

THE NAVIGATOR

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Behavioral finance combines psychology and economics to explain how investors act. Instead of assuming that people (e.g., investors) always make rational financial decisions, behavioral finance proponents argue that behavioral biases strongly influence financial decisions. Unfortunately, behavioral biases can have a detrimental impact on investment results; thus, it is crucial for investors to be aware of, understand, and be able to identify the various behavioral biases that may impact their investment decisions. In this Navigator, we discuss some of the most common biases that can hamper an investor's ability to make rational long-term investment decisions and provide several tools to help minimize the influence of behavioral biases in financial decision making.

BEHAVIORAL FINANCE 101

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As a rule of thumb, most economists believe that people are rational decision makers and always do what is in their economic best interest. In financial circles, there is an often-told joke about two economists who come across a \$20 bill on the ground. The younger economist says, "Look, there's a twenty-dollar bill on the ground." The older and wiser economist, without looking at the ground, says to him, "Impossible. If there had been a twenty-dollar bill lying on the ground, someone would have already picked it up by

now." In a perfect, rational, and efficient world, twenty-dollar bills never sit on the ground.

In contrast, behavioral psychologists have demonstrated that people often make mistakes, including mistakes that are absolutely not in their best economic interest – in direct contradiction to generally accepted economic theory.

All of us make bad decisions from time to time. Sometimes we get our facts wrong, sometimes we do not consider all the alternatives, and other times we simply react emotionally and reflexively to our circumstances. No matter the cause, poorly thought-out decisions can have a deeply negative impact on our lives, especially when it comes to investing. Many poor financial decisions are the result of identifiable behavioral biases that impact our ability to think clearly and rationally. The field of behavioral finance has arisen in recent years in an attempt to better understand these biases and their potential impacts on individuals, capital markets, and society as a whole.

The field of psychology has identified a number of behavioral biases that impact investment decisions and decision making in general, which are typically grouped into two broad categories: **cognitive biases** and **emotional biases**. In this *Navigator*, we do not address every behavioral bias, but, rather, we focus on those biases which we believe can be most impactful to investors in their financial decision-making.

COGNITIVE BIASES

Cognitive biases are mental shortcuts that people take when processing information and making decisions. These cognitive biases can lead to errors – because the brain has limited information processing capacity, and, in an attempt to simplify information, information may be distorted, illogically interpreted, or inaccurately judged. Some primary examples of cognitive biases include *confirmation bias*, *gamblers' fallacy*, *negativity bias*, and *anchoring*.



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- **Confirmation Bias**

Confirmation bias is the tendency to seek out, interpret, and favor evidence or opinions that match our own pre-determined conclusions, while discounting the value of contradictory information. This bias can be especially strong in relation to emotionally charged subject matters or deeply held beliefs. It can also lead to the interpretation of ambiguous information as supporting one's pre-existing beliefs.

For example, consider an investor who has received a tip from a friend about a hot new stock. Confirmation bias would suggest that the investor is likely to seek out information that supports the friend's recommendation to buy the stock rather than to seek out information that contradicts the recommendation. In an effort to "prove" that the stock really is a great investment, the investor is likely to find a number of sources or data points that support the investment potential of the stock while disregarding or discounting potential red flags. This behavior can be dangerous, as it can cause investors to make faulty decisions that are based on poor interpretation of important information.

In order to effectively combat confirmation bias, investors should first seek to prove the original recommendation or thesis wrong; in this case, investing cynicism provides key support in investing due diligence. Investors should actively try to find reasons that the stock might actually be a poor investment opportunity. If the original thesis can stand up to this critical analysis, then the investor should actually have more confidence that the stock truly represents a good investment opportunity.

- **Gamblers' Fallacy**

The gamblers' fallacy is the mistaken belief that if something happens more frequently during a certain period, it will happen less frequently in the future; or conversely, that if something happens less frequently during some period, it will happen more frequently in the future. Yet, it is erroneous to believe that an independent event is more or less likely to occur because of independent events that preceded it.

For instance, at one time or another, all of us have flipped a coin in the air several times, with the same side coming up each time, and thought, "Surely the next flip must go the other way; it's about time." In this case, we have fallen victim

to the gamblers' fallacy. In fact, even if you were to flip a coin 1,000 times and get heads each and every time (however unlikely this scenario may be), the flipping history would still have no bearing on the probability of the outcome of the next flip (assuming that the coin is evenly weighted). While it is unquestioned that we should expect to see an equal number of heads or tails over many coin flips, it does not preclude the possibility of long streaks of one outcome or the other.

