

TECHNICAL ANALYSIS 1

What is Technical Analysis?

Technical Analysis forecasts future financial price movements based on examining past price movements. It does not result in absolute predictions about the future price of a stock or an option. Instead, technical analysis can help investors anticipate what is "likely" to happen to prices over time via a wide variety of charts that show prices over time.

Overview Articles:

- **Why Analyze Securities?**

This article examines the three types of market analysts, what they believe about financial markets, and why. It will help you understand the big picture when deciding the "best" way to invest.

- **Technical Analysis**

This article explains Technical Analysis, how it works, and the general steps to take when using technical charts and indicators to analyze stocks. It concludes by examining the strengths and weaknesses of using charts to make investment decisions.

- **Fundamental Analysis**

This article describes Fundamental Analysis and explains a fundamental analyst's general steps when evaluating a stock. It also examines the fundamental analysis's strengths and weaknesses.

- **Intermarket Analysis**

This article describes the relationships between four key intermarket players: stocks, bonds, commodities, and the Dollar. It explores these relationships within the business cycle and its sector rotations.

- **Irrational Exuberance and Behavioral Finance -**

This article describes the findings in Robert Shiller's book, *"Irrational Exuberance."* The 12 precipitating factors of the 2000 stock market bubble are detailed, as well as cultural and psychological factors influencing the decision-making process for investing in stocks.

- **Random Walk versus a Non-Random Walk -**

This article describes the Random Walk Theory of financial markets and its counterpart, the Non-Random Walk Theory.

Why Analyze Securities

Security Analysis - Does it Matter?

Wall Street has hired scores of analysts, strategists, and portfolio managers to do one thing: beat the market. Analysts are there to find undervalued stocks. Strategists' responsibilities are to predict the market's direction and its various sectors. Portfolio managers are supposed to put it all together and outperform their benchmarks, usually measured based on the S&P 500. Many studies and disputes are raging in ranking the performance of equity mutual funds, but it is safe to assume that about 75% of equity mutual funds underperform the S&P 500.

“With these stats, individual investors would surely be better off investing in an index fund rather than attempting to beat the market.”

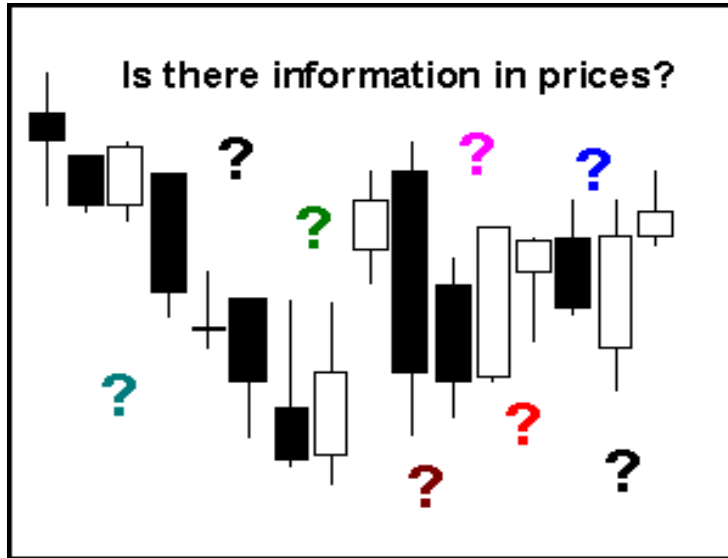
A **Fundamental Analyst** believes that analyzing strategy, company management, product, financial statistics, and many other readily and not-so-readily quantifiable numbers will help choose stocks that will outperform the market. They are also likely to believe that there is little or no value in analyzing past prices and that technical analysts would be better off stargazing.

The **Technical Analyst** believes that the chart, volume, momentum, and various mathematical indicators are keys to superior performance. Technicians are just as likely to believe that fundamental data is hogwash, pure and simple. In contrast, there are the Random Walkers who believe that any attempt to outwit the market is futile.

