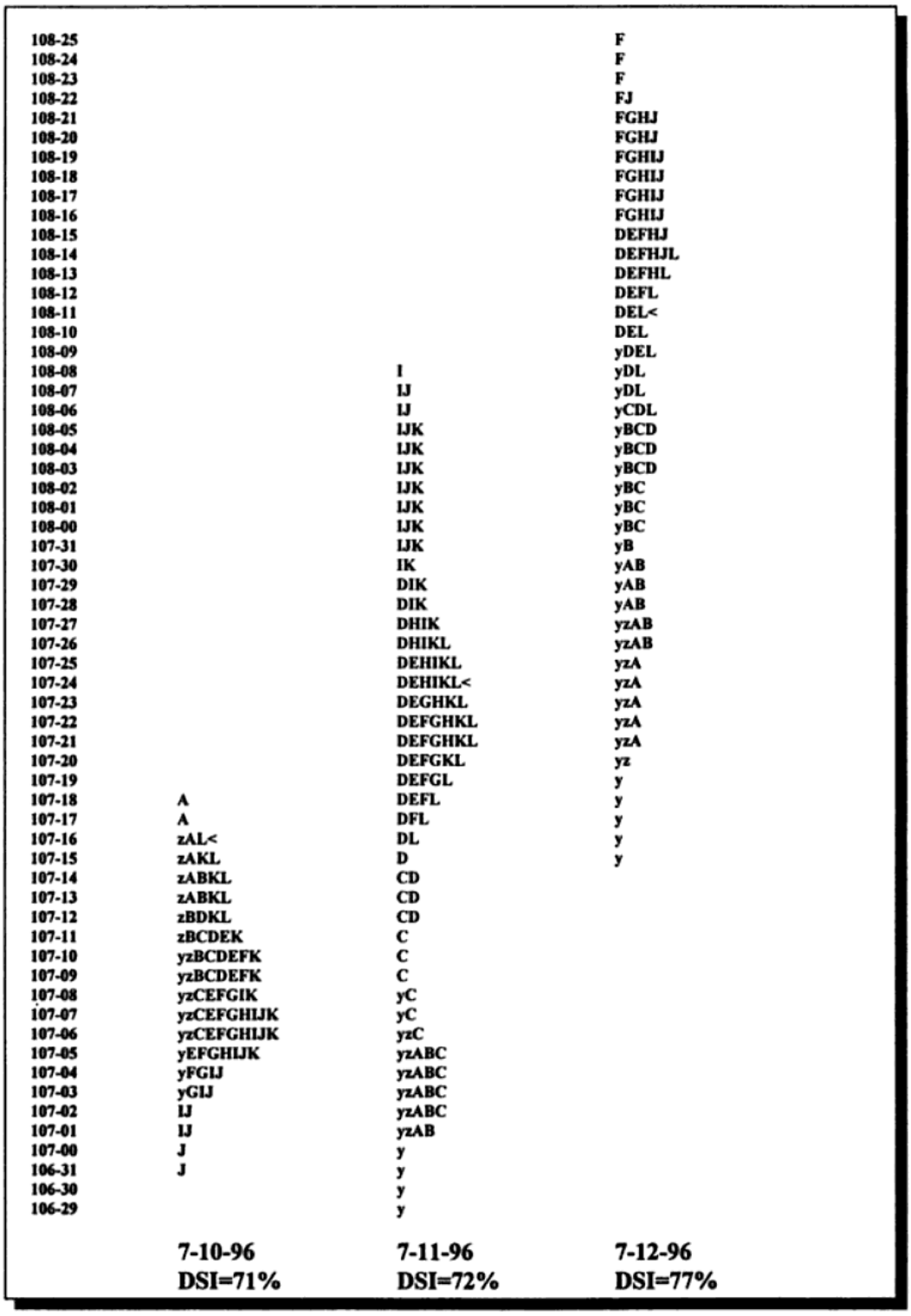



Figure 10.12 Treasury Bond Profiles for July 10 through 12. (Sources: CQG, SkyTrade.)

To illustrate how traders with different time horizons would use the model for trading, let's look at the July 8 through 18 time period. On July 8 the trader would use the extreme reading of 4 percent from the previous afternoon as an alert to the potential for a chaotic market bottom.

The intermediate term, or swing, trader would have used the formation of the chaotic bottom to create a new LTMA chart. As it happens, July 8 was a 3-R buying day, a perfect type of day for a market to change direction after a protracted move in one direction. The trader would see the 3-R day had developed by the close on July 8 and had the opportunity to get long on the market on the close, placing a stop under the day's lows. As we already know, the reason for the stop is two-fold: (1) money management and (2) as the model indicates, if selling activity accompanies extreme bearish sentiment readings the market can continue to trend lower.

The newly formed LTMA chart is presented in Figure 10.13 and day-by-day commentary follows.

After starting the new chart with the 3-R day on July 8, July 9 was a running profile day which developed into a trend day to the upside. July 10 was a selling day, but all of the selling was responsive; it all took place above the previous day's value area. Responsive selling is exactly what one would expect to find as the market goes higher; that is what the market is advertising for. But given that the intermediate-term trader is looking for the market to unfold through the parabola, and through areas 1 through 4 on the LTMA chart, at this point they would be on monitoring status. The market tried to go lower that day (July 10) as evidenced by three forms of selling but only one form of buying. Nevertheless, the sellers were unable to make much, if any, progress on the downside and they certainly didn't set value lower. So, the market was not facilitating trade with the sellers. After the close on July 10, the DSI was at 71 percent, higher than the past few days, but not yet extreme.

July 11 was a trend day up with two forms of initiating buying, one form of responsive buying, and no selling. The value area was wider than the previous day, the buyers were definitely in control, and the DSI was still tolerable at 72 percent

July 12 was a normal day; it had three forms of initiating buying and one form of responsive selling. So far there is no negative feedback for the intermediate-term trader, and the market is in the process of tracing out areas 1 through 4 on the LTMA chart. As stated previously, there is no way of knowing whether the market will continue to trace the trend out through the four areas. The trader is merely trying to secure a relatively advantageous price early in the process so that if the market does not unfold in the sequence, he won't get too hurt when he exits the trade. At the close on Friday, July 12, the DSI was a relatively high at 77 percent.

On Monday, July 15 bonds had a neutral day but the sharply lower close took the wind out of the sails of market opinion, as DSI registered 28 percent. As noted previously, this reversion back down the parabola quickly neutralizes any excess bullishness in the market. It makes for more even, two-sided trade to take place in the market.

In light of the large imbalance of initiating buying activity over the previous few days, the market can be expected to go higher to shut off that buying and advertise for sellers or merely mark time sideways to neutralize the buying activity.

July 16 had a lower open, but the initiating buyers from the prior days could be expected to emerge at these levels. And they did. The jab down in price in the face of all the initiating buying offered a price below value and July 16 posted a normal variation day to the upside. DSI at the close was 62 percent.

July 17 was a normal day with a fair amount of balance between buyers and sellers, who each registered only one form of activity, and DSI dropped to 41 percent.

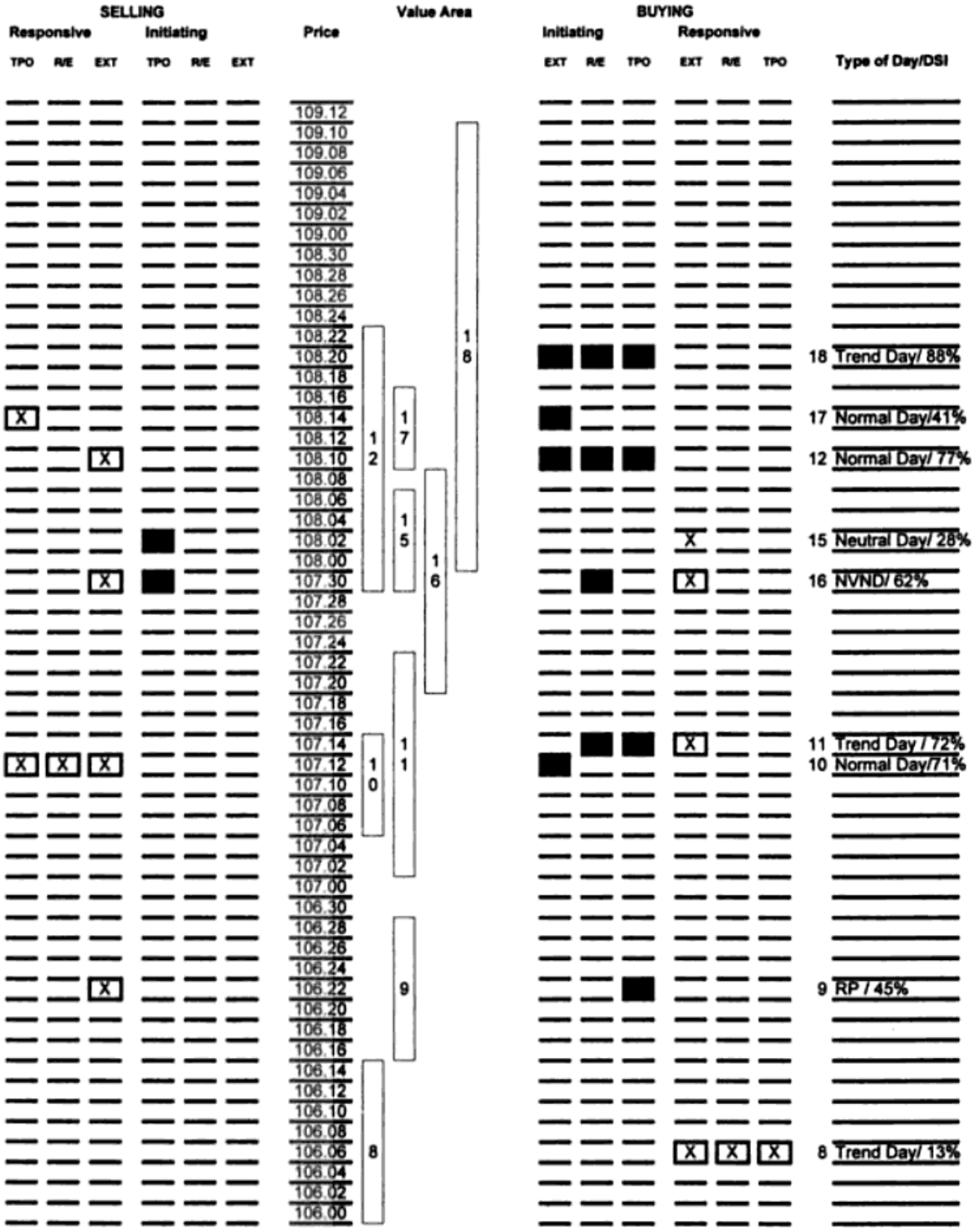



Figure 10.13 LTMA chart for Treasury Bonds, July 8 through 18, 1996. (Sources: CQG, SkyTrade.)

July 18 was a trend day which pushed prices considerably higher as the market posted a 3-1 day and closed with a DSI reading of 88 percent. The high DSI reading makes it difficult for the market to continue to trend higher. An overwhelming percentage of participants think prices are breaking out to the upside. It's not impossible for the market to rally under these conditions, just difficult. If the bulls continue to be rewarded with continued buying entering the market, or at least not discouraged by having some selling come into the market, then the market can

continue to trend higher. But in the face of all this bullishness, if selling does materialize, the conditions are such that a chaotic market top is likely to result.

The tops of the bond market's trading range were formed in accordance with the Model as well. Each time the market approached the top of the range, the DSI reached the 80 percent level and selling emerged. Figure 10.14 shows the LTMA chart for May 20 through 28. The non-trend day on May 20 prompts the creation of a new LTMA chart for the intermediate-term trader. As the chart is filled out over the next few days, the result is net selling by the OTFT—as evidenced by all of the activity on the left side of the chart. This imbalance of selling defines Area 1 on the LTMA chart. The DSI was not excessively bullish, but the BC was moving back into the mid-range of 50 percent. The sentiment surveys were indications of range trading, while the activity was predominantly selling. With all that selling in the market, as we have learned, the market is likely to go lower to shut off the selling or sideways to neutralize the selling.

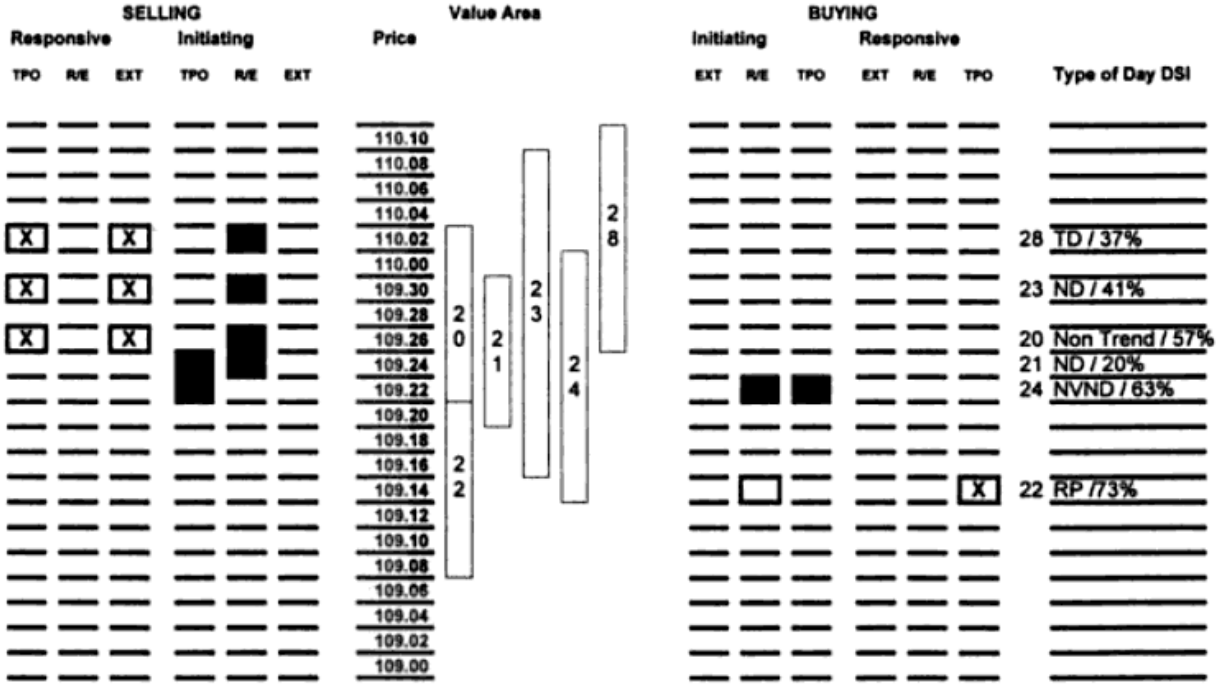



Figure 10.14 LTMA chart for Treasury Bonds, May 20 through 28, 1996. (Sources: CQG, SkyTrade.)

Figure 10.15 shows the concomitant move down in price, amid more selling activity and declining sentiment numbers as the market moved smoothly through the parabola. The combination of expectations and activity served to create a trend lower in the market.

On June 3, the DSI slipped below the 20 percent threshold, alerting both the short-term trader and intermediate-term trader to a possible trading opportunity. The scalper would be looking to buy range extension up, placing a stop under the day's lows if the trade was triggered. The swing trader, depending on his risk profile, could either follow the same strategy or elect to hold his position as the market entered the Area 2 phase of the LTMA chart, the balanced area (see Figure 10.16).

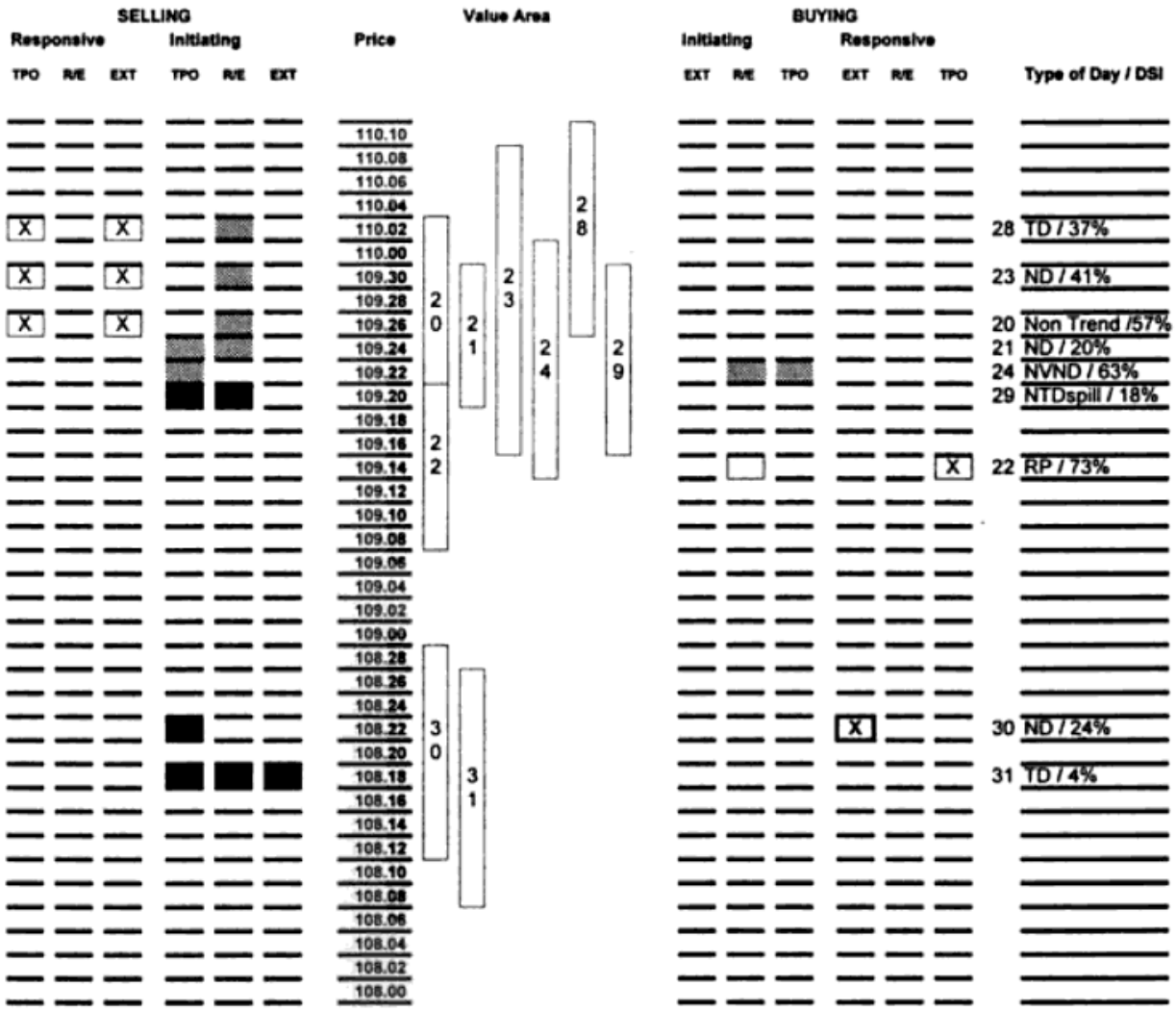



Figure 10.15 LTMA chart for Treasury Bonds, May 20 through 31,1996. (Sources: CQG, Sky Trade.)

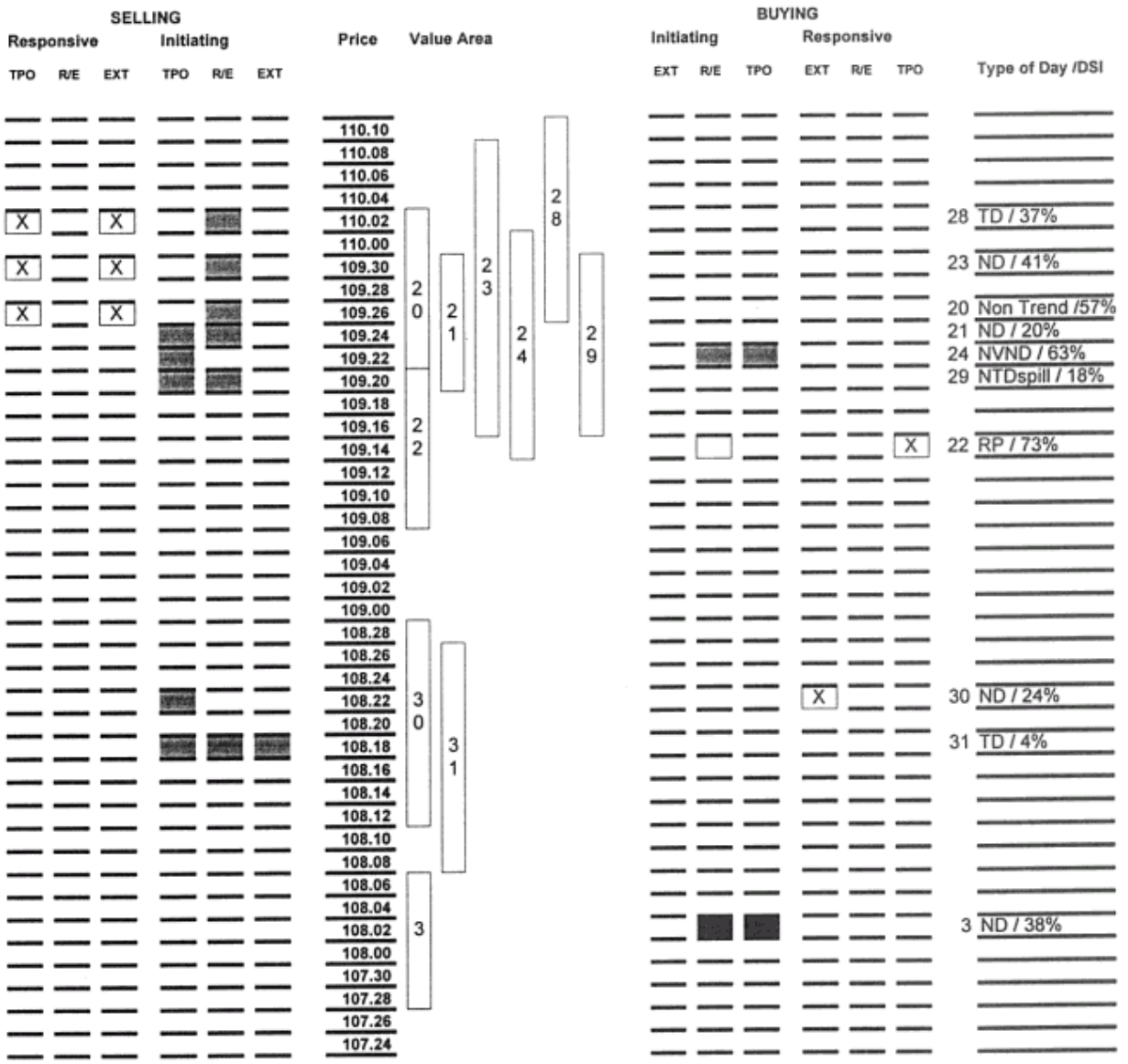



Figure 10.16 LTMA chart for Treasury Bonds, May 20 through June 3, 1996. (Sources: CQG, Sky Trade.)

# *Chapter 11*

## Soybeans

The soybean market experienced some considerable volatility during the time this book was being written, as evidenced in Figure 11.1. Despite some sharp vertical moves, both up and down, the market spent a considerable amount of time in trading ranges. As was done with the bond market in Chapter 10, we will look at several time periods from the time period covered in Figure 11.1.

Looking first at the early part of 1996, Figure 11.2 shows the run-up to the highs and the subsequent trading range. Notice the extremely bullish readings of over 80 percent for both the DSI and BC. The virtual unanimity among participants that prices were headed higher aided in preventing that very thing from happening.

Notice the sharp drops in the DSI in December on even the slightest down-day in price. This rapid move from one end of the Expectations Curve to the other effectively served to neutralize the extreme bullishness in the very short term and to create a possible arbitrage opportunity between the DSI and the BC. The extreme bearishness in the DSI against the backdrop of extreme bullishness in the BC created ripe conditions for the market to rally, provided that the market got range extension up the day after the low DSI readings. On the ensuing rallies, the DSI promptly shot back above 80 percent. As noted previously, this whipping back and forth from > 80 percent to < 20 percent and back again is a prelude to entering a trading range, which is precisely what the market was doing.

As the market maintained the trading range, notice how in the very short term, traders got very bullish, vis-à-vis the DSI, as prices rallied to the top of the range, and very bearish as it broke to the bottom of the range. The market even appeared to be breaking out on the price chart, as illustrated in Figure 11.3 which shows a longer term perspective on price. The market gapped to new contract highs and it certainly looked at though the sky was the limit. However, the near-unanimity among participants that the market was going higher, as measured in the BC, coupled with the thrashing DSI was going to make it difficult for the market to go higher.

