

Understanding Investor Behaviour: A Theoretical Perspective on Behavioural Finance in Modern Financial Markets

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Abstract

Behavioural finance, which is an offshoot of the development of financial economics, violates the conventional concept of investor rationality by adding concepts from psychology, cognitive science and behavioural economics to the analysis of financial decisions. This paper provides a theoretical overview of the development of the field of behavioural finance, from the conceptual beginnings of prospect theory and heuristic decision making, to its current interaction with neuro-finance and artificial intelligence. After summarizing the main cognitive and emotional biases reported in the literature, such as overconfidence, loss aversion, anchoring, herding, and mental accounting, the review investigates their expression in investment decisions, anomalies in asset prices, and other aspects of markets that do not seem to be addressed by classical efficient market theory. The article also examines the Adaptive Markets Hypothesis as a bridging theory between the rational and behavioural approaches, and reviews new research examining how AI-driven robo-advisors can benefit in combating, and sometimes unwittingly exacerbating, investor biases. The review finds that, in addition to being a critique of the classical school, behavioural finance is also an integrative discipline with direct and important implications for investment management, financial regulation and the design of technology-driven financial advice, and that some biases are more intractable than others, such as overconfidence.

Keywords: Behavioural finance, Investor psychology, Cognitive biases, Prospect theory, Robo-advisors, Market anomalies

1. Introduction

Until the latter part of the 20th century, financial theory was based on the assumption that investors were rational actors who receive a flow of information and make rational decisions that maximise their expected utility (Rubinstein, 2011). This assumption is central to many theories on which the foundations of finance are laid, including the Efficient Market Hypothesis and Modern Portfolio Theory, which assume markets are places where prices have instant and complete information. However, decades of empirical testing (bubbles, crashes, continuing discrepancies in asset returns and systematic investor mistakes) have revealed the weaknesses of this rational-actor assumption (Cannon Financial, 2024).

In response to this, behavioural finance was born, and it builds on the insights of cognitive psychology that investors are prone to systematic biases, which make their investment decisions less than optimal, and that these biases can be identified in financial markets and asset prices (Fu, 2022). The field has grown significantly since its inception in the 1980s; a recent four-decade bibliometric analysis of the behavioural finance literature demonstrated that the field has evolved from classical heuristics and prospect theory to a new merging with the fields of neurofinance and behavioural artificial intelligence, highlighting the field's methodological and technological sophistication (Kumari, 2024, as summarised in a recent bibliometric review).

This article provides a theoretical overview of behavioural finance, with the four underlying themes: the concept and theory of behavioural finance, the main cognitive and emotional biases found in the literature, the market-level implications of these cognitive and emotional biases on asset pricing and market efficiency, and the role of financial technology such as AI-driven robo-advisors in either exacerbating or mitigating investor biases.

2. Conceptual Foundations of Behavioural Finance

Behavioural finance is best viewed as an alternative to the classical assumption of the finance and asset-pricing theory that is *homo economicus* and has been prevalent for decades. In the classical finance theory, investors are assumed to process the information without systematic error, while in behavioural finance, it is acknowledged that real world investors have systematic deviations from rational information processing because of cognitive shortcuts, emotional reactions and social influences (Fu, 2022). Behavioural finance posits that many of these biases are systematic across investors, which means that the systematic nature of the biases may lead to their being embedded in market prices rather than being arbitrated away (Sundavadara & Sanghvi, 2024).

The separation has important implications for the modelling and regulation of markets. Otherwise, rational traders would be anticipated to take advantage of any mispricing they have created, restoring market efficiency. Behavioural finance, rather, shows that limitations on arbitrage, such as transaction costs, the absence of short sales, and the possibility that mispricing can extend or deepen before it is corrected, can make it possible for rational actors to not offset all of the effects of the widespread behavioural bias and allow anomalies to last for long periods of time. This insight is a crucial link between findings from the individual investor psychology and their market level implications and provides the explanation for the recent relevance of behavioural finance to regulators and risk managers as well as to individual investors and financial advisors.

It is based largely on evidence from cognitive and social psychology that holds that how people reason and make decisions under conditions of uncertainty or uncertainty of values depends on how they process information. The interdisciplinary nature of the study separates behavioural finance from the traditional approach of financial economics and has given it a platform to expand into other areas such as the study of the neurological activity that accompanies financial decision-making (neurofinance), and recently the study of investor psychology in AI-driven and algorithmically curated financial environments (Cognitive and Emotional Dynamics in Investment, 2024).

3. Theoretical Frameworks

3.1 Prospect Theory

Kahneman and Tversky's prospect theory is the leading theoretical principle of behavioural finance. It suggests that people consider the possible consequences in terms of gains and losses from some reference point rather than the wealth they will reach if each one occurs, as classical expected-utility theory does, and that losses are more strongly felt than equivalent gains, a phenomenon it described as loss aversion. This asymmetry gives rise to an S-shaped value function which is concave for gains and convex for losses, thus accounting for why investors are sometimes risk averse for gains, but risk seeking for losses. Recent implementations of prospect theory have established that endowment-related psychological and behavioral biases are significant factors in financial decision-making, both in the retail investment and institutional risk-management settings (SHS Web of Conferences, 2024).

3.2 Heuristics and Cognitive Biases

Behavioural finance lists several heuristics, or mental shortcuts, that enable people to make complicated decisions in a simpler manner but in a way that systematically distorts the results. These include representativeness (whether the situation looks like an event that is familiar, rather than whether there is any statistical likelihood), availability (overweighting information that is easily remembered) and anchoring (make a judgment and then simply rely on the first reference point). A systematic literature review of the research conducted in the field of behavioural finance has validated the existence of these heuristics as one of the most widely documented and replicated causes of investor mistake in developed and emerging markets (Sundavadara & Sanghvi, 2024).

