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# Technical Analysis: Connecting the Dots or a Legitimate Investment Tool?

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## THE CARL AND WINIFRED LEE HONORS COLLEGE

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# Technical Analysis: Connecting the Dots or a Legitimate Investment Tool?

by
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Haworth College of Business
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# Introduction

Wall Street is full of many unusual characters. They appear frequently in the newspaper headlines, on the evening news, and now on the Internet. They are portrayed both as villains such as Michael Milken or Ivan Boesky and as heroes such as Warren Buffett or Martin Zwieg. While these people may seem very distant at times they really impact each one of us every day, whether or not we are aware of it. The companies we conduct our routine transactions with are financed through them, our retirement plans our dependent on them, and even our jobs rest on the success of those who make up the Wall Street crowd. These professionals all have one fundamental goal in mind - to make money in financial markets (usually by using other people's money). Not surprisingly, each Wall Streeter has his own idea of the "perfect investment strategy" if such a thing exists. Although these strategies vary considerably from one another their foundations can be traced to two basic investment theories: fundamental and technical analysis. From these basic theories come techniques ranging from the simple to the exotic.

# Background of Technical Analysis

## Early Technical Analysis

Most people believe that technical analysis is the original form of investment analysis. Its first appearance was in the late 1800s, around the time that the Dow Jones Industrial

Average was developed. Technical analysis came into widespread use since there was no extensive and fully disclosed financial information, which later led to the origin of fundamental analysis[1]. Because of the long history of technical analysis, many of its techniques used today have been in place for over 60 years. Modern technical analysis still depends on the foundations set by theories developed in the late 1800s, although new techniques have been developed over the years. Computers have made the technician's job much easier and in some cases has automated decision-making.

**Philosophies of Technical Analysis**

One theory that is closely linked to technical analysis, particularly in relation to charting, is the Dow Theory[2]. In the late 1890s Charles Dow developed his theory which is considered the foundation of all technical analysis studies. Interestingly, Dow did not consider his theory to be a forecasting agent of the market or even just a guide for investors, but rather a barometer of general business trends[3].

Students of the Dow theory generally divide it into six basic principles. The first principle of the Dow Theory states that the market averages discount everything. The averages represent the aggregate judgment and emotion of investors for both present and future

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[1] William Brock, Josef Lakonishok, and Blake LeBaron, "Simple Technical Trading Rules and the Stochastic Properties of Stock Returns," The Journal of Finance, (New York: Waverly Press, Inc., December 1992), p. 1731.

[2] Geoffrey A. Hirt and Stanley B. Block, Fundamentals of Investment Management, (Burr Ridge: Richard D. Irwin, Inc., 1993), p. 299.

[3] Robert D. Edwards and John Magee, Technical Analysis of Stock Trends, (Springfield: John Magee, 1958), p. 11.

events[4]. Secondly, the market has three movements - primary movements, secondary reactions, and minor movements[5]. Primary movements are major increases or decreases in the market over a period of at least one year. Secondary reactions, also known as "corrections," are temporary reversals of primary movements. Minor movements are day-to-day fluctuations which have little bearing on the primary market trends. The third principle of the Dow Theory claims that lines on charts indicate movement, providing evidence of the existence of trendlines. Principle four of the Dow Theory states that price/volume relationships provide the background for market trends while principle five states that price action determines market trends[6]. The sixth and final principle of the Dow Theory is that the averages must confirm each other's movements. For example, changes in the Industrial and Transportation Averages should be considered together to confirm potential market movements[7].

Technical analysis is an extension of the Dow Theory in that it provides methods of making investment decisions based on the principles found in this theory. Technical analysis considers the supply and demand for a security and how the security's price reacts to company (or commodity) information and market events[8]. They believe that changes in the supply and demand relationships of a security can be detected in charts of market

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[4] Martin J. Pring, Technical Analysis Explained, (New York: McGraw-Hill, Inc., 1980), p.14.

[5] Robert D. Edwards and John Magee, Technical Analysis of Stock Trends, (Springfield: John Magee, 1958), p. 13.

[6] Martin J. Pring, Technical Analysis Explained, (New York: McGraw-Hill, Inc., 1980), p.16-19.

[7] *Ibid.*

[8] Thomas A. Meyers, The Technical Analysis Course, (Chicago: Probus Publishing Company, 1994), p. 4.

action[9]. Therefore, the only research necessary is the study of market prices. A true technician would not be concerned with what industry a company is in, or what commodity is being traded, but only the price history of the security.

