



# The Psychology of an Investor

A review of behavioral finance concepts



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# Introduction to Behavioral Finance

According to conventional financial theory, the world and its participants are, for the most part, rational “wealth maximizers.” However, there are many instances where emotion and psychology influence our decisions, causing us to behave in unpredictable or irrational ways.

Behavioral finance is a relatively new field that seeks to combine behavioral and cognitive psychological theory with conventional economics and finance to provide explanations for why people make irrational financial decisions.

By the end of this tutorial, we hope that you will have a better understanding of some of the anomalies (e.g., irregularities) that conventional financial theories have failed to explain. In addition, we hope you gain insight into some of the underlying reasons and biases that cause some people to behave irrationally (and often against their best interests). Hopefully, this newfound knowledge will help you when it comes to making financial decisions.



Before we go over the specific concepts behind behavioral finance, let us take a more general look at this branch of finance. In this section, we'll examine how it compares to conventional finance, introduce you to three important contributors to the field and take a look at what critics have to say.

Behavioral finance seeks to explain our actions, whereas modern finance seeks to explain the actions of the "economic man" (*Homo economicus*).

## Why is behavioral finance necessary?

When using the labels "conventional" or "modern" to describe finance, we are talking about the type of finance that is based on rational and logical theories, such as the capital asset pricing model (CAPM) and the efficient market hypothesis (EMH). These theories assume that people, for the most part, behave rationally and predictably.

For a while, theoretical and empirical evidence suggested that CAPM, EMH and other rational financial theories did a respectable job of predicting and explaining certain events. However, as time went on, academics in both finance and economics started to find anomalies and behaviors that could not be explained by theories available at the time. While these theories could explain certain "idealized" events, the real world proved to be a very messy place in which market participants often behaved very unpredictably.

## Homo Economicus

One of the most rudimentary assumptions that conventional economics and finance makes is that people are rational "wealth maximizers" who seek to increase their own well-being. According to conventional economics, emotions and other extraneous factors do not influence people when it comes to making economic choices.

In most cases, however, this assumption doesn't reflect how people behave in the real world. The fact is people frequently behave irrationally. Consider how many people purchase lottery tickets in the hope of hitting the big jackpot. From a purely logical standpoint, it does not make sense to buy a lottery ticket when the odds of winning are generally overwhelming against the ticket holder.

These anomalies prompted academics to look to cognitive psychology to account for the irrational and illogical behaviors that modern finance had failed to explain.

<sup>1</sup> The capital asset pricing model (CAPM) is a model that describes the relationship between systematic risk and expected return for assets, particularly stocks.

The efficient market hypothesis (EMH) is an investment theory that states it is impossible to "beat the market" because stock market efficiency causes existing share prices to always incorporate and reflect all relevant information.



## Important Contributors

Like every other branch of finance, the field of behavioral finance has certain people that have provided major theoretical and empirical contributions. The following section provides a brief introduction to three of the biggest names associated with the field.

### Daniel Kahneman and Amos Tversky

Cognitive psychologists Daniel Kahneman and Amos Tversky are considered the fathers of behavioral economics/finance. Since their initial collaborations in the late 1960s, this duo has published about 200 works, most of which relate to psychological concepts with implications for behavioral finance. In 2002, Kahneman received the Nobel Memorial Prize in Economic Sciences for his contributions to the study of rationality in economics.

Kahneman and Tversky have focused much of their research on the cognitive biases and heuristics (e.g., approaches to problem solving) that cause people to engage in unanticipated irrational behavior. Their most popular and notable works include writings about prospect theory and loss aversion—topics that we'll examine later.

### Richard Thaler

While Kahneman and Tversky provided the early psychological theories that would be the foundation for behavioral finance, this field would not have evolved if it were not for economist Richard Thaler.

During his studies, Thaler became more and more aware of the shortcomings in conventional economic theories as they relate to people's behaviors. After reading a draft version of Kahneman and Tversky's work on prospect theory, Thaler realized that, unlike conventional economic theory, psychological theory could account for the irrationality in behaviors.

Thaler went on to collaborate with Kahneman and Tversky, blending economics and finance with psychology to present concepts such as mental accounting, the endowment effect<sup>2</sup> and other biases.

<sup>2</sup> Mental accounting refers to the tendency for people to divide their money into separate accounts based on criteria like the source and intent for the money. Furthermore, the importance of the funds in each account also varies on these factors.

