

SAPM

Module - 2

What Is Fundamental Analysis?

Fundamental analysis (FA) is a method of measuring a security's intrinsic value by examining related economic and financial factors. Fundamental analysts study anything that can affect the security's value, from macroeconomic factors such as the state of the economy and industry conditions to microeconomic factors like the effectiveness of the company's management.

The end goal is to arrive at a number that an investor can compare with a security's current price in order to see whether the security is undervalued or overvalued.

This method of stock analysis is considered to be in contrast to technical analysis, which forecasts the direction of prices through an analysis of historical market data such as price and volume.

- Fundamental analysis is a method of determining a stock's real or "fair market" value.
- Fundamental analysts search for stocks that are currently trading at prices that are higher or lower than their real value.
- If the fair market value is higher than the market price, the stock is deemed to be undervalued and a buy recommendation is given.
- In contrast, technical analysts ignore the fundamentals in favor of studying the historical price trends of the stock.

Efficient Market Hypothesis (EMH)

What Is the Efficient Market Hypothesis (EMH)?

The efficient market hypothesis (EMH), alternatively known as the efficient market theory, is a hypothesis that states that share prices reflect all information and consistent alpha generation is impossible.

According to the EMH, stocks always trade at their fair value on exchanges, making it impossible for investors to purchase undervalued stocks or sell stocks for inflated prices. Therefore, it should be impossible to outperform the overall market through expert stock selection or market timing, and the only way an investor can obtain higher returns is by purchasing riskier investments.

KEY TAKEAWAYS

- The efficient market hypothesis (EMH) or theory states that share prices reflect all information.
- The EMH hypothesizes that stocks trade at their fair market value on exchanges. What are the forms of the efficient market hypothesis?

There are three different forms of the efficient market hypothesis:

- . Weak
- . Semi-strong
- . Strong



Weak form EMH

- Excess returns can be earned by using investment strategies based on historical share prices.
- Weak-form efficiency implies that Technical analysis techniques will be able to consistently produce excess returns, though some forms of fundamental analysis may not still provide excess returns.
- In a weak-form efficient market current share prices are the worst, biased, estimate of the value of the security. Theoretical in nature, weak form efficiency advocates assert that fundamental analysis cannot be used to identify stocks that are undervalued and overvalued. Therefore, keen investors looking for profitable companies cannot earn profits by researching financial statements.

Semi-strong form EMH

- Semi-strong form efficiency implies that share prices do not adjust to publicly available new information very rapidly and in an unbiased fashion, such that excess returns can be earned by trading on that information.
- Semi-strong form efficiency implies that Fundamental analysis techniques will be able to reliably produce excess returns.
- To test for semi-strong form efficiency, the adjustments to previously unknown news must be of a small size and must be instantaneous. To test for this, consistent downward adjustments after the initial change must be looked for. If there are any such adjustments it would suggest that investors had interpreted the information in an unbiased fashion and hence in an efficient manner.

Strong form EMH

Strong form EMH states that all available information, both public and private, is priced into the price of a security. This would mean that no investor would consistently be able to beat the market as a whole, but that some individuals might make abnormal returns on occasion.

Strong form EMH assumes that the market is perfect, and so the only way an individual could make an excessive return is by using insider information. Both technical and fundamental analysis would be rendered moot, as neither could provide advantageous information.

What is technical analysis?

Technical analysis is a means of examining and predicting price movements in the financial markets, by using historical price charts and market statistics. It is based on the idea that if a trader can identify previous market patterns, they can form a fairly accurate prediction of future price trajectories.

It is one of the two major schools of market analysis, the other being fundamental analysis. Whereas fundamental analysis focuses on an asset's 'true value', with the meaning of external factors and intrinsic value both considered, technical analysis is based purely on the price charts of an asset. It is solely the identification of patterns on a chart that is used to predict future movements.

Examples of technical analysis tools

Technical analysts have a wide range of tools that they can use to find trends and patterns on charts. These include moving averages, support and resistance levels, Bollinger bands, and more. All of the tools have the same purpose: to make understanding chart movements and identifying trends easier for technical traders.

Pros of technical analysis

Being able to identify the signals for price trends in a market is a key component of any trading strategy. All traders need to work out a methodology for locating the best entry and exit points in a market, and using technical analysis tools is a very popular way of doing so.

In fact, technical analysis tools are so commonly used, that many believe they have created self-fulfilling trading rules: As more and more traders use the same indicators to find support and resistance levels, there will be more buyers and sellers congregated around the same price points, and the patterns will inevitably be repeated.

Dow Theory

What Is the Dow Theory?