Given that we are trying to identify the *beginning of trends,* which means identifying *reversals* in the market, consider the conditions prevailing on January 3. As the market was breaking out to the upside in Figure 11.3 the BC was 92 percent and the DSI was 88. January 3 was a 3-1 day up and the two previous days' readings were 86 percent and 93 percent, respectively. According to the rules for the short-term trader, he would get short the market on January 4 if the day had range extension down. Despite the excessively bullish BC and DSI expectations for higher prices, January 4 did get range extension down, at $753^{3}$A. So the short-term traders would get short since selling was coming into the market in the face of excessive bullishness. The intermediate-term trader would also start a new LTMA chart starting with the exhaustive buying day on January 3 to see if the longer-term picture would begin to unfold as a longer-term auction down. Figure 11.4 presents a LTMA chart for January 3 to 5 to show how those next few days unfolded. January 5 was a neutral day with range extension up first and down later in the day. This neutral day adds to the intermediate-term trader's perspective that a possible reversal in the market is unfolding. As we know, neutral days are indicative of a battle going an among OTFTs. They are change-of-ownership-type days; when they occur after a one-way move in

the market, as opposed to the middle of trading ranges, they assist in timing the unfolding of a new trend.

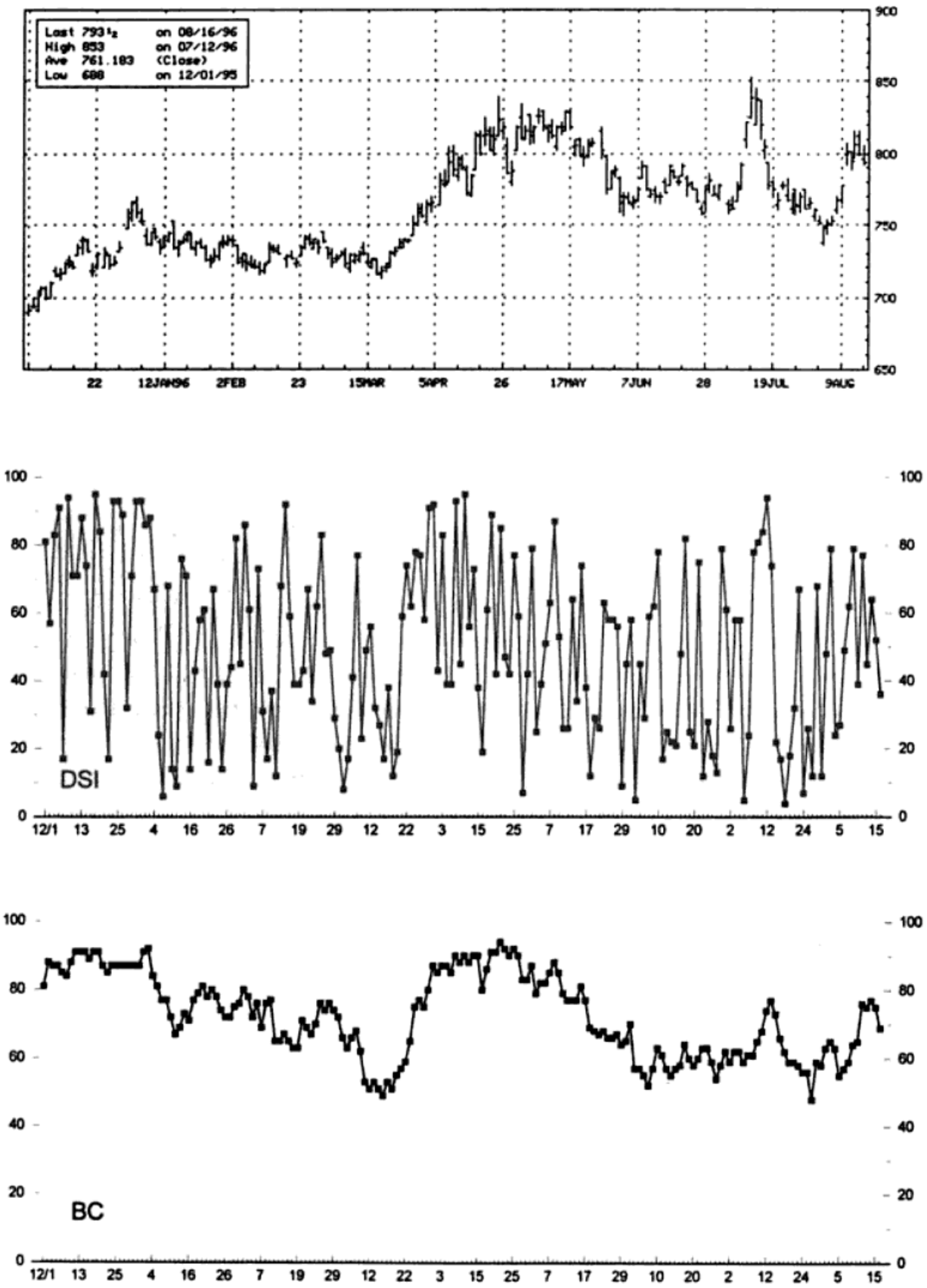



Figure 11.1 Daily continuation chart, BC, and DSI for soybeans, 12/1 /95 to 8/16/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

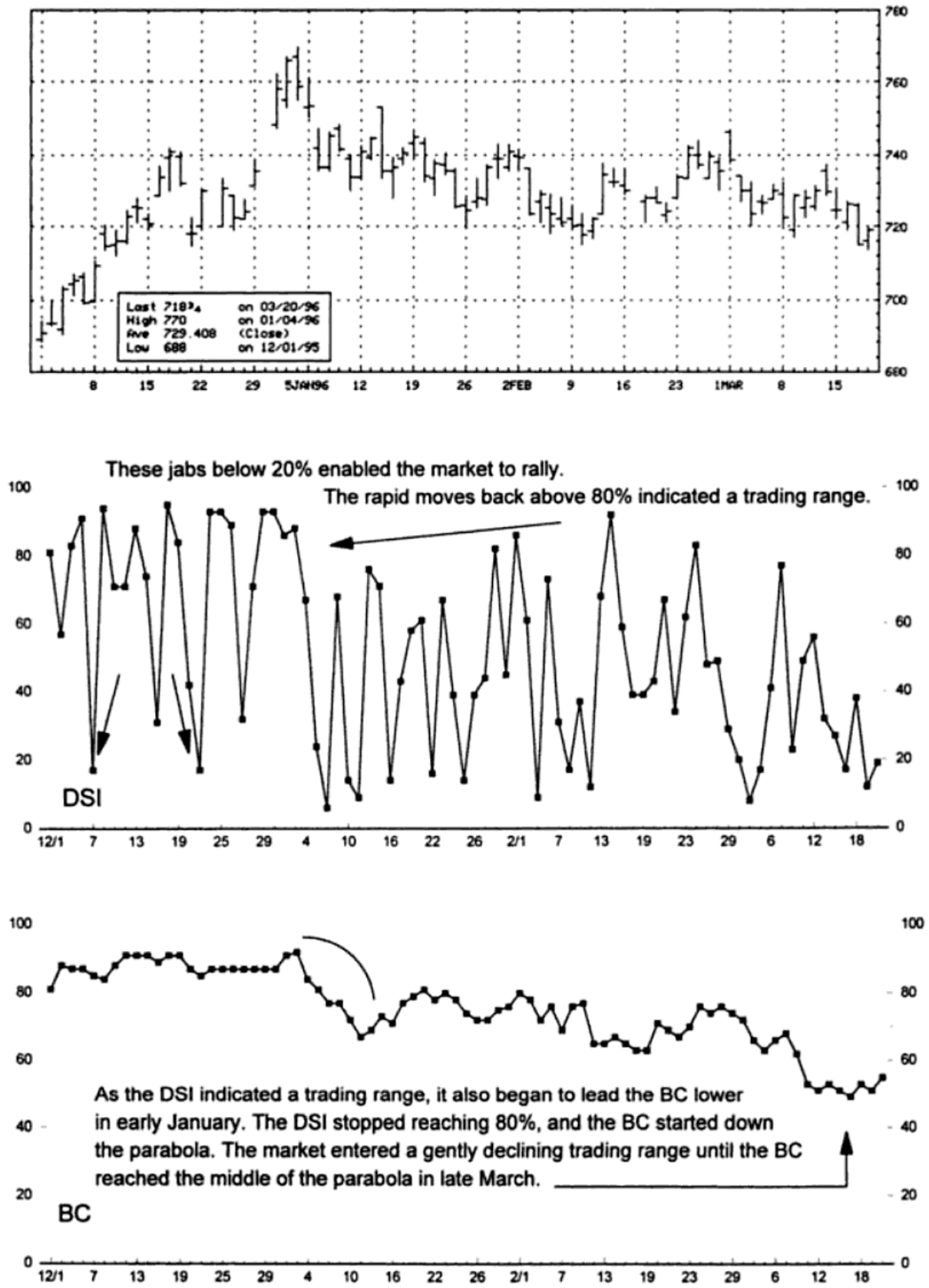



Figure 11.2 Daily continuation chart, BC, and DSI for soybeans 12/1/95 to 3/30/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

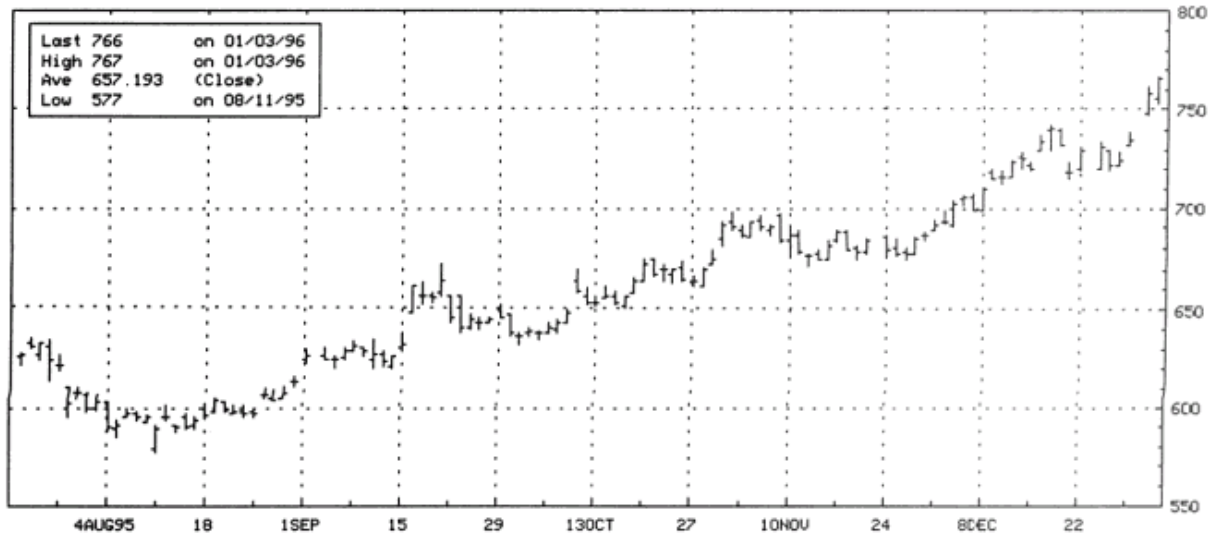



Figure 11.3 Daily continuation chart for soybeans, 7/23/95 to 1/3/96. (Source: Bloomberg Financial Markets.)

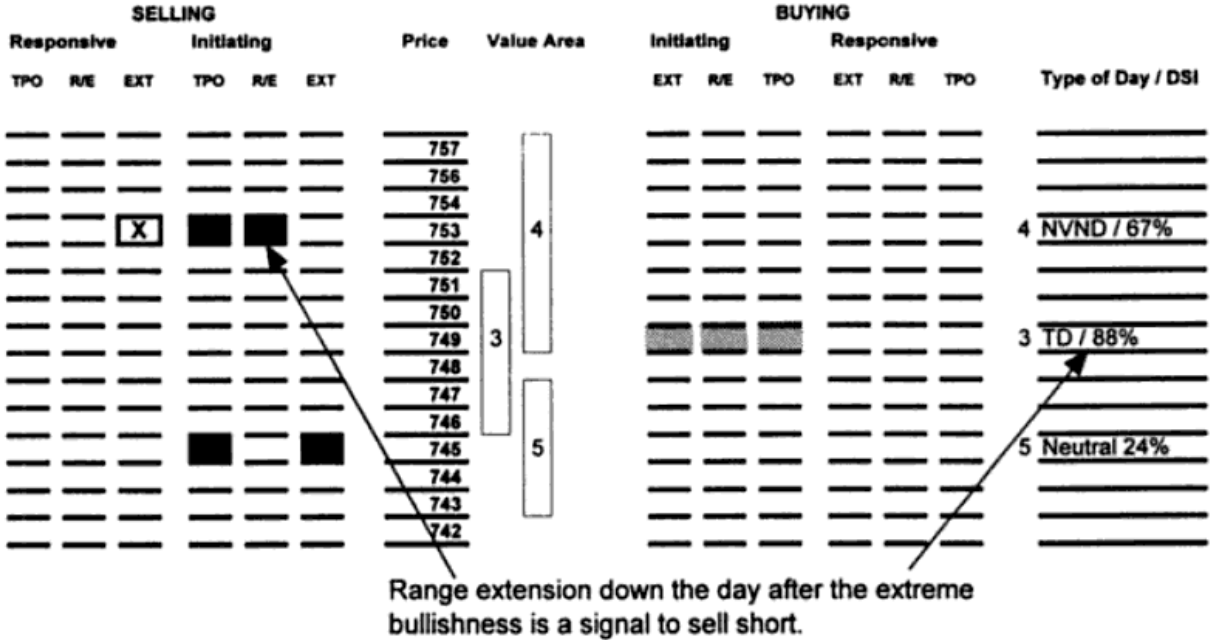



Figure 11.4 LTMA chart for soybeans, January 3 to 5,1996. (Source: Sky-Trade.)

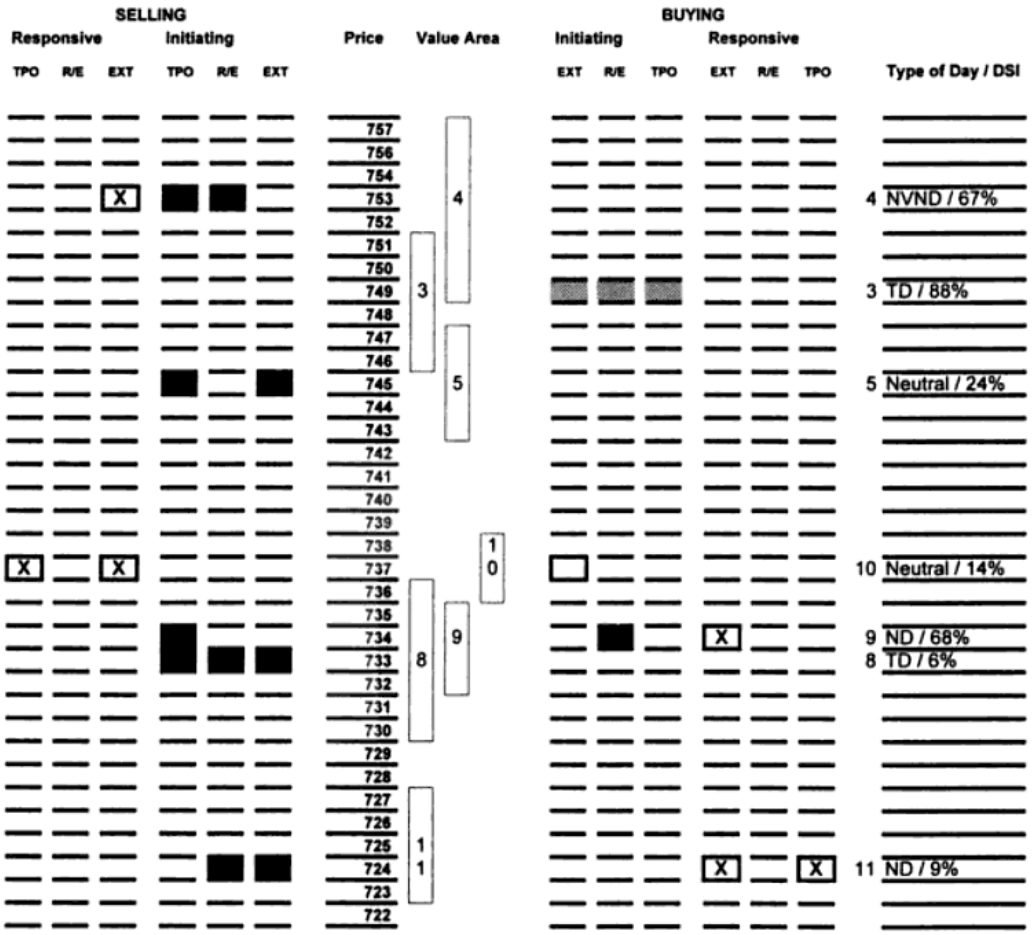



Figure 11.5 LTMA chart for soybeans, January 3 to 11, 1996. (Source: SkyTrade.)

Selling continued to accumulate on the LTMA as shown in Figure 11.5. The extreme 8 percent DSI on January 8 meant the short-term trader would exit the next day if the market had range extension up, which it did at 7313/4. But notice the overwhelming selling imbalance on the LTMA. As with all trading decisions, judgment is required. The intermediate-term trader might stay with the position because the imbalance on the LTMA is still overwhelmingly selling and in conjunction with the now declining BC, the market has the makings of a coherent market. Expectations are now moving down the Expectations Curve parabola and are being matched by OTFT selling activity.

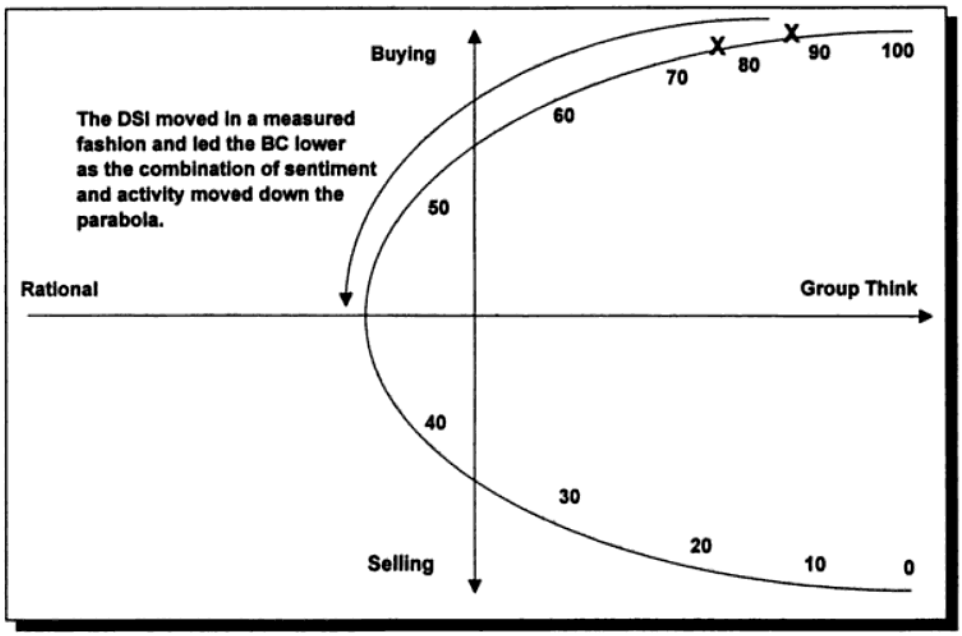



Figure 11.6 An example of soybeans moving down the parabola.

On January 9, the market closed with a sharp increase in the DSI from 6 percent to 68 percent, a rather sharp run from one end of the parabola to the other in a single day. Having crossed from an excessive reading to the other side of the 50 percent in a single day makes the price move suspect. Selling range extension the next day would add evidence to a down auction scenario. And selling range extension did occur on January 10 in the form of a neutral day which closed on its lows and produced a 14 percent DSI.

Notice how the DSI moved progressively lower as the auction down continued. This progression also began to lead, almost to drag, the BC lower. Figure 11.6 plots the market's condition in early January on the Sentiment-Activity Model. Notice how the DSI stopped jumping back above the 80 percent level after January 4. Unlike the parabola traversing pattern which prevailed in late December, as the market began to form a short term trading range in early January.

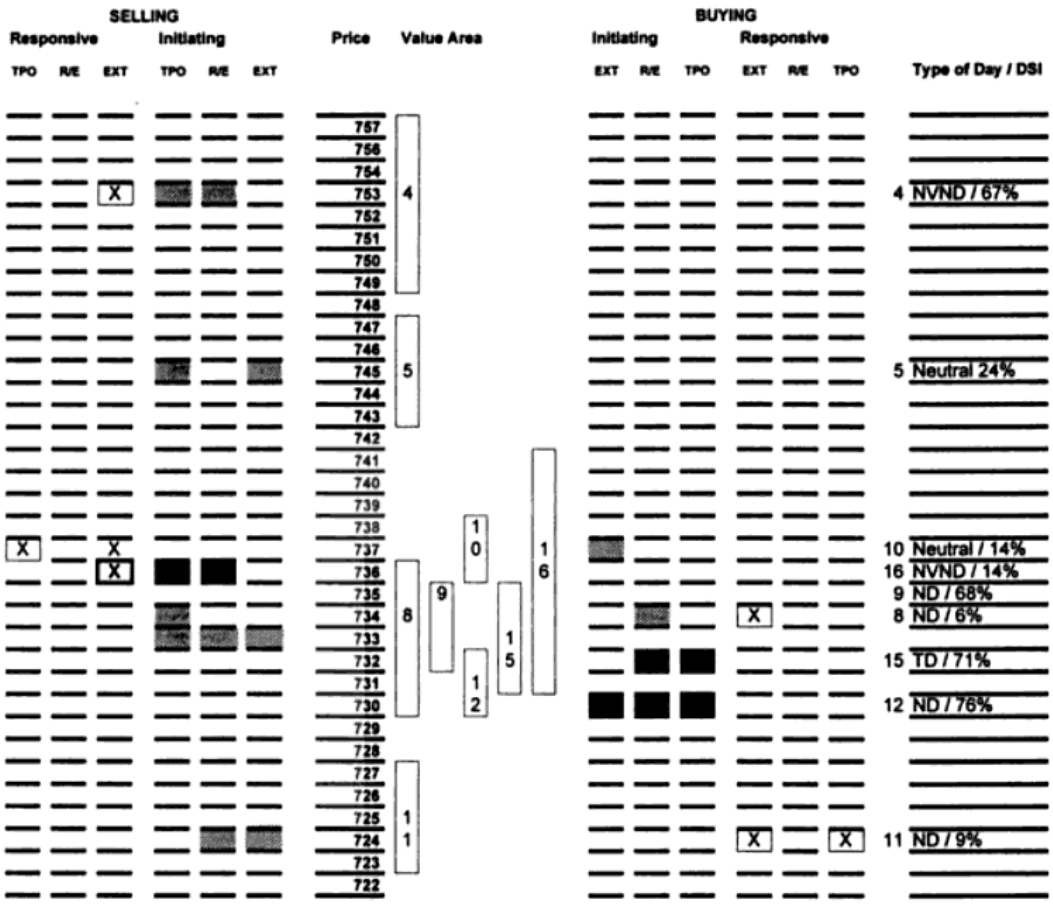



Figure 11.7 LTMA chart for soybeans, January 4 to 16, 1996. (Source: Sky Trade.)

As Figure 11.7 illustrates, the trading range market did unfold in the form of the balanced Area 2 on the LTMA chart. Notice the 9 percent DSI on January 11, followed by range extension up on January 12 which produced a 76 percent DSI as of the close on January 12. That makes the move suspect and any selling range extension the next day would argue for lower prices still. But the market had range extension up on the next trading day, January 15. High expectations coupled with buying pushed prices up on January 16, but the prevailing combination of expectations and market activity was for a trading range and the higher prices attracted selling. If the market was going to unfold on the LTMA chart as a down auction and follow the Area 1-2-3-4 format, January 16 was going to be Area 3—the test to the upside, in which case the test failed so the market should resume the auction lower. While the selling did materialize, the market never unfolded in the 1-2-3-4 mode. Rather, a broad trading range developed. Again, this is one of the advantages of entering the market at the edges of the parabola. If the market does not unfold in the "best case scenario," the price at which you entered the market at the parabola's edge still leaves the trade profitable.

