

Breaking the Cycle of Investment Regret

How Investors Can Harness Emotions for Better Investment Decisions

HIGHLIGHTS

- Our ability to make investment decisions is heavily influenced by emotions.¹
- Left unchecked, these emotions could trigger systematic irrational behaviors that are repeated over and over, potentially leading to serious investing mistakes.
- Although our natural decision-making process is limited by the quality and accuracy of the tools nature has given us, we are not helpless.
- Understanding our emotional state and putting plans in place before emotions take over can help prevent poor investment decisions.

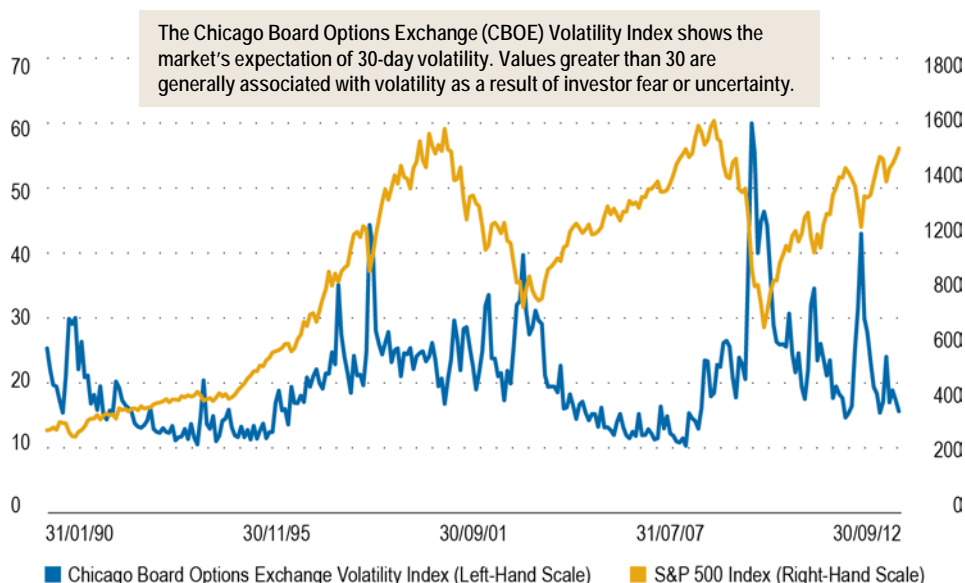
THE HALF-EMPTY GLASS

The market meltdown triggered in 2008 by the global financial and economic crisis has left a legacy of pessimism that continues to rule the minds of many investors despite subsequent periods of both economic and market recovery. While some investors remain on the sidelines frozen by indecision, others seem to shift between asset classes with every mood-changing headline. Paradoxically, investors tend to view market volatility as an isolated phenomenon, not realizing that their own fears, multiplied by those of countless other investors, may help fuel the turbulence (Chart 1).

Chart 1: Fear Spurs Market Declines

Chicago Board Options Exchange Volatility Index vs. S&P 500® Index
Index Values

31 January 1990–30 September 2012



Sources: CBOE Volatility Index® (VIX®) data is provided by Chicago Board Options Exchange, Incorporated (CBOE) and CBOE makes no warranties of any kind with respect to this data. Bloomberg LP, S&P Dow Jones Indices, Standard & Poor's®, S&P® and S&P 500® are registered trademarks of Standard & Poor's Financial Services LLC. An index is unmanaged and one cannot invest directly in an index. Past performance does not guarantee future results.



1. Kahneman and Tversky, "Mental Accounting Matters," *Journal of Behavioral Decision Making*, 12: 183-206 (1999).

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Whether the proverbial glass is half full or half empty is a matter of interpretation, which is inevitably colored by emotion. It is the emotional response—so quick that people are unaware it is even occurring—that too often leads to poor decision making.

But investors need not be doomed by their emotional responses to endlessly pace a treadmill of bad investments. Behavioral finance, which applies the study of cognitive psychology to the motives behind money-related decisions, offers clues to strategies investors can pursue to proactively direct their emotions toward the decisions that could ultimately be in their best interests.

APPLYING REASON TO THE IRRATIONAL

Behavioral finance developed as a response to *standard economic theory* (also known as expected utility theory), which assumes that individuals are rational, risk-averse profit maximizers. This concept of the rational individual formed the foundation for numerous theories about the capital markets. In the well-ordered world of the efficient markets theory, for example, investors were expected to set prices rationally, allowing even the unsophisticated investor to rely on market efficiency to ensure a fair price for transactions.