The Dow theory is a theory that says the market is in an upward trend if one of its averages (industrial or transportation) advances above a previous important high and is accompanied or followed by a similar advance in the other average. For example, if the Dow Jones Industrial Average (DJIA) climbs to an intermediate high, the Dow Jones Transportation Average (DJTA) is expected to follow suit within a reasonable period.

Understanding the Dow Theory

The Dow theory is an approach to trading developed by Charles H. Dow who, with Edward Jones and Charles Bergstresser, founded Dow Jones & Company, Inc. and developed the DJIA. Dow fleshed out the theory in a series of editorials in the *Wall Street Journal*, which he co-founded.

Charles Dow died in 1902, and due to his death, he never published his complete theory on the markets, but several followers and associates have published works that have expanded on the editorials. Some of the most important contributions to Dow theory include the following:

- William P. Hamilton's "The Stock Market Barometer" (1922)
- Robert Rhea's "The Dow Theory" (1932)
- E. George Schaefer's "How I Helped More Than 10,000 Investors To Profit In Stocks" (1960)
- Richard Russell's "The Dow Theory Today" (1961)

Dow believed that the stock market was a reliable measure of overall business conditions within the economy and that by analysing the overall market, one could accurately gauge those conditions and identify the direction of major market trends and the likely direction of individual stocks.

The theory has undergone further developments in its 100-plus-year history, including contributions by William Hamilton in the 1920s, Robert Rhea in the 1930s, and E. George Shaefer and Richard Russell in the 1960s. Aspects of the theory have lost ground, for example, its emphasis on the transportation sector—or railroads, in its original form—but Dow's approach still forms the core of modern technical analysis.

Putting the Dow Theory to Work

There are six main components to the Dow theory.

1. The Market Discounts Everything

The Dow theory operates on the efficient markets hypothesis (EMH), which states that asset prices incorporate all available information. In other words, this approach is the antithesis of behavioural economics.

Earnings potential, competitive advantage, management competence—all of these factors and more are priced into the market, even if not every individual knows all or any of these details. In more strict readings of this theory, even future events are discounted in the form of risk.

2. There Are Three Primary Kinds of Market Trends

Markets experience primary trends which last a year or more, such as a bull or bear market. Within these broader trends, they experience secondary trends, often working against the primary trend, such as a pullback within a bull market or a rally within a bear market; these secondary trends last from three weeks to three months. Finally, there are minor trends lasting less than three weeks, which are largely noise.

3. Primary Trends Have Three Phases

A primary trend will pass through three phases, according to the Dow theory. In a bull market, these are the accumulation phase, the public participation (or big move) phase, and the excess phase. In a bear market, they are called the distribution phase, the public participation phase, and the panic (or despair) phase.

- I. Dow considered a trend to have three parts:
 1. **Primary** (compared to tide, reaching further and further inland until the ultimate point is reached).
 2. **Secondary** (compared to waves and representing corrections in the primary trend, normally retracing between one-third and two-thirds of the previous trend movement and most frequently about half of the previous move)
 3. **Minor (ripples)** (fluctuations in the secondary trend).

4. Indices Must Confirm Each Other

For a trend to be established, Dow postulated indices or market averages must confirm each other. This means that the signals that occur on one index must match or correspond with the signals on the other. If one index, such as the Dow Jones Industrial Average, is confirming a new primary uptrend, but another index remains in a primary downward trend, traders should not assume that a new trend has begun.

Dow used the two indices he and his partners invented, the Dow Jones Industrial Average (DJIA) and the Dow Jones Transportation Average (DJTA), on the assumption that if business conditions were, in fact, healthy, as a rise in the DJIA might suggest, the railroads would be profiting from moving the freight this business activity required. If asset prices were rising but the railroads were suffering, the trend would likely not be sustainable. The converse also applies: if railroads are profiting but the market is in a downturn, there is no clear trend.

5. Volume Must Confirm the Trend

Volume should increase if the price is moving in the direction of the primary trend and decrease if it is moving against it. Low volume signals a weakness in the trend. For example, in a bull market, the volume should increase as the price is rising, and fall during secondary pullbacks. If in this example the volume picks up during a pullback, it could be a sign that the trend is reversing as more market participants turn bearish.

6. Trends Persist Until a Clear Reversal Occurs

Reversals in primary trends can be confused with secondary trends. It is difficult to determine whether an upswing in a bear market is a reversal or a short-lived rally to be followed by still lower lows, and the Dow theory advocates caution, insisting that a possible reversal be confirmed.

Random Walk Theory

The Random Walk Theory, or the Random Walk Hypothesis, is a **mathematical model** of the stock market. Proponents of the theory believe that the prices of **securities** in the stock market evolve according to a random walk.