So, is fundamental analysis worth the time and effort, or is it all a lesson in random futility? Let us start by clarifying things by looking at the *efficient market hypothesis* and seeing where the fundamentalists, technicians, and random walkers stand on the question of market efficiency. We will then examine the random walk theory, fundamental analysis, and technical analysis.

Are Markets Efficient?

The question concerning the value of analysis begins with the debate on market efficiency. Just what does the current price of a security represent? Is a security's current price accurately reflecting its fair value, or do anomalies exist that allow traders and investors to beat the market by finding undervalued or overvalued securities?



Aswath Damodaran of the Stern Business School at New York University defines an efficient market as one in which the market price is an unbiased estimate of the actual value of the investment. That sounds fair enough, but it is not quite that simple. Only in an efficient market does the current security price fully reflect all available information, and it is the actual fair value.

In an efficient market, the price is the sum value of all views (bullish, bearish, long, and short sellers or otherwise) held by market

participants. It is fair value because the market agrees on a price to buy and sell the security based on supply and demand. As new information becomes available, the market assimilates the information by adjusting the security's price up (buying) and down (selling). In an efficient market, deviations from this rule above and below fair value are possible, but these deviations are considered random. In an efficient market, the price should accurately reflect fair value over the long run.

The hypothesis further asserts that if markets are efficient, it should be virtually impossible to outperform the market sustainably. Even though deviations will occur and there will be periods when securities are overvalued or undervalued, these anomalies will disappear as quickly as they appeared with the availability of relevant information, thus making it almost impossible to profit from them.

Based on market history, the consensus is that the market could be more efficient. Anomalies do exist, and there are always investors, traders, and funds that outperform the market. Therefore, there are varying degrees of market efficiency, which can be broken down into three levels. These three levels also correspond to fundamentalists, technicians, and random walkers' beliefs.

Strong-Form: Technicians

The strong form of market efficiency theorizes that the current price reflects all the fundamental information available. It does not matter whether this information is available to the public or is only privy to top management; if it exists, it is reflected in the current price. Because all possible information is reflected in the price, investors and traders cannot find or exploit inefficiencies based on fundamental information. Generally,

“Pure technical analysts believe that the markets are strong-form efficient. and that all information is reflected in the price.”

Semi-Strong Form: Random Walkers

The semi-strong form of market efficiency theorizes that the current market price reflects all readily available information. This information will likely include annual reports, SEC filings, earnings reports, announcements, and other relevant information that any investor can readily gather. However, other information is not readily available to the public or fully reflected in the price. This could be information held by insiders, competitors, contractors, suppliers, or regulators, among others. Anomalies exist when information is withheld from the public, and the only way to profit is by using information that is not yet known to the public. This is sometimes called **insider trading**. Once this information becomes public knowledge, prices adjust instantaneously, so it is nearly impossible to profit from such news at its release.

The Random Walk theory is an example of a semi-strong form of market efficiency.

Weak-Form: Fundamentalists

The weak form of market efficiency theorizes that the current price does not reflect fair value and only reflects past prices. Furthermore, future prices cannot be determined using past or current prices. Fundamental analysts are champions of weak-form market efficiency and believe that the actual value of a security can be ascertained through financial models using readily available information.

The current price will not always reflect fair value; these models will help identify anomalies.

Which Form Exists in the Market Today?

Many in academia believe that security prices are semi-strong efficient. Recall that semi-strong efficiency implies that all public knowledge is reflected in the price, and it is nearly impossible to exploit deviations from the actual value based on public information. Only new information will affect the price. Judging from the reaction of many stocks to news events, there seems to be evidence to support this case. The flow of information has become faster with the Internet, and surprises are factored in instantly. Few will argue that a positive and negative surprise can violently move a security's price. A few examples include:

After Pre-announcing that earnings would come in below expectations on 6-Jan-00, Lucent fell from 59 to 43 in one day.



After positive comments from an influential analyst on 23-Feb-00, Time Warner shot up 49 to 59 in 2 days.



After reporting earnings below expectations on 15-Feb, Abercrombie & Fitch fell from 24 to 15.