Technical analysis claims that prices move in trends that tend to repeat and persist over time[10]. These trends are the result of supply and demand changes. A trend continues until it is reversed, at which time a new trend begins. Because human nature is such that people react to similar events and situations in a consistent manner, these trends repeat themselves. Technicians analyze characteristics of the market today that mirror characteristics of the market in the past with the expectation that the market will react similarly and predictably.

**Fundamental Analysis**

Fundamental analysis approaches a market decision on the basis of statistics[11]. A fundamentalists gathers data about the economy, and industry, and a company to consider business conditions as a whole and on a company-specific basis. A company's financial statements are carefully studied while also considering the company's strategy and quality of management. A fundamentalist will generally attempt to derive a value from this data

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[9] William Brock, Josef Lakonishok, and Blake LeBaron, "Simple Technical Trading Rules and the Stochastic Properties of Stock Returns," The Journal of Finance, (New York: Waverly Press, Inc., December 1992), p. 1731.

[10] Thomas A. Meyers, The Technical Analysis Course, (Chicago: Probus Publishing Company, 1994), p. 5.

[11] Robert D. Edwards and John Magee, Technical Analysis of Stock Trends, (Springfield: John Magee, 1958), p. 3.

that represents what a company's stock should be worth. This value, or price, is compared with the current market price of the company's stock to see if the current price is overvalued, undervalued, or fairly-valued. The investment decision is then made on this basis. Little consideration is given to a company's past stock performance other than perhaps observing the stock's reaction to a major event that somehow influenced the company.

Technical analysts use a different approach. They believe that all the data studied by a fundamental analyst is already reflected in the company's stock price[12]. Therefore, it is considered futile to spend time analyzing a company's financial statements, strategy, or even what business the company is in. Although the two approaches to investment decisions differ significantly, many investors combine the two theories when evaluating their own investments.

**Efficient Markets Hypothesis**

An investor should consider the implications of the Efficient Market Hypothesis (EMH) regardless of whether fundamental or technical analysis is followed. The EMH examines market efficiency, or how accurately security prices are valued. A basic assumption of the EMH is that no security can be inaccurately priced for more than a very short period of

[12] Thomas A. Meyers, The Technical Analysis Course, (Chicago: Probus Publishing Company, 1994), p. 3.

time[13]. Security prices adjust immediately to new information according to the EMH. There are three different forms of the EMH, each reflecting a different level of efficiency in the marketplace. These forms are the weak form, the semi-strong form, and the strong form.

The weak form of the EMH claims that there is no relationship between past and future prices of securities. Because of this, the weak form of the EMH maintains that there is no use in studying past price patterns of a security, a practice which is fundamental to technical analysis[14]. This form of the EMH considers technical analysis, or more specifically charting, to be of little or no use.

A second form of the EMH, the semi-strong form, states that all public information is already considered in the price of a security. The effects of new information on a security's price occurs almost immediately, allowing little or no trading profit by investing based on new information. If this form of the EMH is true, there is virtually no use for fundamental analysis of securities[15].

The third and final form of the EMH is the strong form. This form goes a step beyond the semi-strong form in that it maintains that all information, whether public or private, is

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[13] Robert D. Edwards and John Magee, Technical Analysis of Stock Trends, (Springfield: John Magee, 1958), p. 315; 319-320.

[14] *Ibid.*

[15] *Ibid.*

reflected in the price of securities. This form goes beyond describing highly efficient markets to basically describing perfect markets[16].

Clearly, if markets are truly efficient according to the EMH there is little room for abnormal profits (consistently greater than average market returns) generated through either technical or fundamental analysis. Yet there are investors who realize abnormal profits on a regular basis. For those who follow fundamental analysis we think of Warren Buffet and others. Those who also use technical analysis in their forecasting models include Martin Zwieg ("The trend is your friend"). While there may be some truth to certain elements of the EMH and perhaps in specific markets, the existence of successful investors such as these is evidence that the EMH may be seriously flawed.

The EMH has had a larger presence in the academic community as opposed to the investment community. Nevertheless, in recent years the validity of the EMH has been questioned throughout even the academic community. Many academic papers have been written that provide evidence for links between expected return and fundamental variables such as the price-earnings ratio and the market-to-book ratio. Other papers have clearly identified systematic patterns in stock returns related to calendar periods such as the weekend effect, the turn-of-the-month effect, the holiday effect, and the January effect[17].

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[16] *Ibid.*

[17] William Brock, Josef Lakonishok, and Blake LeBaron, "Simple Technical Trading Rules and the Stochastic Properties of Stock Returns," The Journal of Finance, (New York: Waverly Press, Inc., December 1992), p. 1732.

Both fundamental and technical analysts are providing data that the EMH may not be an accurate indicator of market behavior.