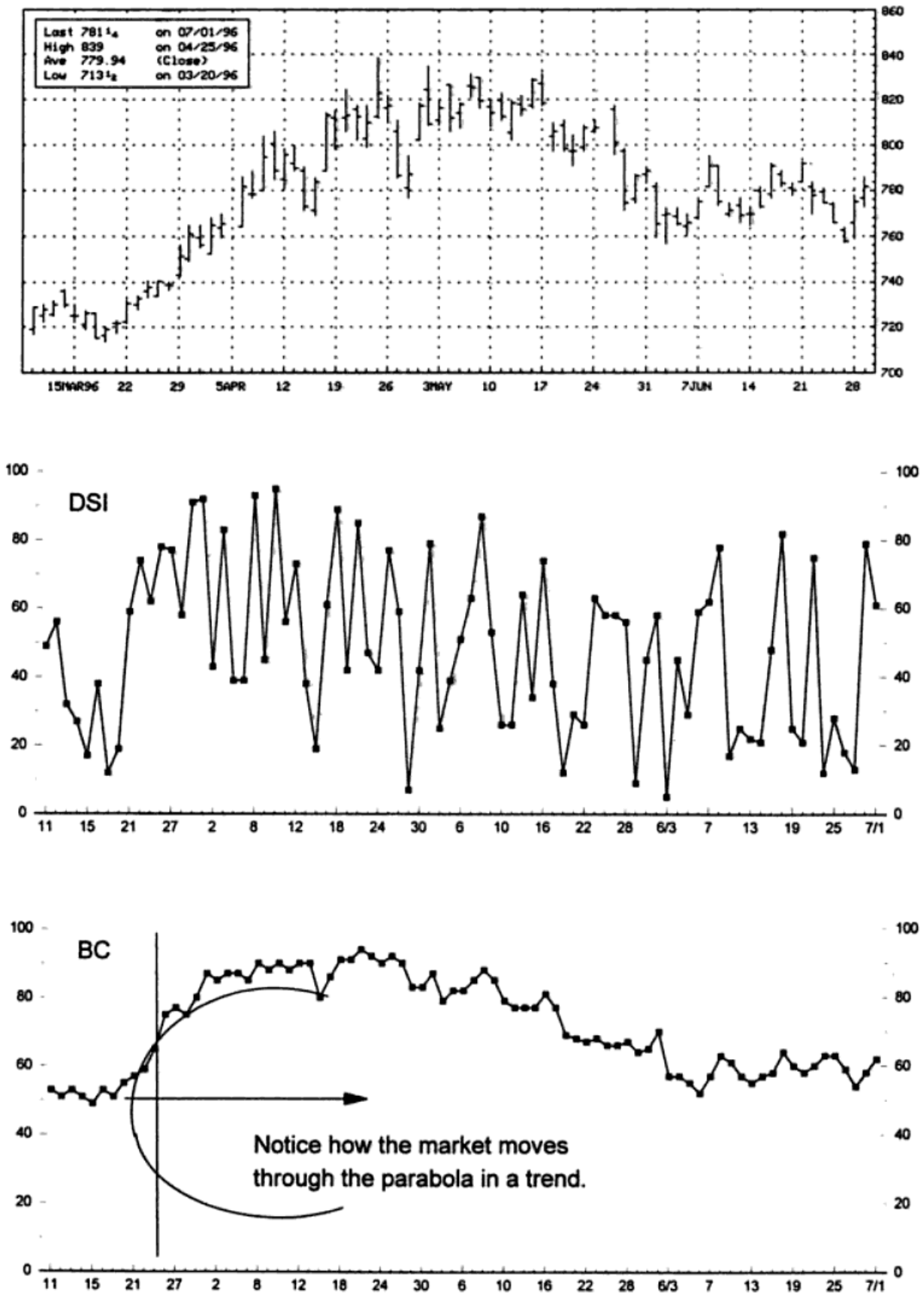



Figure 11.8 Daily continuation chart, BC, and DSI for soybeans 3/11/96 to 7/1/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

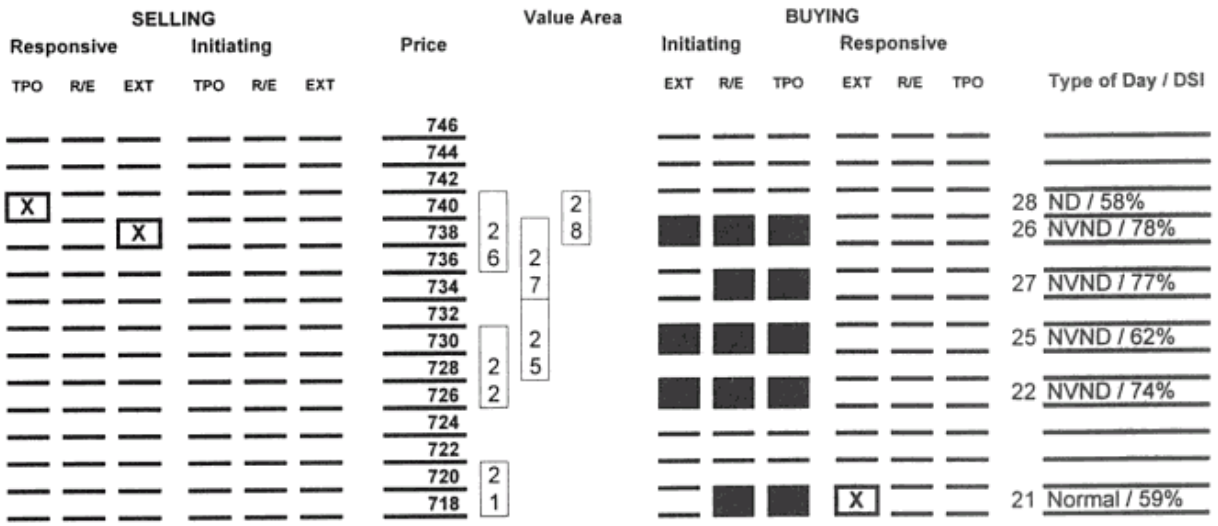



Figure 11.9 LTMA chart for soybeans, January 21 to 28, 1996. (Source: Sky Trade.)

For the intermediate-term trader who is looking for the unfolding of Areas 1-2-3-4, this was the first time since December that the market is starting to respond as though a trend is under way. It was the first time since December that the Expectations part of the equation was also conducive for a trend to start.

Figure 11.10 shows the continuation of the trend in which buying activity is clearly dominant in the market and expectations are growing for higher prices. On April 2 the range extension down on the neutral day following a 92 percent reading would have gotten the short-term trader out of his previously established long. The intermediate-term trader would remain in the market since this is a nominal amount of selling given his time horizon. Besides, he is trying to give the market the time necessary to demonstrate whether the trend is authentic and will unfold in the AREA 1-2-3-4 format. Therefore, while he would start a second LTMA chart beginning with this neutral day after a substantial move in the market, this LTMA would be maintained for the next few days to see if the 1-2-3-4 would unfold. After the close of that neutral day on April 2, the DSI was reported at 43 percent. This sharp, one-day reversal from one extreme of the parabola back across the 50 percent level is an indication of having neutralized the excessive bullishness in the market in the short term. This would enable the market to resume its rally the next day, provided OTFT buying shows up on the profile in the form of range extension up.

Any LTMA charts started from the lows or highs of the range fizzled into a balanced situation. Any long trades entered near the lows of the trading range in hopes that Areas 1 through 4 would unfold were frustrated as the market quickly became excessively bullish as the DSI jumped over the 80 percent mark, making it difficult for the market to rally. Invariably, selling came into the market the day after each of these high DSI readings. This is not to say that money couldn't have been made by taking advantage of the excessive readings at the time. In fact, the market provided several opportunities to arbitrage the excessive pessimism in the DSI with the excessive optimism registered in the BC, using range extension as a signal for the arbitrage trade. The point is, the underlying combination of expectations and activity in the market did not favor the development of a trend. Balanced activity combined with the DSI jumping from one end of the parabola to the other, all while BC was gently and steadily declining, established the ideal setting for a trading range. The trading range had a gently sloping negative bias to it, thanks in large part to the declining BC But there were no opportunities to speak of for the intermediate-term trader since the LTMA charts quickly found balance every time they were started. The short-term trader had several opportunities to get long on range extension up on extremely

bearish DSI readings, exit, and possibly even reverse on range extension down the day after extremely bullish readings. But rather than trying to force trades, or expect that the market would erupt into a trend, the best strategy remained trying to operate at the edge of the parabola.

The market remained in this random walk type trading range market until the middle of March. Note in Figure 11.8 that by that time the BC had declined to the 50 percent level, a possible area of support according to the theory of contrary opinion. On March 19 the DSI registered 12 percent. This combination of relative extreme bearishness in expectations is an alert to the possibility of a reversal in the market and the start of a trend. However, buying activity by the OTFT must surface in the face of the bearishness if a trend is going to materialize. To increase the chances that the market is at a turning point and at the edge of the parabola, ideally the trader wants the DSI to be at an extreme bearish level too.

March 20 was a neutral day which would have alerted the intermediate-term trader to start a new LTMA chart and simultaneously gotten the short-term trader long on the buying range extension. March 20 closed with the DSI at 19 percent so buying range extension the next day would have once again given a signal to the short-term trader to get long the market. So on March 20, or by the latest March 21, both time horizons of traders had indications to be long the market. Notice how the DSI did not jump all the way through the parabola. Instead, the market progressed through the Expectations Curve in a more orderly fashion, enabling a trend to unfold. The underlying conditions of the market were a combination of gradually improving expectations and buying activity by the speculative element of the market.

Figure 11.9 shows the first six days of that LTMA. The inordinate imbalance of buying, and primarily initiating buying, activity indicates that the demand curve is shifting higher. The market should move higher to shut off the buying and advertise for selling.

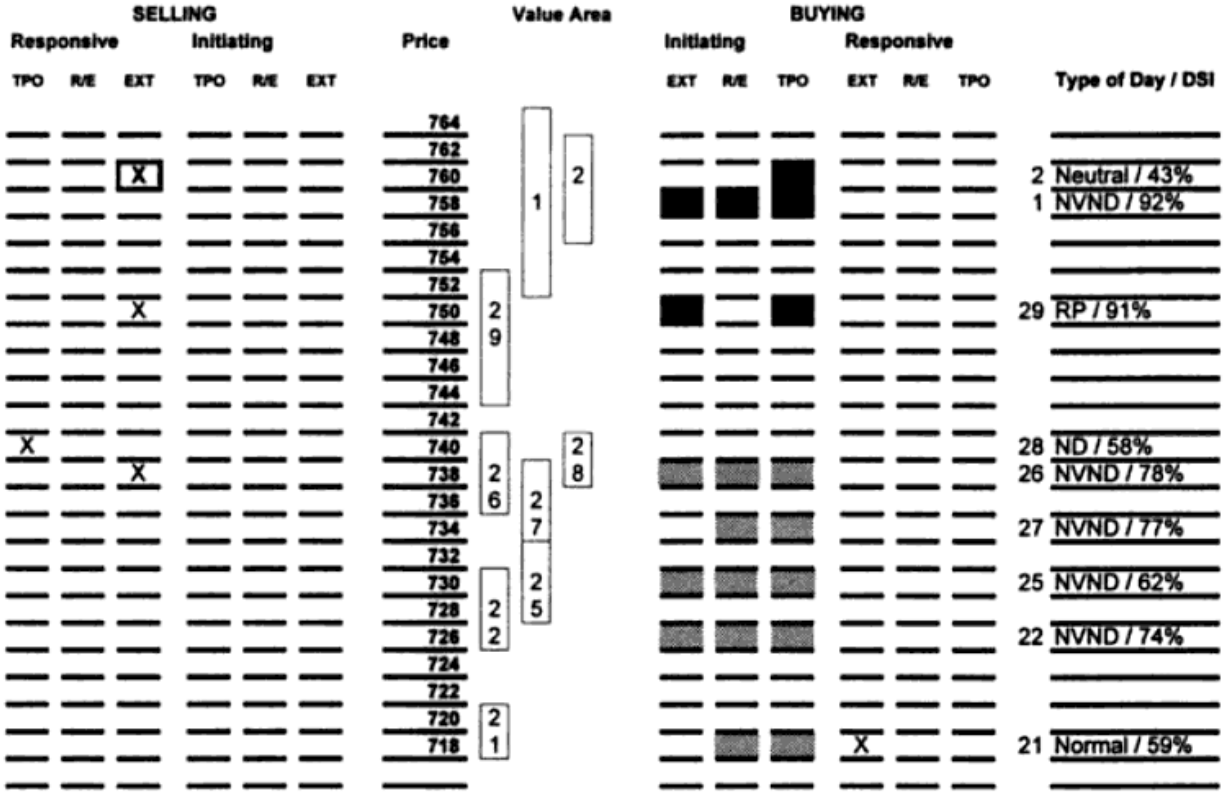



Figure 11.10 LTMA chart for soybeans, 3/21/96 to 4/2/96. (Source: Sky-Trade.)

The 43 percent DSI proved to have been enough to neutralize the situation as the next day posted a 3-1 buying day. The 83 percent was definitely an alert for market exhaustion, but as can be seen in Figure 11.11, no selling came into the market to confirm the alert. The next two trading days, April 4 and 8, continued to post 3-1 buying days.

As Figure 11.12 shows, this market did unfold in the Area 1-2-3-4 format. The market came into more of a balanced situation from April 11th to the 16th. The market had finally gone high enough to attract some selling from OTFTs. Looking at the chart you can see that the amount of initiating buying and selling is more in balance in the 774 to 796 price range. The 16th was a trend day down at the bottom of this range and left the DSI at a meager 19 percent. This was the test down, Area 3, on the LTMA format. This created a perfect opportunity to arbitrage the BC and the DSI provided the market got buying range extension the next day. Refer to the daily chart in Figure 11.8 to see how the market resumed the up auction after this test down failed.

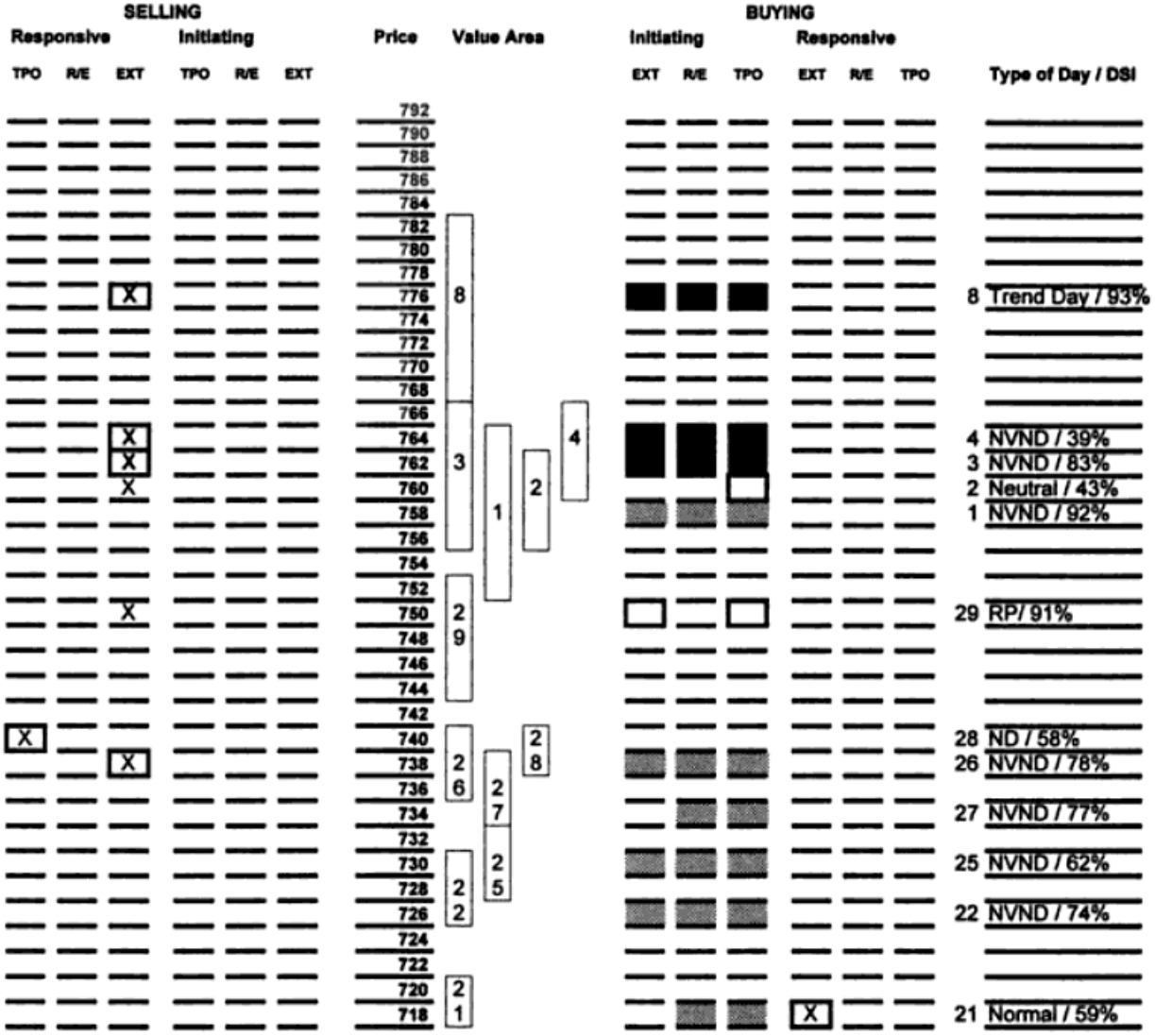



Figure 11.11 LTMA chart for soybeans, March 21 to April 8, 1996. (Source: SkyTrade.)

Refer to Figure 11.8 to recap these LTMA charts. As the market reached the high end of the parabola on 8 with the BC at 90 percent-h and DSI near 90 percent, the market began to take on similar underlying conditions to those which prevailed at the beginning of the year: overwhelming bullishness, selling via the Profile, and sharp

spikes to the 20 percent area on the DSI. Note that during the trend higher between March 20 and April 25, the DSI was void of any spikes down, with the exception of the ideal jab down while the LTMA chart was creating Area 3, the test down which failed. The 19 percent reading on the DSI offered an ideal opportunity to get long on buying range extension the next day.

The vertical move in early July is also worth examining in detail, if for no other reason than it stands out on the daily chart like a sore thumb. Figure 11.13 illustrates that in June and coming into July, the BC was in the rational state and prone to a trading range. At the close on July 5, right at the bottom of the trading range, the DSI registered only 4 percent bulls. Then the market exploded into a five-day, $1.00 rally. While there is no denying that such a price move would have been highly profitable, the short-term trader would not have gotten a buy signal; there was no combination of extreme bearishness on one day and buying range extension the next day. But it turned out to be just as well since the market collapsed and in five days gave back all of its gains.

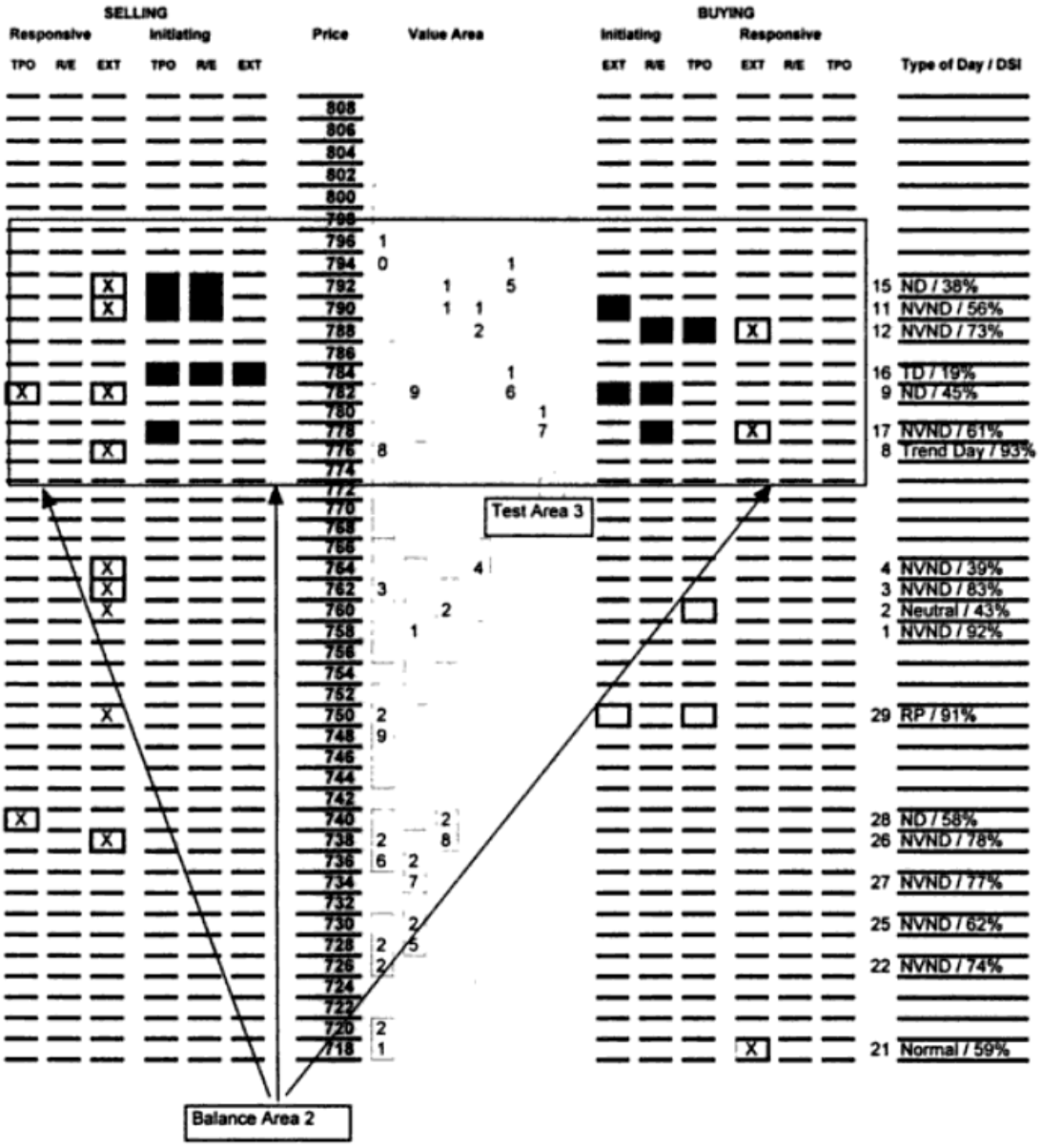



Figure 11.12 LTMA chart for soybeans, 3/21/96 to 4/17/96. (Source: Sky Trade.)