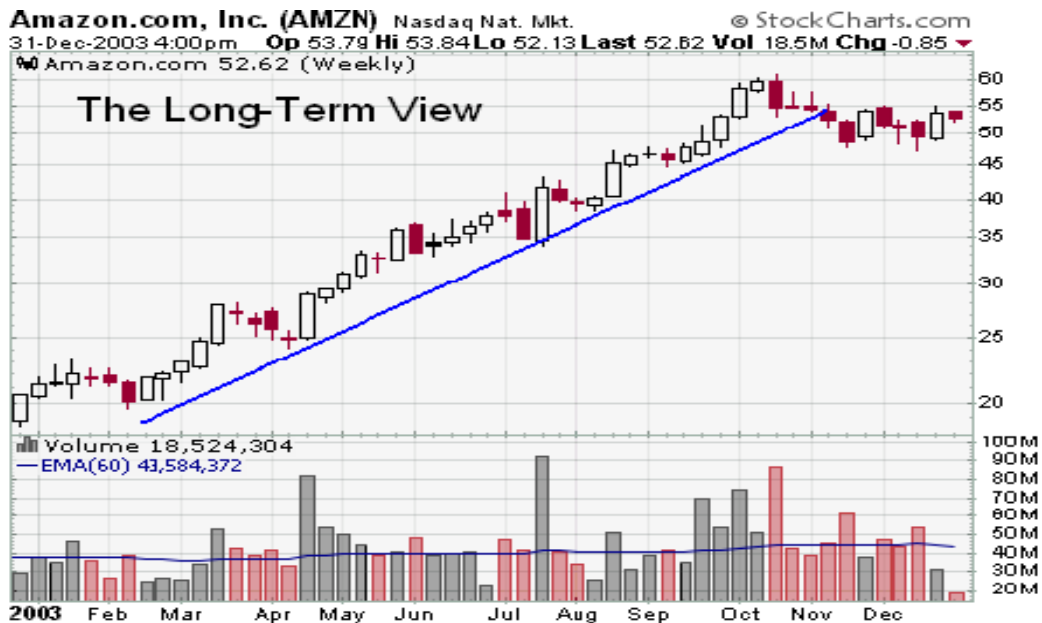


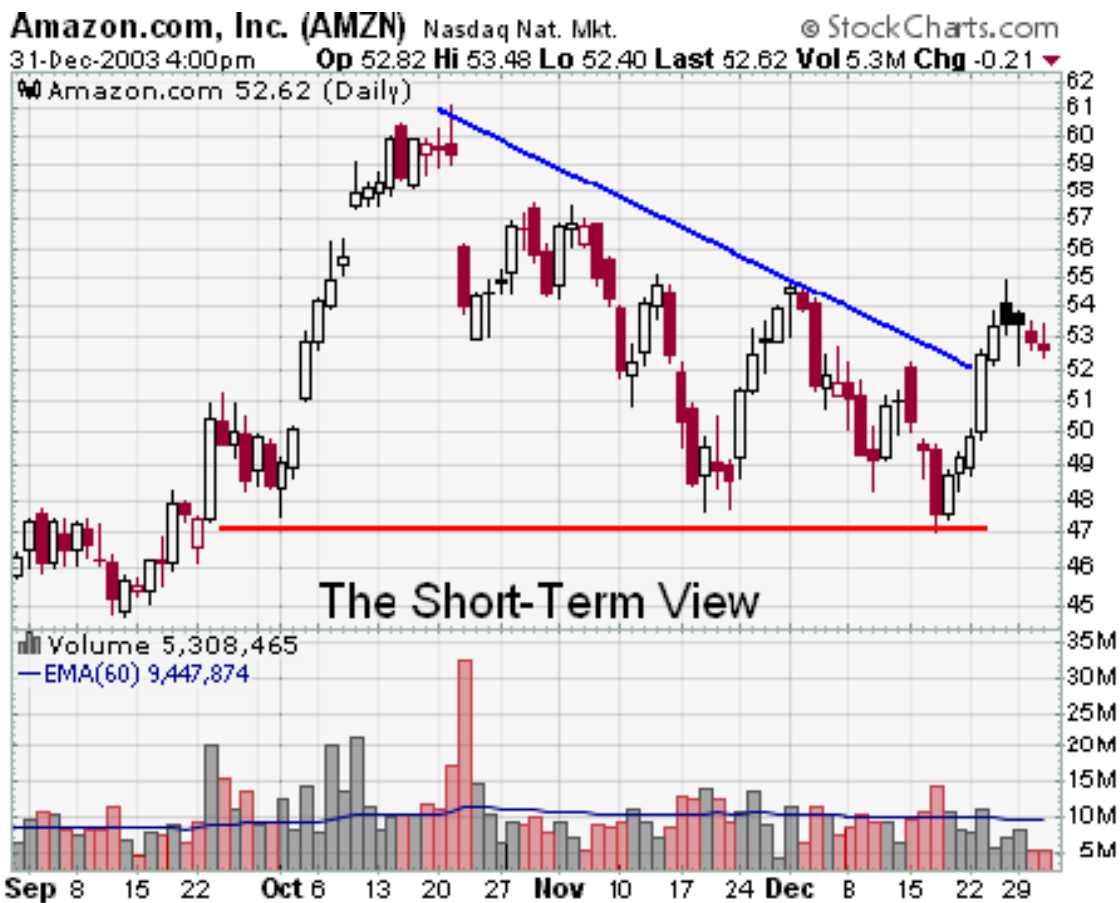
Even though these are a few examples, new information can move the price of a security in non-random ways.