A “random walk” is a statistical phenomenon where a variable follows no discernible trend and moves seemingly at random. The random walk theory, as applied to trading, most clearly laid out by Burton Malkiel, an economics professor at Princeton University, posits that the price of securities moves randomly (hence the name of the theory) and that, therefore, any attempt to predict future price movement, either through fundamental or technical analysis, is futile.



- Random walk theory suggests that changes in stock prices have the same distribution and are independent of each other.
- Random walk theory infers that the past movement or trend of a stock price or market cannot be used to predict its future movement.
- Random walk theory believes it's impossible to outperform the market without assuming additional risk.
- Random walk theory considers technical analysis undependable because it results in chartists only buying or selling a security after a move has occurred.
- Random walk theory considers fundamental analysis undependable due to the often-poor quality of information collected and its ability to be misinterpreted.
- Random walk theory claims that [investment advisors](#) add little or no value to an investor's portfolio.

Basic Assumptions of the Random Walk Theory

1. The Random Walk Theory assumes that the price of each security in the stock market follows a random walk.
2. The Random Walk Theory also assumes that the movement in the price of one security is independent of the movement in the price of another security.

Implications of the Random Walk Theory

Since the Random Walk Theory posits that it is impossible to predict the movement of stock prices, it is also impossible for a stock market investor to outperform or “beat” the market in the long run. It implies that it is impossible for an investor to outperform the market without taking on large amounts of additional risk.

As such, the best strategy available to an investor is to invest in the **market portfolio**, i.e., a portfolio that bears a resemblance to the total stock market and whose price reflects perfectly the movement of the prices of every security in the market.

Criticism of the Random Walk Theory

One of the main criticisms of the Random Walk Theory is that the stock market consists of a large number of investors, and the amount of time each investor spends in the market is different. Thus, it is possible for trends to emerge in the prices of securities in the short run, and a savvy investor can outperform the market by strategically buying stocks when the price is low and selling stocks when the price is high within a short time span.

Other critics argue that the entire basis of the Random Walk Theory is flawed and that stock prices do follow patterns or trends, even over the long run. They argue that because the price of a security is affected by an extremely large number of factors, it may be impossible to discern the pattern or trend followed by the price of that security. However, just because a pattern cannot be clearly identified, that doesn't mean that a pattern does not exist.

Types of Charts used in Technical Analysis

Charts are graphical presentations of price information of securities over time. Charts plot historical data based on a combination of price, volume as well as time intervals.

The use of charts is so prevalent, that technical analyst is often referred to as chartists. Originally, charts were drawn manually, but a majority of charts nowadays are drawn by computer.

Chart Types

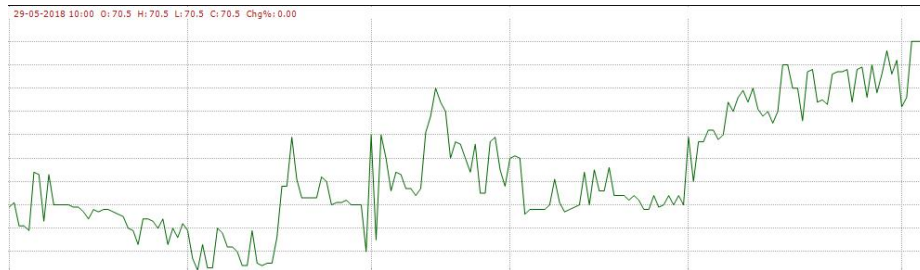
The main chart types used by technical analysts are the line chart, bar chart, candlestick chart, Renko Chart, Point-and-Figure charts, etc. Charts can also be presented on an arithmetic or logarithmic scale. The types of charts and the scale used depend upon what information the

technical analyst considers to be most important, and which charts and which scale ideally shows that information.

Line Charts

Line charts are the most basic form of charts, They are composed of a single line from left to right that links the closing prices. Generally, only the closing price is graphed, presented by a single point.

This is a popular type of chart used in presentations and reports to give a very general view of the historical and current direction.



It is clear as well as a simple way of getting a general idea of the price movement's direction in the market, which is preferred by some traders.

While kind of chart doesn't provide much insight into intraday price movements, many traders consider the closing price to be more important than the open, high, or low price within a given period.

Bar Chart



this One of the basic tools of [technical analysis](#) is the bar chart. Bar charts are also referred to as open-high-low-close (OHLC) charts. They are comprised of a series of vertical lines that indicate the price range during that Time Frame.

Bar charts enable traders to discover patterns more easily as they take into account all the prices, open, high, low and close. The opening price is the horizontal dash on the left side of the horizontal line and the closing price is located on the right side of the line. If the opening price is lower than the closing price, the line is often colored black (or green) to represent a rising period. The opposite is true for a falling period, which is represented by a red color.

