PART I

Trend Theory

M ost literature on the subject of technical analysis focuses on application—how to apply some tool set to the market to magically make money. Very little of the available literature digs deeper into the mysteries of trading markets, asking the more philosophical and theoretical questions regarding what really makes the market do what it does.

Step back and consider the approach used in scientific inquiries. The common practice is to develop a hypothesis that attempts to explain the observed phenomenon. Next, studies are devised to test the hypothesis. After testing, the hypothesis is revised as needed, retested, and, as a result of this process, eventually a theory is created that explains most aspects of the phenomenon. Once understood, the theory can be utilized to create a simplified model of the reality.

In the field of study commonly referred to as technical analysis, the concept of trend is arguably the most fundamental of all technical building blocks. Without an accurate understanding of what trend is and how it can be reliably identified, technical analysis is crippled, at best.

Given the unquestioned importance of trend, there is an unparalleled need to create a theory of trend that utilizes the circular process of proposing and testing a hypothesis. In practice, this approach builds a solid foundation, a lasting foundation that isn't subject to the whims of the day.

The early work of Charles Dow and Thomas Hamilton is the most defining work on trend, and their trend model is studied intently. From that material, the objectives, inputs, definitions, and relationships of the currently practiced model of trend are exposed and analyzed. The Dow/Hamilton

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model can be referred to as the classical model of trend, given its ground-breaking work and application.

Although an excellent model, the Dow/Hamilton model's focus was rather narrow. Later practitioners, rather than extending the model in order to properly apply it to other phenomenon, chose to take the simple way out. Rather than do the legwork required to formulate a new theory and resultant model, these modern-day practitioners chose to simply distort and stretch the classical model to fit their needs. Such an approach is problematic.

Thus, Part I addresses theory and model. It begins with a presentation of the classical model of trend followed by the proposed neoclassical model. Both are presented in depth with an eye toward their objectives, internal assumptions, inputs, definitions, and the relationships among those moving parts.

The neoclassical model is comprehensively documented and its far-reaching implications are analyzed. Starting from a set of objectives that seek to explain how all trends are created, persist, and eventually meet their demise, observable phenomenon (market behavior) is utilized to validate the model. As such, the neoclassical model is essentially a replacement for the classical model, extending its scope and applicability—but it doesn't stop there.

The neoclassical model introduces another equally important, if not more important, concept. The model proposes that not all trends are equal in terms of their quality; that some trends are better than others. Initially that may not sound groundbreaking, but the implications are huge. If a trader can discern one trend as having an increased likelihood of continuance as compared to another, then naturally the trader would gravitate their efforts into trading the trend that had the most promise. The resulting yields should increase, and thus the model provides a valuable application in the "real world" of trading.

To summarize, not all trends are created equal and the neoclassical model provides the theoretical foundation for both the identification and qualification of trends. The model that springs forth yields abundant opportunities for practitioners in a very practical sense. In all human endeavors, applications without theories and resultant models typically end up on the trash heap of failed ideas. The currently practiced trend model is a failure not because of the model itself, but because the model has and is being applied in a manner it wasn't designed for. There is a better way. Through a painstaking examination of the existing model followed by the creation and exposition of a new, more comprehensive one, future generations of traders shall have the benefit of a theory that more closely matches the reality and objectives that they are most interested in.

Redefining Trend

T rend, as it applies to securities trading, is loosely defined as the proclivity of prices to move in a general direction for some period of time. This definition appears to be a reasonable description, given the references made to *trend* throughout the technical literature. Note, however, that this definition neither indicates the direction of movement nor precisely defines the concept of time. Instead we are offered a broad picture of the inertia of prices moving along in one direction or another and continuing to do so for some unspecified period of time.