The reality is that all individuals are far less rational in their decision making than economic theory assumes. Behavioral economics accounts for that irrationality.

In 1979, psychologists Daniel Kahneman and Amos Tversky challenged standard economic theory with their introduction of *prospect theory*, which argues that in situations involving financial risk, people are more concerned about the change in their wealth than its ultimate level. Consequently, they may be either more cautious or confident than statistical probability would dictate and they routinely misjudge the odds for success or failure.²

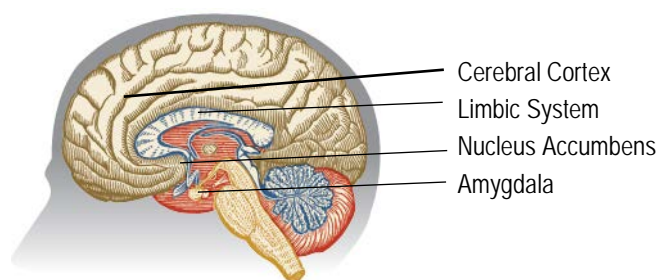
For his ground-breaking research, Dr. Kahneman was awarded a Nobel Prize in economics³ (Dr. Tversky did not share the honor due to his death shortly before the Nobel committee made its selection). From those first experiments in the anomalies of human behavior toward money, numerous studies over the years have built substantial empirical evidence in support of their original hypothesis. It seems that not only are people far less rational in their decision making than economic theory assumes, but left to their own devices, many people also consistently repeat mistakes over and over again, *even when the error has been pointed out*.⁴

Dan Ariely, a professor of psychology at Duke University who specializes in behavioral finance, terms such behavior “predictably irrational”: Even when provided with a reasonable argument and ample context, oftentimes the human brain nevertheless has a strong tendency to make decisions based on irrational emotion.

IT'S JUST EMOTIONS TAKING ME OVER

The decision-making process is highly complex, requiring the resources of two large centers of the brain. Dominating the front of the brain is the cerebral cortex, which houses the so-called higher functions of logic, reason and planning—and the limbic system, which is responsible for our instincts, emotional responses and the intuitive system.

Figure 1. Decision Making in the Brain



Working together, emotion and reason should balance each other out, but studies show subconscious activity actually *precedes and determines* conscious choice.⁵

BLAME IT ON THE AMYGDALA

Within the network of structures that comprise the limbic system lies the amygdala, a small but active area that functions as the brain's early warning system, sending out messages of anxiety and fear to warn of trouble ahead. In the absence of stalking predators or other forms of imminent attack, the amygdala tends to focus on the potential for harm from more abstract causes like competitors, stress or negative headlines. Because of this bias toward deflecting danger, the amygdala regards negativity and pessimism as accurate.

2. Daniel Kahneman and Amos Tversky, "Prospect Theory: An Analysis of Decision Under Risk," *Econometrica* 1979, 47: 263-91.

3. The Royal Swedish Academy cited Kahneman "for having integrated insights from psychological research into economic science, especially concerning human judgment and decision making under uncertainty."

4. Dan Ariely, *Predictably Irrational: The Hidden Forces That Shape Our Decisions*, 2008.

5. Soon, Brass, Heinze & Haynes (2008), "Unconscious determinants of free decisions in the human brain," *Nature Neuroscience* 11, p. 543-545.

FIVE BEHAVIORS THAT LEAD TO INVESTMENT MISTAKES

Activity in the amygdala is also highly correlated with some of the most common mistakes made by investors, five of which follow.

