# The Market Timing Approach: A Guide to the Various Strategies

## by Joseph Ludwig

With technical analysis enjoying a renaissance on Wall Street, can market timing—which is firmly rooted in technical analysis—be far behind?

Over the past few years the application of market timing by individual investors, as well as registered investment advisers, has accelerated rapidly. Contributing to the growth of timing has been the proliferation of computer capabilities, the availability of data, and the growth of mutual funds.

Market timers believe that it is possible to identify market trends early enough at their start to successfully position investments in equity, bond, or money market funds. Buy-and-hold advocates argue against this approach, maintaining that it is not possible to successfully time the market on a continuing basis. Many articles on market timing—including those in the AAII Journal—tend to focus on the debate between market timers and buy-and-holders. What gets lost is any detailed discussion of market timing itself—what it is and what the primary strategies are.

This article skips over the debate (although I am clearly in the market timing camp) in the interests of simply explaining the market timing approach.

## Market Timing Variations

Market timers range from "pure" timers to dynamic asset allocators. Pure market timers use technical analysis to determine when to make moves completely in or completely out of specific asset classes; in most cases these asset classes include U.S. stocks, money market funds and bonds. In dynamic asset allocation, the distribution of assets among domestic and international equity, bonds, and money markets is adjusted on a continuing basis in response to market and economic conditions. This redistribution is based on the probability of return and relative risk of each asset class. Other more common forms of asset allocation focus on the investor's profile and/or requirements.

Most market timers use mutual funds to implement their strategies, moving investments between industry sectors and among various types of equity, fixed-income, and money market funds, in both domestic and international arenas. Mutual funds offer a number of advantages to investors, including professional stock selection, diversification, defined investment objectives, and the convenience of telephone transfers at little or no cost. The fact that transaction costs are negligible is a major element in market timers' ability to employ their strategies effectively.

While some mutual fund groups have been reluctant to accommodate timers, the increase in the number of fund families has meant increased competition for investment dollars and greater

willingness to work with market timers. In fact, there are a growing number of mutual funds designed specifically for market timing; variable annuities are reportedly not far behind.

# Strategy Components

Financial markets move in trends caused by the changing attitudes and expectations of investors with regard to the business cycle. Since investors continually make the same types of mistakes from cycle to cycle, an understanding of the historical behavior and relationships of certain market averages and other data (financial and otherwise) can be used in an attempt to identify market turning points. Since no single indicator can ever be expected to signal all such trend reversals, it is essential to use a number of indicators simultaneously, so that an overall picture can be painted.

Most professional timers use complex strategies or models consisting of two or more components. Typically, the timer looks for confirmation among components, which may incorporate a variety of variables including internal market statistics (prices, volume, new 52-week highs and lows, the number of advancing and declining issues, etc.), monetary factors (interest rate and/or money supply), valuation measures (price-earnings ratios and/or dividend yields), and sentiment factors (bull/bear ratio, consumer confidence, put/call ratio, etc.).

Some technical analysts use complex mathematical techniques to blend their indicators into a structured all-encompassing approach; others use less formal techniques to establish meaningful quantitative relationships between variables in building their respective models.

The different timing approaches used by market timers tend to fall into seven principal methodologies: trend-following; fundamental/forecasting; overextended; cyclical; pattern recognition; seasonality; and artificial intelligence.

## Trend-Following

The objective of a trend-following strategy is to recognize a bona fide change in trend soon after it occurs. Trend-following models are most useful when the data exhibits long or broad sweeps up or down. Most trend-following models use internal market data exclusively to determine the primary trend. Frequently the technician constructs several market trend indicators and looks for confirmations of a signal from one indicator by other indicators before defining the primary trend.

