WILMINGTON TRUST

Investment INSIGHTS

Behavioral Finance:
Emotions and investment choices

Of all the emotions that humans experience, fear and greed are two of the most destructive to the investment decision-making process.

According to the theory of efficient markets, where independent news flows freely and markets are fairly valued, it is impossible to "beat the market" through expert stock selection. Left to their own devices, markets would probably be nothing but rational, with trading wholly justified by universally available information.

However, there is a gap between what should be and what is, between decisions made in a theoretical marketplace that seeks to optimize a rational outcome and decisions made by human beings—with all their fear, greed, vulnerabilities, egos, and weaknesses.

Out of this gap was born a body of research on "behavioral finance" by psychologists Amos Tversky and Daniel Kahneman who won the Nobel Prize in 1979 for the study of the effects of human biases and emotions on market participants.

The irrational investor

The emotions that may lead human beings to believe they can outperform the market are the same emotions that may also unconsciously lead them to make poor investment decisions. Consider the example of hypothetical experienced investors James and Marilyn Larson, who managed their own investments. They thought they were doing quite well, until a closer look at the performance of the mutual funds they'd invested in showed that the returns they had earned were less than the funds' actual returns. This situation is not unusual.

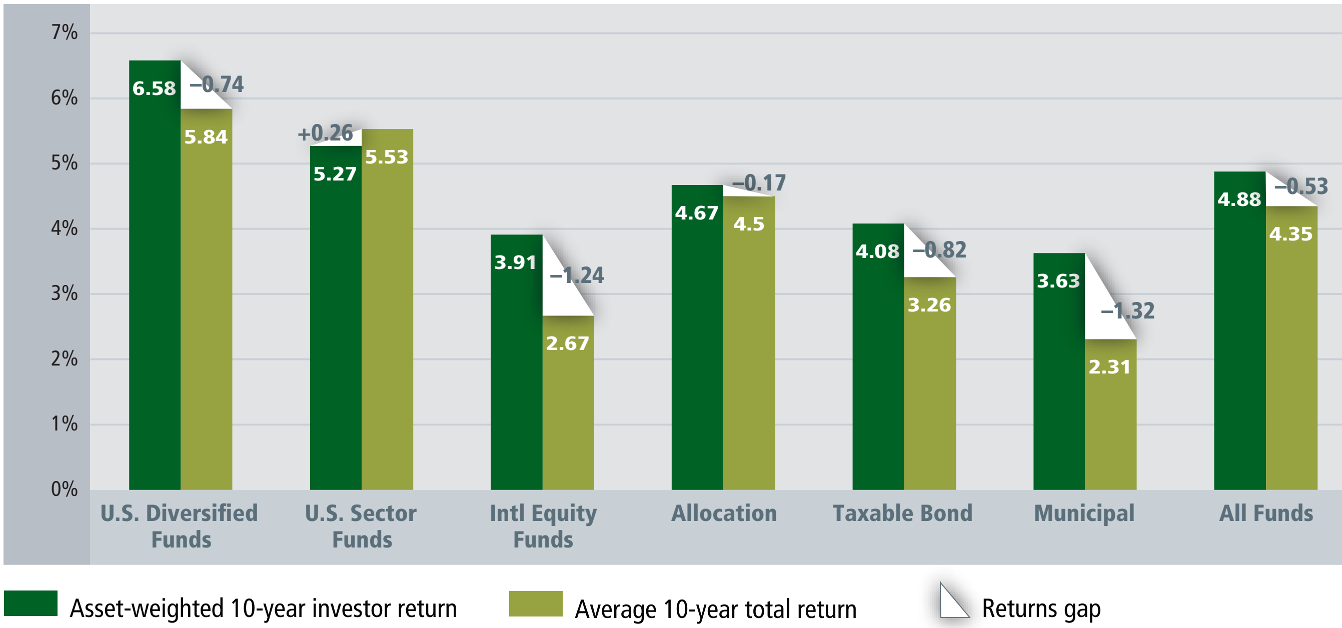
In a Morningstar study published in 2014, the mutual fund returns investors earned over the prior 10 years lagged the actual returns of the funds in which they were invested by as much as over three percentage points with the average gap during that time coming in at 2.49%. This underperformance was across all fund categories, as illustrated in Figure 1.