Candlestick Chart

Another kind of chart used in the technical analysis is the candlestick chart, so-called because the main component of the chart which represents prices looks like a candlestick, with a thick 'body' and usually, a line extending above and below it, called the upper shadow and lower shadow, respectively.



The top of the upper shadow represents the high price, while the bottom of the lower shadow shows the low price. Patterns are formed both by the real body and the shadows. Candlestick patterns are most useful over short periods of time, and mostly have significance at the top of an uptrend or the bottom of a downtrend, when the patterns most often indicate a reversal of the trend.

The wider part of the candlestick is shown between the opening and closing price. It is usually colored in black/red when the security closes on a lower price and white/green the other way around.

The thinner parts of the candlestick are commonly referred to as the upper/lower wicks or as shadows. These show us the highest and/or lowest prices during that timeframe, compared to the closing as well as opening price.

The relationship between the bodies of candlesticks is important to candlestick patterns. Candlestick charts make it easy to spot gaps between bodies.

A slight drawback of the candlestick chart is that candlesticks take up more space than OHLC bars. In most charting platforms, the most you can display with a candlestick chart is less than what you can with a bar chart.

Types of chart patterns

Chart patterns fall broadly into three categories: continuation patterns, reversal patterns and bilateral patterns.

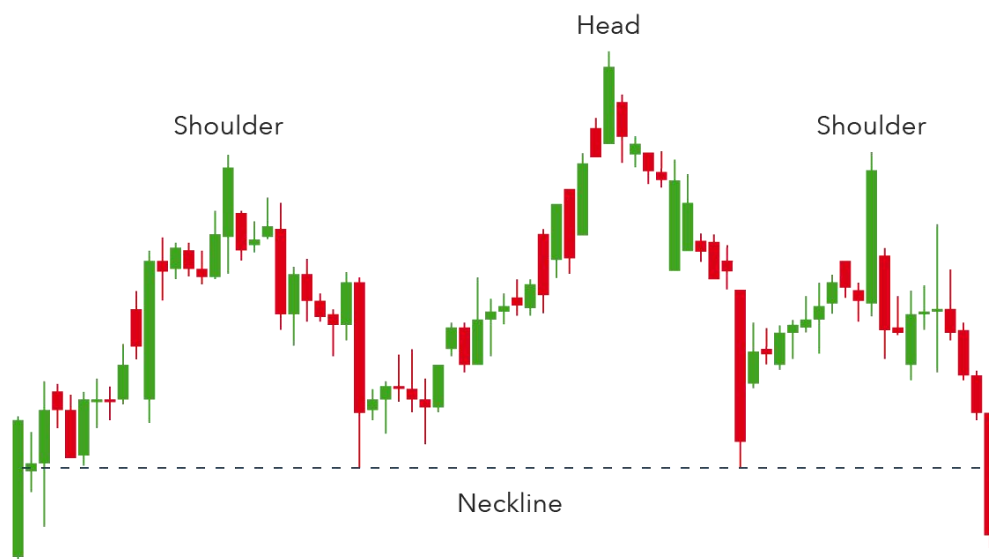
- A continuation signals that an ongoing trend will continue
- Reversal chart patterns indicate that a trend may be about to change direction

- Bilateral chart patterns let traders know that the price could move either way – meaning the market is highly volatile

Head and shoulders

Head and shoulders is a chart pattern in which a large peak has a slightly smaller peak on either side of it. Traders look at head and shoulders patterns to predict a bullish-to-bearish reversal.

Typically, the first and third peak will be smaller than the second, but they will all fall back to the same level of support, otherwise known as the ‘neckline’. Once the third peak has fallen back to the level of support, it is likely that it will breakout into a bearish downtrend.



Double top

A double top is another pattern that traders use to highlight trend reversals. Typically, an asset's price will experience a peak, before retracing back to a level of support. It will then climb up once more before reversing back more permanently against the prevailing trend.



Double bottom

A double bottom chart pattern indicates a period of selling, causing an asset's price to drop below a level of support. It will then rise to a level of resistance, before dropping again. Finally, the trend will reverse and begin an upward motion as the market becomes more bullish.