With trend-following, buy and sell signals generally lag market tops and bottoms, providing a high comfort level for the investor because signals are reinforced by the prevailing market condition. On the negative side, these late entries and exits result in some missed opportunities and forfeiture of gains. The trend-following model is also vulnerable to whipsaws (a series of short-duration trades generating small profits or losses) in directionless or tight trading range markets. To determine the effectiveness of a trend-following model, one must examine both how quickly it identified a bona fide trend, as well as how well it avoided whipsaws.

# Fundamental/Forecasting

The fundamental/forecasting model attempts to identify data series (or combinations of series) that lead the market. These models are not acutely time-sensitive, but attempt to project the market's overall direction in the next time period.

In general, fundamental models look at either or both of two areas. One is the valuation of the stock market relative to other investments (such as money markets or fixed-income securities). This market valuation is usually measured by earnings and earnings growth and/or dividends and dividend growth. The other area that fundamental models may look to is the economic cycle. The objective is to determine the current stage of the economic cycle, where the economy is headed, and, therefore, which sectors will benefit from these conditions. Once this is determined, the analyst can project corporate earnings and dividends. Stock values then follow, based on these earnings and dividend projections.

Models based on fundamental and forecasting strategies may seem to be contrary to conventional wisdom and may be psychologically uncomfortable to the investor—signals often occur months in advance of the actual change in trend. Another problem is the difficulty in identifying the base series, partially because the stock market is itself an important leading indicator.

# Overextended

Overextended models capitalize on the "bandwagon" effect when investors overreact to market information. These models are designed to discriminate between "normal" and "extreme" behavior by creating an overbought/oversold oscillator. The oscillator is often based on either market action or investor sentiment.

One typical overextended model creates an oscillator (an index that moves between 0 and 100) based on the current price relative to the lowest and highest prices over the most recent time period (e.g., three months). If the oscillator is in the lower portion of this range (e.g., bottom 20%), it may be considered oversold and a purchase may be indicated when the oscillator begins to rise. In this approach, the investor would hold the security until the oscillator moves into the upper portion of this range (e.g., top 20%) and turns down. At this time the security would be considered overbought and therefore a candidate for sale.

Another overextended model creates a moving average (for instance, a 20-day moving average) of a security price or market index. This moving average is plotted on a graph along with the actual prices. Bands are then constructed above and below the moving average. The location of the bands may be a fixed percentage above and below the moving average (for instance, 4%) or may be based on the volatility of the prices. As the actual price moves near or through one of these bands, it is considered to be overextended and with a high degree of probability will move back toward the moving average line.

Like the fundamental/forecasting model, overextended models fly in the face of "conventional wisdom" and are frequently called "contrarian." These models are often too early in entering and

exiting extended market moves, particularly during strong trends, however, they can be extremely effective in a trading range market [where the market moves back and forth between an upper and lower range over an extended period of time].

# Cyclical

Cyclical models use cycle theory, such as Fourier Analysis, to analyze the behavior of a time data series and to make a projection of future prices. Fourier Analysis is based on the concept that any data series is composed of many repetitive waves of varying lengths and amplitudes that act simultaneously; this approach provides equations that allow for a mathematical analysis of the data series. One difficulty of Fourier Analysis is the fact that the Fourier equations exactly replicate past patterns. Phase shifting or even slight changes in cycle length or amplitude may adversely affect projections, making it difficult to determine significant changes in market direction.

Another type of cyclical model is generated by the Elliott Wave Theory, developed by R. N. Elliott. This theory proposes that all market movements can be described by patterns of waves, repetitive in form but not necessarily in time or amplitude. The basic form is a series of primary trend movements followed by corrective action. Some critics of the Elliott Wave Theory claim that interpretations of wave counts are extremely subjective, with "theorists" often having different predictions for the same wave pattern.

# Pattern Recognition

Pattern recognition models trace their origins to charting, one of the most popular methods of technical analysis and a method on which many technicians continue to rely heavily. Pattern recognition is based on the theory that when certain chart patterns of prices begin to take shape, they often play themselves out in similar ways. Examples of some classic patterns are head and shoulders, multiple bottoms or tops, flags, channels, etc.