When you look for definitions of *trend* in the body of technical analysis work that has formed over the past century, there are few to be found. A general definition is contained in what has become known as the defining work for classical technical analysis, *Technical Analysis of Stock Trends* by Robert D. Edwards and John Magee.[1] Edwards and Magee explain how Charles Dow is believed to be the first person to make a thorough effort to express the notion of a general trend. Dow's research led to a series of editorials published in the *Wall Street Journal.* After Dow's death, the succeeding editor at the *Journal*, William P. Hamilton, continued to write about the market averages and trends. Eventually, Hamilton took Dow's work and organized it into a set of principles that later came to be known as the Dow Theory. That theory is heavily premised on the principle of identifying the general market trend.

Probably the most influential work on the Dow Theory is provided by Robert Rhea, who in 1932 published a book by the same title, *The Dow Theory.* Rhea recounts the work of Hamilton and provides what is probably

the most complete literary definition of trend, described in the context of bull and bear markets.[2]

> *Successive rallies penetrating preceding high points, with ensuing declines terminating above preceding low points, offer a bullish indication. Conversely, failure of the rallies to penetrate previous high points, with ensuing declines carrying below former low points, is bearish.*

Outside of Hamilton's definition, *trend* is heavily referred to yet almost universally lacking a definition. The notion of trend is widely accepted, but other than in the early works of Dow and Hamilton, the absence of a definitive definition is deafening.

Open almost any book on trading and you will see references to *trend*. It doesn't matter if the subject matter addresses tape reading,[3] the psychological aspects of trading,[4] or something as unique as explaining the market through chaos theory;[5] almost every trading book makes references to *trend*, yet provides no definition. It's as if the definition is so widely known that it need not be repeated. Clearly all these technicians view *trend* as important—certainly important enough to take the time and trouble to use the concept in their books and to utilize that concept to explain their trading systems and insights.

Given that *trend* is such a fundamental concept to the study of technical analysis, this absence of a precise definition is, in a word, baffling. Few would argue about the definition of a price-to-earnings ratio (PE). There is little disagreement in the world of finance about such concepts as PEG ratios, profit margins, return on assets (ROA), or a whole host of financial criteria used to evaluate a company's financial health. In fact, the less-than-rigorous nature of technical analysis is what frustrates so many traders. It is why fundamental traders (those who analyze the fundamentals of a company and use that analysis to make investment decisions) mockingly refer to technical traders as voodoo traders or worse. How can you use the conclusions of a field of study when a most basic concept is—shall we say—fuzzy?

The most complete definition of *trend* (as popularized by Rhea) has held sway for more than a century now and has been used liberally by all who have followed. It is based on the concept of price and direction and was originally provided in the context of the general market trend, a trend that is measured in years—not months, weeks, or, heaven forbid, days. Over the years, though, the notion of trend has increasingly been applied to price movements within shorter and shorter time frames. Given the criticality of the concept of trend to all technical traders and to technical trading in general, it is necessary to ask if this definition,

postulated over a century ago and directed at major market movements, is applicable in shorter time frames. Is the generalized and widespread practical application of *trend* meaningful, and has the liberalization of the applicable rules surrounding this most basic concept rendered the term useless? I'm afraid it has.

The concept of trend is as basic as financial theory gets, and the application of the concept reaches to the very heart of technical analysis. Billions, if not trillions, of dollars are wagered on the direction of currencies, bonds, commodities, and stocks on a daily basis. The willingness of traders and investors to put their money at risk on the pure faith in the proclivity of prices to continue to move in a general direction for some period of time is self-evident. It happens on a daily basis all around the world. What if the daily actions of the stock market participants could be distilled and utilized in such a way as to increase the predictive accuracy of future price movements? What if a trend model could be defined, refined, and directed to address the need for trend identification on a more granular level, in terms of time, widespread applicability, and probabilities? This is the objective of trend qualification, and the pages that follow seek to address these desires.

The concept we construe as *trend* is, simply put, a model. Models consist of inputs, definitions, and relationships usually expressed as methodological rules or equations. They are nothing more than a mechanism to artificially impose structure on some part of a more complicated reality. The models we humans construct attempt to simplify yet capture the essence of the reality we are modeling. The ultimate model is the one that utilizes the smallest number of inputs yet reflects reality perfectly. The performance of most models is, however, always something less than ideal.