The endowment effect describes a circumstance in which an individual values something that they already own more than something that they do not yet own.

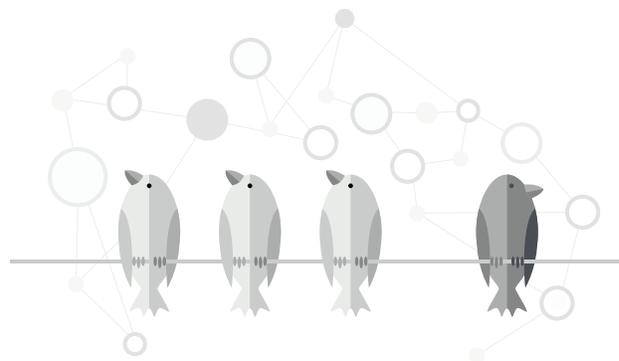
## Critics

Although behavioral finance has been gaining support in recent years, it is not without its critics. Some supporters of the efficient market hypothesis, for example, are vocal critics of behavioral finance.

The efficient market hypothesis is considered one of the foundations of modern financial theory. However, the hypothesis does not account for irrationality because it assumes that the market price of a security reflects the impact of all relevant information as it is released.

The most notable critic of behavioral finance is Eugene Fama, the founder of market efficiency theory. Professor Fama suggests that even though there are some anomalies that cannot be explained by modern financial theory, market efficiency should not be totally abandoned in favor of behavioral finance.

In fact, he notes that many of the anomalies found in conventional theories could be considered shorter-term chance events that are eventually corrected over time. In his 1998 paper entitled "Market Efficiency, Long-Term Returns and Behavioral Finance," Fama argues that many of the findings in behavioral finance appear to contradict each other, and that all in all, behavioral finance itself appears to be a collection of anomalies that can be explained by market efficiency.



The presence of regularly occurring anomalies in conventional economic theory was a big contributor to the formation of behavioral finance. These so-called anomalies, and their continued existence, directly violate modern financial and economic theories, which assume rational and logical behavior. The following is a quick summary of some of the anomalies found in the financial literature.

## January Effect

The January effect is named after the phenomenon in which the average monthly return for some stocks is consistently higher in January than any other month of the year. This is at odds with the efficient market hypothesis, which predicts that stocks should move at a “random walk.”

A 1976 study by Michael S. Rozeff and William R. Kinney, called “Capital Market Seasonality: The Case of Stock Returns,” found that from 1904-74 the average amount of January returns for small firms was around 3.5%, whereas returns for all other months was closer to 0.5%. This suggests that the monthly performance of small stocks follows a relatively consistent pattern, which is contrary to what is predicted by conventional financial theory. Therefore, some unconventional factor (other than the random-walk process) must be creating this regular pattern.

One explanation is that the surge in January returns is a result of investors selling loser stocks in December to lock in tax losses, causing returns to bounce back up in January, when investors have less incentive to sell. While the year-end tax selloff may explain some of the January effect, it does not account for the fact that the phenomenon still exists in places where capital gains taxes do not occur. This anomaly sets the stage for the line of thinking that conventional theories do not and cannot account for everything that happens in the real world.

Conventional theories do not and cannot account for everything that happens in the real world.



## The Winner's Curse

One assumption found in finance and economics is that investors and traders are rational enough to be aware of the true value of some assets and will bid or pay accordingly.

However, anomalies such as the winner's curse—a tendency for the winning bid in an auction setting to exceed the intrinsic value of the item purchased—suggest that this is not the case.

Rational-based theories assume that all participants involved in the bidding process will have access to all relevant information and will all come to the same valuation. Any differences in the pricing would suggest that some other factor not directly tied to the asset is affecting the bidding.

According to Richard Thaler's 1988 article on the winner's curse, there are two primary factors that undermine the rational bidding process: the number of bidders and the aggressiveness of bidding. For example, more bidders involved in the process means that you have to bid more aggressively in order to dissuade others from bidding. Unfortunately, increasing your aggressiveness will also increase the likelihood that your winning bid will exceed the value of the asset.

Consider the example of prospective homebuyers bidding for a house. It's possible that all the parties involved are rational and know the home's true value from studying recent sales of comparable homes in the area. However, variables irrelevant to the asset (aggressive bidding and the number of bidders) can cause valuation error, oftentimes driving up the sale price more than 25% above the home's true value. In this example, the curse aspect is twofold: not only has the winning bidder overpaid for the home, but now that buyer might have a difficult time securing financing.