## Charting

The primary tool of a market technician is the chart. Charts keep track of price, volume, and other information about securities and displays this information in a graphical manner. These charts are then used to identify trends that can be examined with technical analysis. Different types of charts show different information and thus different types of trends. The primary types of charts used by technical analysts include bar charts, point and figure charts, and candlestick charts.

### Bar Charts

Bar charts are the most commonly used charts in technical analysis. These charts often appear in magazines and newspapers on a regular basis. While simple to construct, these charts provide a technical analyst with some of the most important historic information about a security: price, trading range, and usually the volume as well.

The vertical axis of a bar chart represents a price scale while the horizontal axis represents a time scale[18]. The prices plotted on the chart include a security's closing, high and low

[18] Thomas A. Meyers, The Technical Analysis Course, (Chicago: Probus Publishing Company, 1994), p. 15.

values for a given time period. These values are connected with a vertical line to indicate the trading range. If the volume of trading is included on a bar chart, the values will appear at the bottom of the chart in the form of vertical lines. Figure 1 is an example of a bar chart.

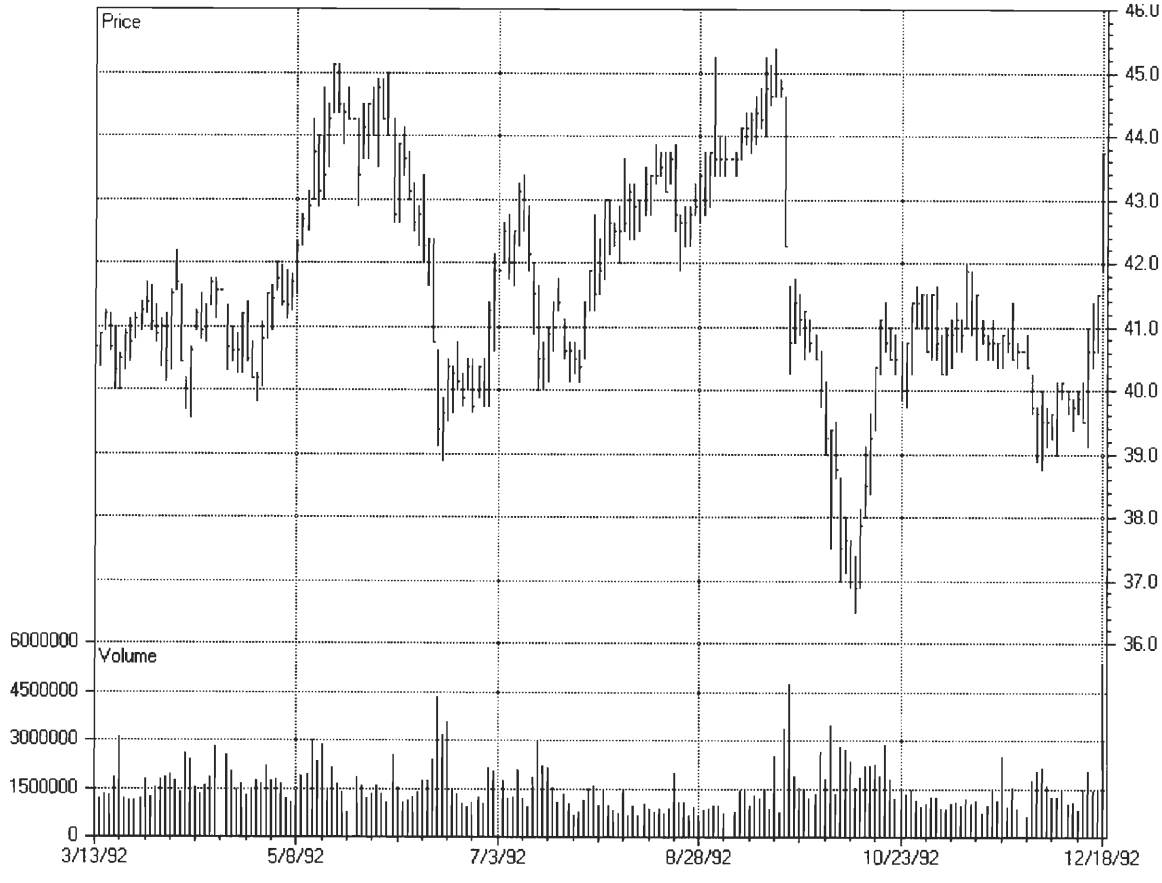


**Figure 1**

Bar charts, or price charts in general, are used by technical analysts since they believe that all supply and demand information has been combined into the price of the security[19].