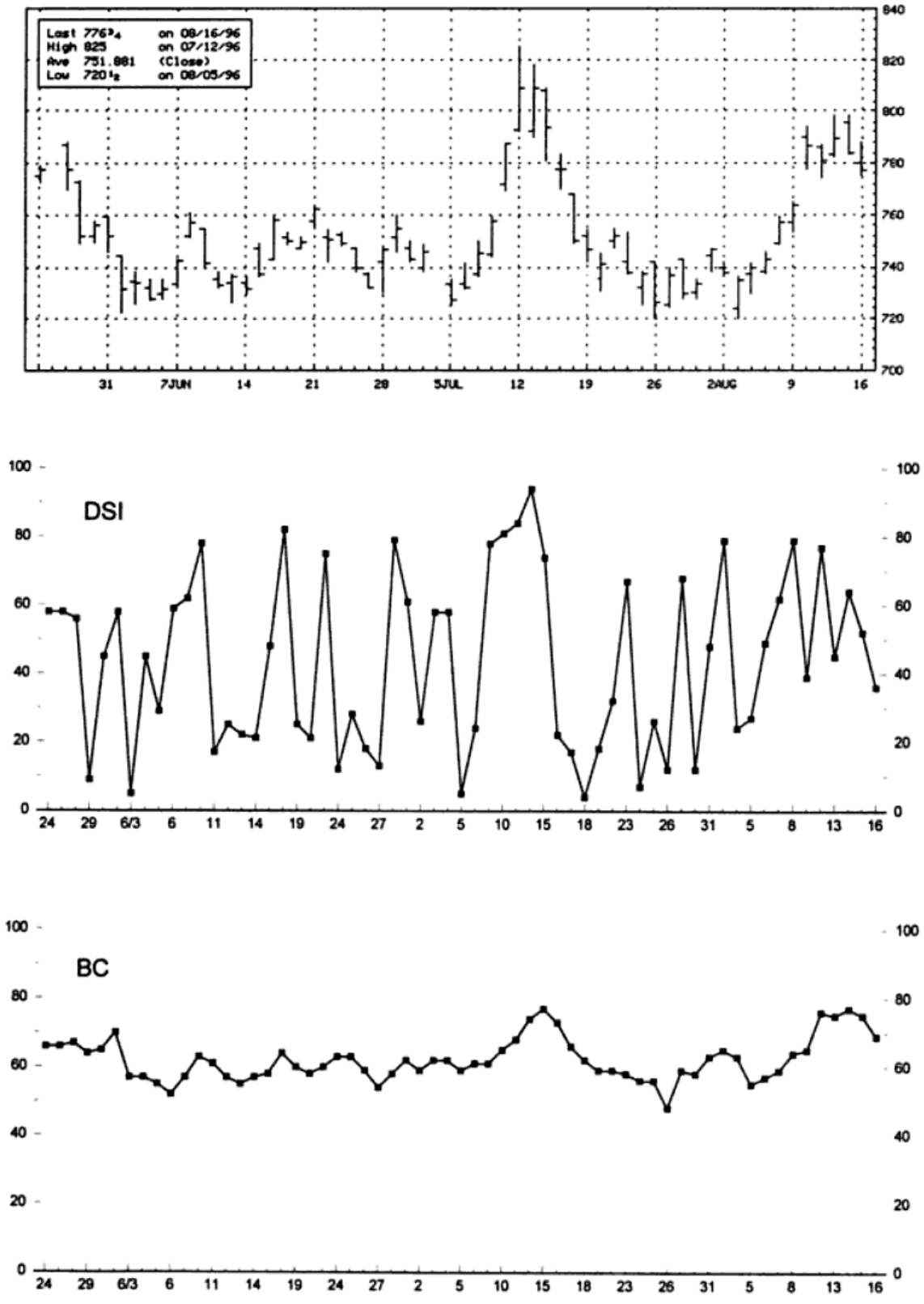



Figure 11.13 Daily bar chart, DSI, and BC for November soybeans, 5/24/96 to 8/16/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

The surge to 94 percent on July 12 set off warning signals. At the top of that move the market posted what would not ordinarily be called a non-trend day since the day's range was so wide. But the interesting thing about that day was that the entire day's range was made in the first 30-minute time bracket. That is, the market had no range extension; locals were able to find both edges of the day in less than half an hour. Days which post the entire day's range in 30 minutes, even if it is particularly wide, often produce the same results as a non-trend day; namely, a change in trend. The 94 percent bulls bolstered the prospects for that to be the case. The intermediate-term trader would start a new LTMA chart on that day and start to look for selling from the OTFT. Such a trader would not have had to wait long for the selling to enter the market, as shown in the Profiles in Figure 11.14.

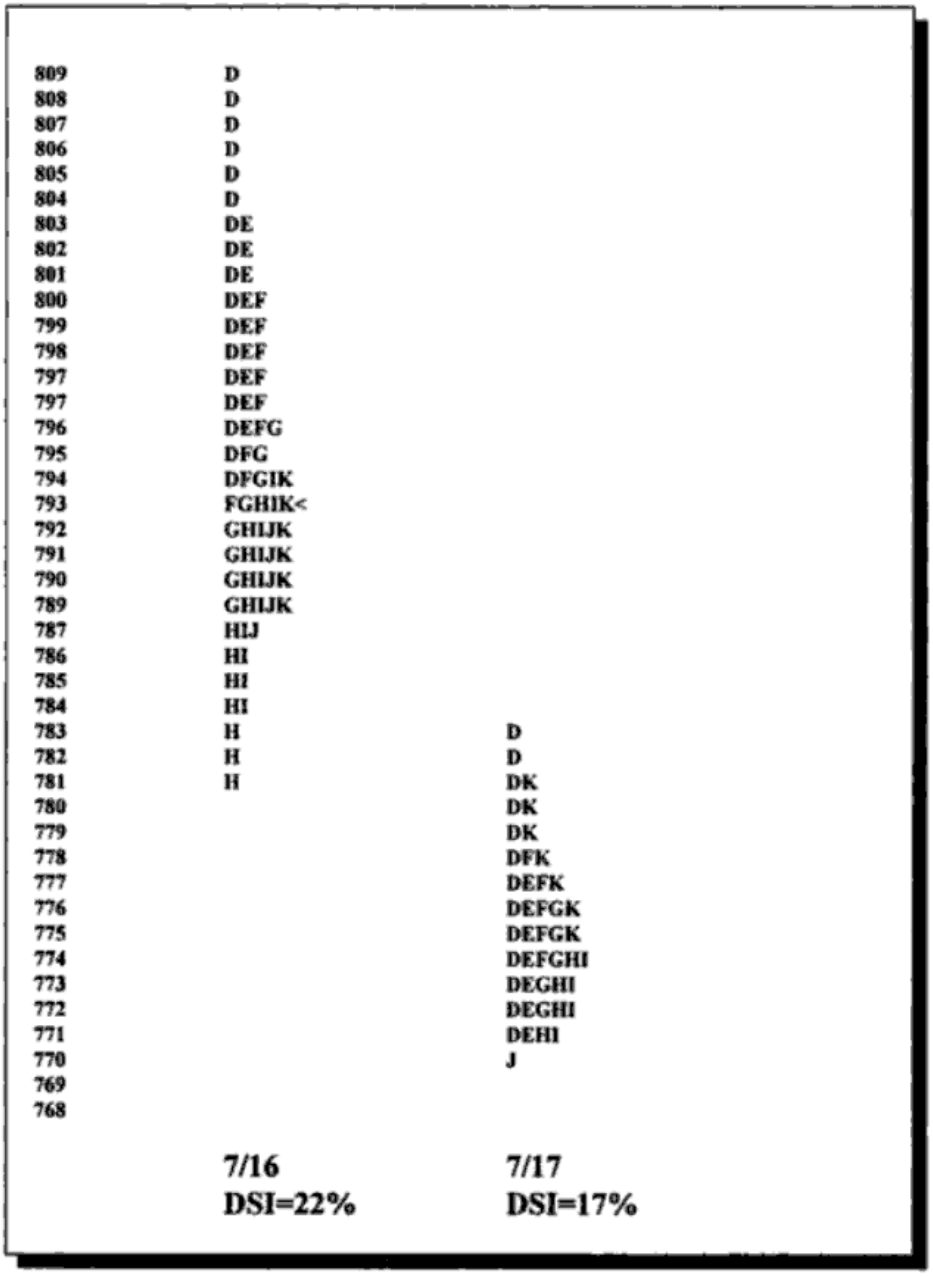



Figure 11.14 November soybean profiles for July 16 through 17, 1996. (Sources: CQG, Sky Trade.)

Of particular note in this example is how quickly the DSI came out of the excessive bullish camp and went into the bearish camp, but no buying came into the market. It was a situation in which the crowd was right, so to speak. Figure 11.14

shows the Profiles for July 16 and 17 which, despite extreme bearish DSI readings, continued to generate OTFT selling, therefore pushing the market further down the parabola.

The crowd continued to be right all the way back to where the rally had started on July 5. Figure 11.15 picks up where Figure 11.14 left off, presenting the Profiles for the subsequent three days of trading. On July 18, the short-term trader was working with a DSI of 17 percent from the day before. If July 18 got buying range extension, the short-term traders would go long. But July 18 saw more selling from the OTFT. It was a 3-1 selling day and closed with a 4 percent reading on the DSI, raising the prospect that perhaps the OTFTs had exhausted themselves. Range extension up on July 19 at 735 got the short-term traders long. The range extension up on July 20 called for bringing the short-term trader's stop up to that day's lows, the equivalent of a neutral day. He would have been stopped out that next day at 748. The intermediate-term trader, depending on his willingness to let the market unfold, would still be short. But as was the case earlier in the year, the LTMA charts fizzled in terms of accumulating imbalance and the market settled back into the trading range.

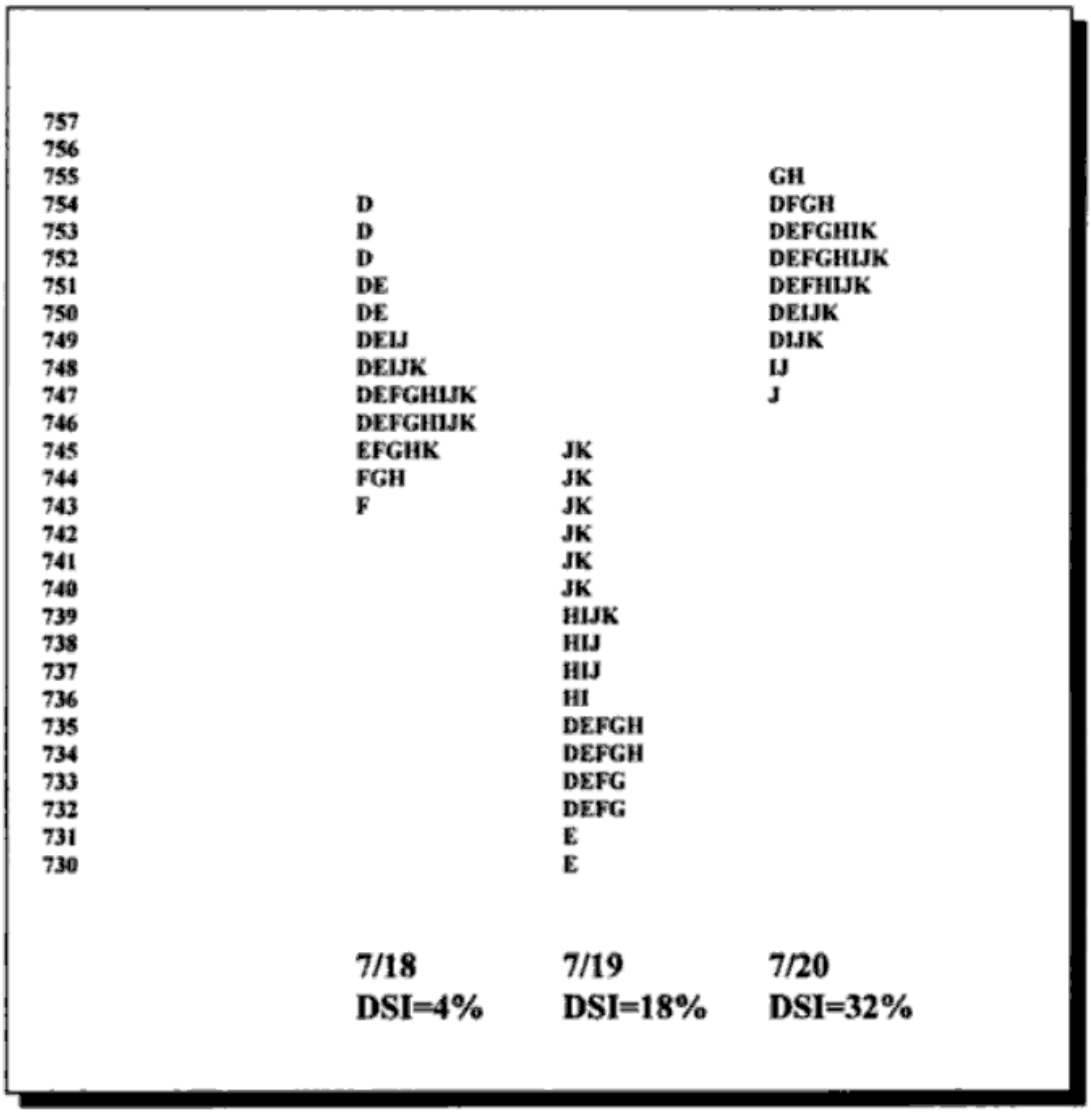



Figure 11.15 November soybean profiles for July 17 through 20, 1996. (Sources: CQG, SkyTrade.)

To round out the soybean examples, let's look briefly at what happened next in this market. Figure 11.16 plots the LTMA chart beginning with the neutral day on July 25, 1996. Notice the build-up of initiating buying activity; notice further that what selling

was in the market was responsive in nature. Even on the "best" day the sellers had in this time period, the 26th, the selling was all responsive. That day closed with a 12 percent DSI reading which triggered into a buying signal the next trading day, July 29, on range extension up.

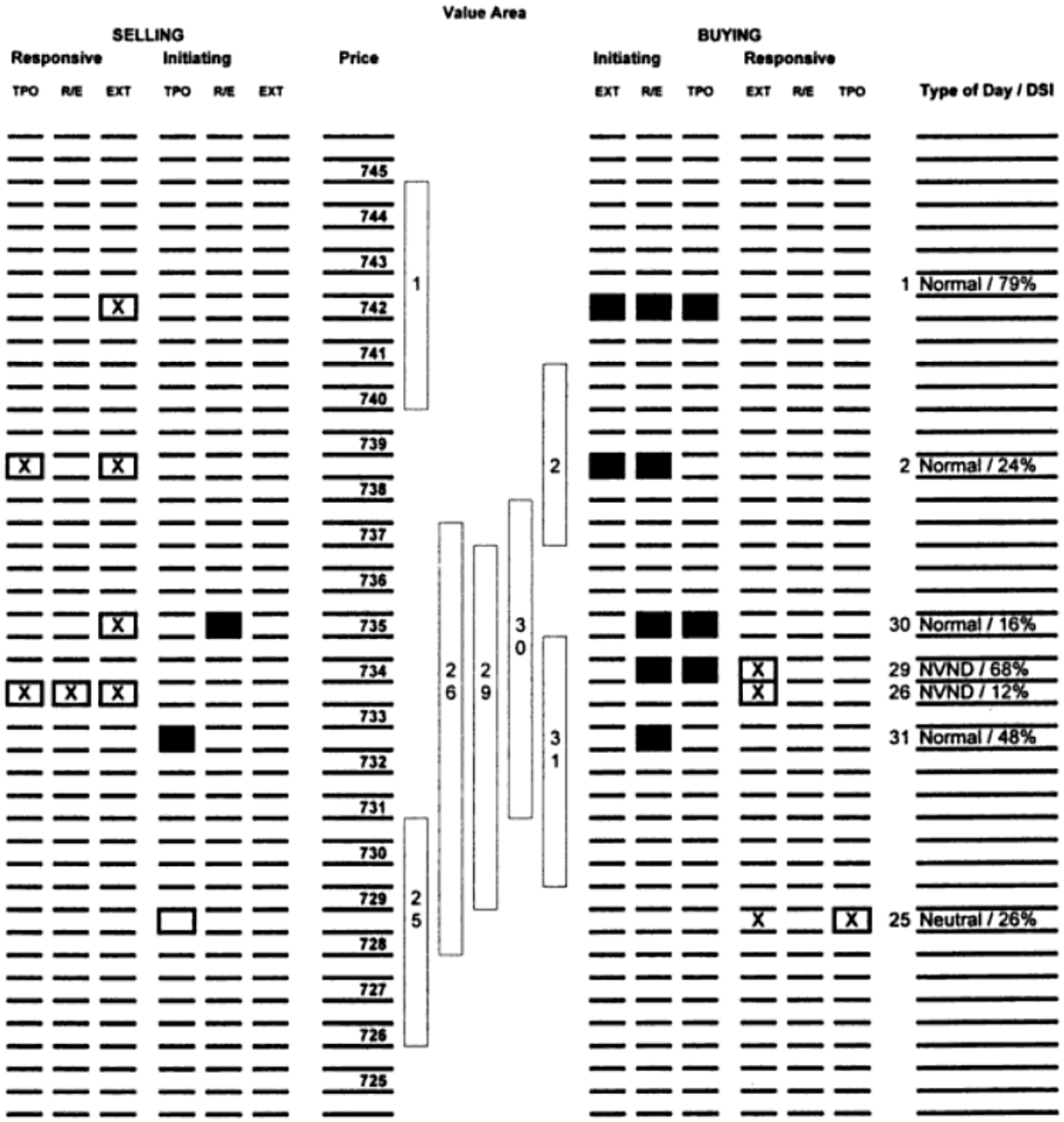



Figure 11.16 LTMA for soybeans, 7/25/96 to 8/2/96. (Source: SkyTrade.)

Figure 11.17 tracks the next several days of trading as the market unfolds to the upside and continues to build buying activity on the right-hand side of the chart. Figure 11.18 is a daily chart that recaps these LTMAs for the end of July and beginning of August. Notice how the BC had declined to the mid-point of the scale, the DSI posted readings < 20 percent, and buying activity emerged all to combine the necessary ingredients for a trend in the market.

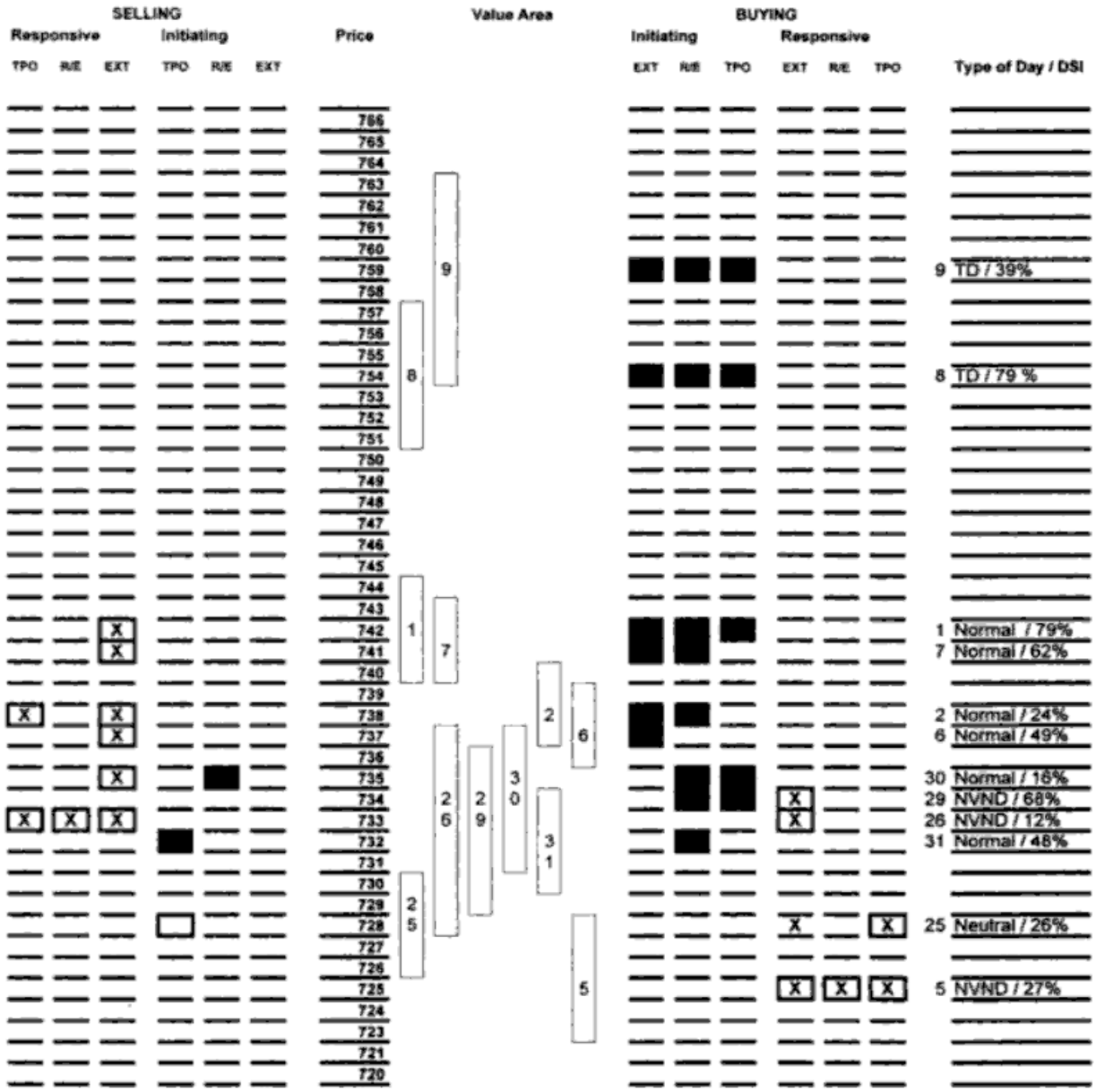



Figure 11.17 LTMA for soybeans, 7/25/96 to 8/9/96. (Source: SkyTrade.)

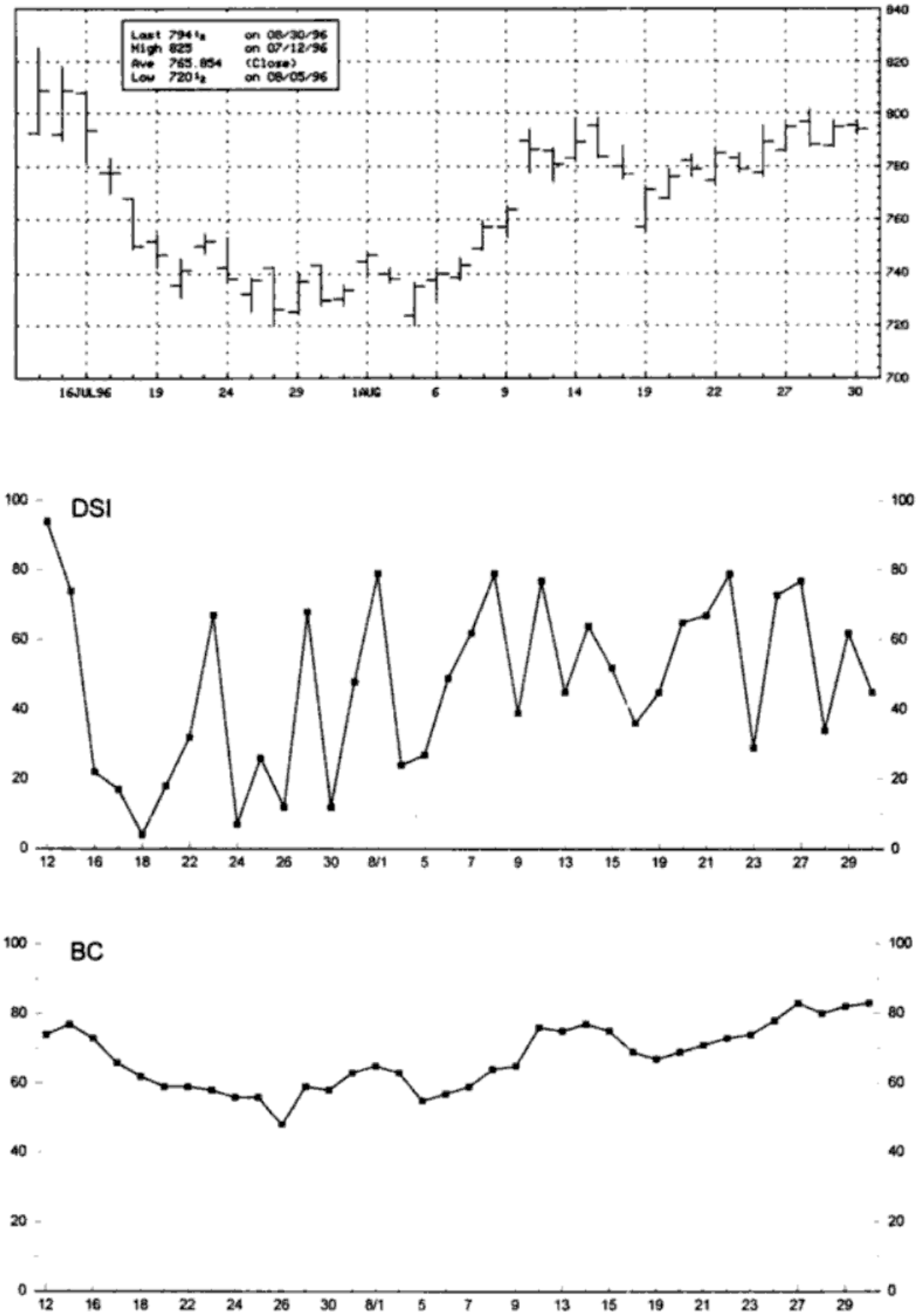



Figure 11.18 Daily bar chart, IDSI, and BC for November soybeans, 7/12/96 to 8/30/96. {Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

# *Chapter 12*

## Deutsche Mark

The deutsche mark had been in a pronounced bear market during the nine months preceding the time period illustrated in Figure 12.1. Accordingly, that bear market tended to keep the BC under the 50 percent level. The market advisors in the BC survey never got excessively bullish. Rather, they were either excessively bearish, registering readings in the 20 percent and less range, or they were evenly mixed in their opinion, roughly the 50 percent level, about price direction for the DM. The severity of bearishness in this market is also evidenced by noting that the DSI recorded only three readings over the 80 percent level, but 10 times that many readings under the 20 percent level.