## Equity Premium Puzzle

An anomaly that has left academics in finance and economics scratching their heads is the equity premium puzzle. According to the capital asset pricing model (CAPM), investors that hold riskier financial assets should be compensated with higher rates of return.

The equity premium puzzle is a phenomenon that describes the unusually higher historical real returns of stocks over government bonds. The equity premium, which is defined as equity returns minus bond returns, has been approximately 6.4% on average over a 100+ year period in the U.S. The premium is supposed to reflect the relative risk of stocks compared to "risk-free" government bonds, but the puzzle arises because this unexpectedly large percentage implies an unreasonably high level of risk aversion among investors.<sup>3</sup>

Behavioral finance's answer to the equity premium puzzle revolves around the tendency for people to have "myopic loss aversion," a situation in which investors—overly preoccupied by the negative effects of losses in comparison to an equivalent amount of gains—take a very short-term view on an investment. What happens is that investors are paying too much attention to the short-term volatility of their stock portfolios. While it is not uncommon for an average stock to fluctuate a few percentage points in a very short period of time, a myopic (e.g., shortsighted) investor may not react too favorably to the downside changes. Therefore, it is believed that equities must yield a high-enough premium to compensate for the investor's considerable aversion to loss. Thus, the premium is seen as an incentive for market participants to invest in stocks instead of marginally safer government bonds.

Conventional financial theory does not account for all situations that happen in the real world. This is not to say that conventional theory is not valuable, but rather that the addition of behavioral finance can further clarify how the financial markets work.

<sup>3</sup> Source: Factset. Equity returns based on Dow Jones Industrial Average. Government bond returns based on U.S. Treasury Bonds.

# Summary

## Key Concepts Summary

In the following modules, we will explore eight key concepts that pioneers in the field of behavioral finance have identified as contributing to irrational and often detrimental financial decision making. As you read through them, consider whether you've fallen prey to some of these biases. Chances are, at one point or another, we all have.

- ▶ Conventional finance is based on the theories that describe people, for the most part, as behaving logically and rationally. People started to question this point of view as there have been anomalies, which are events that conventional finance has a difficult time in explaining.
- ▶ Three of the biggest contributors to the field are psychologists, Daniel Kahneman and Amos Tversky and economist Richard Thaler.



### Anchoring

The concept of anchoring draws upon the tendency for us to attach or "anchor" our thoughts around a reference point despite the fact that it may not have any logical relevance to the decision at hand.



### Herd Behavior

Herd behavior represents the preference for individuals to mimic the behaviors or actions of a larger sized group.



### Mental Accounting

Mental accounting refers to the tendency for people to divide their money into separate accounts based on criteria like the source and intent for the money. Furthermore, the importance of the funds in each account also varies on these factors.



### Overconfidence

Overconfidence represents the tendency for an investor to overestimate his or her ability in performing some action/task.



### Confirmation and Hindsight Biases

Seeing is not necessarily believing as we also have confirmation and hindsight biases. Confirmation bias refers to how people tend to be more attentive to new information that confirms their own preconceived opinions about a subject. The hindsight bias represents how people believe that after the fact, the occurrence of an event was completely obvious.



### Overreaction and Availability Bias

Overreaction occurs when one reacts to a piece of news in a way that is greater than actual impact of the news.



### Gambler's Fallacy

The gambler's fallacy refers to an incorrect interpretation of statistics where someone believes that the occurrence of a random independent event would somehow make another random independent event less likely to happen.



### Prospect Theory

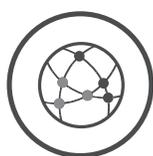
Prospect theory refers to an idea created by Drs. Kahneman and Tversky, which essentially determined that people do not associate equal levels of joy and pain with the same effect. The average individuals tend to be more loss sensitive (in the sense that they will feel more pain in receiving a loss compared to the amount of joy felt from receiving an equal amount of gain).

**Whether it's mental accounting, irrelevant anchoring or just following the herd, chances are we have all been guilty of at least some of the biases and irrational behavior highlighted in this tutorial. Now that you can identify some of the biases, it is time to apply that knowledge to your own investing and if need be take corrective action. Hopefully, your future financial decisions will be a bit more rational and a lot more lucrative as well.**

Contact your financial advisor to learn more about INVESTMENT ESSENTIALS or please visit [amgfunds.com/essentials](http://amgfunds.com/essentials) for more information.

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