[19] Kenneth H. Shaleen, Technical Analysis, (Chicago: Kenneth H. Shaleen, 1988), p. 2-3.

Changes in prices can be easily monitored with bar charts and trends can be revealed by the plotted price information. Volume is usually included in bar charts to stress the strength of price movements[20]. For example, a change in direction of a trend accompanied by volume that is higher than the average day-to-day trading may indicate a significant reversal.

The horizontal axis of a bar chart, representing time, can be varied in scale to produce short-term and long-term trends. Scales typically used for the horizontal axis include monthly, weekly, and daily values. Many investors will first examine the monthly values to analyze long-term trends, then move to weekly and daily values to take advantage of short term movements that follow the long-term trends[21].

**Point and Figure Charts**

Some technical analysts believe that only price changes and reversals of price changes are important. These variables are recorded in point and figure charts[22]. These charts are one dimensional in that they record only price information, ignoring the passage of time and security volume.

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[20] *Ibid.*

[21] Thomas A. Meyers, The Technical Analysis Course, (Chicago: Probus Publishing Company, 1994), p. 17.

[22] Robert D. Edwards and John Magee, Technical Analysis of Stock Trends, (Springfield: John Magee, 1958), p. 303.

Point and figure charts are generally constructed using an "X" to indicate an increase in price and an "O" to indicate a decrease in price (a predetermined value of typically one or two points)[23]. As long as an upward or downward trend persists, the analyst keeps plotting new Xs or Os in the same column. Once a trend reverses, a new column is started to indicate the new trend. Figure 2 is a point and figure chart.

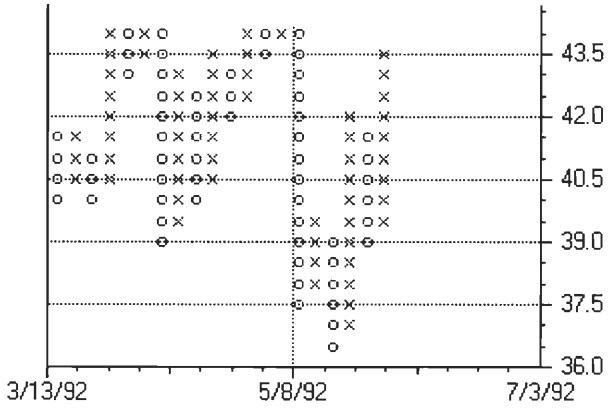


**Figure 2**

The same trading patterns used for bar charts are also used for point and figure charts. Trendlines and various formations are drawn on point and figure charts as they are on bar charts. However, point and figure charts differ from bar charts in their analysis of breakouts in that they link horizontal movement on a chart with later vertical price movement[24]. In other words, if a breakout were to occur in a trading pattern, the amount of horizontal movement in the chart can be used to determine the value of the breakout's

[23] David L. Markstein, How to Chart Your Way to Stock Market Profits, (West Nyack: Parker Publishing Co., Inc., 1966), p. 94.

[24] Kenneth H. Shaleen, Technical Analysis, (Chicago: Kenneth H. Shaleen, 1988), p. 1.

price change. Point and figure chart users claim this ability to predict the degree of price changes is the chart's greatest advantage[25].

**Candlestick Charts**

Candlestick charts first appeared in Japan and are presently the only method in use to graphically record the history of price activity. Some technical analysts believe that candlestick charts provide greater clarity of price movement than bar charts even though both charts use identical data.

Like bar charts, candlestick charts show a session's opening, closing, high, and low price. A candlestick line contains two parts: the body and the shadows. The body of a candlestick line represents the range between opening and closing prices for a given trading session[26]. If the body is filled in with black then the closing price was lower than the opening price. The reverse is true if the body is filled in with white (some analysts use red). The high and low prices for a trading session are indicated by thin lines called shadows that sometimes extend beyond the candlestick's body. The shadow on top of the body represents the session's highest trade, the bottom shadow the lowest trade (Figure 3). A sample candlestick chart is in Figure 4.

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[25] David L. Markstein, How to Chart Your Way to Stock Market Profits, (West Nyack: Parker Publishing Co., Inc., 1966), p. 8.

[26] Gregory L. Morris, CandlePower, (Chicago: Probus Publishing Company, 1992), p. 6, 9.

