PIMCO

INVESTOR EDUCATION

# The Importance of Behavioral Guidance

Why managing our biases may lead to better investment outcomes

A company of Allianz

# Behavioral Science: An Overview

Classic economics assumes that investors are rational — that they incorporate available information to determine appropriate probabilities and to optimize their investing decisions.

**95%**

of the time, we use heuristics,[1] or mental shortcuts, such as a rule of thumb, an educated guess or intuitive judgment to make complex decisions.

But, what you may not realize is that **95% of the time, we use heuristics,[1]** or mental shortcuts, such as a rule of thumb (general guidelines say this is the right thing to do), an educated guess (this seems like the right thing to do) or intuitive judgment (it feels right) to solve problems and reach decisions without using up a lot of time and energy.

Diverse and expansive, behavioral science studies why humans often behave in ways that may not maximize our own well-being, such as making choices today that do not enhance our future happiness, or examining how seemingly arbitrary factors influence our decisions, beliefs, and attitudes.

While heuristics and intuition are often beneficial in our fast-paced world, they can also give rise to behavioral biases. These biases are unintended consequences of our decision-making shortcuts. Although these shortcuts enable us to act quickly and efficiently, they often come at the cost of accuracy and precision. As a result, we tend to make predictable errors due to these biases.

Especially when markets are volatile, we tend to lean more on these mental shortcuts to make decisions, which can lead to behavioral bias, errors, and less-than-ideal outcomes, especially when it comes to investing.

On the following pages, we highlight several common behavioral biases that can have a negative impact on how investors make financial decisions.

1 Ariely, Dan. (2008) Predictably Irrational: The Hidden Forces That Shape Our Decisions. Harper Collins.

**BEHAVIORAL SCIENCE IN ACTION**

PIMCO's deep commitment to behavioral science is embodied by our partnership with The Roman Family Center for Decision Research (CDR) at The University of Chicago Booth School of Business. Leaders in their field, CDR researchers are constantly engaged in studies investigating how people form judgments and make decisions. Many of these studies take place at the PIMCO Decision Research Laboratories – facilities on and off The University of Chicago campus that bring behavioral insights to the mainstream by fostering greater engagement with the public.

**Learn more at global.pimco.com/pimcolabs**

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PIMCO Decision Research Laboratories

# Behavioral Biases Common to Investors

## LOSS AVERSION

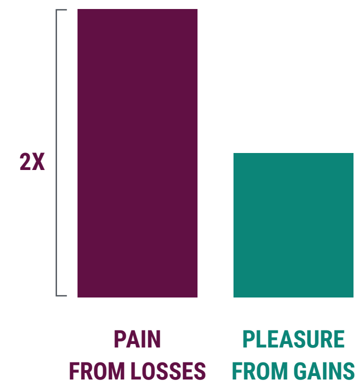
**What is it?**

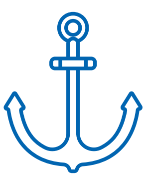
Loss aversion is an emotional and motivational bias in which investors typically feel the pain of loss more profoundly than the joy of an equivalent gain. Research has found that some investors need to “win” twice as much as they “lose” to be indifferent to taking risk.

**How loss aversion can impact investors:**

- Investing only in safe investments with low returns, potentially reducing future purchasing power
- Holding a stock below purchase price solely to avoid taking a loss
- The unwillingness to sell a home for less than it was purchased for
- Focusing only on positions that are underwater while ignoring total portfolio holdings
- Holding the belief that an investment loss doesn’t exist until it’s sold
- Selling winning positions instead of losing investments to avoid accepting defeat

**The pain of losses is twice as painful as the pleasure of gains**



## ANCHORING

**What is it?**

A cognitive bias, anchoring is the tendency to continue using information that has been used in past decisions despite the existence and availability of new and relevant data. As a result, investment decisions become difficult to reverse, even if the new information indicates that a change is advisable.