CONTINUED

FIGURE 1

Funds perform better than investors in those funds

Asset-weighted and average total and investor returns: 10 years ended December 31, 2015

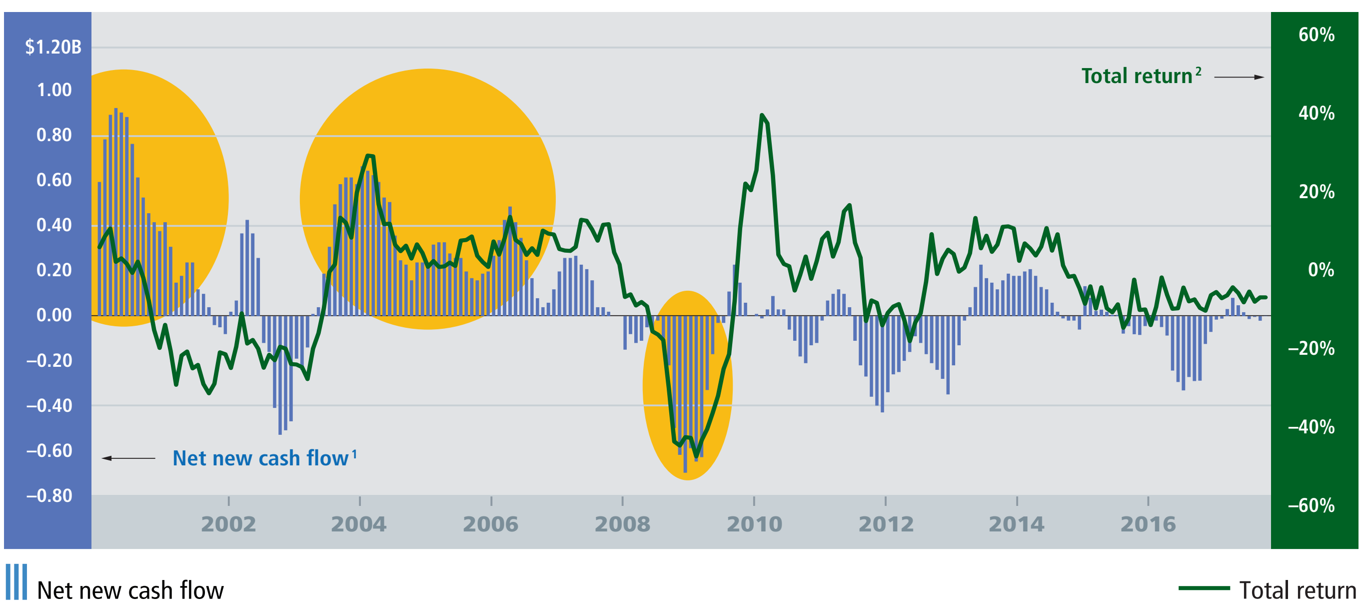


Investing involves risks and you may incur a profit or a loss. Past performance is no guarantee of future results.
Source: Morningstar, Inc. Data as of December 2015.

FIGURE 2

Investors buy high and sell low

Net new cash flow to stock funds is related to world stock returns monthly, 2000–2013



[1] Net new cash flow is plotted as a six-month moving average.

[2] The total return on equities is measured as the year-over-year percent change in the MSCI All Country World Daily Total Return Index.