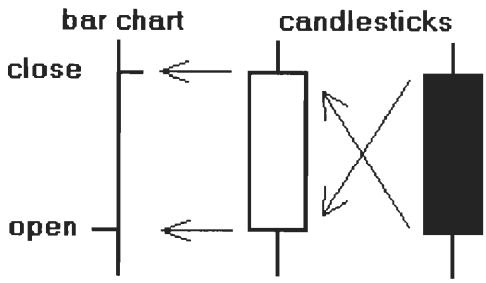


**Figure 3**

The Japanese have many names to describe variations in candlestick lines[27]. Variations of the typical candlestick line include a body with no shadows, a body with only one shadow, or an unusually long or short body. In addition, there are dozens of patterns that are unique to candlestick charts that indicate imminent trends in the security or market being analyzed.

[27] *Ibid.*

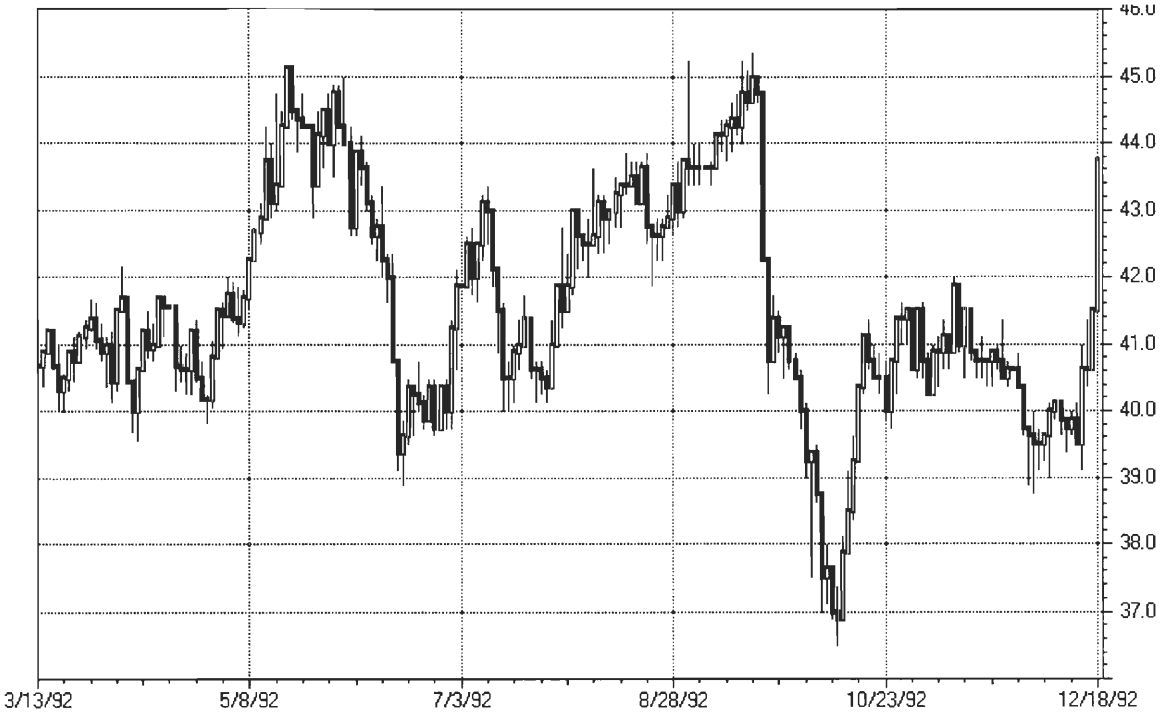


**Figure 4**

## Application of Technical Analysis

A large amount of time has been devoted to the study of support, resistance, and trend lines. These are relatively simple methods of determining when significant market movements will occur. Rather than regurgitate textbook material about support/resistance and trend lines, I will discuss two applications of technical analysis that are not typically mentioned in finance courses: the Elliot Wave and Chaos theories.

**Elliot Wave Theory**

Leonardo Fibonacci (1170? - 1240?) discovered a mathematical series of numbers in which each member is the sum of the two preceding numbers[28]. For example, a Fibonacci series starting with 0 and 1 would be 0...1...1...2...3...5...8...13 and so on. This numeric relationship has been used to explain many natural patterns such as growth rings in a tree and in mathematical problems[29]. Ralph Nelson Elliot developed a theory in the 1930s called Elliott's Wave Principle which attempts to apply Fibonacci numbers to financial market patterns. Elliot believed that traders moved in recognizable patterns that were more distinguishable with larger numbers of traders[30]. The Elliot Wave Principle claims that prices move in a five-wave sequence in line with the direction of the main trend and in a three-wave sequence in main trend corrections[31].