Figure 12.2 shows the LTMA chart for December 28 to January 4. December 28 and 29 were back-to-back neutral days which would have prompted the intermediate-term trader to start a new LTMA chart. The neutral day on December 29 was essentially one of the running profile days which closed on its low and produced a DSI of 32 percent versus 61 percent from the previous day. Referring to Figure 12.1, note how in the few days leading up to the creation of the LTMA chart in Figure 12.2 the DSI had already begun to embark on a smooth progression lower from relative high readings. The short-term trader did not receive a sell signal as the market began to roll down the parabola, but as stated earlier the Model is not going to trigger trades for each and every move in the market. Nevertheless, the intermediate-term trader definitely had reason to be looking to short this market vis-à-vis the increasing imbalance of selling activity and the gradual decline in the DSI. The market had the makings for developing a coherent trend down. Whether it would unfold remained to be seen, but that's why it's advantageous to try to operate at the edge of the parabola. If the down trend did not unfold, the edge of the parabola gives the trader a good entry level. He can exit the trade with a nominal loss or maybe even a small profit.

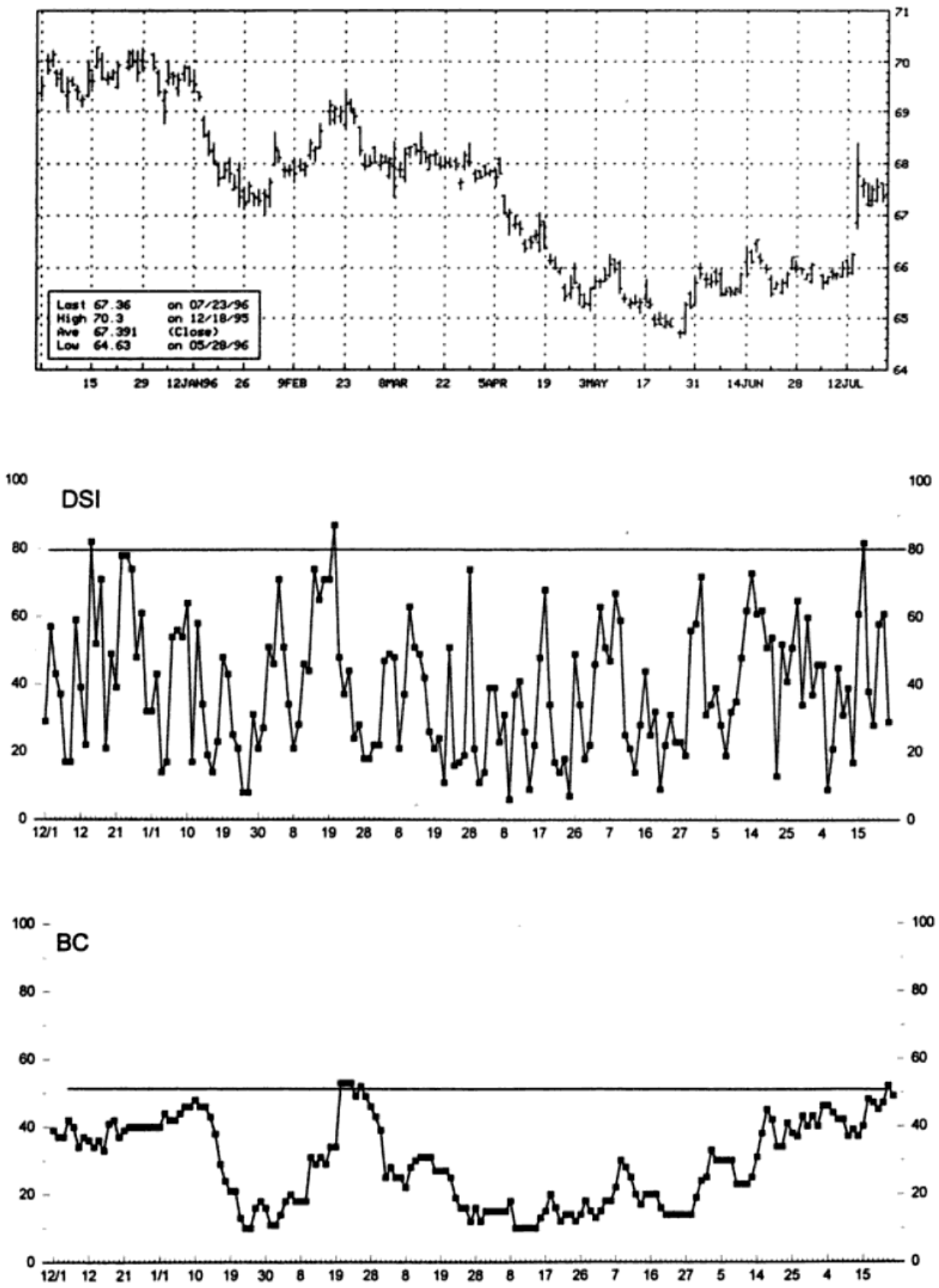



Figure 12.1 Daily continuation chart, DSI, and BC for DM, 12/1/95 to 7/23/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

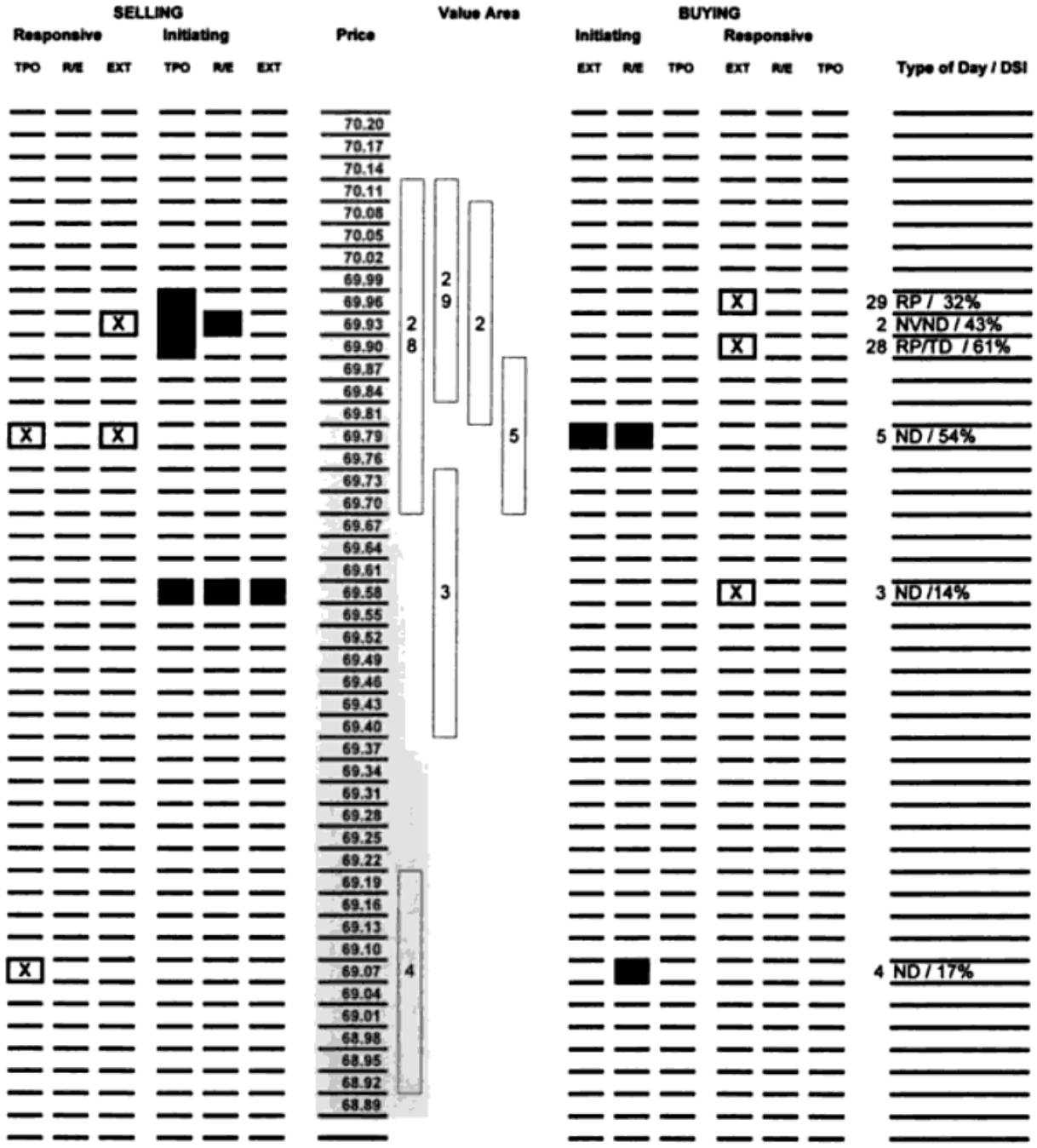



Figure 12.2 LTMA chart for DM, 12/28/95 to 1/4/96. (Source: SkyTrade.)

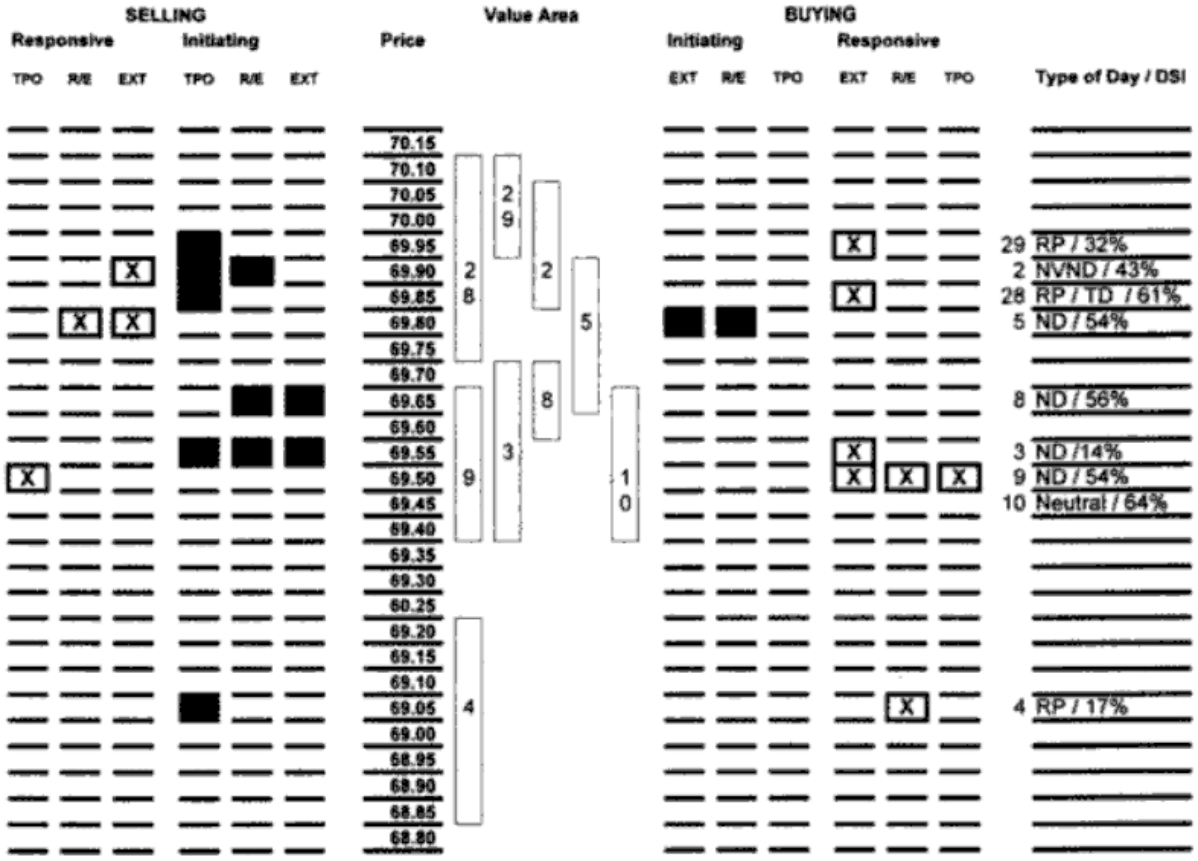



Figure 12.3 LTMA chart for DM, 12/28/95 to 1 /10/96. (Source: SkyTrade.)

Figure 12.3 adds the next few days onto the LTMA chart presented in Figure 12.2 and changes the price scale so the new data will fit. January 9 was a 3-R day which would have prompted the creation of another LTMA chart to be maintained concurrently to determine if the market was going to start an up auction. But on January 10, 11, and 12 selling resumed in the market, adding to the imbalance of selling market activity and eliminating the use of the second LTMA chart. As you can see, taking these days as a whole, the market was clearly imbalanced to the sell side. The bulk of the activity was from OTF sellers and most of the activity was initiating in nature. Moreover, the BC was at the 50 percent area and the DSI has progressed down the parabola in a measured fashion from the relatively high 78 percent on December 27 when the selling range occurred, triggering a sell signal.

Figure 12.4 adds the next several days of activity to the LTMA chart. As you can see, the selling pressure accumulating over the previous days made its presence known in the market and the supply curve shifted lower as more initiating selling came into the market on January 15, 16, and 17. Note the complete absence of buying activity on the right-hand side of the LTMA chart as the market declined those three days. Since I am not going to detail every single day in the moves of these markets, refer to the daily chart in Figure 12.1 to see that the market continued to decline throughout January in an attempt to shut off the selling activity and advertise for buyers.

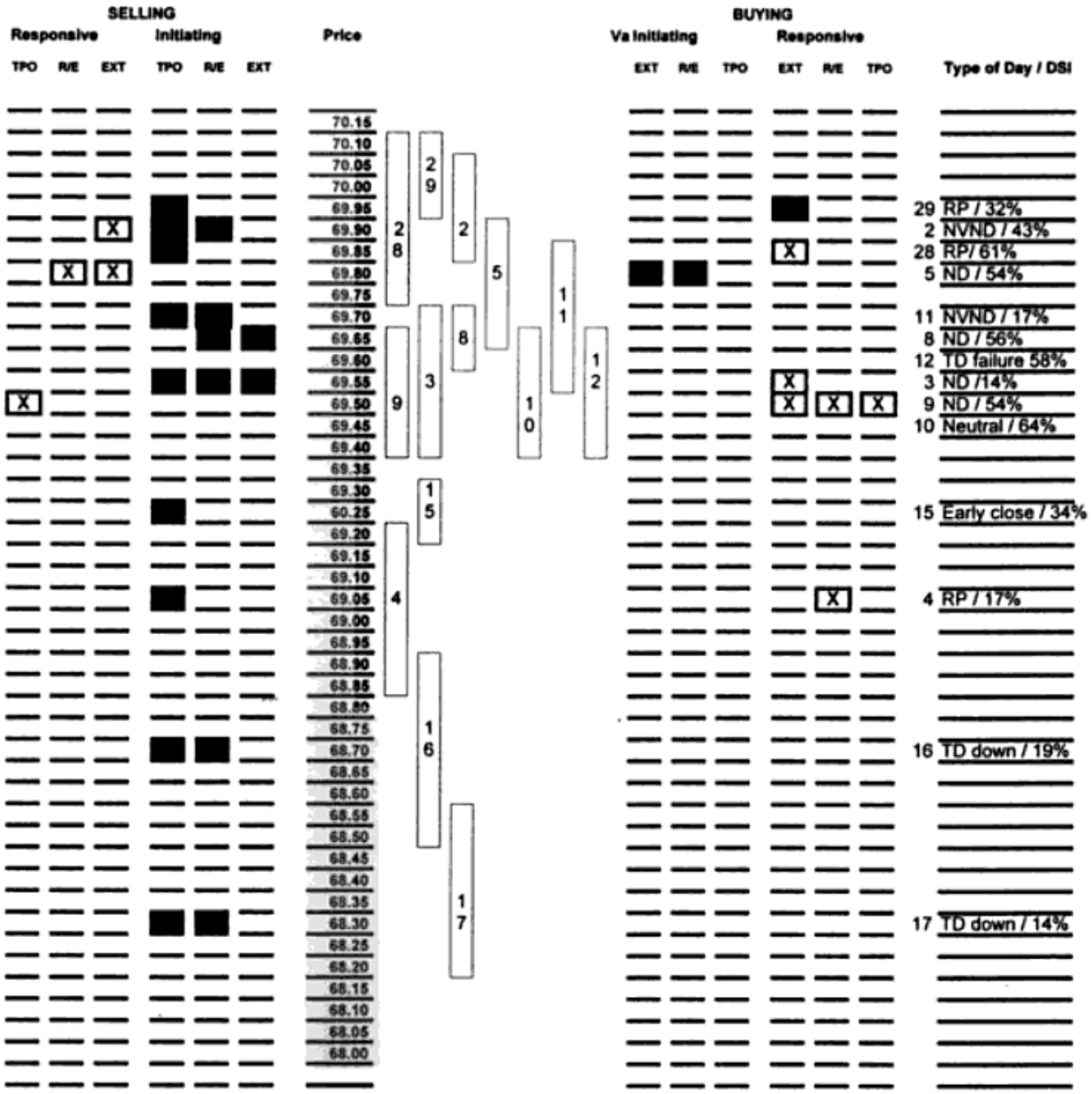



Figure 12.4 LTMA chart for DM, 12/28/95 to 1/17/96. (Source: SkyTrade.)

Looking at the next section of the market, Figure 12.5 shows a daily bar chart for the DM with the DSI and BC plotted underneath. Referring to that figure, notice that both the DSI and BC readings were excessively bearish in late January 1996. The DSI reached a meager 8 percent and the DSI registered 11 percent. A neutral day on February 2, was a sign of a change in ownership and a potential change in trend for the market. The intermediate-term trader would have started a new LTMA chart on that neutral day. Remember, the goal is to enter the market at the beginning of trends, not after they have been under way for some time. The next two days posted 3-1 buying days as the DSI progressed gradually up to the 70 percent level. The market paused for a few days while the DSI dropped back to the 20 percent level which neutralized the short term excessive bullish element in the market, thus enabling the market to rally if buying came into the market. The market progressed through the parabola in a gradual fashion, with DSI reaching 87 percent on February 20, a neutral day. But at no time between February 1 and 22 did the DSI reach excessively bullish readings and the BC was bumping along under 20 percent at the same time.

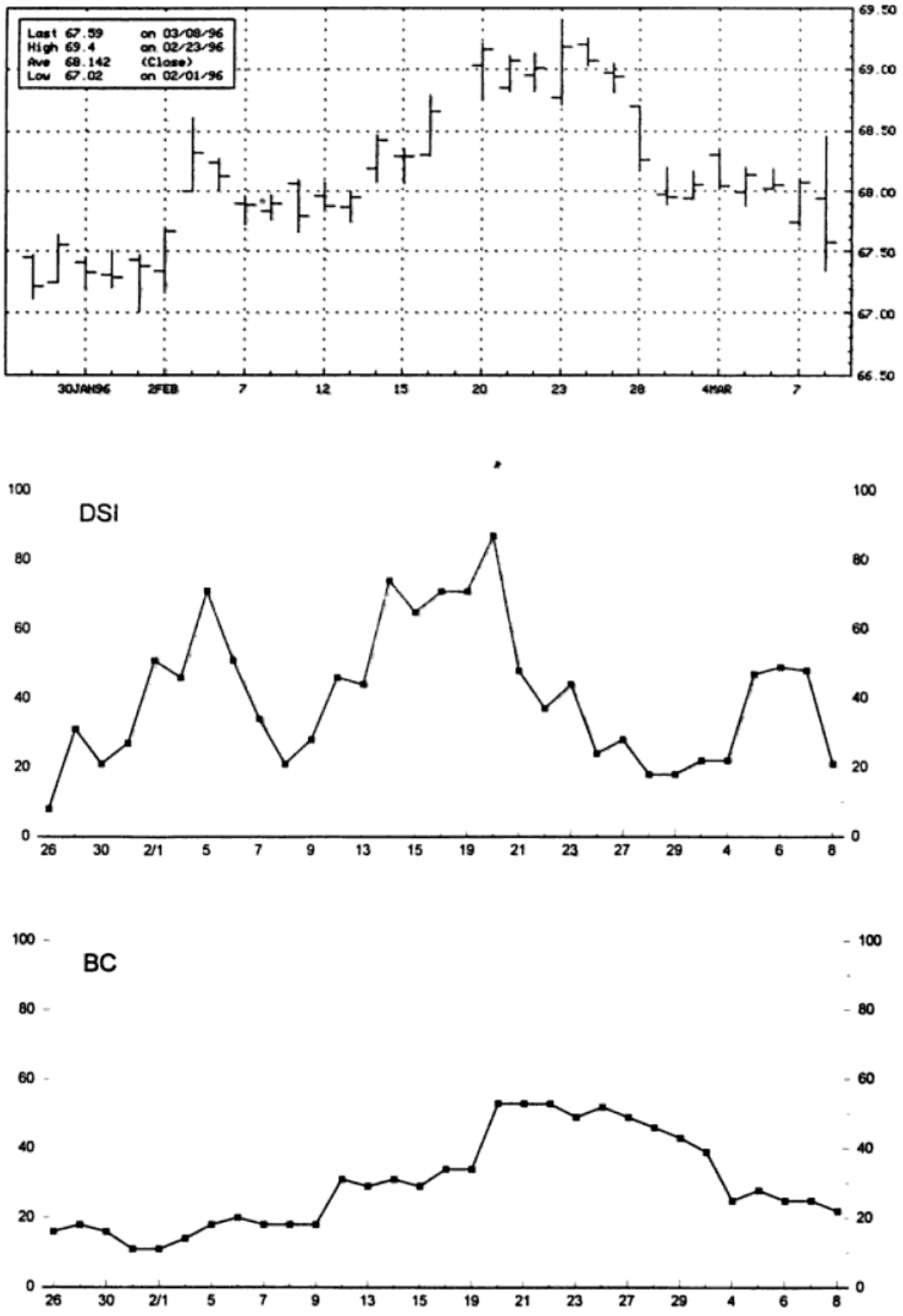



Figure 12.5 Daily continuation chart DSI, and BC for DM, 1/26/96 to 7/23/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

The market had a neutral day when the DSI was reaching that 87 percent. This prompted the start of a new LTMA chart. Additionally, the BC was just touching the 50 percent level which had served to be the topside excessive bullish reading for quite sometime. Note that as the DSI moved from 87 percent on February 20 back into the random walk range of 50 percent on the twenty-third, the DSI began to lead the BC back down from the relatively extreme 50 percent level. Consequently, the market started to march back down the parabola with selling activity on the LTMA chart and declining sentiment readings. Figure 12.6 shows the beginning of that selling as it accumulated on the LTMA chart. Of the five days recorded, four were days that did not facilitate trade: three neutral days and one non-trend. This activity against the backdrop of relatively high reading in both of the sentiment surveys dovetailed to form a top in the market.


Figure 12.6 LTMA chart for DM, February 20 through 26,1996. (Source: Sky Trade.)

The next item of note in terms of using the Model is the time period between March 21 and May 1. As shown in Figure 12.7, virtually the entire period was marked by the BC posting readings under 20 percent. Yet, instead of reversing course, the DM actually declined 300 ticks during that time period. Remember, despite extreme bearish expectations, the crowd will be right just so long as selling from the speculative element in the market continues to enter the market. For starters, notice how the DSI spiked from 19 percent on March 27 to 74 percent on March 28 while price hardly moved up at all. That relatively high reading, given the prevailing conditions, alerts the short-term trader to get short the next day if the market gets range extension down. The market did get range extension down the next day; it was also a neutral day which prompted the intermediate-term trader to start a new LTMA chart. Figures 12.8 to 12.10 show the unfolding LTMA charts for the same time period and illustrate how that selling came into the market despite the extremely bearish sentiment readings.