**How does anchoring impact investors?**

Investors may stick too closely to their original estimates when new information becomes available. For example, if an investor estimates next year’s earnings for a company to be $2 per share and the company experiences difficulties during the year, the investor may not adjust their original estimate to account for these challenges because they’re anchored by their original estimate.

## HINDSIGHT

**What is it?**

Hindsight is a common cognitive bias where investors perceive investment outcomes as if they were predictable – even if they were not. You may have heard friends or even yourself say “I knew it,” or “I could have predicted that.” We all need to be careful when evaluating how past events affect the current market and our own ability to predict.

**How does hindsight impact investors?**

Hindsight bias gives investors a false sense of security when making investment decisions, possibly leading to excessive risk-taking.

**Hindsight isn’t always 20/20**

Financial bubbles are always subject to substantial hindsight bias after they burst.

### RECENCY

**What is it?**

Recency bias is a cognitive bias that favors recent events over historic ones. It gives greater importance to the most recent events, such the closing argument a jury hears before being dismissed to deliberate.

**What are the effects on investors?**

Recency bias can skew investors into not accurately evaluating economic cycles, causing them to believe that rising markets will continue to gain or that declining markets will continue to fall. This can lead to portfolio allocations that may be inconsistent with an investor's risk tolerance and long-term financial goals.

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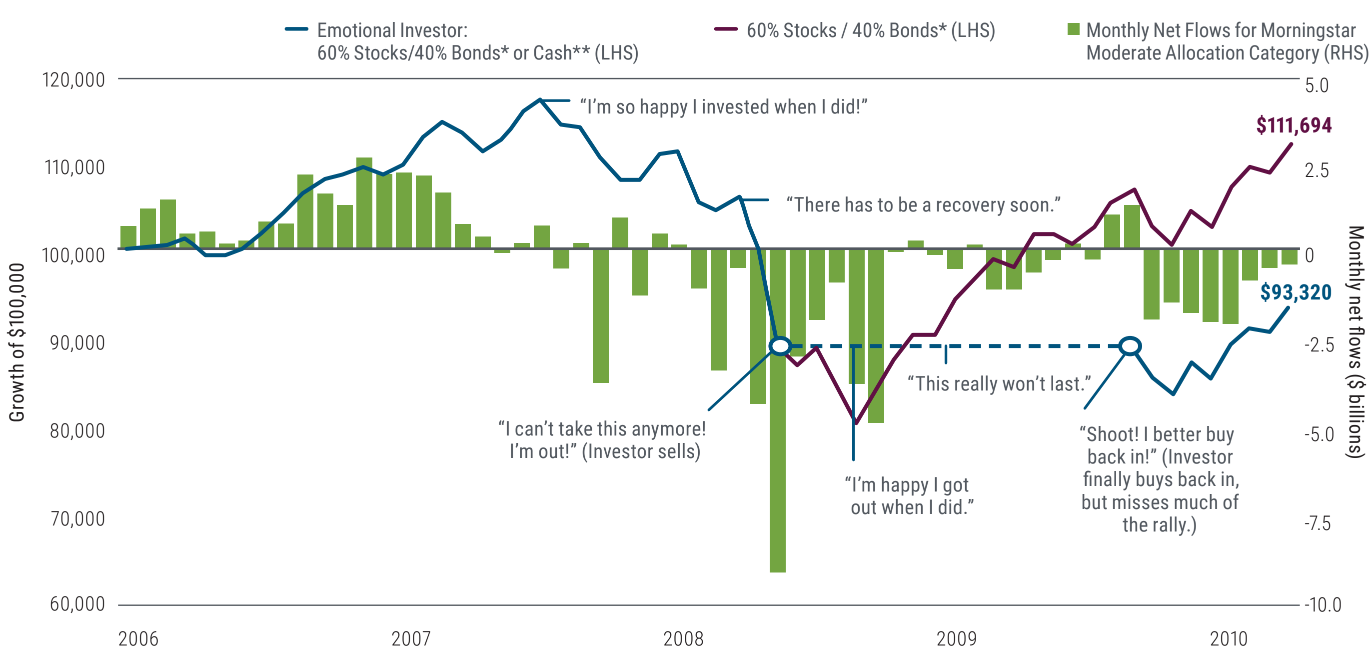
## Recency Bias in Context

In order for investors to help improve their individual investment outcomes, they need to improve the choices they make. Understanding biases in context can help all of us make better investment decisions.