Technical Analysis

What is Technical Analysis?

Technical Analysis forecasts future financial price movements by examining past price movements. However, it does not result in absolute predictions about the future. Instead, it can help investors anticipate what is "likely" to happen to prices over time. Technical analysis uses a wide variety of charts to show prices over time.





Technical analysis applies to stocks, indices, commodities, futures, or any tradable instrument where the forces of supply and demand influence the price. Price refers to any combination of the open, high, low, or close for a given security over a specific period. The period can be based on intraday (1-minute, 5-minute, 10-minute, 15-minute, 30-minute, or hourly), daily, weekly, or monthly price data and last a few hours or many years. In addition, some technical analysts include volume or open interest figures in their study of price action.

The Basis of Technical Analysis

At the turn of the century, the Dow Theory laid the foundations for what would later become modern technical analysis. The Dow Theory does not represent a complete amalgamation but has been pieced together from the writings of Charles Dow over several years. Of the many theorems put forth by Dow, three stand out:

- Price Discounts Everything
- Price Movements Are Not Random
- "What" Is More Important Than "Why"

Price Discounts Everything

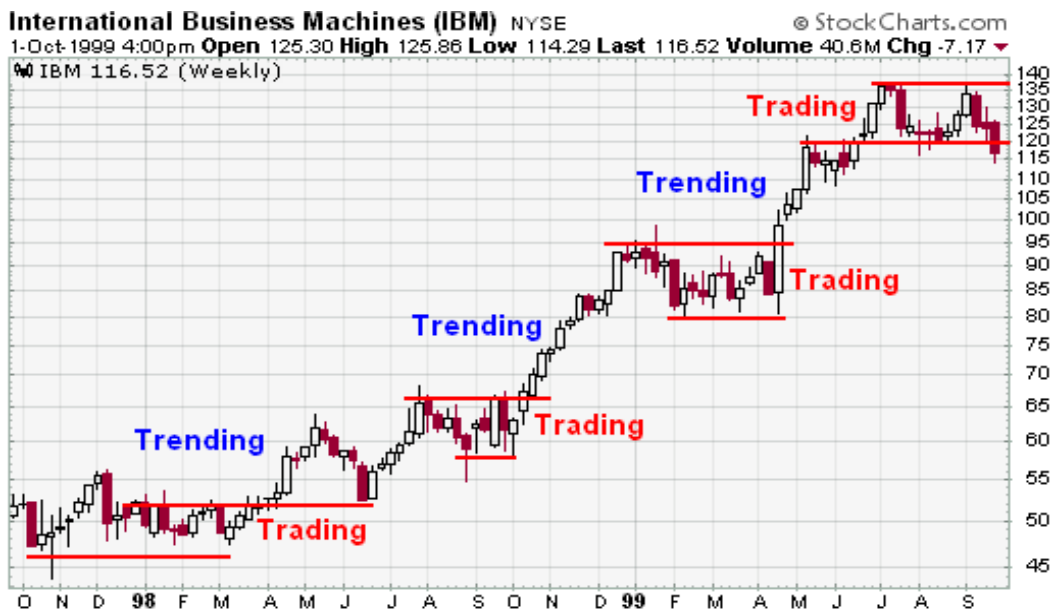
This theory is similar to the strong and semi-strong forms of market efficiency. Technical analysts believe that the current price fully reflects all information. Because all information is already reflected in the price, it represents the fair value and should form the basis for analysis. After all, the market price reflects the sum of the knowledge of all participants, including traders, investors, portfolio managers, buy-side analysts, sell-side analysts, market strategists, technical analysts, fundamental analysts, and many others. It would be foolish to disagree with the price set by such an impressive array of people with impeccable credentials.