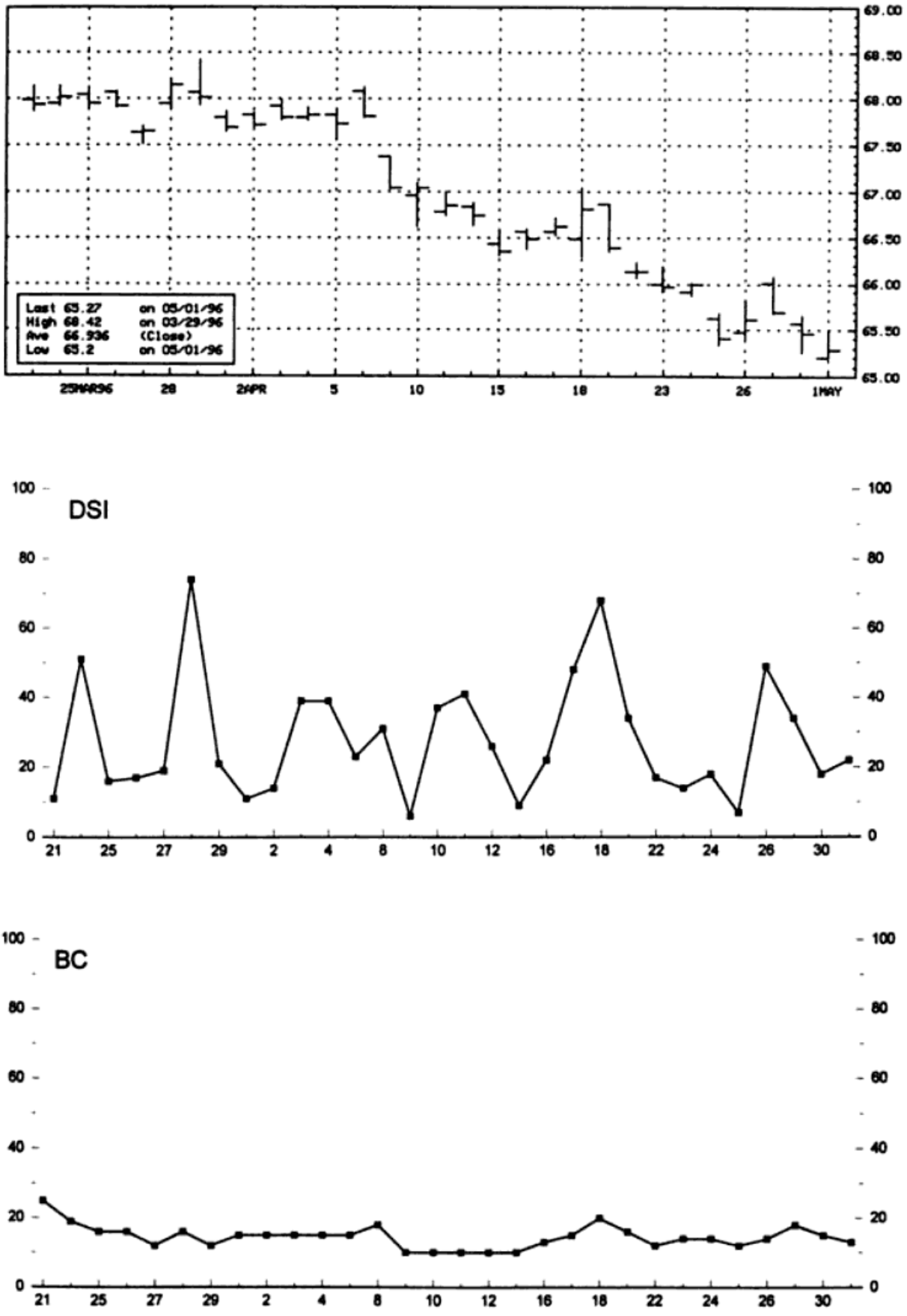



Figure 12.7 Daily continuation chart, DSI, and BC for DM, 3/21/96 to 5/1/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

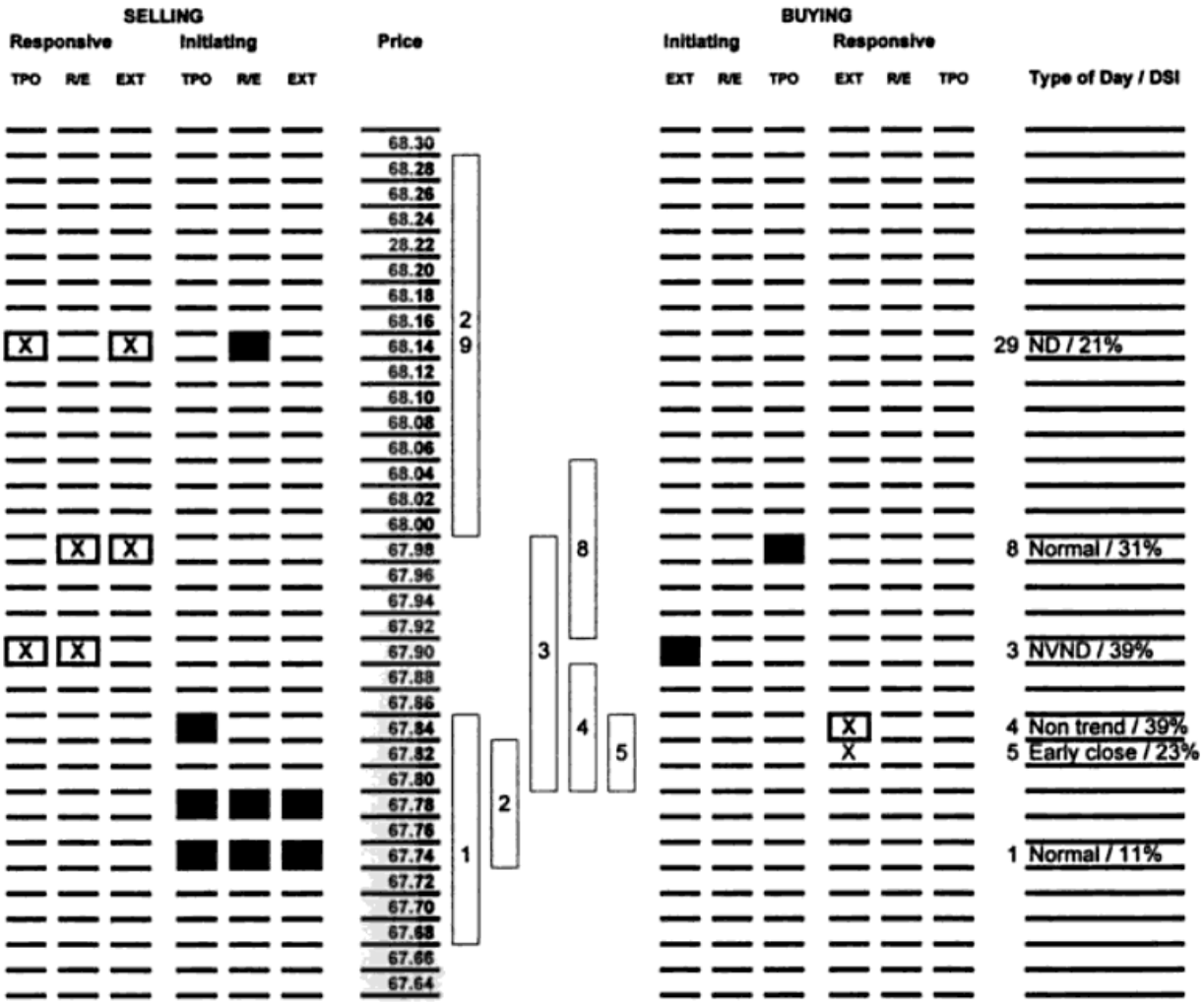



Figure 12.8 LTMA chart for DM, 3/29/96 to 4/8/96. (Source: SkyTrade.)

Notice in Figure 12.8 that the first three days following that 74 percent reading on March 28 were pure selling by the OTFT. Notice further that over the next several days, even though the DSI slipped under the 20 percent level, the market had no buying range extension. The selling imbalance is clearly evident, despite the BC registering less than 20 percent.

Figure 12.9 continues the LTMA chart by adding the activity from April 9 to 19. The price drop during this time period was precipitous despite the excessively bearish BC. Expectations combined with activity to produce a coherent bear trend over the intermediate term. Buying range extension did not materialize until April 17, marking the first time this particular type of OTFT activity occurred since the market started down on March 29. For the intermediate-term trader looking for the ideal scenario of Areas 1-2-3-4 to unfold, April 17 would look like the beginning of Area 2 where the market comes into balance, so the buying on April 17 and 18 is not reason enough for exiting the market. Moreover, the "relatively extreme" DSI, given the bear nature of this market, of 68 percent made the market vulnerable if range extension down occurred the following day, which it did. Notice the selling activity on April 19 which sparked a resumption of the down-trend.

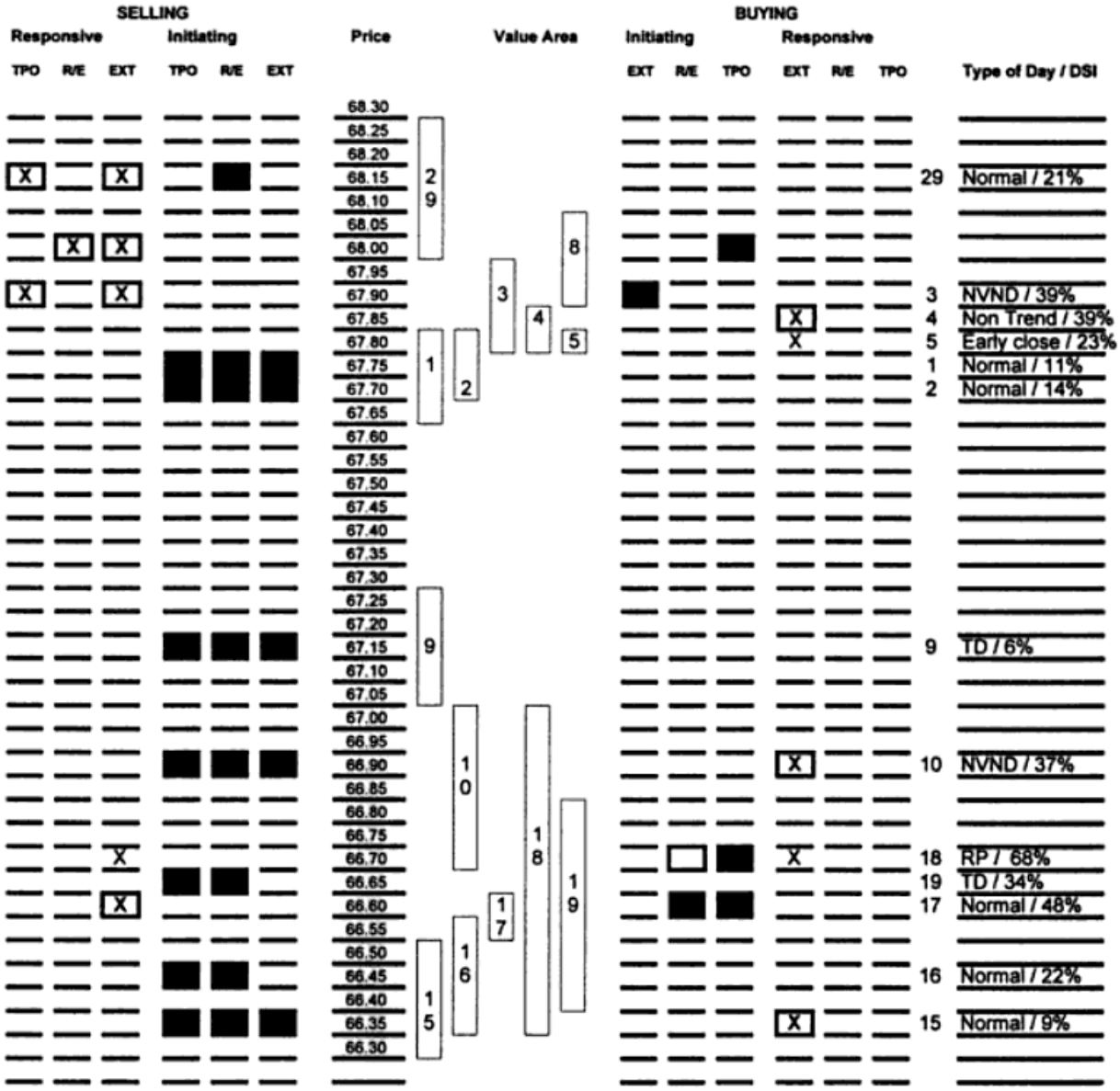



Figure 12.9 LTMA chart for DM, 3/29/96 to 4/19/96. (Source: SkyTrade.)

Continuing the LTMA chart with Figure 12.10, April 24 posted a neutral day which would have prompted the intermediate-term trader to start a second LTMA to run concurrently with the existing one. But April 25 made it clear this second LTMA chart was not needed, as selling resumed in force below the level of the neutral day. This example illustrates the crowd can be right. Their extreme expectations when backed up by appropriate activity in the market create the conditions necessary to make the market trend.

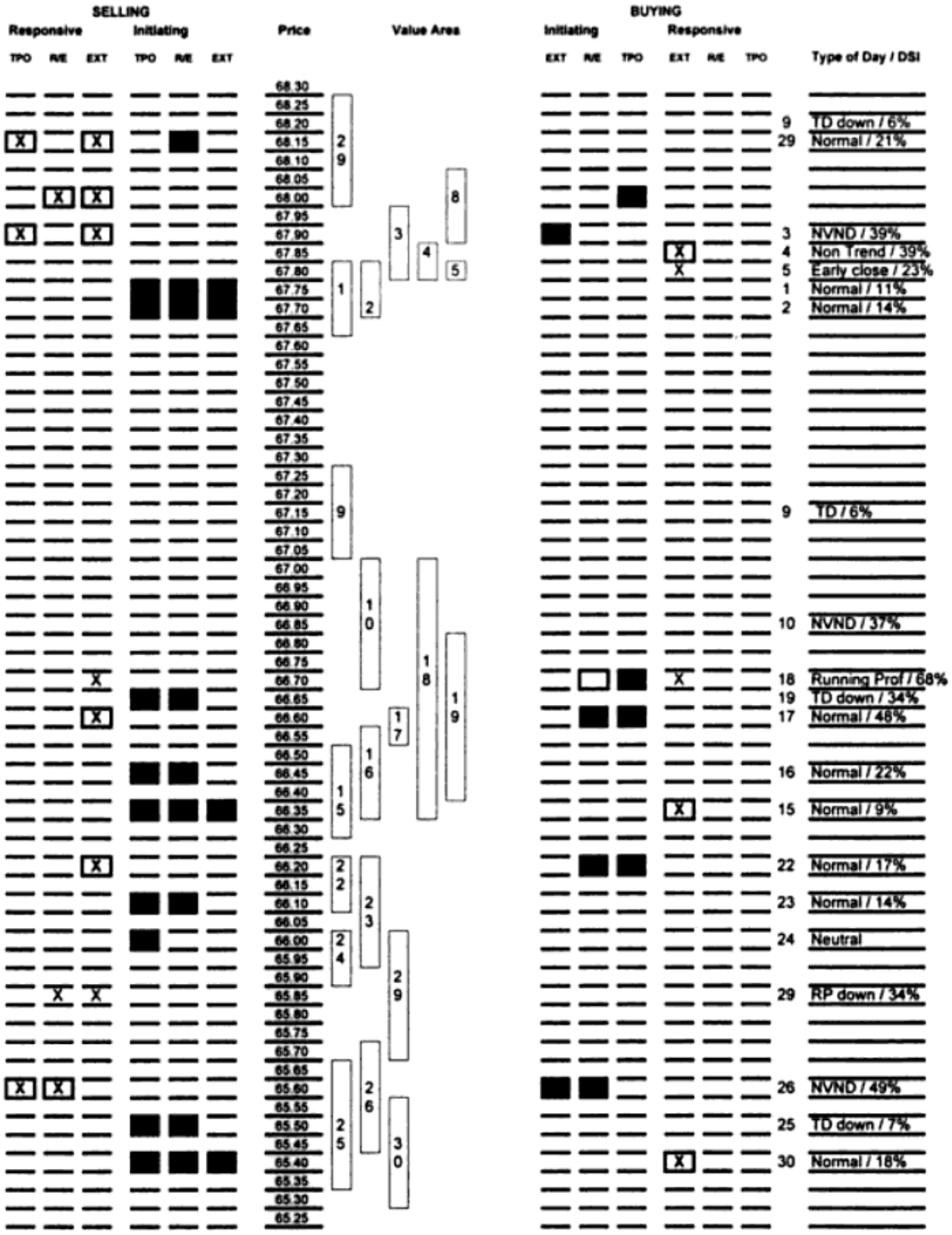



Figure 12.10 LTMA chart for DM, 3/29/96 to 4/30/96. (Source: SkyTrade.)

The time period following this 300-point decline is also worth examining in some detail. Figure 12.11 presents the familiar daily bar chart with the DSI and BC graphed underneath. Notice the series of gently progressing increases in the DSI as the market experienced several short-term moves to the upside. The DSI didn't bolt from one end of the parabola to the other; this enabled these short-term moves to unfold as short-term trends. As the market rallied in this series of short-term moves, the BC gradually came out of the extreme bearish zone in June and inched back into the 50 percent relative extreme level in the middle of July. Since this had proven to be a relatively

high reading during the course of the year, the market advisors were actually extremely bullish on the DM.

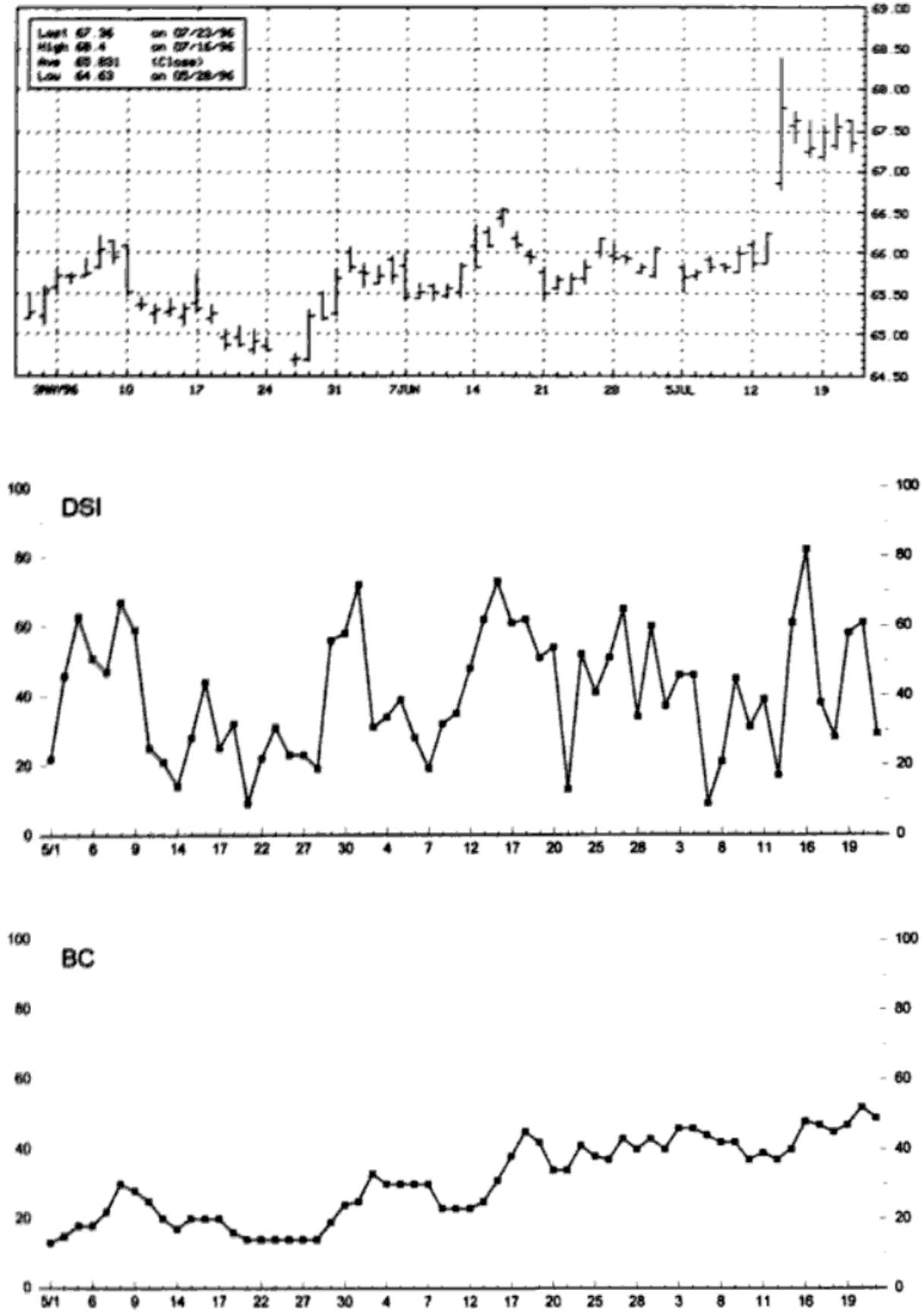



Figure 12.11 Daily continuation chart, DSI, and BC for DM, 5/1/96 to 7/23/96. (Sources: Bloomberg Financial Markets, MBH Commodity Adviswrs, Market Vane.)

However, the real item I want to draw attention to in Figure 12.11 is the vertical move on July 16 when the market gapped higher and posted a +250 point intra-day high. Figure 12.12 shows the profiles for the September DM contract for the three days preceding this eruptive move with the DSI reading as of the close on each of those days. Note how the market set itself up for this break out of the trading range. The BC was at the 50 percent area, relatively high for this market during this time period. After trying several times to break out of the range on the upside without success, traders got bearish near the top of the trading range; posting 17 percent on the DSI on July 12. That placed the market at the low end of the parabola in the short term. Range extension up the next day shot the market sharply higher and out of the range.

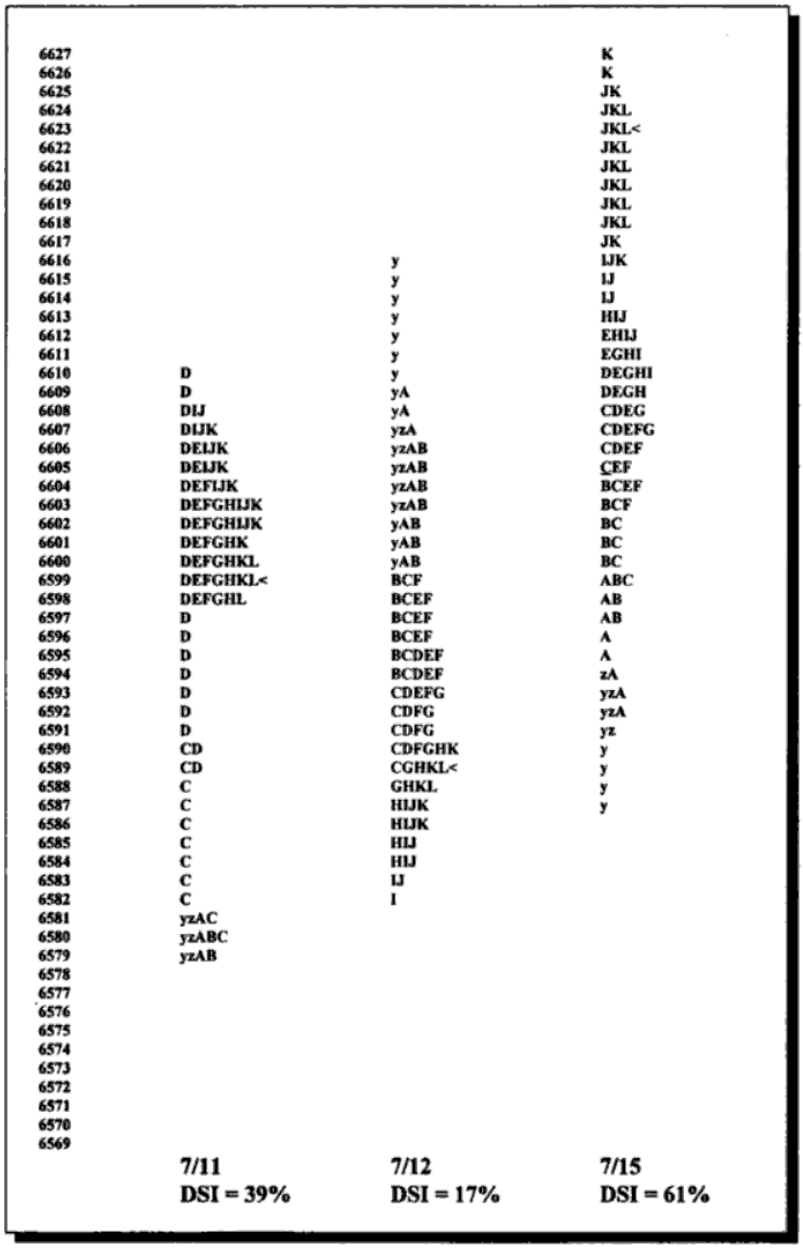



Figure 12.12 Profiles for DM, July 11 through 15, 1996. (Sources: CQG, SkyTrade.)