Followers of the Elliot Wave believe that traders can estimate where a wave will end using mathematical relationships[32]. This information would then allow traders to ride a trend for nearly its entire duration and then reverse positions during a trend correction. Elliot Waves are applied to both short and long term investment time periods. Many investors have developed their own variations on the Elliot Wave. Thomas R. DeMark, in his book The New Science of Technical Analysis describes his approach to the Elliot Wave

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[28] "Fibonacci Series," Microsoft Encarta, (Funk & Wagnalls Corporation, 1994)

[29] *Ibid.*

[30] World Wide Web, http://www.iinet.net.au/~cewa/

[31] Richard J. Teweles, Edward S. Bradley, and Ted M. Teweles, The Stock Market, (New York: John Wiley & Sons, Inc., 1992), p. 454.

[32] World Wide Web, http://www.iinet.net.au/~cewa/

Principle which he calls D-Wave analysis. In this analysis Mr. DeMark attempts to make Elliot Wave analysis less subjective by using a more quantitative method of wave evaluation.

**Chaos Theory and Technical Analysis**

From the beginning, chartists have been trying to discover only linear trends in financial markets. Linear trends are those whose equations raise variables to the power of one only[33]. This proves limiting because some trends may be non-linear, or have variables raised to powers greater than one. Recently, analysts have turned to computers to help them locate non-linear trends in financial markets. The use of non-linear equations to explain seemingly random changes relates to Chaos theory.

Chaos theory applies one or more equations to a system that appears to have random changes. There has been some recent work in which chartists have tried to apply this theory to financial markets. While no one expects to be able to find the formula that would explain the market, many believe they have found pieces of it that could explain certain price patterns[34]. Computers have played a vital role in this new area of technical analysis.

[33] "Tilting at Chaos," The Economist, (New York: The Economist Newspaper, NA, Inc., August 15th, 1992), p. 70.

[34] *Ibid.*

Citibank's Andrew Colin, a British mathematician, has written a computer program that detects non-linear trends in currency markets[35]. The program generates hundreds of hypotheses about what might influence the currency markets. Those that appear promising when tested against actual data are set aside and later combined with other promising hypotheses to generate algorithms. Another program is used that combines the algorithms in a way that would be most appropriate for given market conditions.

After two years of experiments, Dr. Colin believes his computer model can create returns of 25% per year. Although many people are skeptical of the computer's forecasting ability, some firms such as Midland Bank are already using artificial intelligence to at least aid humans in investment decisions. Future developments in this area will certainly contribute to security analysis.

## Legitimacy of Technical Analysis

Much work has been done to test the validity of technical analysis. The following section provides an overview of some of the techniques used in technical analysis and corresponding studies that support their use.

[35] *Ibid.*

**The Role of Volume**

Price and volume statistics for a security or market index are closely related and used simultaneously when basing investment decisions on technical analysis. Although price is the most important variable, the role that volume plays cannot be ignored. Volume provides information about the quality of an investor's analysis that is based on price patterns[36].

Blume, Easley, and O'Hara developed a model that "demonstrates why volume and the absolute value of price changes are positively correlated, and provides interesting comparative static predictions of the effects of information precision and dispersion on the price-volume relationship[37]" By using very sophisticated statistical methods Blume, Easley, and O'Hara produce results that clearly indicate that both the equity and futures markets have this strong relationship between absolute price changes and volume. Their research shows that a trader who engages in technical analysis must rely on past market statistics in addition to current statistics to profitably predict future market movements.

The results of the study by Blume, Easly, and O'Hara also indicate that technical analysis has value not only because of the statistical variables that are used but because there is

[36] Lawrence Blume, David Easley, and Maureen O'hara, "Market Statistics and Technical Analysis: The Role of Volume," The Journal of Finance, (New York: Waverly Press, Inc., March 1994), p. 153, 155, 177.

[37] *Ibid.*

some underlying uncertainty to be learned in the economy[38]. In addition, volume adds to the value of technical analysis by increasing the quality of traders' information signals.

**Moving Averages and Trading Range Breaks**

Two of the easiest and most commonly used trading signals in technical analysis are price relationships to moving averages and trading ranges. Both of these techniques are relatively easy to keep track of and provide clear buy/sell signals when properly used. They are plotted as lines on charts (typically bar charts) so their effect on prices may be quickly determined.

A moving average is calculated by taking the average of a security's (or market index's) price over a given period of time. This statistic is "moving" because the value changes every day as the oldest price used in the average is dropped and the most recent price is added. This produces a line on a graph that is very smooth in comparison to price. Moving averages vary in the use of short and long-periods of data. The most popular moving average rule uses a one day (short) average and 200 day (long) average[39]. A buy signal is given when the short-period moving average rises above the long-period moving average while a sell signal occurs when the short-period moving averages falls below the long-period moving average.