The gamblers' fallacy is prevalent in the investing world. It is common for investors to assume that the market or a stock will go down (up) after an extended period of upward (downward) movement, simply because "it's about time." But, as demonstrated many times in financial history, this logic is flawed and can lead investors to buy or sell positions with no good rationale. Of course, this is not to say that extended periods of upward or downward movement should not be considered when making investment decisions, as such movement can cause a stock to become over- or under-valued on a fundamental basis and lead to a deserved re-pricing. But the simple fact that a stock has seen several up or down days in a row should not affect the probability of seeing a move in the opposite direction in the days ahead.

- **Negativity Bias**

The negativity bias causes investors to put more weight on bad news than on good. The human brain is naturally wired to process negative data more quickly and more thoroughly than positive data. Similarly, negative experiences are felt more deeply and have a far longer-lasting effect on our psychological states than positive experiences. This negative tilt, like many of our biases, has an evolutionary origin. The human instinct to put more weight on negative events than positive ones can be an effective risk management tool. It can be a strong deterrent from engaging in risky behavior or making poor choices, and it is easy to see how our ancestors might have developed such a self-preservative tendency. However, the negativity bias can have detrimental impacts on our ability to make sound investment decisions.

The stock market crash that occurred in conjunction with the 2008 Financial Crisis was nothing short of traumatic for millions of investors. Many investors lost much of their life savings in the market rout, and the psychological impact of that event cannot



be overstated. Even now, nearly eight years from the market's nadir, many investors still remain on the sidelines; these investors are simply too paralyzed with fear to begin investing again. This behavior is the negativity bias on full display. For many, nearly eight years of equity gains have not been enough to overcome the negative memory of 2008-2009.

We are not suggesting that investors should blindly ignore negative events or make the faulty assumption that there will not be other negative events in the future. But investors should be cognizant of their own negative bias and try to make investment decisions by assigning appropriate weights to both risk and reward.

- **Anchoring**

Anchoring is the tendency to be influenced by an initial anchor – the first piece of information that is offered when making a decision, even when the anchor is generated by an arbitrary or biased source and so has no logical relevance to the decision at hand. This very common bias is particularly prevalent in investing. Imagine an investor who buys ABC stock at \$120/share. The investor buys the stock in his IRA, so taxes have no impact on decision-making. The stock then drops in reaction to negative news and trades down to \$90/share. The investor decides to hold onto the stock until the initial purchase price (the anchor) is reached. This decision has nothing to do with the value of the stock but only is related to an irrelevant data point to make the investor feel better about not losing money. However, the money was lost as soon as the stock dropped to \$90. The rational investor should ingest the new information, decide what the new value for the stock would be, and then make a decision as to whether holding onto the stock continues to make logical sense.

Investors anchor to many reference points. A stock's original purchase price, a high-water mark, an analyst's fair value estimate – all of these data points can influence an investor's decision-making, even though they do not affect market pricing. In order to reduce the effects of anchoring, investors must remain disciplined and only consider truly relevant information when making decisions. Using a systematic and data-driven approach to making investment decisions can help investors to focus on important factors that actually drive shareholder value, rather than irrelevant noise.

EMOTIONAL BIASES

A cognitive bias is the result of taking a cognitive shortcut, but an emotional bias is one that results in taking action based on feelings instead of facts. That is, emotional biases may lead people to make poor decisions that are clouded by emotions and not based on rational judgment. Examples of emotional biases are *loss aversion*, *overconfidence*, *endowment bias*, and *herd behavior*.

- **Loss Aversion**

Loss aversion refers to the tendency of people to strongly prefer avoiding losses as opposed to acquiring gains. Research suggests that the psychological pain that we experience from losing money is *roughly twice as strong* as the joy that we feel when we make money, and the implications of this bias can be significant. Humans' aversion to loss is so powerful that it can actually lead to *risk taking* instead of *risk aversion*.