# *Chapter 13*

## Crude Oil

The crude oil market was also a particularly active market during the months when this book was being written. As Figure 13.1 shows, the market had one fairly large trend higher from the end of January 1996 through mid-April and punctuated this trend with a substantial trading range thereafter. Figure 13.1 also demonstrates that sentiment in the crude oil market has its own unique characteristics. As previously mentioned, after working with the surveys the reader will develop some familiarity with some of the nuances exhibited in each market's sentiment readings in terms of its volatility and what constitutes relative extremes. Also, the crude oil market has monthly contracts which appears to lend an added element of volatility to prices. The increased frequency of expiring contracts introduces another factor which can affect the anxiety level of the speculative element in the market.

The first thing which stands out in Figure 13.1 is that in December 1995 the crude oil market was straining under the excessive bul 1-ishness of both the BC and the DSI. Despite what appeared to be a breakout in the first week of January, the market turned on a dime and dropped $2.50 per barrel in a matter of four days.

To get a closer look at the January top in the market notice in Figure 13.2 that as the BC nudged to new extreme highs in the first days of the new year, the DSI was already moving down the parabola and led the BC lower in the ensuing days. As noted previously about the interaction between the DSI and the BC, the DSI often leads the BC lower; that is just what happened in this market in January.

Selling range extension on January 9 at $20.07 with the DSI at 86 percent from the close the day before triggers a sell for the short-term trader. The intermediate-term trader would also have gotten short since both surveys were in extreme territory and the short term triggered a signal. As previously noted, in these extreme situations the intermediate-term traders are going to start with the short-term signals and begin a LTMA chart to see if it unfolds into the coherent trend in his time horizon. The DSI moved rapidly through the parabola posting 28 percent as of the close of the day of the sell signal. That doesn't constitute a smooth progression through the parabola; the immediate jump from extreme bullishness to less that 50 percent on the DSI is an alert for the short-term trader. Therefore, if the market had range extension up on January 10, the short-term trader would have to exit the trade. However, January 10 had selling range extension again. That selling in the face of the rapid jump through the parabola creates the conditions of a short term coherent bear trend. January 10 closed with an extreme DSI reading of 8 percent. Selling range extension occurred on each of the four trading days, with no buying range extension at all. January 16 closed with an extreme bearish reading of 14 percent. Buying range extension the next day January 17, at $18.35 was a signal for the short-term trader who would have exited his previously established short. This was the first range extension up the market had since the trader established his short at $20.07. If he was a particularly aggressive trader, he would reverse his position and gotten long with this range extension up on January 17. The intermediate-term trader would still be looking for Area 2 on the LTMA chart to form and would have stayed short. The market jumped to $19.18 on the close of January 18 and registered a relatively high 71 percent on the DSI. The rapid traversing of 50 percent from the extreme 14 percent the day before is a warning sign to the short term long in the market. The warning is: If the market gets selling range

extension the next day, get out of the long position. The down trend is likely to resume. On January 19 the market got selling range extension, at $18.99. If the short-term trader had been flat, he would have used this as a signal to get short to go with the resumption of this intermediate-term coherent trend down. There was an imbalance of sellers in the market on the LTMA chart, and the DSI was leading the BC down the parabola. The particularly aggressive term trader would have reversed the long position he had established on January 17 and gone short.

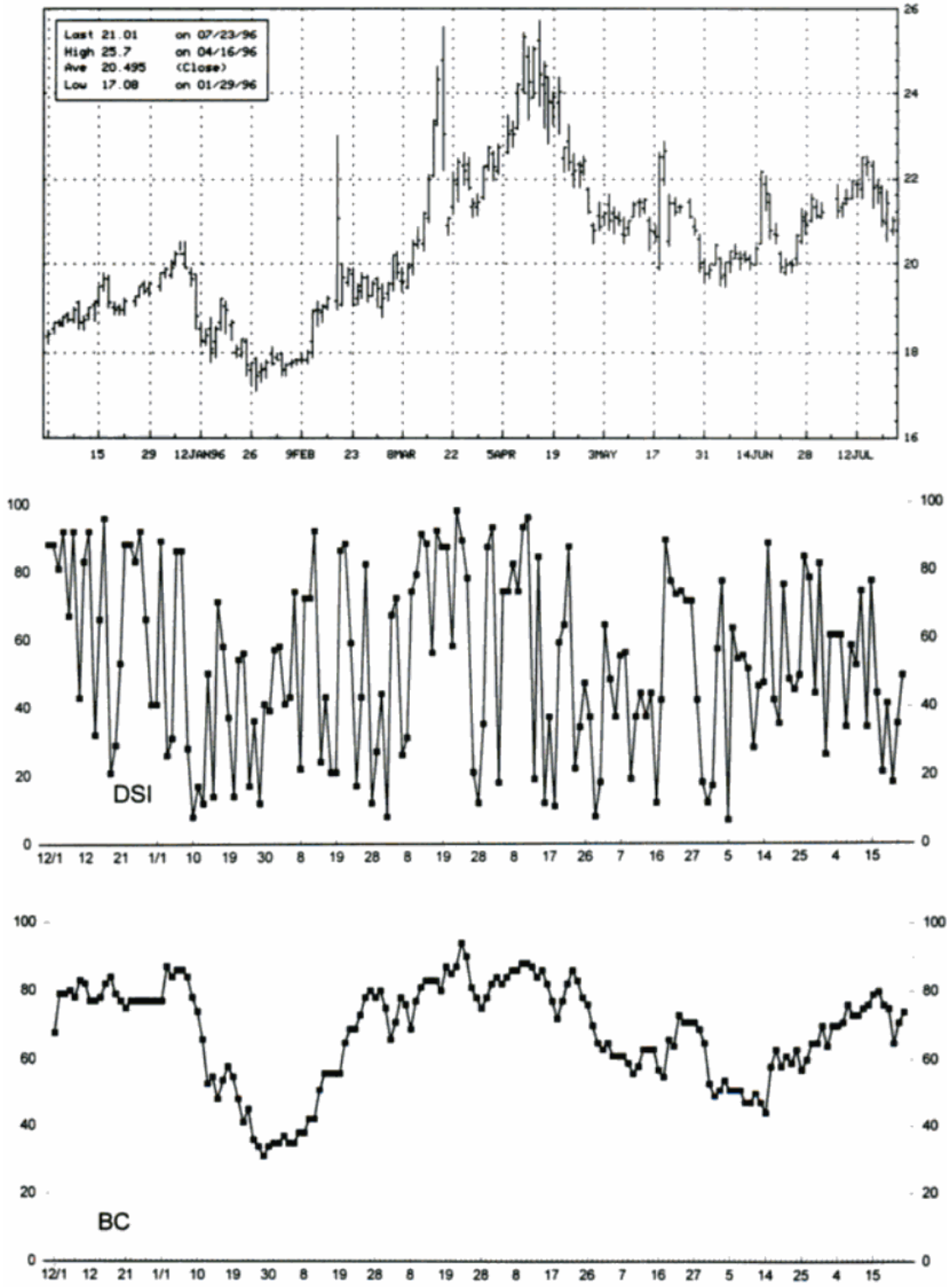


Figure 13.1 Daily continuation chart, DSI, and BC for crude oil, 12/1/95 to 7/23/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

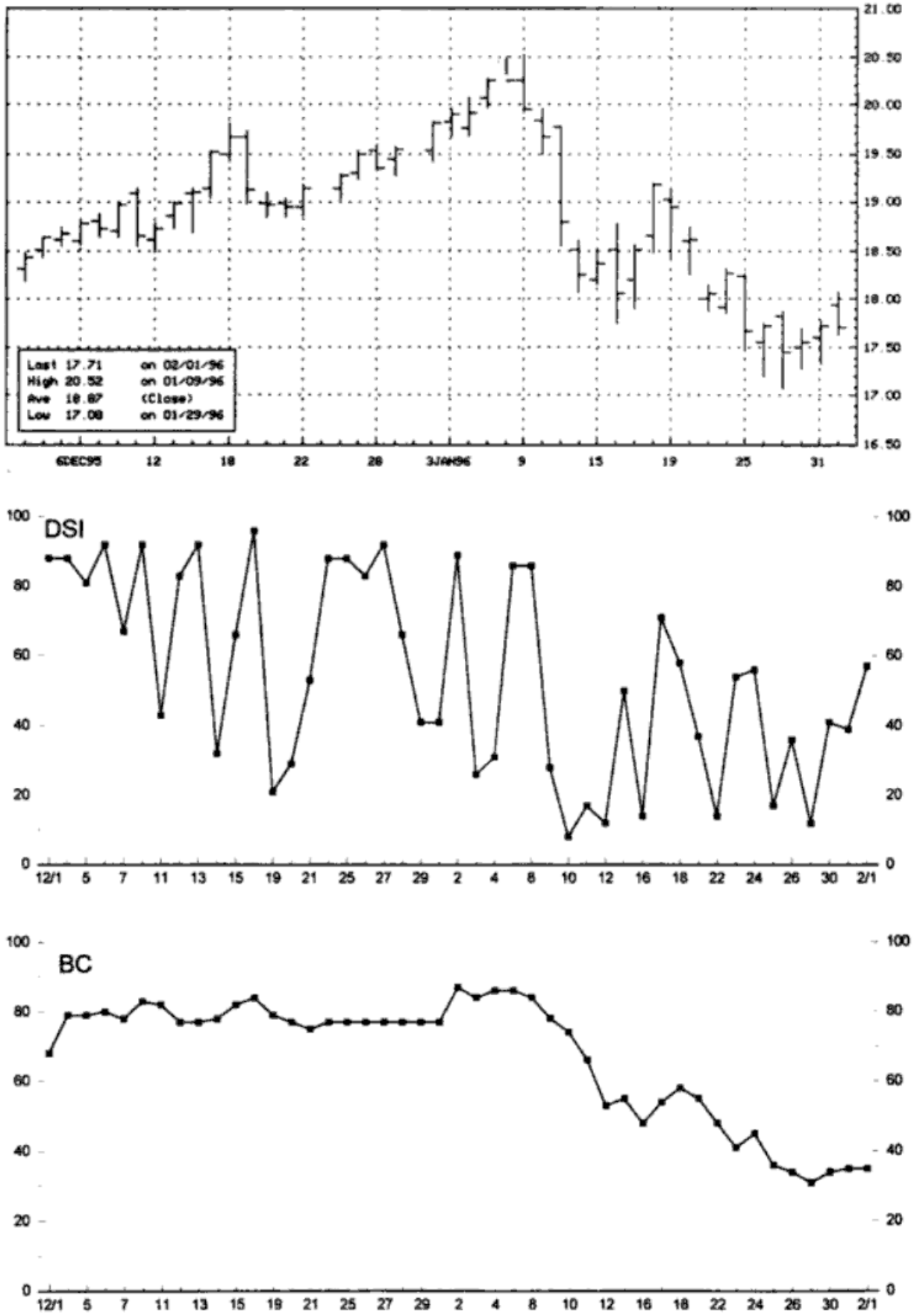


Figure 13.2 Daily continuation chart, DSI, and BC for crude oil, 12/1/95 to 2/1/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

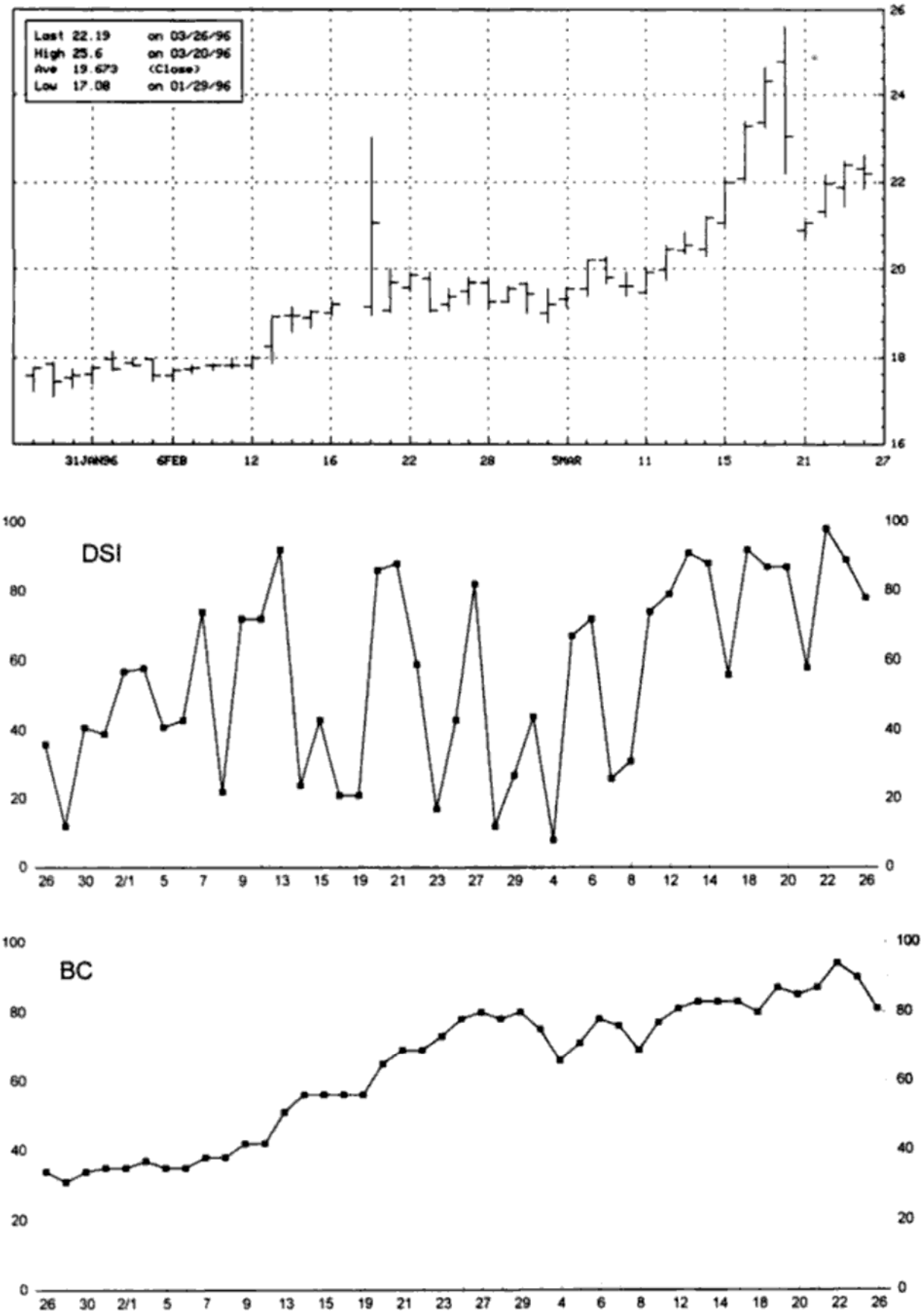


Figure 13.3 Daily continuation chart, DSI, and BC for crude oil, 1/26/96 to 3/26/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

The next item of note in the market in 1996 was the intermediate-term trend which began in late January. January 29 posted a closing reading of a mere 12 percent on the DSI and the BC was at 31 percent down from 86 percent at the beginning of the month. Both DSI and BC are in extremes, so you are looking at the low end of the parabola and the possibility for a trend to the upside. Figure 13.3 shows how the DSI began to unfold through the parabola to the upside in a gradual fashion, leading the BC higher through the parabola as well.

Figure 13.4 shows the LTMA chart for the beginning of this intermediate-term trend higher. From January 30 through February 2, as the DSI began to lead the BC up the parabola, the LIMA chart accumulated an imbalance of initiating buying. This combined both factors necessary for the market to develop a coherent bull trend. Expectations were growing and those expectations were being matched with the actions of the speculative element in the market.

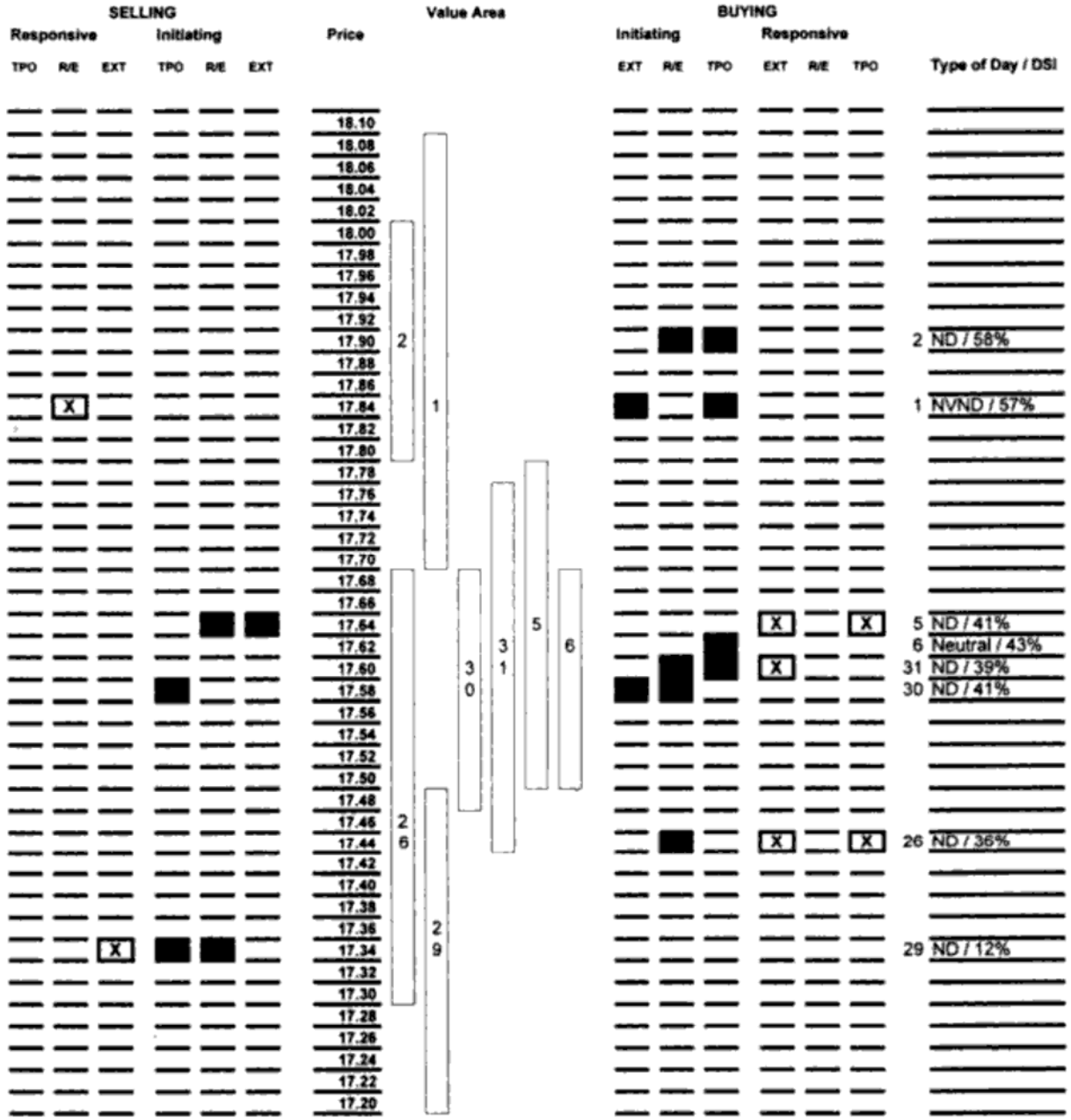


Figure 13.4 LTMA chart for crude oil, 1/26/96 to 2/2/96. (Source: Sky-Trade.)

Figure 13.5 continues the LTMA chart for February, taking it through the fifteenth of the month. The price scale in Figure 13.5 has been changed to five cents from two cents in Figure 13.4 so that the new data fits on the chart. As you can see, the coherent bull trend materialized in higher prices. As of the close on February 13, the market reached an extreme DSI reading of 92 percent, an alert to short the market on selling range extension if it materialized the next day. That selling did come into the market, but the rapid down-draft in the DSI from extreme bullishness to below 50 percent in a single day (in fact it dropped all the way down the parabola to 24 percent) means that if the market had range extension up on the following day, the trader would have to exit the short. Notice on the LTMA chart that the buying range extension did occur, so the trader effectively scratched the trade.

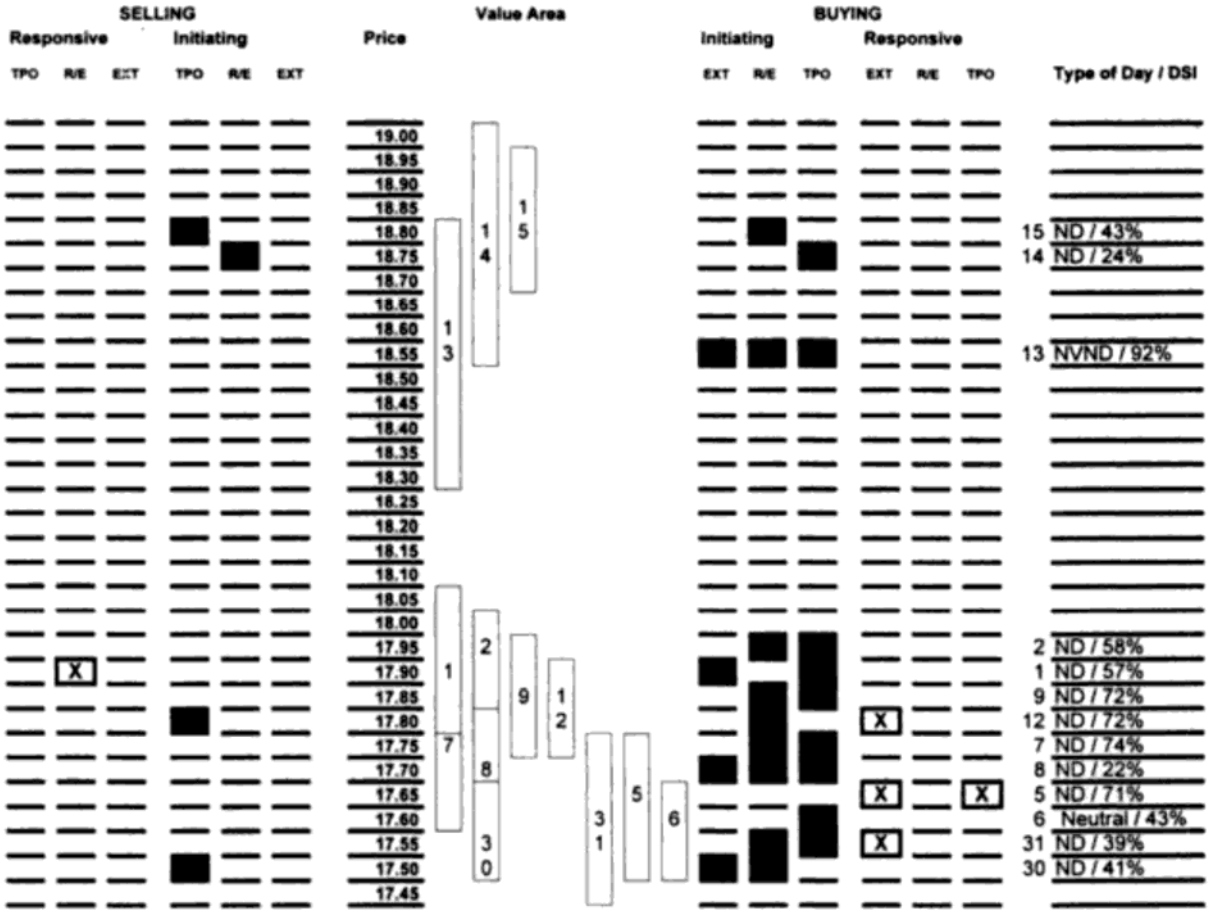



Figure 13.5 LTMA chart for crude oil, 1/30/96 to 2/15/96. (Source: Sky-Trade.)

Now refer to Figure 13.3 again. Notice that on February 16 the market closed at a new high for the move, yet the DSI dropped from 43 percent to 21 percent. This is one of those instances in which traders deviated from their normal tendency to get bullish on rallies and bearish on breaks. Now we know that the crowd isn't always wrong. If they are of like mind at the supposed top of a market, yet buying continues to enter the market, then "they" will be right and the market will continue to rally.

Likewise, it doesn't mean that they will be wrong if at the top of a move the crowd turns decidedly extremely bearish. But in order for them to "be right" they had better back up their expectations with selling. If they don't back up their sentiments with actions, the market can explode. That is precisely what happened in crude the following day. The relatively extreme, especially in light of the rally and BC at the high end of the parabola, of 21 percent was met with buying range extension up at $19.49 the next day and the market traded up over $23.00 that day (Figure 13.6).