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[38] *Ibid.*

[39] William Brock, Josef Lakonishok, and Blake LeBaron, "Simple Technical Trading Rules and the Stochastic Properties of Stock Returns," The Journal of Finance, (New York: Waverly Press, Inc., December 1992), p. 1735.

The trading range break-out rule relates to support and resistance levels. The appearance of both support and resistance levels simultaneously constitutes a trading range. Technical analysts believe that many investors will try to take their profits by selling when prices reach a resistance level and will begin buying again when prices fall to a support level. This creates a trading range in which a security's price may stay for significant periods of time. If the security breaks cleanly out of a trading range by rising above a resistance level a buy signal is generated. Likewise, a sell signal is formed when a security breaks out of a trading range by falling below a support level.

A study by Brock, Lakonishok, and LeBaron provides evidence that supports the use of moving averages and trading range break-outs in making buy/sell decisions. They are very straight-forward when they say "Our study reveals that technical analysis helps to predict stock price changes.[40]" The study uses data from the first day of the Dow Jones Industrial Average in 1897 to 1986 - 90 years of trading. The summary statistics produced by the study show that using the moving average and trading range break-out techniques of technical analysis will produce consistent returns above market returns for the same period. As would be expected in an upward-trending market such as the New York Stock Exchange, the number of buy signals generated with these techniques occur 50% more frequently than sell signals[41].

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[40] William Brock, Josef Lakonishok, and Blake LeBaron, "Simple Technical Trading Rules and the Stochastic Properties of Stock Returns," The Journal of Finance, (New York: Waverly Press, Inc., December 1992), p. 1734, 1738.

[41] *Ibid.*

**Chart Formations: Head and Shoulders**

Technical analysts use charts to find reoccurring formations that supposedly predict future stock price movements. These formations range from the very clear cut, easy to find to those that are somewhat questionable and at best inconspicuous. One of the more identifiable and predictable chart formations is the head and shoulders pattern.

The head and shoulders pattern resembles its name - two smaller peaks on either side of one large peak. The smaller peaks represent the shoulders and the larger peak in the middle, the head. Volume tends to be heavy in the left shoulder and head, picking up once again during final penetration of the neckline (Figure 5)[42]. Although there are variations on this basic theme the result of a head and shoulders pattern is the same - a reversal in the current major trend. Upward trends are reversed with a regular head and shoulders formation while a downward trend is reversed with the reverse head and shoulders formation. Some technicians believe that not only does this formation predict a reversal but it gives an indication of how significant the reversal will be, based on the size of the head and shoulders pattern.

[42] David L. Markstein, How to Chart Your Way to Stock Market Profits, (West Nyack: Parker Publishing Co., Inc., 1966), p. 38.

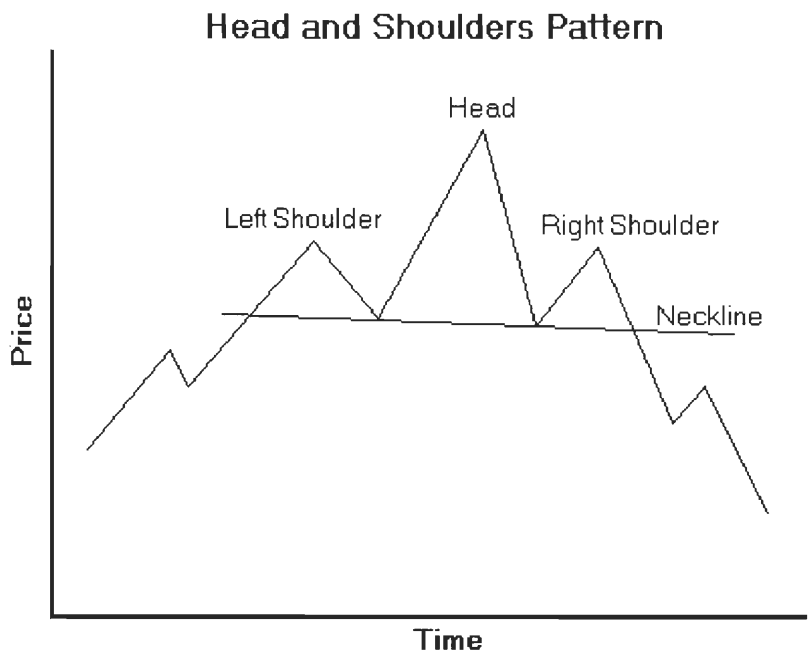


**Figure 5**

In August of 1995 the Federal Reserve Bank of New York released a report titled "Head & Shoulders: Not Just a Flaky Pattern." This was definitely an unusual report to be coming from the Federal Reserve which is known for its financial conservatism. Nevertheless, the economists that developed the report actually found that the pattern had merit on the currency exchange data used for the analysis[43]. A quote directly from the report:

> "The head-and-shoulders trading rule appears to have some predictive power for the German mark and yen but not for the Canadian dollar, Swiss franc, French franc or pound. Nonetheless, if one had speculated in all six currencies simultaneously, profits would have been both statistically and economically significant... These results are inconsistent with virtually all standard exchange rate models and could indicate the presence of market inefficiencies."