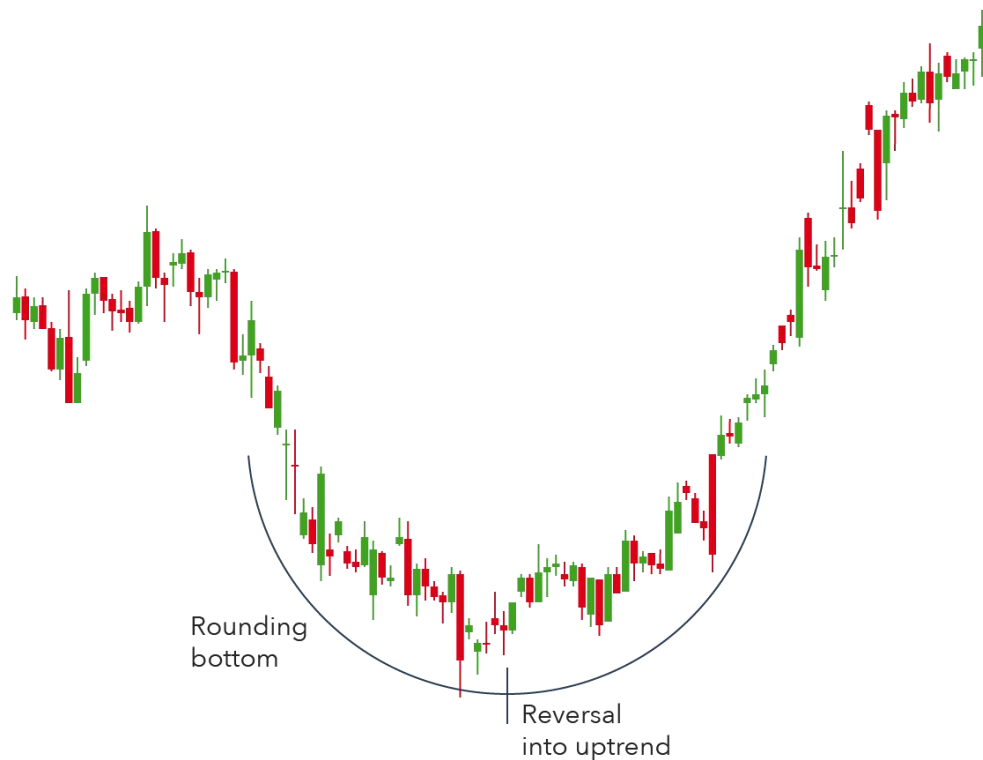
A double bottom is a bullish reversal pattern, because it signifies the end of a downtrend and a shift towards an uptrend.



Rounding bottom

A rounding bottom chart pattern can signify a continuation or a reversal. For instance, during an uptrend an asset's price may fall back slightly before rising once more. This would be a bullish continuation.

An example of a bullish reversal rounding bottom – shown below – would be if an asset's price was in a downward trend and a rounding bottom formed before the trend reversed and entered a bullish uptrend.



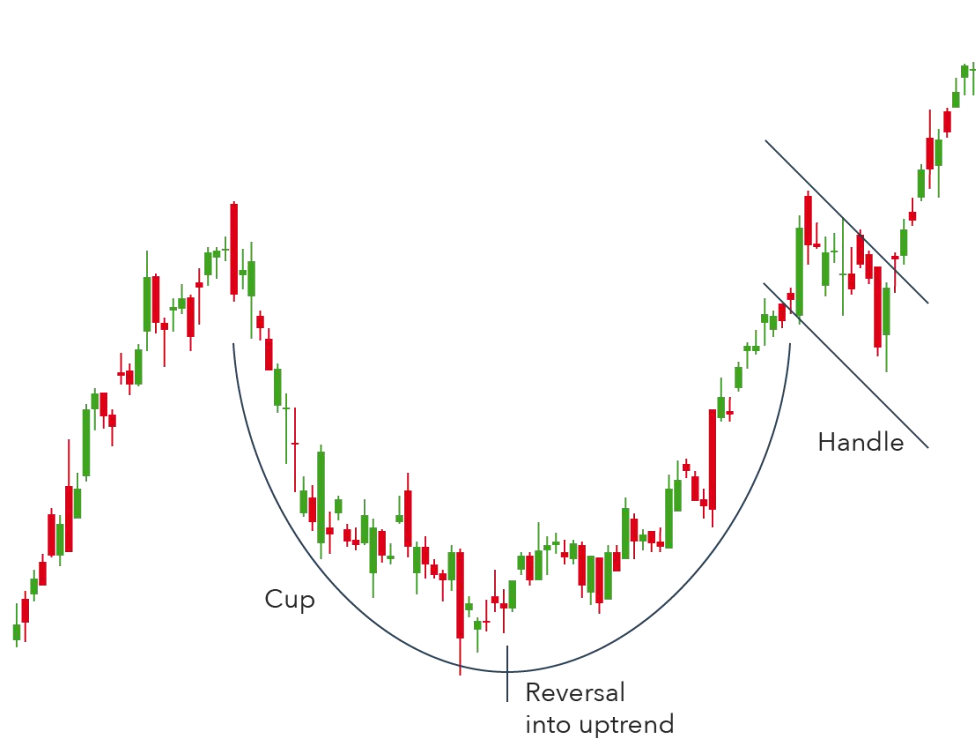
Traders will seek to capitalise on this pattern by buying halfway around the bottom, at the low point, and capitalising on the continuation once it breaks above a level of resistance.