“Technical analysis utilizes the information captured by the price. to interpret what the market says to form a view of the future.”

Prices Movements are not Random.

Most technicians agree that prices trend. However, most technicians also acknowledge that there are periods when prices do not trend. Making money using technical analysis would be extremely difficult if prices were always random. In his book Schwager on Futures: Technical Analysis, Jack Schwager states:

“One way of viewing it is that markets may witness extended periods of random fluctuation, interspersed with shorter periods of nonrandom behavior. The goal of the chartist is to identify those periods (i.e., major trends).”



A technician believes it is possible to identify a trend, invest or trade based on it, and make money as it unfolds. Because technical analysis can be applied to many different periods, it is possible to spot both short-term and long-term trends. The IBM chart illustrates Schwager's view on the nature of the trend. The broad trend is up but also interspersed with trading ranges. In between the trading ranges there are smaller uptrends within the more significant uptrend. The uptrend renews when the stock breaks above the trading range. A downtrend begins when the stock breaks below the low of the previous trading range.

"What" is More Important than "Why"

In his book, [The Psychology of Technical Analysis](#), Tony Plummer paraphrases Oscar Wilde by stating, "A technical analyst knows the price of everything, but the value of nothing."

Technicians (technical analysts) are only concerned with two things:

1. What is the current price?
2. What is the history of the price movement?

The price results from the battle between the forces of supply and demand for the company's stock. The objective of the analysis is to forecast the direction of the future price. Technical analysis represents a direct approach that focuses on price and only price. Fundamentalists are concerned with why the price is what it is. The why portion of the equation is too broad for technicians, and often, the fundamental reasons are highly suspect. Technicians believe it is best to concentrate on what and never mind why. Why did the price go up? It is simple: more buyers (demand) than sellers (supply). After all, the value of any asset is only what someone is willing to pay for it. Who needs to know why?

"The value of any asset is only what someone is willing to pay for it."

General Steps to Technical Evaluation

Many technicians employ a top-down approach that begins with broad-based macro analysis. The more significant parts are then broken down to base the final step on a more focused/micro perspective. Such an analysis might involve three steps:

1. Broad market analysis through the major indices such as the S&P 500, Dow Industrials, NASDAQ, and NYSE Composite.
2. Sector analysis to identify the strongest and weakest groups within the broader market.
3. Individual stock analysis to identify the strongest and weakest stocks within select groups.

The beauty of technical analysis lies in its versatility. Because the principles of technical analysis are universally applicable, each of the analysis steps above may be performed using the same theoretical background. You do not need an economics degree to analyze a market

index chart. You do not need to be a CPA to analyze a stock chart. Charts are charts. It does not matter if the period is 2 days or 2 years. It does not matter if it is a stock, market index, or commodity. The technical principles of support, resistance, trend, trading range, and other aspects can be applied to any chart. While this may sound easy, technical analysis is challenging. Success requires serious study, dedication, and an open mind.