Models can be extremely complicated or relatively simple. Econometric models are well known for comprising hundreds, if not thousands of inputs, variables, and equations in their attempts to reflect all or some part of the economy. The model developed by Charles Dow to measure primary stock market direction (trend) was much simpler, consisting of only three variables—the instrument being measured, its price, and time.

The trend model conceived of by Dow over a century ago (as documented by and expanded upon by Hamilton) was purposefully developed to forecast major cycle changes in the market. Hamilton wrote of major bull and bear market cycles that consisted of three trends: the primary, secondary, and minor trends. In Hamilton's opinion, it wasn't worth examining minor trends, as they represented brief fluctuations that had no real effect on the larger trend of the market. Hamilton's real concern was to identify primary trends: those that would last for longer than a year and potentially for many years.

To this end, Dow and Hamilton originally began to monitor a critical group of stocks that they thought could provide a reliable indication of the general economy's health. If the group of stocks was strong and certain strength characteristics were met, then the economy would be strong and a primary bull market trend would likely ensue. The first group of stocks measured the industrial base of the country. Although the components have changed over time, the index remains and is called the Dow Jones Industrial Average. The second group of stocks concentrated on the movement of goods throughout the country. At the turn of the century, that was limited to railroad stocks. Like the industrial average, this second group of stocks has changed over the years, as well, yet it remains with us today. It is called the Dow Jones Transportation Index.

Assuming that one could determine the stock market's primary trend in a reasonably reliable manner, what value does it provide? The answer to that question is rather obvious. An accurate predictive model of trend is indeed a gem to behold. As the trend model suggests, trend is the proclivity for prices to continue in the direction of the trend. Thus, once identified, a trend can be followed until it ends, which brings us to the second major component of the trend model: identifying the trend's demise. Hamilton's trend model addressed this need as well.

Since it is generally accepted that, once established, there are greater odds that a trend will continue, the logical trading axiom is that you should always trade with the trend. Almost all trend-based trading systems (technical analysis tools and methodologies) generally accept this notion and attempt to trade with the trend. Equally important is the identification of a trend's end and there is another distinct set of tools and methods that attempt to determine this. Both trend-following and trend-exhaustion tools and methodologies are all loosely centered on the notion of trend as first described by Dow and Hamilton.

For example, an old mainstay and still popular model for trend determination is the moving average. There are simple moving averages, exponential moving averages, and even triangular moving averages. The rules governing their use are varied and easily outnumber the variations in moving average types. The crossover theory, for example, purports to indicate when to buy and sell. This theory is based on the use of two moving averages, each consisting of a different time period. When the faster of the two moving averages (shorter time span) crosses over the slower moving average line, then a buy or sell indicator is triggered.

Every popular charting package has a multitude of technical analysis tools available for use. The vast majority of these indicators are related to trend in one way or another. For example, a popular trading package from Investools.com offers more than 160 tools in their premier charting package. The proliferation of tools, many of which are related to trend, is

overwhelming. In trading, what is needed is simplicity. The entire point of developing a model is to capture reality in the simplest possible manner.

A trading model is a very serious tool. It needs to capture the reality of the market because your money is at stake. There are literally thousands of inputs at work in the stock market. To distill that down to a minimal set of core inputs with a reasonably simple set of rules is what the astute trader strives for. To accomplish this, the model must account for the ultimate price determinant—supply and demand. It needs to be applicable to any time frame. It has to work the same for a stock as it does for a stock sector or an index, and on any market anywhere in the world. The model should apply equally to other markets including bonds, currencies, and commodities. It needs to be generic enough to do all these things yet still yield specific recommendations based on price direction: on trend initiation, continuation, and the potential for reversal.

That is a lot to ask of a model. Naturally, such a model will not always be right, but few models are. The goal is to get it right most of the time. Is such a system possible? Not only is it possible, it exists. The model is called trend qualification.