Cup and handle

The cup and handle pattern is a bullish continuation pattern that is used to show a period of bearish market sentiment before the overall trend finally continues in a bullish motion. The cup appears similar to a rounding bottom chart pattern, and the handle is similar to a wedge pattern – which is explained in the next section.

Following the rounding bottom, the price of an asset will likely enter a temporary retracement, which is known as the handle because this retracement is confined to two parallel lines on the price graph. The

asset will eventually reverse out of the handle and continue with the overall bullish trend.



Wedges

Wedges form as an asset's price movements tighten between two sloping trend lines. There are two types of wedge: rising and falling.

A rising wedge is represented by a trend line caught between two upwardly slanted lines of support and resistance. In this case the line of support is steeper than the resistance line. This pattern generally signals that an asset's price will eventually decline more permanently – which is demonstrated when it breaks through the support level.



A falling wedge occurs between two downwardly sloping levels. In this case the line of resistance is steeper than the support. A falling wedge is usually indicative that an asset's price will rise and break through the level of resistance, as shown in the example below.

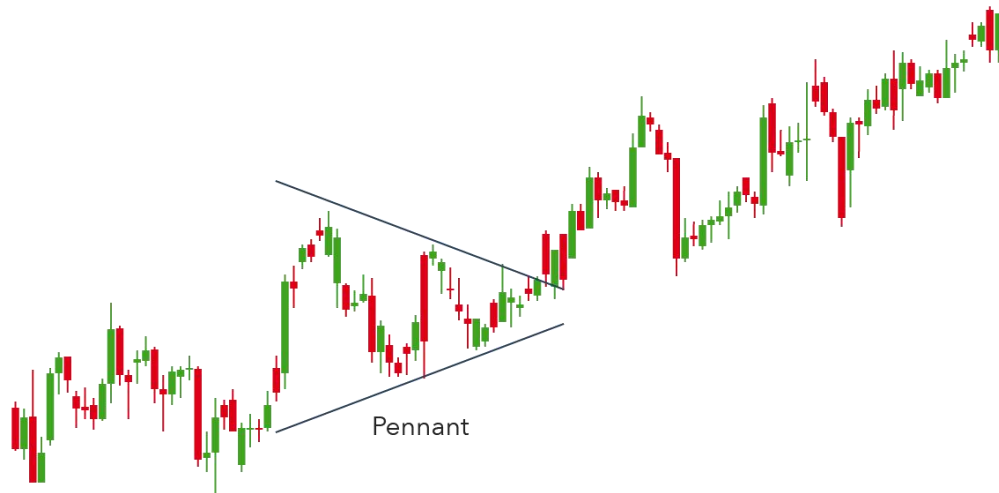


Both rising and falling wedges are reversal patterns, with rising wedges representing a bearish market and falling wedges being more typical of a bullish market.

Pennant or flags

Pennant patterns, or flags, are created after an asset experiences a period of upward movement, followed by a consolidation. Generally, there will be a significant increase during the early stages of the

trend, before it enters into a series of smaller upward and downward movements.



Pennants can be either bullish or bearish, and they can represent a continuation or a reversal. The above chart is an example of a bullish continuation. In this respect, pennants can be a form of bilateral pattern because they show either continuations or reversals.

While a pennant may seem similar to a wedge pattern or a triangle pattern – explained in the next sections – it is important to note that wedges are narrower than pennants or triangles. Also, wedges differ from pennants because a wedge is always ascending or descending, while a pennant is always horizontal.

Ascending triangle

The ascending triangle is a bullish continuation pattern which signifies the continuation of an uptrend. Ascending triangles can be drawn onto charts by placing a horizontal line along the swing highs

– the resistance – and then drawing an ascending trend line along the swing lows – the support.



Ascending triangles often have two or more identical peak highs which allow for the horizontal line to be drawn. The trend line signifies the overall uptrend of the pattern, while the horizontal line indicates the historic level of resistance for that particular asset.

Descending triangle

In contrast, a descending triangle signifies a bearish continuation of a downtrend. Typically, a trader will enter a short position during a descending triangle – possibly with [CFDs](#) – in an attempt to profit from a falling market.