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Chart Analysis

Technical analysis can be as complex or as simple as you want it. The example below represents a simplified version. Since we are interested in buying stocks, we will focus on spotting bullish situations.



Overall Trend: The first step is to identify the overall trend. This can be accomplished with trend lines, moving averages, or peak/trough analysis. The trend will be considered bullish if the price stays above its uptrend line, selected moving averages, or previous lows.

Support: Areas of congestion or previous lows below the current price mark support levels. A break below support would be considered bearish.

Resistance: Areas of congestion and previous highs above the current price mark the resistance levels. A break above resistance would be considered bullish.

Momentum: Momentum is usually measured with an oscillator such as MACD. If MACD is above its 9-day EMA (exponential moving average) or positive, then momentum will be considered bullish or at least improving.

Buying/Selling Pressure: An indicator that uses volume measures buying or selling pressure for stocks and indices with volume figures available. When Chaikin's Money Flow is above zero, buying pressure is dominant, and selling pressure is dominant when it is below zero.

Relative Strength: The price relative is a line that divides the security by a benchmark. For stocks, the stock price is usually divided by the S&P 500. The plot of this line over a period will tell us if the stock is outperforming (rising) or underperforming (falling) the primary index.

The final step is to synthesize the above analysis to ascertain the following:

- Strength of the current trend.
- Maturity or stage of current trend.
- Reward to-risk ratio of a new position.
- Potential entry levels for new long positions.

Top-Down Technical Analysis

An investor would analyze long-term and short-term charts for each segment (market, sector, and stock) to find those that meet specific criteria. The analysis will first consider the market in general, perhaps the S&P 500. The analysis would select sector charts if the broader market were considered bullish. Those sectors with the most promise would be singled out for individual stock analysis. Individual stock selection can begin once the sector list is narrowed to 3-4 industry groups. With a selection of 10-20 stock charts from each industry, 3-4 of the most promising stocks in each group can be selected. How many stocks or industry groups make the final cut will depend on the strictness of the criteria set forth. Under this scenario, we would be left with 9-12 stocks from which to choose. These stocks could even be broken down further to find the 3-4 of the strongest of the strong.

Strength of Technical Analysis

Supply, Demand, and Price Action

Many technicians use the open, high, low, and close when analyzing the price action of a security. There is information to be gleaned from each bit of information. Separately, these will not be able to tell much. However, taken together, the open, high, low, and close reflect forces of supply and demand.

Focus on Price

If the objective is to predict the future price, then it makes sense to focus on price movements.

Price movements usually precede fundamental developments. By focusing on price action, technicians are automatically focusing on the future. The market is considered a leading indicator and generally leads the economy by 6 to 9 months. Looking at the price movements to keep pace with the market makes sense. More often than not, change is a subtle beast. Even though the market is prone to sudden knee-jerk reactions, hints usually develop before significant moves. A technician will refer to periods of accumulation as evidence of an impending advance and periods of distribution as evidence of an impending decline.



The annotated example above shows a stock that opened with a gap up. Before the opening, the number of buy orders exceeded the number of sell orders, and the price was raised to attract more sellers. Demand was brisk from the start. The intraday high reflects the strength of demand (buyers). The intraday low reflects the availability of supply (sellers). The close represents the final price the buyers and sellers agreed upon. In this case, the close is well below the high and much closer to the low. This tells us that although demand (buyers) was strong during the day, supply (sellers) ultimately prevailed, forcing the price back down. Even after this selling pressure, the close remained above the open. Looking at price action over an extended period, we can see the battle between supply and demand unfold.

In its most basic form, higher prices reflect increased demand and lower prices reflect increased supply.

Support/Resistance

Simple chart analysis can help identify support and resistance levels. These are usually marked by periods of congestion (trading range), where prices move within a confined range for an extended period, telling us that the forces of supply and demand are deadlocked. When

prices move out of the trading range, it signals that either supply or demand has started to gain the upper hand.

