

MITIGATING BEHAVIORAL BIAS WITH GOALS-BASED INVESTING

The Nobel Prize winning work of Daniel Kahneman, Amos Tversky, Richard Thaler and others show that people make decision errors due to biases of intuition.¹ These behavioral biases recur predictably in certain circumstances, leading to suboptimal outcomes.

Psychologists use a System 1/System 2 framework to describe how our minds work. System 1 employs intuition. It is fast, instinctual, and emotional. The mental processes of System 1 are rooted in survival and evolution. System 1 prefers simple, causal stories — whether they are true or not. Unfortunately, System 1 produces systematic errors, or behavioral biases that can be costly in the long run.

Fortunately, we can call upon System 2, which employs logic and reason. System 2 monitors System 1 and can override it, helping us overcome behavioral biases. But it takes hard work to process System 2 so we use it sparingly. Although we like to believe System 2 is who we are, System 1 is running the show most of the time.

People are not intuitive statisticians. We are good at thinking causally, associatively, and metaphorically — but not statistically, where we encounter too much going on at once. Problems arise when we do not acknowledge all of the uncertainty around us, underappreciating the role of chance. For example, investors face asset returns that display much randomness, and statistical thinking can help separate information from noise.

Our decision weights — the subjective probabilities we assign when making decisions — differ from true probabilities. We tend to ignore the statistical probabilities of events actually occurring (base rates) and overweigh the likelihood of improbable outcomes, whether those outcomes are good or bad. Instead of considering base rates, we prefer linear narratives.

Numerous documented behavioral biases produce systematic errors in judgment. We briefly describe several biases that can undermine long-term investment outcomes in particular. The **availability heuristic** describes how decisions are influenced by how easily examples come to mind. System 1 relies on information that is more recent, frequent, or dramatic. It explains why investors overweigh the information in recent returns (e.g., chasing the latest investment fads) instead of considering base rates.

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¹ Amos Tversky passed away before his research partner, Daniel Kahneman, received the Nobel Prize in Economics for their work.

Confirmation bias is the tendency to favor information that confirms pre-existing beliefs and to ignore contradictory evidence. In contrast, base rates incorporate all available information. **Conformity or herding bias** occurs when people make decisions based on what others are doing or thinking, disregarding both base rates and even their own analysis and beliefs. People are highly influenced by others — whether others are right or wrong — and this problem is likely exacerbated in our age of social media. It explains the groupthink that underpins prevailing investment narratives. **Anchoring bias** describes how people rely too heavily on the first piece of information (the anchor) when making decisions. It is difficult to move off the anchor (e.g., an arbitrary price level) even when more and better information becomes available.

Loss-aversion bias is the tendency to prefer avoiding losses over acquiring equivalent gains. It leads to more risk-averse behavior than would be expected from a rational investor who makes decisions using base rates. At the same time, **overconfidence bias** occurs because people tend to overestimate their abilities, knowledge, or control over outcomes. It leads to overly optimistic predictions and excessive risk taking. Behavioral finance has many such paradoxes. The key point is that all of these System 1 behavioral biases result in suboptimal decision-making that is costly in the long run.

How do we reconcile efficient markets theory (EMT) with behavioral biases? EMT proposes that investors are rational and market prices fully reflect all available information, so there should be no opportunities to earn risk-adjusted excess return (alpha). But do systematic biases create mispricing opportunities for rational investment managers to exploit? The overwhelming empirical evidence (base rates) strongly suggests the answer is no. In our research article "[Manager Performance and Persistence](#)," we evaluated the performance of fund returns going back to 1973 and found no statistically significant evidence of alpha net of fees.² The behavioral bias is believing you can earn alpha, which results from overconfidence bias and ignoring base rates. It is another paradox of behavioral finance that financial markets can be highly competitive while market participants can also make systematic errors.³

The financial media and Wall Street marketing machine feed System 1. Goals-based investing is a decision-making framework and investment process that engages System 2, while mitigating System 1 errors. A good goals-based investment process is built on goals and base rates. And it can even leverage certain behavioral biases for better outcomes.

Mental-accounting bias is the tendency to separate liabilities (goals) and assets into nonfungible groups, so we are already hardwired to think in terms of discrete financial goals and their corresponding goal-funding assets. A first principle of goals-based investing is that assets should serve a purpose: to fund lifetime goals (consumption, gifts, etc.). Therefore, the optimal investment strategy should incorporate both assets and goals.

The risk that matters to goal funding is not the day-to-day volatility that taunts System 1, but the more consequential risk of failing to achieve lifetime goals — goal-relative risk. **Framing bias** is the tendency to interpret information and events differently depending on how they are presented. When we frame risk as goal-relative risk instead of short-term volatility, we engage System 2 to make more rational decisions regarding risk. A well-constructed goals-based portfolio employs goal hedges to fully or partially secure goals with minimal goal-relative risk, directly mitigating loss-aversion bias.⁴

2 We found some evidence of gross alpha (before fees) but it was rare and did not reliably persist.

3 Mispricing opportunities are often only obvious in hindsight, after a price correction. Markets are highly competitive, so there is the risk that an investor's perception of mispricing could be wrong. Additionally, it may be too risky to exploit a perceived mispricing, which can continue to trend for a long time.

4 See our research article "[The Optimal Goal Hedge](#)."

There is an optimal investment strategy at the intersection of an individual's unique goals, assets, and risk preferences. When combined with base rates (such as long-term return and risk forecasts), these inputs feed a rational framework to make informed trade-offs, adaptations, and optimal investment and wealth-planning decisions over the course of a lifetime. With goals-based investing, we can mitigate System 1 errors and employ System 2 for better long-term wealth outcomes.

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