[43] Mark Etzkorn, "Fed & Shoulders," Futures, (Cedar Falls: Oster Communications, Inc., January 1996), p. 32-34.

The group conducting the Fed's test divided it into three parts: a computerized identification of the pattern, the application of realistic trading scenarios to make use of the pattern, and an evaluation of the results to determine if predictable profits could be realized[44]. The computer model used to identify the head and shoulders was based on statistics and percentage changes in currency prices. Sample trades were based on realistic assumptions about what prices an average investor could actually obtain once a signal was generated. The economists were shocked that the head and shoulders technique actually produced constant returns[45]. However, they did find that the returns were higher for simpler trading techniques such as filter rules. Overall, their analysis did seem to indicate that market inefficiencies do exist in the currency markets they studied.

**Candlestick Formations**

In an earlier section where candlestick charts were discussed it was mentioned that this type of chart had its own unique formations. Gregory L. Morris, author of CandlePower, took 55 of the most common candlestick formations and applied them to the stocks in the S&P 100 index. Using 82,000 days of data for the stocks Mr. Morris ranked the success rate of the candlestick formations found in these stocks. The results were divided between three, five, and seven day intervals to analyze the effect of varying time periods on the formations.

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[44] *Ibid.*
[45] *Ibid.*

The results of this study indicated that about 65% of the candlestick patterns that appeared were successful for the three-day interval. Just over 50% of the patterns were successful over the five-day interval while 63% were ranked successful for the seven-day interval. In viewing the results it was clear that some candlestick patterns were much more reliable and useful than others, particularly since some of the patterns appeared only a couple of times while others appeared over 1000 times. Some of the patterns were very successful with 80% or above success rates while others appeared totally worthless with less than 50% success rates.

## Conclusions

Throughout my two years of finance classes at Western Michigan University, I have been exposed to both fundamental and technical analysis, in addition to theories such as the Efficient Market Hypothesis theory. I have even had the opportunity to practice my investment skills in an introductory investments class. From these exposures to the investment world I've drawn some conclusions of my own in regards to the validity of technical analysis.

**Self-fulfilling Prophesy**

It appears that all the major brokerage firms have a technical analysis department. Some well-known investors rely at least partially on technical analysis when making investment decisions. From my research I've found that those adhering to technical analysis are a loyal group. As a result, I think it is fair to say that there are enough "techies" in the investment community for their group to have influence on the financial markets. If this is the case, some of the technical market signals would cause technical analysts to all react in the same way. This would make the signal legitimate if enough technical analysts made the same market transactions in reaction to the signal. In this sense, technical analysis could very well be a self-fulfilling prophesy.

Consider, for example, support and resistance levels. Anyone can view various analyst's support and resistance levels on television by watching a station such as CNBC. Most analysts probably draw the same support and resistance lines on a chart if they are easily identifiable. These analysts would react the same way in the market if a security's price were to penetrate either a support or resistance level with heavy volume. This would cause the price to react even further, re-emphasizing the analyst's belief in technical analysis.

Since some chart formations or signals are more widely used than others, this self-fulfilling prophesy theory would only apply to the more common formations and signals with enough following to generate market influence.

**Variations Between Markets and Individual Securities**

The legitimacy of technical analysis will vary between financial markets. Some markets, such as the commodities and futures markets, simply have more technical analysts studying market patterns. This, in addition to my "self-fulfilling prophesy" theory, would influence the level of effectiveness that technical analysis has on a given financial market.

The degree to which technical analysis is true may vary between individual securities as well. Market efficiency, as described by the Efficient Markets Hypothesis, would depend largely on the amount of volume generated by a particular security. With more volume, securities (or markets as a whole) become more efficient in reflecting available information. Therefore, technical analysis will have more usefulness in securities and markets with lower levels of volume.

**My Personal Approach to Investing**

In view of what I've studied about financial markets, I would use a combination of fundamental and technical analysis in analyzing investments. Fundamental analysis would

give an indication of a company's financial health and valuation while technical analysis would be useful for determining the timing of a transaction. Technical analysis certainly has a place in modern financial markets, as long as the investor is careful to follow sound patterns and signals rather than chasing random market fluctuations.

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