**If prices move above the upper band of the trading range, then demand is winning.
If prices move below the lower band, then supply is winning.**

Pictorial Price History

A price chart can offer valuable information even if you are a tried-and-true fundamental analyst. The price chart is an easy-to-read historical account of a security's price movement over time. Charts are much easier to read than a table of numbers. On most stock charts, volume bars are displayed at the bottom. With this historical picture, it is easy to identify the following:

- Reactions before and after significant events.
- Past and present volatility.
- Historical volume or trading levels.
- Relative strength of a stock versus the overall market.

Assist with Entry Point

Technical analysis can help with timing a proper entry point. Some analysts use fundamental analysis to decide what to buy, and technical analysis decides when to buy. It is no secret that timing can play an essential role in performance. Technical analysis can help spot demand (support) and supply (resistance) levels and breakouts.

“Simply waiting for a breakout above resistance or buying near support levels can improve returns.”

It is also essential to know a stock's price history. If a stock you thought was outstanding for the last 2 years has traded flat for those two years, it would appear that Wall Street has a different opinion. If a stock has already advanced significantly, it may be prudent to wait for a pullback. Alternatively, if the stock is trending lower, it might pay to wait for buying interest and a trend reversal.

Weaknesses of Technical Analysis

Analyst Bias

As with fundamental analysis, technical analysis is subjective and can reflect our biases. It is essential to be aware of these biases when analyzing a chart. A bullish bias will overshadow the analysis if the analyst is a perpetual bull. On the other hand, if the analyst is a disgruntled eternal bear, then the analysis will probably have a bearish tilt.

Open to Interpretation

Furthering the bias argument, technical analysis is open to interpretation. Even though there are standards, two technicians often look at the same chart, paint two scenarios, or see different patterns. Both will be able to develop logical support, resistance levels, and critical breaks to justify their position. While this can be frustrating, it should be pointed out that technical analysis is more like an art than a science, somewhat like economics. Is the cup half-empty or half-full? It is in the eye of the beholder.

“Technical analysis is more like an art than a science, somewhat like economics.”

Too Late?

Technical analysis has been criticized for being too late. By the time the trend is identified, a substantial portion of the move has already occurred. After such a significant move, the reward-to-risk ratio is not excellent. Lateness is a particular criticism of [Dow Theory](#), especially in today’s computerized trading environment, with trades being executed in nanoseconds.

Always another Level

Even after a new trend has been identified, another “important” level is always close at hand. Technicians have been accused of sitting on the fence and never taking an unqualified stance. Some indicator or level will always qualify their opinion, even if they are bullish.

Trader's Remorse

Not all technical signals and patterns work. When you begin to study technical analysis, you will come across various patterns and indicators with rules to match. For instance, A sell signal is given when the neckline of a head and shoulders pattern is broken. Even though this is a rule, it is not steadfast and can be subject to other factors, such as volume and momentum. Similarly, what works for one particular stock may not work for another. A 50-day moving average may work great to identify support and resistance for IBM, but a 70-day moving average may work better for Yahoo.

“Many principles of technical analysis are universal, but each security will have its idiosyncrasies.”

Technical analysts consider the market to be 80% psychological and 20% logical. Fundamental analysts consider the market to be 20% psychological and 80% logical. Psychological or logical issues may be open to debate, but the current security price is not questioned. After all, it is available for all to see, and nobody doubts its legitimacy. The price set by the market reflects the sum of the knowledge of all participants, and we are not dealing with lightweights here. These participants have considered (discounted) everything under the sun and settled on a

price to buy or sell. These are the forces of supply and demand at work. By examining price action to determine which force is prevailing, technical analysis focuses directly on the bottom line:

What is the price? Where has it been? Where is it going?

Even though some universal principles and rules can be applied, it must be remembered that technical analysis is more an art form than a science. As an art form, it is subject to interpretation. However, it is also flexible in its approach; each investor should use only that which suits their style. Developing a style takes time, effort, and dedication, but the rewards can be significant.

To be continued in Technical Analysis Part 2 “Fundamental Analysis”

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