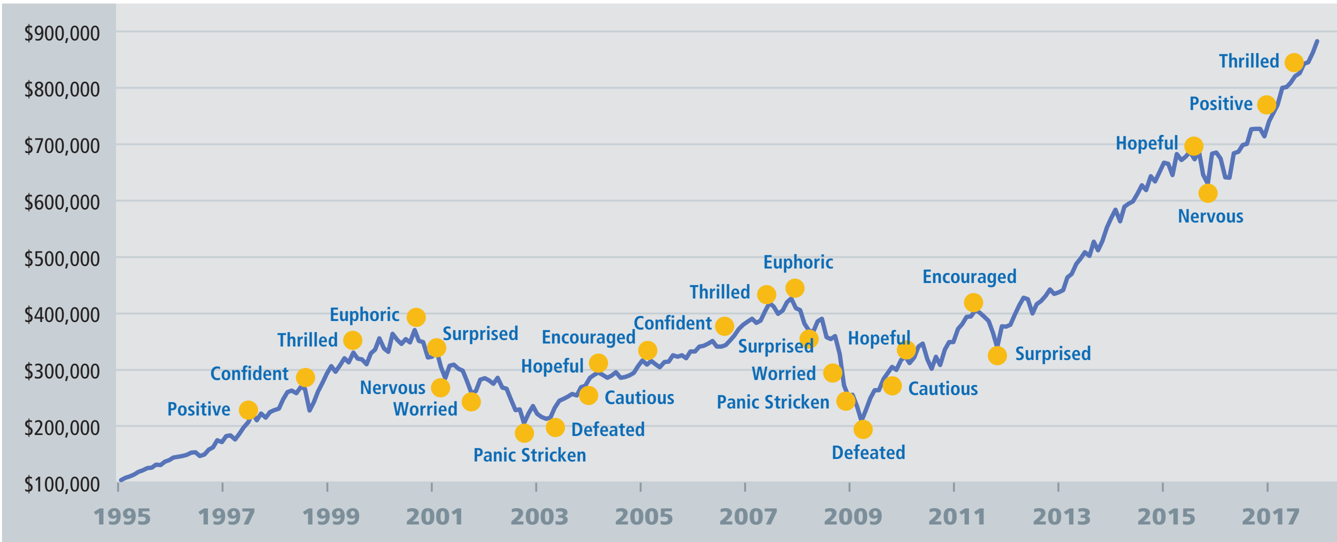
Sources: Investment Company Institute and Morgan Stanley Capital International.

CONTINUED

FIGURE 3

Do your emotions lead you astray?

Growth of a hypothetical $100,000 investment in the S&P 500 index (1995–2015)



Sources: BlackRock; Informa Investment Solutions, WTIA. Emotions are for illustrative purposes only. Past performance is no guarantee of future results.

To better understand the disconnect between actual fund and investor returns, see Figure 2, which shows that emotional investors are often driven to "buy high, sell low"—precisely the opposite of what they should be doing. Their tendency is to sell during down market periods (presumably out of fear and a desire to cut their losses) and buy late into and well past up market cycles (again, presumably when they feel "safe" once again and end up trying to chase performance).

For instance, in 2009, investors stampeded out of stock funds in response to the sharply falling markets. It actually proved to be a smart time to buy (and a poor time to sell) as March of that year marked the bottom of the credit crisis-related bear market that had begun in earnest in 2008.

Twin demons: Fear and greed?

If biases are a silent and imperceptible undercurrent that affects investment decision making, emotions are visible, unambiguous, and can be the source of some rash and unreasonable investment errors. Of all the emotions that humans experience, fear and greed are the most destructive to the investment decision-making process.

Fear comes from a sense of danger and provokes flight from the source of that perceived threat. It can leave lasting scars that affects behavior long into the future. When stock prices drop significantly, either precipitously or over an extended period of time, the fear of further stock price declines causes many investors to sell (usually at the worst time) and move to more conservative investments, such as cash. See Figure 3, which illustrates the markets' sharp ups and downs in terms of the roller coaster of human emotion. Fear can continue to affect investors as they hesitate to re-enter the market even as it shows signs of recovering, losing the opportunity to recover from losses.

Greed has driven investment mania for centuries, from tulip mania in 17th century Holland to the "dotcom bubble" in the year 2000; in both instances, prices soared and then collapsed. The insidious nature of investment greed is the cloak in which individuals wrap it in order to rationalize buying investments at irrational prices. For example, in the dot.com bubble, investors convinced themselves that existing stock valuation models did not

CONTINUED

> "The investor's chief problem—and even his worst enemy—is likely to be himself."
>
> — BENJAMIN GRAHAM

In 1637, at the peak of tulip mania, some tulip bulbs sold for more than 10 times the annual income of a skilled craftsman.

Left: Anonymous 17th-century watercolor of the Semper Augustus, famous for being the most expensive tulip sold during tulip mania (over $2,000 per bulb in American dollars)

apply to this new age industry and profits didn't matter. The mantra, "This time it's different," was the cloak for rationalizing the blind rush toward any internet stock despite the extraordinary and unsustainable run-up in prices. Mastery of these two emotions may be a key contributor to investment success.

A profile of investor behavior

If analyzing a problem is the first step to finding a solution, it's important to recognize that the central tool of investing, the human brain, did not evolve with investment management in mind. The brain is wired by thousands of years of adaptation to our environment—adaptations that may not always serve us well in a more modern era. For example, the fear an individual feels when danger is sensed was a useful instinct for the physical threats our ancestors faced (and remains so today), but that "flight" response to a fear stimulus may be a counterproductive response to a sharply declining market. On the contrary, a prudent response from an investment standpoint may be to do nothing or even move toward the danger, i.e., buying more of the asset that's losing value.