To illustrate this point, imagine an investor who owns a stock that has lost a significant amount of value due to deterioration in fundamentals. Future prospects for the company look poor, and there is much uncertainty surrounding the business. In such a case, continuing to hold the stock is risky, as there still could be meaningful additional downside in the stock. However, many investors who find themselves in this position continue to hold the stock, for no other reason than that selling the stock would make the loss "real" in their minds rather than just a paper loss. The prospect of having to face such a powerfully negative feeling is enough to cause many investors to actually take on *more risk* by continuing to hold the stock instead of simply selling the stock and moving on to better and less risky investments.

Interestingly, we can also observe loss aversion in situations where investors have actually experienced a gain on an investment. The prospect of seeing an unrealized gain on an investment dissipate can be so emotionally distressing that many investors will sell a winning investment too soon, completely ignoring the possibility that the company's fundamentals suggest additional upside.

Loss aversion is one of the strongest emotional biases faced because of the intensity of emotion that is felt when we experience loss. Accordingly,



we must be especially vigilant in identifying this bias. While it is impossible to entirely avoid the effects of loss aversion, we can try to minimize them by being intellectually honest with ourselves when an investment has gained or lost value and remaining focused on an investment's fundamentals instead of how much money we might stand to gain or lose by selling it.

- **Overconfidence**

In the overconfidence bias, a person's subjective confidence in his or her judgment, ability, or belief is greater than the objective accuracy of that judgment, ability, or belief. It is the mis-calibration of subjective probabilities that results in a person having more confidence in him- or herself than the objective parameters of the situations suggest.

People tend to be overconfident in their abilities in many arenas, from karaoke singing to starting a business to parallel parking. This phenomenon has been highlighted time and again in study after study. For example, in one particular study, a group of college students were asked to rate their driving abilities as either below average, average, or above average. Statistically, self-ratings should be distributed evenly between these three categories. However, as much as 82% of the students rated their abilities as above average, which is clearly impossible.ⁱ In a similar study, a group of entrepreneurs were asked to rate their businesses' chances of success. 81% believed that their businesses had at least a 70% chance of success, while 33% believed that their chances of success were 100%! In reality, the data suggest that only 25% of those businesses would exist five years later.ⁱⁱ

Investing provides plenty of fertile ground for overconfidence to take root, and, consequently, this bias is very commonly observed in investors' behavior in the capital markets. There are two sides to every trade (which makes a market!), and each side believes his or her information and/or analysis to be superior to that of the counterparty. By definition, this must be the case or the trade would never happen. But both parties cannot possibly be correct! Confidence in one's investment analysis and conclusions is what ultimately leads one to make a trade, which, in and of itself, is completely rational. However, *overconfidence* can lead to making *too many* trades, which most certainly can be detrimental to a long-term investing strategy. Research has shown that overconfidence leads to increased portfolio turnover rate, which is strongly

correlated with sub-par returns. Put simply, investors who are overconfident in their stock-picking abilities tend to trade more often and earn lower returns than investors who do not suffer from this bias.

One of the most effective ways to combat the overconfidence bias is to seek out analysis that conflicts with one's own investment theories. By seeking to understand how one's conclusions might be wrong, an investor's confidence can be tempered, resulting in a more measured approach to trading decisions.

- **Endowment Bias**

Endowment bias suggests that people assign more value to something if they own it than if they do not. This bias applies to a number of possessions, including homes, automobiles, stocks, and practically any other item. In one experiment that was performed on a group of Cornell University students, one-half of the students were given a coffee cup, and the other one-half were given nothing. Then those students who had been given coffee cups were asked at what price each of them would sell his or her cup. The median price at which the group agreed to sell their cups was \$5.25. However, when the students who had not been given coffee cups were asked to give a price at which they would buy the cups from the other group, no one in the group was willing to pay more than \$2.75. This sizeable gap seems to indicate that the selling group placed more value on the coffee cups simply because they owned the cups.ⁱⁱⁱ

Early research on this topic suggested that the origin of endowment bias was actually loss aversion. Because a person selling an item would feel a sense of loss upon the sale, he or she wanted to be compensated for that painful feeling by charging a higher price, even though he or she would never pay that price to buy the item. However, more recent studies have shown that the endowment bias is even simpler than this.^{iv} In a modified version of the original coffee cup experiment, it was found that buyers would pay a higher price for a coffee cup if they already owned an identical cup. This phenomenon indicates that simply owning an item causes a person to assign more value to it.