1 Loss Aversion: The Pain of Loss Outweighs the Pleasure from Gain

No one wants to lose money. Loss aversion refers to the deep pain investors feel upon taking a loss and the lengths to which they will go to avoid that pain. In fact, Kahneman and Tversky estimated that the pain from loss was measurably greater than the pleasure from gain.⁶

In a classic Kahneman/Tversky experiment, participants were hypothetically offered a chance of winning a cash prize by choosing one of three options:

1. A certain win of US\$3,000
2. An 80% chance of winning US\$4,000 or a 20% chance of winning US\$0

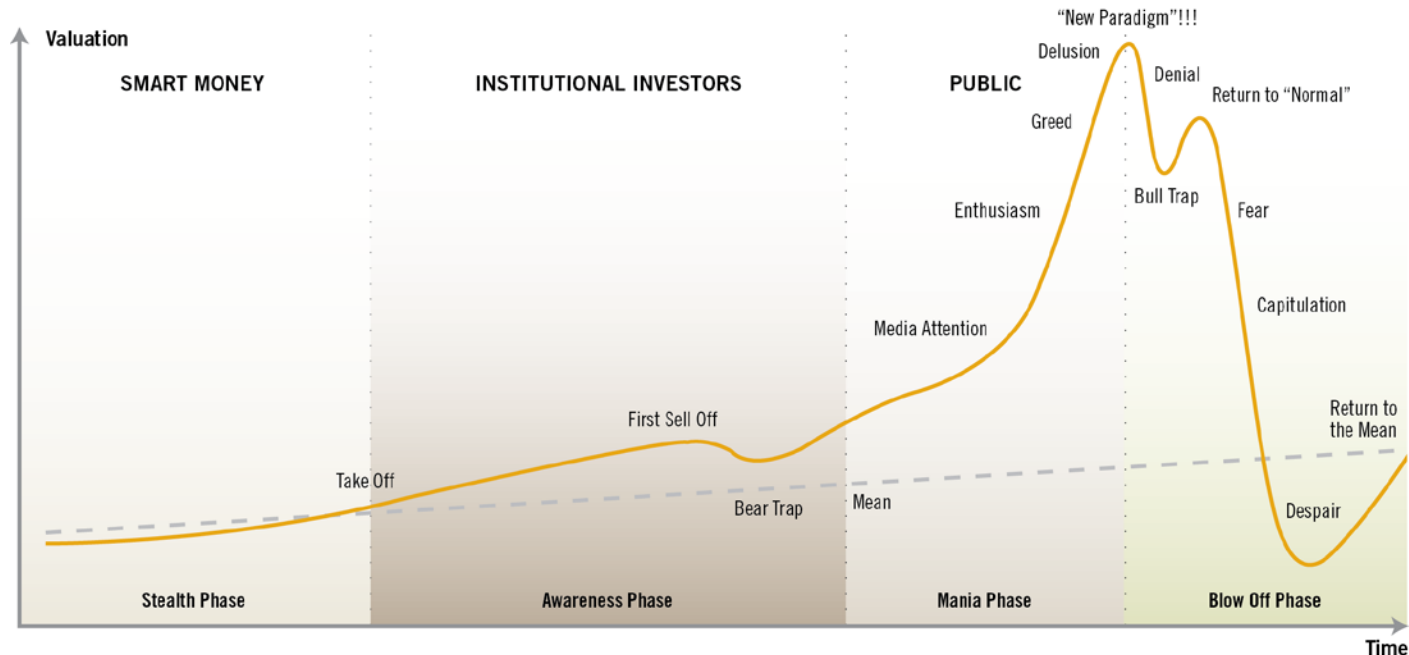
To no one's surprise, more than 90% chose number one: a certain win of US\$3,000.

When the offer was switched to losing money, however, the response was quite different. Again, participants were asked to choose one of three options:

1. A certain loss of US\$3,000
2. An 80% chance of losing US\$4,000 or a 20% chance of losing US\$0

In this case, almost 90% of people took the second option—that included the 20% chance of losing nothing—even though statistically, it was the riskier proposition.

Figure 2. How Bubbles Burst



Since 2008, the tendency toward loss aversion has been demonstrated by many investors' reluctance to invest in equities, instead preferring to remain in low-yielding savings vehicles that may even deliver a negative real return after inflation.

2 Anchoring: Holding Fast to the Past

Anchoring is the tendency to focus on an early decision as input for the future decision to the exclusion of other considerations.

Experiments conducted by Professor Ariely have demonstrated that once initial prices are established in people's minds, they shape not only the perception of current prices but also future prices.⁷ The sensitivity shown to price changes might be largely a result of memory for prices paid in the past and the desire for coherence with past decisions—not at all a reflection of true preferences or level of demand.

Capital markets reflect the tendency of investors to anchor to a given price. For example, a stock will typically trade for a while within a certain range, then trend up or down to a new anchor level and trade within that range for a length of time as investors adjust their expectations to the altered price. Overly sharp gains or losses often provoke discomfort as prices move outside the anchor range—one reason why investors are so distressed by volatility.