To zero in on the thinking that drives modern investors to buy high and sell low, let's take a closer look at the psychological and behavioral forces at work, which may not be of the greatest monetary utility, yet often drive and may negatively affect investor decisionmaking.

How we choose to remember—or forget

Selective memory is one of the great coping mechanisms humans have i.e., the ability to forget painful experiences, while remembering the more positive ones. Bad experiences can also represent a threat to a person's self-image.

Investor impact: Burying the memory of past investment mistakes comes at a cost of a lost opportunity to learn from those mistakes. Not only can selective memory cause investors to repeat the same mistakes, it can also frustrate the process of becoming better investors.

Recency bias places too much weight on short-term performance and insufficient weight to the evidence from the more distant past.

Investor impact: Those who overlook the historical cyclical nature of markets and only focus on recent events are inclined to invest more as the markets are going up and sell or remain on the sidelines when market values are declining. Then, when the markets turn, investors are surprised they missed the signs of change in market fortunes.

Loss aversion refers to the fact that the pain of loss is generally felt more acutely than the joy of a gain. In order to avoid the pain of a loss, individuals can favor inaction over action and the status quo over change.

CONTINUED

Investor impact: An inclination toward risk-averse behavior may keep an investor from pursuing beneficial long-term investment opportunities to sidestep the discomfort of potential short-term price fluctuations. It can also mean that investors will be slow to sell stocks whose prices have declined to avoid acknowledging a loss and any embarrassment they attach to having sustained a loss.

Regret aversion is the fear of bad outcomes and the desire to avoid blaming one's self for a poor result.

Investor impact: Regret aversion may result in an individual either taking or failing to take action. For instance, an investor may choose to not invest in stocks to avoid regretting the decision should they decline in value. Conversely, an investor may choose to overweight stocks to avoid the regret of missing out on a sharp price appreciation.

Anchoring means fixating on a value or number against which comparisons can be made, even if the anchor number is irrelevant to making a meaningful assessment. A simple example might be a store that holds a 20% off sale. We tend to anchor on the pre-sale price to make a judgment about the attractiveness of the sale price without regard to whether the pre-sale price was even fair or reasonable.

Investor impact: Oftentimes, individuals will assess the attractiveness of a company whose share appears "on sale." The fact that the price declined does not automatically mean it is a good value for the money. Rather than anchoring to a past price, an analysis of the company's merit still needs to be based on a wide range of factors, such as earnings and future business prospects.

How we view the world and ourselves

Optimism bias, or overconfidence, is the natural human tendency to overestimate our abilities. In a classic study, "Comparative Perceptions of Driver Ability," 80% of subject drivers rated themselves as above-average drivers.* Similar research has been conducted with lawyers, professors, and small-business owners, all of which found that individuals—especially men—consistently rated their abilities, experience, and training higher than others in their respective peer group.

Investor impact: A bias toward overconfidence can lead to excessive trading, which is one of the primary factors behind investment underperformance, since the associated transaction costs, related tax inefficiencies, and the pressure of continually finding exceptional trading opportunities can all place a drag on results. Overconfidence may also result in an overly optimistic view of how well individuals can manage their assets, forgoing professional management and the potential for better performance results.

Negativity bias. The human brain has a greater sensitivity to bad news, which is one reason newscasts and newspapers are filled with it. This bias most likely evolved for a good reason—to steer clear of harm's way.

Investor error: There is always enough bad news for investors to find reasons not to invest. Those who wait for "good news" that they think heralds the right time to invest will more likely wait too long, until the optimal time to invest in good opportunities has passed.

Self-handicapping essentially boils down to the tendency to make excuses and point fingers rather than accept responsibility for perceived failure, while permitting one's self the ability to "own" success.

Investor error: Individuals who exhibit this trait tend to focus on outperforming the markets rather than on task mastery, to the detriment of investment success.

*Accident Analysis & Prevention, "Comparative Perceptions of Driver Ability: A Confirmation and Expansion," McCormick IA, Walkey FH, Green DE, Vol. 113. No. 1. pp. 205 208, 1986.

CONTINUED

Blaming the research or another external factor is an acceptable way for an investor to divest himself or herself of accountability. It permits one to move on without learning the lesson, since it wasn't his or her fault.