Investors tend to make decisions based on recent trends instead of using longer-term information. In periods of market decline, we exhibit a tendency to reduce our exposure and add to portfolio holdings following periods of strong returns – behavior that may hinder our long-term performance and objectives.

**As this hypothetical example shows, when impulses take over, it's easy for investors to make suboptimal decisions, buying out of excitement when the market is going up (buying high) and selling out of fear when the market is falling (selling low).**

### Investor's Behavior and Thoughts During a Volatile Market (2006-2010)




January 2006 to December 2010. Source: Morningstar, Bloomberg, PIMCO. Past performance is not a guarantee or a reliable indicator of future results.

**Hypothetical performance for illustrative purposes only. Hypothetical performance is not based on actual results, has certain inherent limitations and should not be relied upon as the sole basis for making an investment decision. Investors should carefully review the appendix for additional, important information about hypothetical performance. Not indicative of the past or future performance of any PIMCO product.**

* Stocks are represented by S&P SOO Index. Bonds are represented by Bloomberg U.S. Aggregate Index. It is not possible to invest in an unmanaged index.

** These results are based on hypothetical modeling and are intended for illustrative purposes only. Emotional Investor is assured to move to cash on 10/31/2008 and back to 60% Stocks / 40% Bonds on 04/30/2010.

# Defining Some Biases

**ANCHORING: using irrelevant information as a reference for evaluating or estimating the unknown value of something**

Investors tend to cling to arbitrary price points when they decide to buy or sell a portfolio holding. This bias may prevent an investor from viewing investments holistically, because they are influenced by purchase price or an arbitrary price level.

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**RECENCY BIAS: short-term memories influence more than memories of things long ago**

Investors tend to more easily remember something that happened recently instead of something that may have occurred a while back. This means they're likely to believe that rising markets will continue to gain or that declining markets will continue to fall. That can lead to portfolio allocations that may be inconsistent with investors' risk tolerance and long-term financial goals.

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**FAMILIARITY BIAS: sticking with what you know**

Investors tend to stick with what they know, which can have a strong impact on what they buy. However, investing only in stocks that investors are familiar with may result in over allocations to certain companies, industries and countries; that can negatively impact portfolio diversification.

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**CONFIRMATION BIAS: interpreting new information as confirmation of something you already believe**

Humans have a tendency to search for, interpret, focus on and remember information that confirms our preconceptions. Investors might inadvertently look for information that supports their beliefs about an investment and fail to see information that presents different ideas. Having a one-sided view can lead to poor investment decisions.

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**OVERCONFIDENCE: overestimating or exaggerating your ability to successfully perform a given task**

Overconfident investors feel that they are better than others at picking the best stocks and times to enter or exit a position – a behavior that can lead to more frequent trades and market timing. That may result in lower returns.

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**LOSS AVERSION: feeling the pain of loss more than the joy of gains**

Investors typically feel the pain of loss more severely than they feel the joys associated with gains. This aversion to loss can cause investors to sell winning investments too early, hold losing investments too long, or possibly assume additional risk in an attempt to make up for potential losses.

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# Behavioral Finance: Moving Beyond the Biases

A basic understanding of behavioral finance can help you keep emotions in check, make better decisions and potentially improve your investment outcomes.

Partnering with a financial professional can help, too, as she or he can often develop a thoughtful strategy, provide continued advice to encourage discipline in investment choices.