3 Herding: Our Tendency Is to Follow the Crowd

Herding is a normal, sometimes even advantageous, human behavior that is perfectly rational for certain situations, such as deciding whether to choose the empty restaurant or the full one for dinner; however, it can lead to serious investment mistakes.

6. Kahneman and Tversky, "Mental Accounting Matters," *Journal of Behavioral Decision Making*, 12: 183-206 (1999).

7. Dan Ariely, *Predictably Irrational*, p. 48.

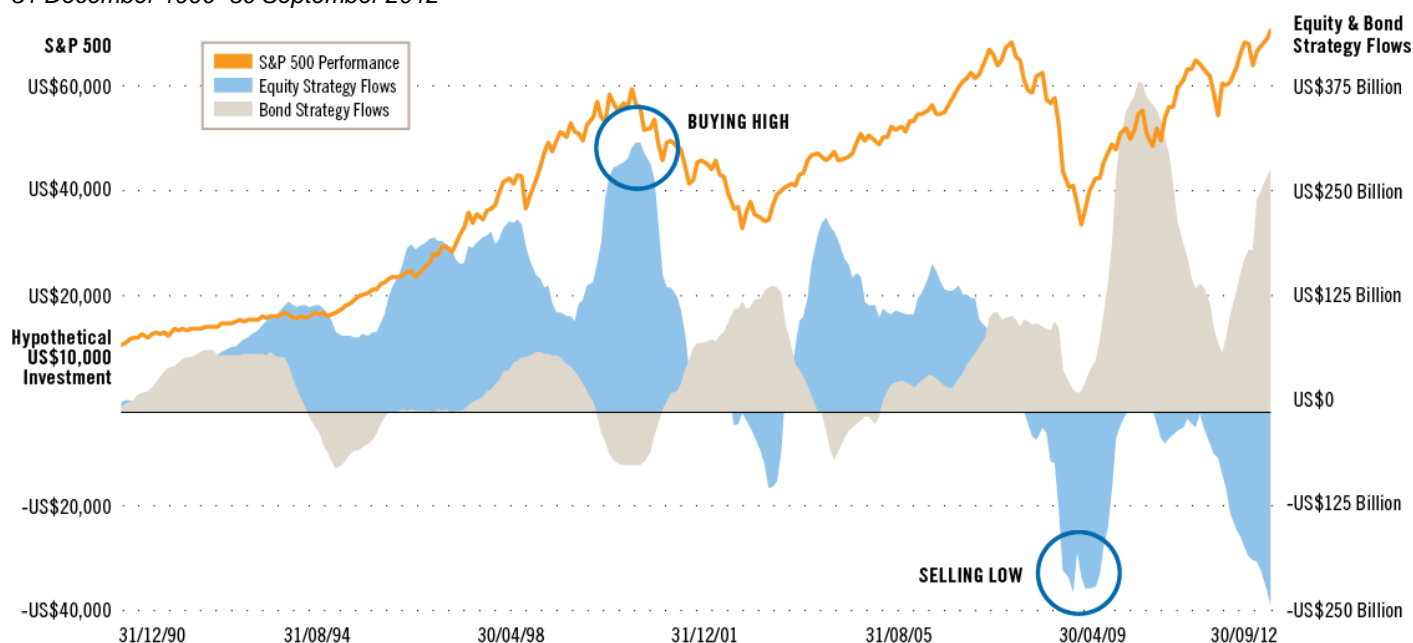
Herding can be a precursor to market bubbles. What begins as a natural inclination to participate in the growth path of a company has been known to end in tragic losses as the euphoria of explosive price increases causes investors to lose their sense of judgment.

Market swings are invariably tied to investors deciding to follow the crowd. One of the most famous modern examples of herding gone wrong was the dot-com phenomenon of 2000. While the significance of the Internet was real and enduring, many of the companies into which investors poured their money were neither. As one dubious enterprise after another disappeared or defaulted, the shares of established technology giants were carried along in the decline (Figure 2). Eventually the herd moved on, providing patient investors with a long-awaited opportunity to buy the surviving high-quality companies at bargain prices.