Sunk costs have already been incurred and are unrecoverable, but they still drive behavior. A common example is having tickets to a sporting event, but for some reason the desire to attend the game no longer exists. Most individuals will attend anyway if they paid for the tickets versus if they were a gift. Rationally speaking, whether one attends shouldn't be tied to whether money was expended since the commitment of time and effort is the same, yet the notion of cost often affects behavior.

Investor impact: When it comes to investments already owned, sunk costs hampers the ability to evaluate an investment's prospects on its merits. If an objective analysis of a particular stock finds that it is not a good investment, there should be no difference between the decision to sell it, or not buy it in the first place. However, when an investment is already owned, the notion of sunk cost makes the decision to sell more difficult than the decision not to buy.

How we are affected by what we see and hear

Herding. Humans are social animals, so much so that social exclusion can be painful. The importance and value of group action was established early in human development as survival rewarded those who traveled together and cooperated. Acting in unison with the group is as natural to the human condition as it is important.

Investor impact: The desire to run with the herd—whether to or from financial markets—can be a very dangerous inclination. Smart investment decisions are rarely rooted in what everyone else is doing.

Confirmation bias. Individuals are prone to drawing conclusions first and then seeking out the facts or associations that support those conclusions. It's one reason people tend to gravitate to those who share their views, tastes, and interests.

Investor impact: When facts contradict someone's comfortable reality, more often than not, they are ignored. Investors who disregard facts and opinions contrary to their investment point of view do so at their own peril.

Inoculating against bad behavior

All is not lost. There are a number of steps that you can take to protect yourself from the inherent biases and natural human emotions that lead to investment mistakes, including:

Have a plan: An investment plan (as codified in a client's Investment Policy Statement) factors in your investment objectives, personal risk tolerance, and time horizon—all of which can be invaluable in avoiding the missteps that can derail your investment success. A plan acts as a mechanism for investment discipline that can keep you from reactionary, emotion-based, and ill-considered decisions.

Create a checklist of questions: Develop a short list of questions that will help you to make more objective decisions. Some questions might include:

- *Does making this investment fit with my overall asset allocation strategy?*
- *If the investment lost 30% of its value in 12 months, what would I do?*
- *What is my exit strategy?*
- *What do I know about this investment—am I acting on word-of-mouth, specific advice, or a particular insight into the company or its business?*
- *Am I not selling it because I'm afraid its price may recover?*
- *Would I buy this security if I already didn't own it?*

Actively seek out contrarian opinions: If you love an investment idea, pause and seek opinions that challenge your investment thesis. What would cause you to change your mind? Since there are no guarantees about future outcomes, you need to understand the factors that could upend your outlook for an investment candidate and the probability of an adverse scenario.

CONTINUED

Avoid short-termism and skepticism: Recent history is replete with reasons not to invest—world wars, great recessions and depressions, oil shocks, high inflation—but the arc of history has been one of long-term economic growth and wealth creation. When economic or geopolitical news gives you pause about investing, ask yourself one important question: "Do I believe that economic wealth will be greater in five to ten years than it is today?" If you can answer "yes," then it may be a good time to invest.

Admit and learn from mistakes: A cornerstone of maturation and growth is the ability to admit and learn from life's mistakes. Your investing skill will improve if mistakes are recognized and the lessons learned are incorporated into your future investment decisions. Because we tend to forget mistakes, consider keeping a diary of investment mistakes, e.g., times you would have been better off holding than buying or selling. Include your original thesis, what went wrong, and the lesson learned so you can periodically refer to it and keep the lessons fresh.

And last but certainly not least, don't go it alone. An Investment Advisor can bring the analytical, strategic, and tactical expertise of the firm to bear on your portfolio. Partnering with those who are used to the ebbs and flows of financial markets should help keep your investments on a rational, unemotional keel.

The MSCI All Country World Index *(ACWI) is a free float-adjusted, market capitalization weighted index, hedged to U.S. dollars, that is designed to measure global equity returns via the aggregate performance of 46 developed and emerging market country indices.*

The S&P 500 Index *measures the performance of approximately 500 widely held common stocks listed on U.S. exchanges. Most of the stocks in the index are large-capitalization U.S. issues, and its members account for roughly 75% of the total U.S. equity market.*

Indices are not available for direct investment. Investment in a security or strategy designed to replicate the performance of an index will incur expenses, such as management fees and transaction costs, which would reduce returns.