Descending triangles generally shift lower and break through the support because they are indicative of a market dominated by sellers, meaning that successively lower peaks are likely to be prevalent and unlikely to reverse.

Descending triangles can be identified from a horizontal line of support and a downward-sloping line of resistance. Eventually, the trend will break through the support and the downtrend will continue.

What is Behavioral Finance?

Behavioral finance is the study of the influence of psychology on the behavior of investors or financial analysts. It also includes the subsequent effects on the markets. It focuses on the fact that investors are not always rational, have limits to their self-control, and are influenced by their own biases.



Traditional Financial Theory

In order to better understand behavioral finance, let's first look at traditional financial theory.

Traditional finance includes the following beliefs:

- Both the market and investors are perfectly rational
- Investors truly care about utilitarian characteristics
- Investors have perfect self-control
- They are not confused by cognitive errors or information processing errors

Behavioral Finance Theory

Now let's compare traditional financial theory with behavioral finance.

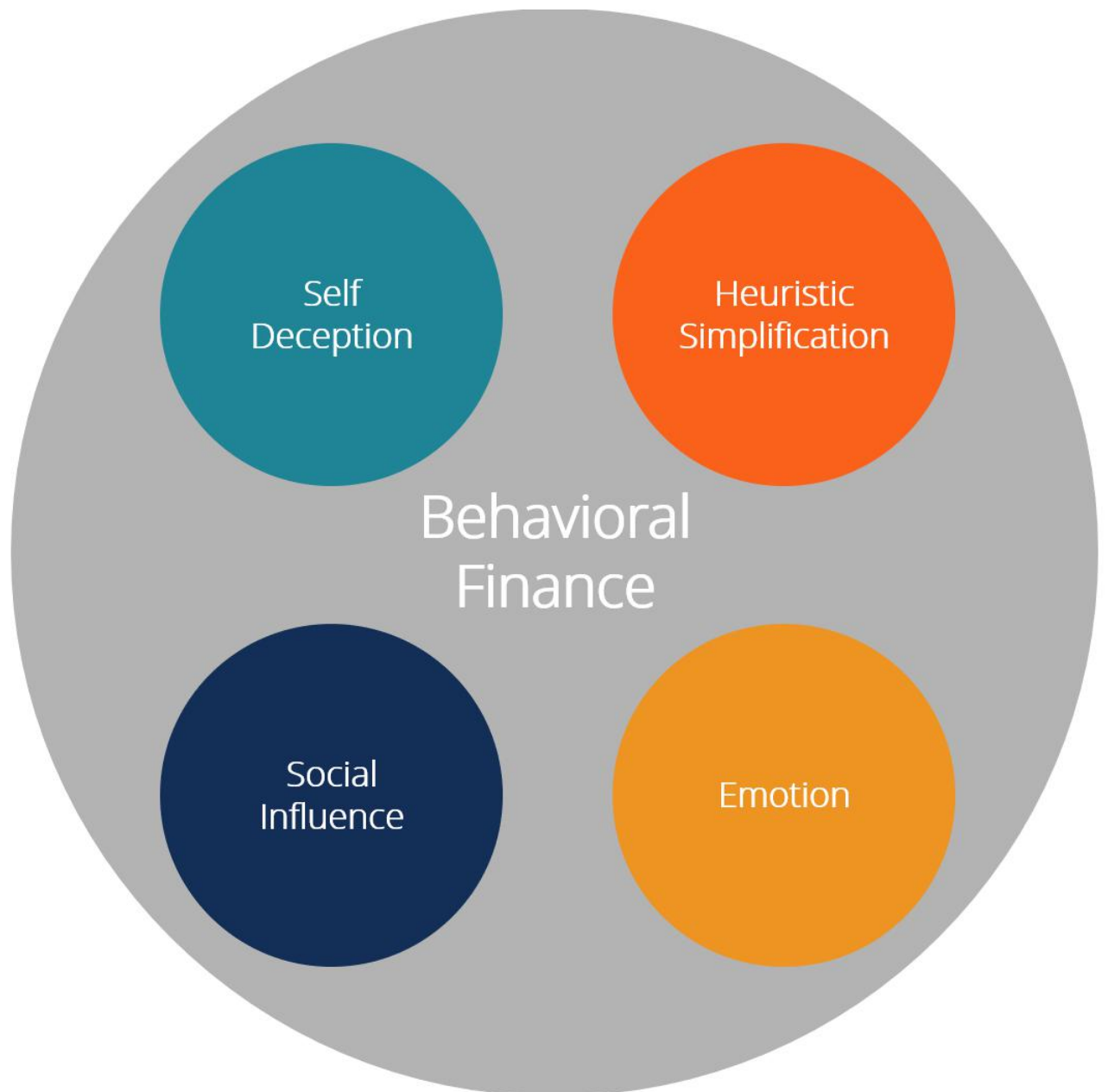
Traits of behavioral finance are:

- Investors are treated as “normal” not “rational”
- They actually have limits to their self-control
- Investors are influenced by their own biases
- Investors make cognitive errors that can lead to wrong decisions

Decision-Making Errors and Biases

Let's explore some of the buckets or building blocks that make up behavioral finance.