Historical examples of herd behavior in the markets are amply and entertainingly discussed in the book *Extraordinary Popular Delusions and the Madness of Crowds*.⁸ First published in 1841, author Charles Mackay traces the rise and fall of numerous bubbles and market scandals ranging from tulips to technology over more than 200 years.

Chart 2: The Problem of Going with the Flow

S&P 500 Performance vs. Equity and Bond Strategy Net New Flows
31 December 1990–30 September 2012



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8. Charles Mackay, *Extraordinary Popular Delusions and the Madness of Crowds*, fwd. by Andrew Tobias, originally pub. 1841, republished by Random House, Inc., July, 1995.

9. Daniel Kahneman: "Maps of Bounded Rationality: A Perspective on Intuitive Judgment and Choice," Princeton University, December 2002.

Arguably the most painful bubble experience for Americans in this century has been in real estate, with subprime mortgages the pin that burst the home ownership dream for many and triggered a global debt crisis that has yet to be completely resolved.

History has shown it is extremely difficult, if not impossible, to accurately time the market. Investors who take their cues from the herd tend to buy high and sell low, exactly the opposite of the strategy they should be following (Chart 2).

4 Availability Bias: Most Recent Is Most Relevant

Availability bias is the enabler of anchoring. Rather than analyzing all relevant information prior to making a decision, people prone to availability bias rely on whatever information is most easily recalled, which tends to be either recent or emotionally charged.

Availability bias can cause investors to overreact to market conditions, whether positive or negative. They may invest in a stock simply because it has been covered heavily by the media, or concentrate too large a proportion of their investments in a sector currently in favor.

A particular danger is the incomplete nature of individual memories. In the absence of full information, the brain tends to fill in the gaps on its own. This is known as *attribute substitution*: an impression of one attribute is mapped onto the scale of another, and the judge is normally unaware of the substitution.⁹

Highly complex judgments such as investment strategy suffer when information gaps force the brain to apply its own rules of thumb. Over the past four years, for example, the remembered pain of dramatic events and past losses has continued to color many investors' perceptions of the financial markets.

5 Mental Accounting: The Value of Money Varies with the Circumstances

The phrase "mental accounting" was coined by behavioral finance pioneer Richard Thaler to describe how people treat money differently depending on where it comes from, where it is kept, and how it is spent.

Many investors employ mental accounting in their portfolios by locking in certain assets for retirement, maintaining somewhat greater liquidity for controlled wealth accumulation, and allowing a relatively smaller portion of "play money" for high-risk/high-reward investments.

But this penchant for compartmentalizing can have a darker side. Investors may take unwarranted risks with their own money while being overly cautious with an inheritance. Instead of viewing tax refunds as part of income to be allotted to saving and investing, they may regard it as "found money" and use it to take a vacation.

FINDING THE BALANCE BETWEEN EMOTION AND REASON

The human mind is biologically incapable of complete objectivity. Because the amygdala and other areas of the limbic system work faster than the neural centers of logic and reason, every decision is a combination of emotion and reason. In that case, how can investors know the decisions they make are in their best interests?

Professor Ariely believes effective decision making is the result of individuals understanding their own biases and planning ahead. He urges everyone to seek advice from others, use technology to overcome inherent shortcomings and take time to reflect before making a decision. For professional investors, consciously resolving to think differently about investment decisions can lead to creative solutions that may further strengthen the quality of collaboration, analysis and strategy that mark any good investment team's decision-making process.

THE PLEASURE OF SOUND DECISIONS

Humans naturally seek pleasure over pain, and the decisions we make have a common purpose—to create pleasure or reward and avoid pain, loss and regret. Interestingly, the frontal part of the brain is linked to the pleasure and reward centers in the limbic system by way of the neurotransmitter dopamine. In helping to regulate movement as well as emotional response, dopamine enables us not only to see rewards but also how to move toward them.

Professor Ariely points out in the final pages of his book "...although irrationality is commonplace, it does not necessarily mean we are helpless." Through their experiments, psychologists working in the field of behavioral finance strive to slow down human behavior and examine it frame by frame. Armed with their insights, investors have the tools to leave past mistakes behind and make decisions that could ultimately prove rewarding.

WHAT ARE THE RISKS?

All investments involve risks, including possible loss of principal. Special risks are associated with foreign investing, including currency fluctuations, economic instability and political developments. While stocks have historically outperformed other asset classes over the long term, they tend to fluctuate more dramatically over the shorter term.

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