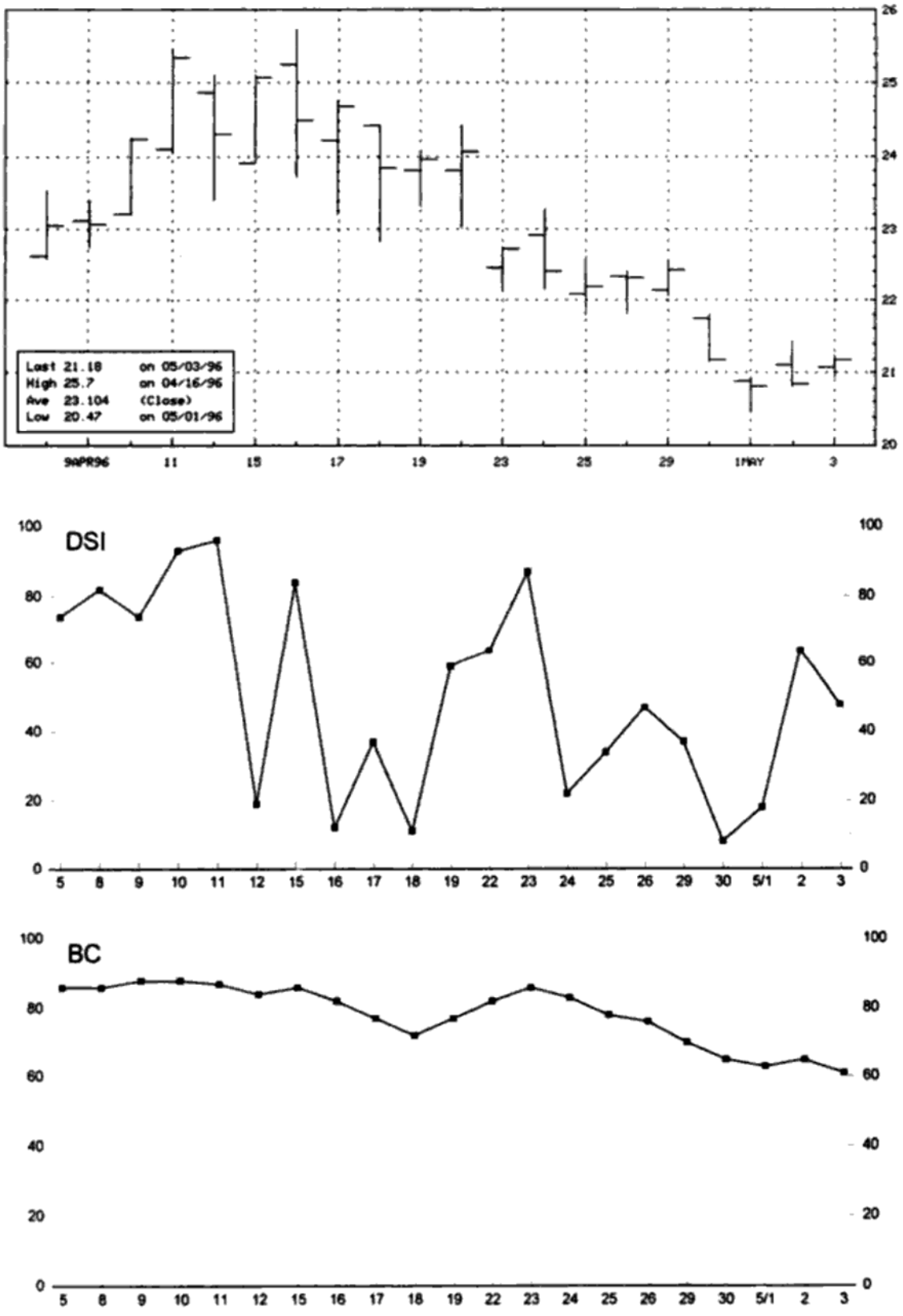


Figure 13.6 Daily continuation chart, DSI, and BC for crude oil, 4/4/96 to 5/3/96. (Sources: Bloomberg Financial Markets, MBH Commodity Advisors, Market Vane.)

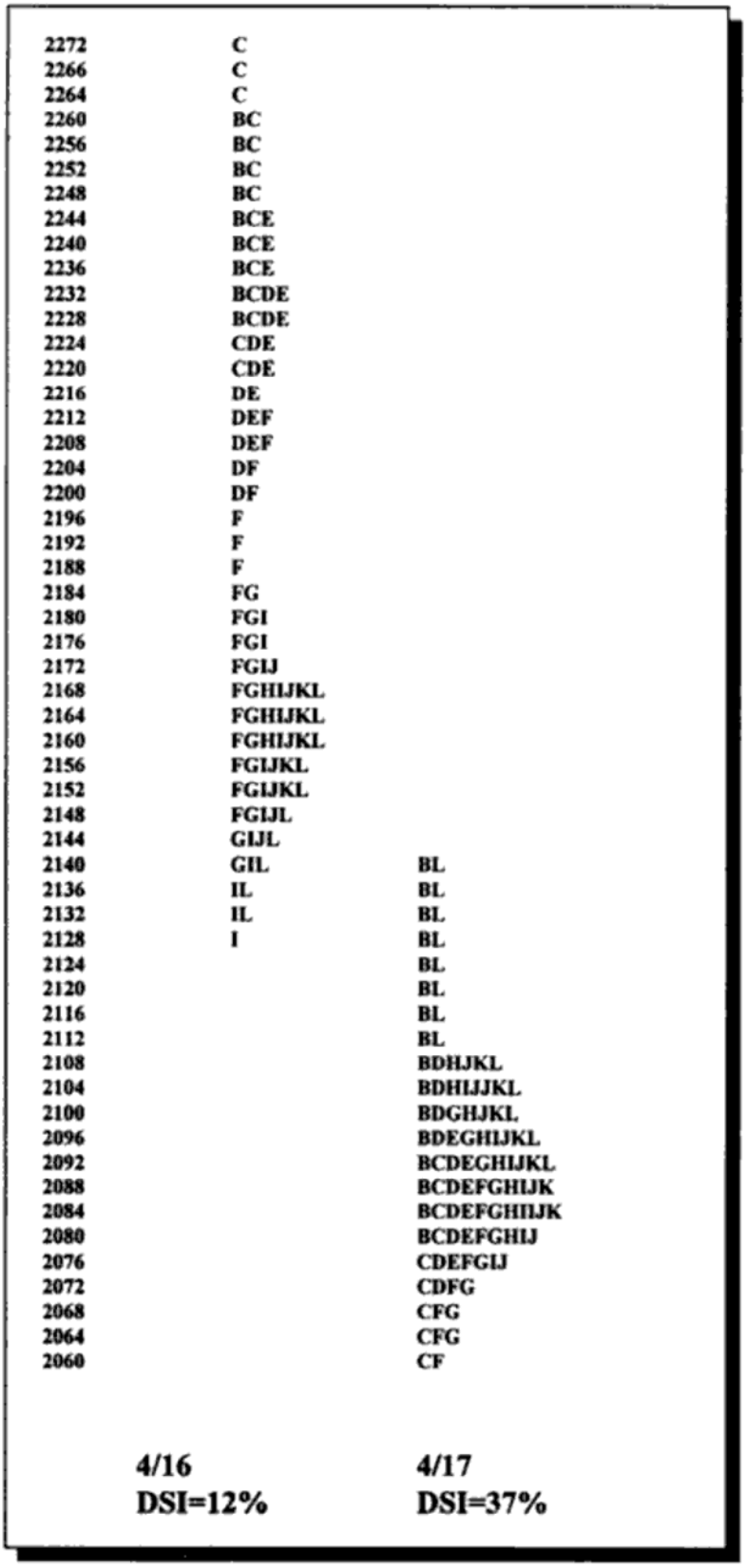


Figure 13.7 Profiles for June crude oil on April 16 and 17. (Sources: CQG, SkyTrade.)

Figure 13.7 shows the Profiles for June Crude Oil as the market made its top in mid-April. On April 15 the DSI was 84 percent. Therefore, if the next day had selling range extension the trader would short the market. As you can see in the Profiles, the range extension came in at $22.00 and the market developed a trend day down, closing near its lows for the day and posting a 12 percent DSI on the close. That's a caution flag for the trader, but no buying range extension occurred the following day so the market was still in a position to trend lower. Refer to the daily chart in Figure 13.1 to see how prices, the DSI, and the BC all rolled down the parabola over the ensuing days.

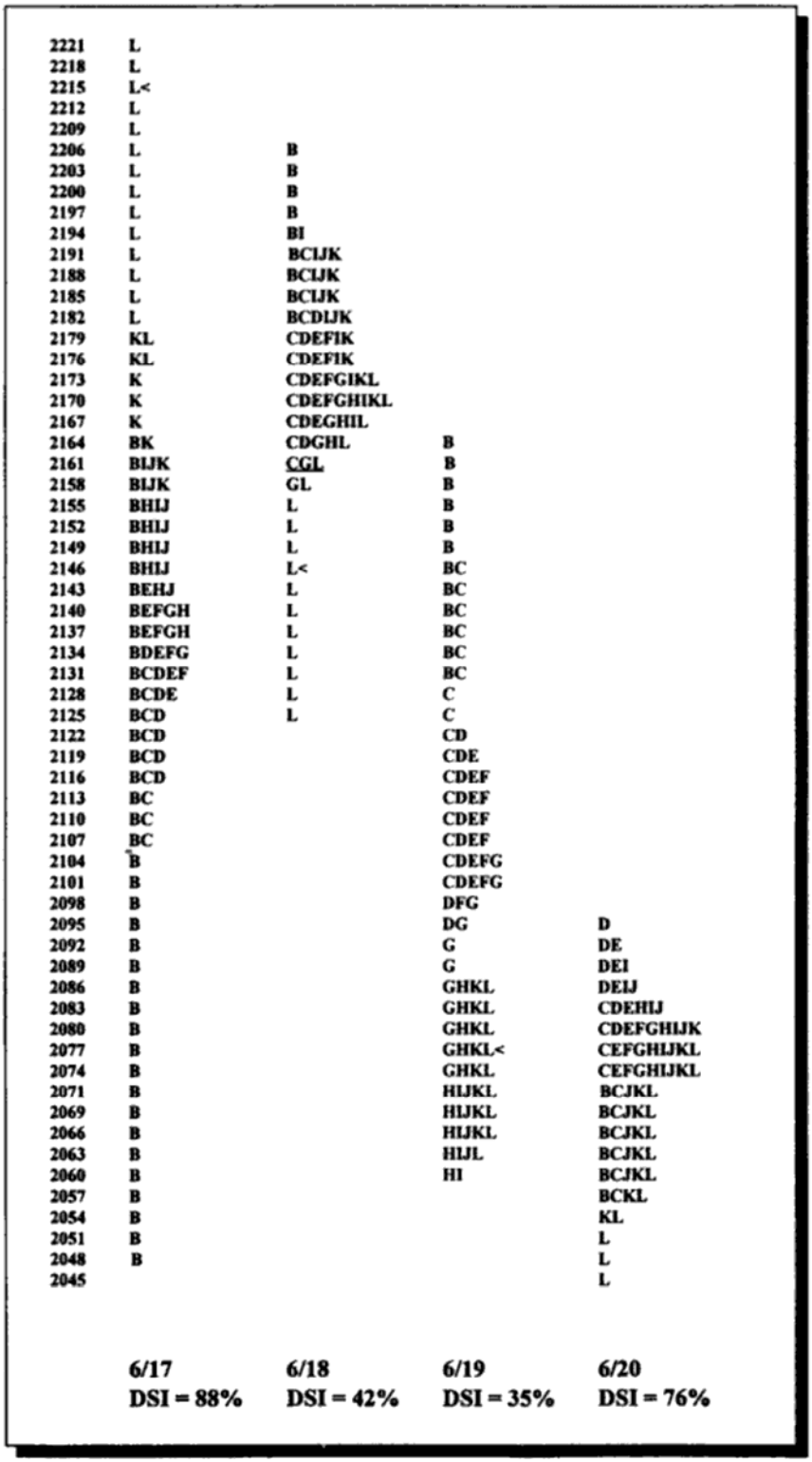



Figure 13.8 Profiles for crude oil, June 17 through 20. (Source: Sky Trade.)

Next, let's look at the intermediate spike top made on June 17. Again, referring to the daily chart in Figure 13.1 places this spike in perspective. After the close of the day after the huge run-up on June 17, the DSI was at 88 percent. As shown in Figure 13.8, selling range extension the next day at $21.58 triggered a sell signal. Selling range extension came into the market in each of the next two days, taking crude oil down $1.00 per barrel from the short sale.

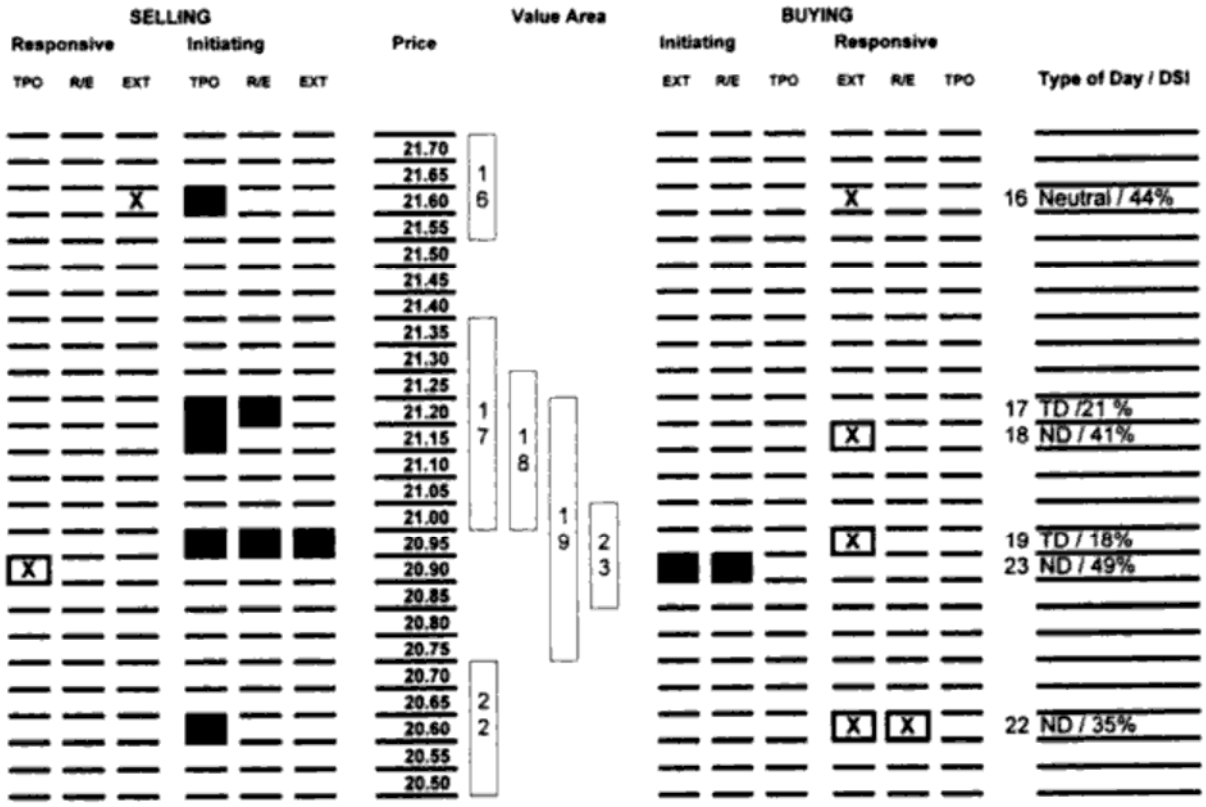



Figure 13.9 LTMA chart for crude oil, July 16 to 25. (Source: SkyTrade.)

As a final example, consider the LTMA chart in Figure 13.9 which shows the creation of a new LTMA chart on July 16 with the occurrence of a neutral day. An imbalance of selling activity unfolds over the next two days amid a dearth of buying range extension. When that buying range extension did occur, it was not matched with extreme bearish DSI numbers.

# CONCLUSION

The goal of this book has been to develop a method for trading in the futures markets based on combining the two primary factors driving prices in all markets which have a large speculative element: individuals' transactions and expectations of what prices are going to do in the future. By focusing on individuals who are making speculative decisions in order to improve their lot, the Model remains true to the primary purpose of markets and deals with the subject matter in as precise a manner as possible. By incorporating expectations into the methodology, the Model accurately reflects what is actually motivating individuals to make the transactions in the first place.

The Sentiment-Activity Model provides a framework for understanding how expectations and transactions interact to create trading ranges, trends, and reversals of trends. Moreover, the Model provides a construct for determining when the market is likely to respond typically to news items and when it is likely to respond perversely.

The Model's principles apply to time-frame perspectives ranging from a single day (as evidenced by examples of scalping the market) to years (as evidenced by the example of 26 years of GDP data on the U.S. economy). The same principles guiding the interactions between expectations and subsequent buying or selling are consistent

across these time periods, because these are the primary factors responsible for price movements. When applying the Model to a longer-term time horizon some judgment, as is the case in all business decision-making, is necessary. Over a shorter time horizon some of the Model's rules can be mechanized into a *system* of sorts. Aware that many traders are accustomed to such an approach to trading, I have provided in the appendix details on how to contact Advantage Futures, a brokerage firm which has a program in place to implement a mechanized approach to the Model.

# Appendix

## Vendors and Sources of Information

Advantage Futures, Inc. 200 South Santa Fe Suite #3 Salina, KS 67401 800-658-1924

Bloomberg Financial Markets 499 Park Avenue New York, NY 10022 212-318-2000

Commodity Quote Graphics P.O. Box 758, 201 Centennial St. Glenwood Springs, CO 81602 970-945-8907

Market Vane Corporation P.O. Box 90490 Pasadena, CA 91109-0490 818-395-7436

MBH Commodity Advisors P.O. Box 353 Winnetka, IL 60093 847-291-1870

SkyTrade P.O. Box 198038 Nashville, TN 37219 615-370-3444

# Notes

## Chapter 1

1. Nathan Rosenberg and L. E. Birdzell, Jr. *How the West Grew Rich* (New York: Basic Books, 1986), 28.

2. Ludwig von Mises, *Human Action* (Chicago: Contemporary Books, 1966), 396.

## Chapter 2

1. Michael C. Jensen and William H. Meckling, "The Nature of Man" *Journal of Applied Corporate Finance* 7, No. 2 (summer 1994): 5.

2. Ibid. The Resourceful, Evaluative, Maximizing Model asserts that every individual is an evaluator. Each individual's wants are limited. Each individual is a maximizer, acting to enjoy the highest level of value possible. Individuals are resourceful and able to respond to changes in their environment by creating new opportunities.

3. Ibid., 6.

4. Michael C. Jensen, "Self-Interest, Altruism, Incentives, and Agency Theory," *Journal of Applied Corporate Finance 7,* No. 2 (summer 1994): 42.

5. Jensen and Meckling, "Nature," 7.

6. "What Makes a Good Salesman," *Harvard Business Review, Business Classics: Fifteen Key Concepts for Managerial Success,* 52-53.

7. "A Typing Brush-Up Might Be in Order For a 'Mad Genius/" *The Wall Street Journal* (March 16,1994): A1.

8. Ibid., A2.

9. Ibid., A1.

10. Jensen, "Self-Interest," 43.

11. Jensen, preview of "Economics, Organization, and Non-Rational Behavior," *Journal of Applied Corporate Finance* 7, No. 2 (summer 1994): 43.

12. Jensen, "Self-Interest," 45. According to Jensen, PA M is intended to complement REMM. "The combination of REMM and PA M leads to a richer positive description of behavior." (44).

13. C. Kanodia, R. Bushman, and J. Dickhaut, "Escalation Errors and the Sunk Cost Effects: An Explanation Based on Reputation and Information Asymmetries," *Journal of Accounting Research* 27 (1989): 59-77.

14. The phenomenon of the Midas Touch Syndrome is detailed in *What I Learned Losing a Million Dollars* by Jim Paul and Brendan Moynihan (Nashville, TN: Infrared Press, 1994).

15. "Trader Sent to Clean Up Back Office Left a Globe-Trotting Mess," *The Wall Street Journal* (February 28,1995): A3.

16. Ibid., 17.

17. "Before the Fall. Hubris and Ambition in Orange County: Robert Citron's Story," *The Wall Street Journal* (January 18,1995): Al.

18. Ibid.

19. Ibid.

20. Ibid.

## Chapter 3

1. James Grant, Testimony before the House Banking Committee, July 30, 1992.
2. Ludwig Von Mises, *Human Action* (Chicago: Contemporary Books, 1966), 112.
3. *The Wail Street Journal* "Dollar Advances; Market's Direction Remains Uncertain" (March 7, 1996): C-18.
4. Peter F. Drucker, *Management* (New York: Harper Row, 1985), 470.
5. Jude Wanniski, *The Way the World Works,* 3d ed. (Morristown, NJ: Polyconom-ics, 1989), 97.
6. Ibid.
7. Ibid., 99.

## Chapter 4

1. Burton G. Malkiel, *A Random Walk Down Wall Street,* 4th ed. (Ontario: W.W. Norton & Co., 1985), 43.
2. Charles Mackay, *Memoirs of Extraordinary Popular Delusions and the Madness of Crowds* (Yugoslavia: I. C Page & Co., 1932), 53, 1841.
3. Ibid., 71.
4. Malkiel. *Random Walk,* 37.
5. Richard J. Teweles, Charles V. Harlow, and Herbert L. Stone, *The Commodity Futures Came: Who Wins? Who Loses? Why?* (New York: McGraw-Hill, 1977), 197.
6. Humphrey B. Neill, *The Art of Contrary Thinking* (Caldwell, Idaho: Caxton Printers, Ltd., 1954), 1.
7. Ibid, 9.
8. Mackay, *Memoirs,* p. xx. Preface to the Second Edition, 1932. (London: Office of the National Illustrated Library).
9. "A Typing Brush-Up Might Be in Order For a 'Mad Genius,'" *The Wall Street Journal* (March 16,1994): Al.
10. Teweles, et al.. *Commodity,* 197.
11. Neil), *Art,* 98.

## Chapter 5

1. "Texas International Air Plans Discount Fares on Seven Routes in March," *The Wall Street Journal* (February 11,1977).
2. Rapid Ascent: People Express, Flies Into Airlines' Big Time in Just 3 Years, *The Wall Street Journal* (March 30,1984): Al.
3. Thomas Petzinger, *Hard Landing* (New York: Times Books, 1995), 409.
4. Ibid., 410.
5. Ibid.
6. Ibid.
7. "People Express Airlines: Rise and Decline," Harvard Business School Case No. N9-490-012, March 1,1990.

## Chapter 7

1. Robert D. Edwards and John McGee, *Technical Analysis of Stock Trends,* 2d ed. (Boston: John Magee, Inc., 1966), 86.

2. Specifically in J. Peter Steidlmayer, *Steidlmayer on Markets* (New York: John Wiley *k* Sons, 1989).

3. J. Peter Steidlmayer and Shera Buyer, *Taking the Data Forward* (Chicago: Market Logic, Inc., 1986), 12-13.

4. Ibid.

## Chapter 8

1. Tonis Vaga, "The Coherent Market Hypothesis, *Financial Analysts journal* (November-December, 1990): 36.

# Bibliography


Drucker, Peter F. *Management.* New York: Harper & Row, 1985.

Edwards, Robert D., and John Magee. *Technical Analysis of Stock Trends.* Boston: John Magee, 1966.

Mackay, Charles. *Memoirs of Extraordinary Popular Delusions and the Madness of Crowds.* Yugoslavia: L.C. Page & Co., 1932.

Malkiel, Burton C. *A Random Walk Down Wall Street,* 4th ed. Ontario: W.W. Norton, 1985.

Mises, Ludwig von. *Human Action.* Chicago: Contemporary Books, 1966.

Neill, Humphrey B. *The Art of Contrary Thinking.* Caldwell, ID: Caxton Printers, 1954.

Paul, Jim, and Brendan Moynihan. *What I Learned Losing a Million Dollars.* Nashville, TN: Infrared Press, 1994.

Petzinger, Thomas. *Hard Landing.* New York: Times Books, 1995.

Rosenberg, Nathan, and L. E. Birdzell, Jr. *How the West Grew Rich.* New York: Basic Books, 1986.

Steidlmayer, J. Peter. *Steidlmayer on Markets.* New York: John Wiley & Sons, 1989.

Steidlmayer, J. Peter, and Shera Buyer. *Taking the Data Forward.* Chicago: Market Logic, 1986.

Teweles, Richard J., Charles V. Harlow, and Herbert L. Stone. *The Commodity Futures Game: Who Wins? Who Loses? Why?* New York: McGraw-Hill, 1977.

Wanniski, Jude. *The Way the World Works,* 3d ed. Morristown, NJ: Polyconomics, 1989.