The investment implications of this bias should be obvious. An investor may be disinclined to sell assets that have become fully valued because the



mere act of ownership impairs the investor's ability to properly value the asset. Holding onto assets that have become fully valued on a fundamental basis introduces incremental risk to a portfolio. For this reason, an investor should not take a position in an investment without having a clear and disciplined exit plan. This exit plan may change over time because of changes in fundamentals, but having a stated plan for when to sell an investment can help to offset or avoid the effects of endowment bias. Investors should note that securities are merely tradable assets, and one should not have an emotional relationship with any investable asset should it become over-valued.

- **Herd Behavior**

Herd behavior is the tendency for individuals to mimic the actions of a larger group, even if, individually, most people would make a different decision. Herd behavior is generally regarded as one of the primary causes of society's most spectacular – and often spectacularly damaging – bubbles. A number of historical examples exist, including the infamous Dutch tulip mania of the 1630s, when the price of a single tulip bulb reached the equivalent of 10 times the annual income of a skilled craftsman! Certainly, irrational forces impact investor behavior here. So why do humans exhibit this type of behavior? Research has suggested two possible explanations, both with strong analogues in the animal kingdom.

One reason that animals join herds is to benefit from information that other members of the herd may have, such as knowledge of food and water resources. Humans behave similarly. We assume that a group of investors who have started to pursue a certain strategy must know something that we do not, and we therefore join the group in order to benefit from that knowledge. The theory is that there simply is not a way that so many people can be wrong – or so the thinking goes. But because humans often value resources according to what they think others will pay for those same resources in the future, the lifespan for any popular strategy is inherently limited.

Another reason that animals join herds is to protect themselves from predators. By being a part of a herd, an animal increases the odds of a predator choosing another member of the herd as its prey. By essentially hiding in the herd, an animal can decrease its risk. Investors do effectively the same

thing. They hide in the herd in order to avoid the risk of being alone. Professional investors who pursue contrarian strategies that go against conventional thinking (*i.e.*, the herd) face reputational risk if they are wrong, while being wrong with the rest of the herd can be easily excused. However, most great investors became so by thinking independently and pursuing strategies that actually *benefited* from the fact that herds are often wrong – just think of the billions that John Paulson made shorting subprime debt during the Financial Crisis. True investment opportunity often lies in eschewing the herd and taking a contrarian stance that is based on thorough and competent analysis.

CLOSING THOUGHTS

The behavioral biases that we have outlined are powerful and prevalent, creating somewhat of a psychological minefield for investors to navigate. It should be noted that we only touched on some of the most commonly observed biases; certainly, many other psychological investing pitfalls are out there lurking for the unaware investor. No doubt these biases make the already challenging task of investing that much more difficult by clouding investors' judgment and pushing them to make decisions contrary to their own long-term self-interest. Only by being aware of behavioral biases and their nature can one hope to dull their effects.¹

Finding suitable investments with attractive risk/reward characteristics is a big part of what we strive to do at Appleseed Capital, but it is far from the only activity we perform. One of our most important responsibilities as investment advisors is helping our clients to make good financial decisions. By providing knowledgeable, objective advice and removing the burden of trading decisions from our clients' shoulders, we try to help them avoid many of the adverse consequences of the completely normal but potentially detrimental human tendencies previously outlined.

Should you have any questions about this *Navigator* and the topic of behavioral biases, please reach out to your portfolio manager.

¹ At Appleseed Capital, we incorporate checks and procedures into our investment process to help mitigate our own behavioral biases.



For further reading on these topics, please review:

ⁱ Ola Svenson, "Are We All Less Risky and More Skillful Than Our Fellow Drivers?" *Acta Psychologica* 47(1981): 143-148

ⁱⁱ Arnold C. Cooper, Carolyn Y. Woo, and William C. Dunkelberg, "Entrepreneurs' Perceived Chances of Success," *Journal of Business Venturing* 3(1988): 97-108

ⁱⁱⁱ Daniel Kahneman, Jack L. Knetsch, Richard H. Thaler, "Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias," *The Journal of Economic Perspectives* 5(1991): 193-206

^{iv} Carey K. Morewedge, Lisa L. Shu, Daniel T. Gilbert, Timothy D. Wilson, "Bad riddance or good rubbish? Ownership and not loss aversion causes the endowment effect," *Journal of Experimental Social Psychology* 45(2009): 947-951

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