## TIPS TO CONSIDER

In addition, consider some important tips that may help you overcome biases that can derail long-term financial goals and objectives:

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|---|---|
| **Define your objectives:** | If you have a plan, assess its limits by putting the objectives into words on paper and then engage in continuous questioning. Investors often don't recognize knowledge gaps until they verbalize their plans. |
| **Pay attention to red flags:** | When you see signs of overconfidence, such as rushed decision-making, swift and firm opinions, generalizing judgments, justifications, or speaking in absolutes, then it's time to pause and adopt more analytical and thoughtful strategies to make decisions. |
| **Acknowledge emotions:** | Impulsive decisions are often not the wisest. And emotions can motivate investors to react impulsively and cause future regrets. Whenever feasible, reserve important decisions for more calm, cool and collected moments. |
| **Consider the other side:** | To avoid having a one-sided view of an investment, examine how you handle contradictory information. If you dismiss it, rationalize it, or scrutinize it more than confirmatory data, then adopt a more balanced and methodical approach to gathering and evaluating evidence. |
| **Stay diversified:** | Portfolio diversification, in line with your return objectives and risk tolerance, can help mitigate portfolio volatility and can potentially produce more consistent and successful investment outcome. |
| **Rebalance regularly:** | Change can be good. Regular portfolio rebalancing instills a disciplined approach to decision making, forcing investors to take actions that may be emotionally uncomfortable, but often financially productive. |
| **Avoid relying on memory:** | Memory doesn't function like a tape recorder. So document your mental state by writing down your reasoning, evidence, and confidence level during decision-making. Review these notes later to counter the temptation of hindsight bias, preventing the illusion of "I knew it all along!" |
| **Check your assumptions:** | Continuously update your assumptions in response to new information as the world evolves. After making a decision, use the outcome as feedback by comparing it to your mindset at the time. Did the results align with your expectations? If not, it's crucial to revise your assumptions accordingly. |

The information presented here is based on what PIMCO believes to be generally accepted investment theory. It is for illustrative purposes only and may not be suitable for all investors. The information is not based on any particularized financial situation, or need, and is not intended to be, and should not be construed as, a forecast, research, investment advice or a recommendation for any specific PIMCO or other strategy, product or service. Individuals should consult with their own financial advisors to determine the most appropriate allocations for their financial situation, including their investment objectives, time frame, risk tolerance, savings and other investments. Investors should speak to their financial advisors regarding the investment mix that may be right for them based on their financial situation and investment objectives.

**Past performance is not a guarantee or a reliable indicator of future results.**

**All investments** contain risk and may lose value. Investing in the **bond market** is subject to risks, including market, interest rate, issuer, credit, inflation risk, and liquidity risk. The value of most bonds and bond strategies are impacted by changes in interest rates. Bonds and bond strategies with longer durations tend to be more sensitive and volatile than those with shorter durations; bond prices generally fall as interest rates rise, and low interest rate environments increase this risk. Reductions in bond counterparty capacity may contribute to decreased market liquidity and increased price volatility. Bond investments may be worth more or less than the original cost when redeemed. **Equities** may decline in value due to both real and perceived general market, economic and industry conditions. **Diversification** does not ensure against loss.

There is no guarantee that an investment strategy will work under all market conditions or are suitable for all investors and each investor should evaluate their ability to invest long-term, especially during periods of downturn in the market. Investors should consult their investment professional prior to making an investment decision.

HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM.

ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS. [1]

[1] THIS MAY INCLUDE THE IMPACT OF TRANSACTION COSTS, LACK OF LIQUIDITY, PRICE VOLATILITY IN THE MARKET AS A WHOLE OR FOR A PARTICULAR INVESTMENT, HOW PARTICULAR INVESTMENTS WITHIN A TRADING PROGRAM INTERACT WITH ONE ANOTHER, OR HOW A TRADING STRATEGY MAY BE ADJUSTED OVER TIME IN RESPONSE TO PERFORMANCE AND RISK METRICS ON A PER-INVESTMENT OR MACRO LEVEL.

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