Behavioral finance views investors as “normal” but being subject to decision-making biases and errors. We can break down the decision-making biases and errors into at least four buckets.



#1 Self-Deception

The concept of self-deception is a limit to the way we learn. When we mistakenly think we know more than we actually do, we tend to miss information that we need to make an informed decision.

#2 Heuristic Simplification

We can also scope out a bucket that is often called heuristic simplification. Heuristic simplification refers to information-processing errors.

#3 Emotion

Another behavioral finance bucket is related to emotion, but we're not going to dwell on this bucket in this introductory session. Basically, emotion in behavioral finance refers to our making decisions based on our current emotional state. Our current mood may take our decision making off track from rational thinking.

#4 Social Influence

What we mean by the social bucket is how our decision making is influenced by others.

Top 10 Biases in Behavioral Finance

Behavioral finance seeks an understanding of the impact of personal biases on investors. Here is a list of common financial biases.

What is a Market Indicator?

A market indicator is a quantitative tool that is used by traders to interpret financial data in order to forecast stock market movements.



Summary

- A market indicator is a quantitative tool that is used by traders to interpret financial data in order to forecast stock market movements.
- Market indicators are considered a subset of technical indicators.
- Common examples of market indicators include market breadth, market sentiment, on balance volume, and moving averages.

Market Indicators vs. Technical Indicators

Market indicators are considered a subset of technical indicators, but the two share fundamental differences. Market indicators are calculated in the same way as technical indicators, which is by applying statistical formulas to a set of data points in order to derive ratios or formulas.

A market indicator can use data collated from multiple **securities** traded on a given market or part of an index. Technical indicators usually appear at the bottom of an index price chart, whereas market indicators are generally plotted on separate charts and graphs.

Market Indicators – Types

There are multiple types of market indicators. Common indicators include the following:

1. Market Breadth

Market breadth indicators compare data of several stocks that show a similar price movement. It enables traders to ascertain where the trend is headed in the near future. The number of companies that reach new highs will be compared with the number of stocks that reach new lows within a given trading period.

The market breadth is useful for trend traders who primarily seek to profit off betting on trends of price movements in the market. Trends are considered to be relatively no-risk if the indicators used are accurate, and risk is properly accounted for. However, trends do not account for trading psychology, which can cause unexpected price movements in the market.

For example, the **advance-decline line** is a ratio that considers the number of positively advancing stocks in an index as opposed to the stocks that are negatively advancing.

The indicator is useful as it incorporates the weight of the market capitalization of a given company while calculating the trajectory of price movements, as opposed to simply considering the price movements of the stock of the largest company in that index. Common examples include **\$NYAD** and **\$NAAD**.

2. Market Sentiment

Market sentiment indicators serve to contrast the price of a security with its volume of trade. It is done in order to determine if, on the overall market, investors are bullish or bearish on the overall market.

For example, the put-call ratio calculates the number of call options as opposed to the number of put options bought in a given duration.

3. Moving Averages

Moving averages are useful in filtering out irrelevant data points in that they “smooth” out available price data. It is because a **moving average** is expressed as a single flowing line that represents the average price of a given security over a period.

The chosen period is up to the discretion of the trader, depending upon their priorities. For example, investors and long-term trend followers will normally consider a timeframe of 50, 100, or 200 days. Short-term traders may consider a week-long period.

The moving average can indicate several properties in the trajectory of a given security. The angle of the slope can expose the trendline. A horizontal moving average shows that the price of the security varies while a positively sloped moving average shows that the price is likely to rise.

It is important to note that moving averages do not predict price movements, but simply show the real price movements that have already occurred. Examples include \$NYA50, \$NYA200, \$NAA50, and \$NAA200.

4. On-Balance Volume (OBV)

Volume of trade is an important market indicator, and on-balance volume collates a lot of volume-related data into a single flowing line. OBV doesn't predict price movements but confirms trends. A rising OBV shows that the price of the security is rising while a negative OBV accompanies negative price movements.

If the OBV and price are moving in opposite directions, the price movement is likely to change its direction. A rising OBV accompanied by a falling price shows that the price may soon start to rise. A falling price accompanied by an OBV that is flatlining means that the price is nearing a bottom.