In pattern recognition or charting, the analyst is concerned with price support and resistance. Support is defined as that price area that attracts buyers; resistance is defined as the price area where investors begin selling. Once resistance is penetrated significantly by upside price movement, this price area becomes a new area of support. Likewise, once support is penetrated by downward price movement, it becomes a new resistance area. The longer support or resistance is in place and the more times prices fail to penetrate these areas, the more significant the eventual penetration is and the greater the likelihood that the price will stay above the old resistance or below the old support.

Charting traditionally relied on the analyst's subjective judgment. Today computers aid in the effort to identify chart patterns by developing derivative data series and objectively identifying patterns. However, perceived patterns don't always resolve themselves in the same way and may not be effectively replicated by the computer. Following this approach still may require some subjectivity.

# Seasonality

The strategy involved in these models is based on determining specific days of the week, intervals of the month and/or times of the year that are favorable to a rise in the stock market. Initial observations of seasonality patterns were made by Arthur Merrill in his text, "Behavior of Prices on Wall Street." A comprehensive approach to stock market seasonality patterns was further explored by The Institute of Econometric Research in its book, "Stock Market Logic." Essentially these studies established that most of the market's gain over the last 60 years occurred during seasonally favorable days.

A disadvantage of seasonality models is that they require frequent trading. Also, recent evidence suggests that this strategy is losing effectiveness because many investors are now following its well-defined rules.

# Artificial Intelligence

Artificial intelligence (AI) is the newest method of timing the market and involves computer problem-solving techniques that imitate human thought or decision-making processes. The first application of artificial intelligence to financial markets was in the 1960s by G. P. E. Clarkson. In recent years the use of artificial intelligence systems on Wall Street has gained momentum and followers.

There are three main branches of artificial intelligence: expert systems, neural networks and genetic algorithms. Expert systems, the oldest branch, consist of two basic components: a knowledge base and an inference engine. The knowledge base is a library of all the knowledge the analyst has about the market and how it behaves. The inference engine is a computer program whose purpose is to determine the inter-relationships between the data presented and the rules of the knowledge base and offer a range of potential outcomes prioritized by degrees of probability.

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A neural network mimics the structure and function of the human brain. Through a computer program it attempts to identify subtle patterns that exist in financial market data and forecast future market movement based on those data patterns. Like the brain, neural networks are adaptive and have the ability to learn and correct as additional data and results are revealed.

Genetic algorithms are a recent branch of artificial intelligence and are still in relative infancy. A genetic algorithm is a system for optimization of non-linear problems. In this system, computer models mimic evolution in order to arrive at an optimal strategy for solving problems such as selecting the proper investment vehicles and/or approaches for specific markets. They have the ability to splice individual strategies and synthesize a more complex model from simplistic approaches. Genetic algorithms have focused on optimization problems, such as asset allocation, but are now being researched as an application for forecasting.

With some types of artificial intelligence models the market timer is often unable to explain how the results are determined, likening their use to a "black box" system. While this characteristic as well as the complexity of artificial intelligence systems inhibit many individuals from using them, these models owe their increasing attraction to their ability to adapt to changing market conditions.

# For More Information

This article is only an overview of the general approaches. Technical analysis and the techniques used in market timing are complex, but they are not beyond the understanding or capabilities of many individual investors. If you want more details and in-depth discussions about various timing approaches, the following books are highly recommended; all are basic and written in an easy-to-understand style.

Technical Analysis Explained, 3rd edition
by Martin J. Pring
Published by McGraw-Hill, (800) 262-4729

The Encyclopedia of Technical Market Indicators
by Robert W. Colby and Thomas A. Meyers
Published by Business One Irwin, (800) 634-3961

Stock Market Logic
by Normal G. Fosback
Published by the Institute for Econometric Research,
(305) 563-9000

Winning on Wall Street
by Martin E. Zweig
Published by Warner Books, (800) 759-0190

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