3.3 The Adaptive Markets Hypothesis

The Adaptive Markets Hypothesis (AMH) reconciles the Efficient Market Hypothesis and behavioural finance by suggesting that market efficiency is a dynamic phenomenon that depends on competition, adaptation and the evolving mix of market participants, and that rather than relying on static rationality, it is based on principles from evolutionary biology. There has been a growing amount of empirical evidence supporting AMH as a framework that can explain the observed behavioural anomalies without impairing financial markets functioning in the long term, thus moving the rationality of investors from an assumption to a variable factor that may be different depending on the circumstances (Cognitive and Emotional Dynamics in Investment, 2024).

3.4 Neurofinance and Emotional Decision-Making

Neurofinance builds on behavioural finance by focusing the study of these relationships on the roles of emotions and cognition in financial decision-making, which includes using neuroimaging to investigate the relationships between emotions and cognition when making financial decisions and processing losses. This is a new line of research in the literature that builds on previous behavioural results by giving biological evidence for the emotional salience of losses compared with gains and one of the key areas where behavioural finance is developing further, according to the JEFAS Bibliometric Review 2025.

4. Key Behavioural Biases in Investment Decision-Making

Although there is a vast taxonomy of documented biases and biases come and go in the empirical literature, five categories appear again and again in the literature with clear implications for actual investment behaviour: overconfidence, loss aversion and regret aversion, herding, mental accounting, and anchoring and status quo bias. In fact, all of these biases have been found operating together, and sometimes in tandem, during market stress, when the avalanche of emotion could overwhelm investors' ability to engage in the type of analytical thinking that might otherwise stave off heuristic-based error.

4.1 Overconfidence and Overoptimism

One of the most widely studied investor biases is overconfidence; investors who overestimate their knowledge and their ability, and who tend to overtrade, underdiversify, and take on more risk (Cannon Financial, 2024). Based on the empirical study of the effect of overconfidence bias on the investment decision making of young investors, it was concluded that the overconfidence bias has a positive and significant effect on young investors' investment decision making, even though the investment competence is not high (Wijaya, Liangga & Sutejo, 2025).

4.2 Loss Aversion and Regret Aversion

Prospect theory has been formalized into the concept of loss aversion, which motivates investors to keep holding onto the losing positions for longer than would be rational because they want to not realize a loss, and to exit the winning positions prematurely to "lock in the gain" as described in many studies as the disposition effect. One focus of loss aversion is regret aversion in which investors refrain from taking actions that could be regretted even if they lead to lower future returns. Empirical research on investor decision making has shown that emotional biases have a significant impact on irrational investment outcomes for a wide range of investors (Ambarwati, 2025).

4.3 Herding Behaviour

Herding refers to the tendency of investors to follow the lead of others in their trading actions instead of using their own independent analysis, and can often exacerbate market movements, lead to bubbles and cause sudden market reversals. This bias is hypothesized to work in part through informational cascades, where investors assume that others have better information, and in part because of social and emotional pressures to conform, especially in times of greater market uncertainty.

4.4 Mental Accounting

Mental accounting describes the behavior of people to separate and act on money based on its source and purpose, instead of treating wealth as fungible, as classical theory does. This bias can result in investors making inconsistent risk decisions in each of their 'accounts' (e.g. windfall gains more risky than earned income) leading to portfolio-level choices that are inconsistent with what a fully rational, wealth-integrated investor might do.

4.5 Anchoring and Status Quo Bias

Anchoring bias makes investors overlook a previous reference point (like the price they paid for a stock) when considering new information and take a long time to adjust their portfolios accordingly. Likely relevant is status quo bias, which is the default behavior of preferring one's existing asset or decision over reallocating to a different asset when it would be objectively better to do so, and which has been demonstrated to be a powerful determinant of investment decision making, beyond just its simple presence (Ambarwati, 2025).

5. Market-Level Implications: Anomalies and Risk Management

Classical efficient-market theory is unable to account for a host of well documented asset price anomalies which have been linked to the aggregation of individual behavioural biases across market participants such as excess volatility, momentum and reversal effects, or periodic asset price bubbles that end in sharp corrections. In the context of sector-specific applications, like those of commercial banks in risk management, behavioural finance research has revealed that biases such as loss aversion and momentum trading have a significant impact on the risk behaviour of financial institutions, and are not limited to retail investors (SHS Web of Conferences, 2024).

Behavioural finance, from the risk management point of view, provides some practical examples of the systematic way in which risk perception tends to be biased, since investors do not necessarily evaluate risk based on the objective probability, but rather based on emotionally salient heuristics, such as recent experience or vivid and easily remembered events, generating risk perceptions that significantly deviate from statistical reality. The insights gained from these patterns can inform risk-disclosure practices, investor communication, and regulatory strategies for market stability, especially when uncertainty is high and herding and loss-aversion are likely to be most significant (DRPress Review, 2024).

6. Financial Technology and the Mitigation of Behavioural Bias

The advent of AI-powered robo-advisors has added a whole new variable to the study of behavioural finance as it asks whether AI-based financial advice can help investors mitigate the pitfalls of behavioural finance. There is mixed evidence on this issue, and it is bias-specific. Research on structural equation modelling of AI-powered financial robo-advisors shows that overconfidence and loss-aversion biases of retail investors are significantly reduced with the presence of perceived personalisation, interactivity, autonomy, and algorithm transparency, while financial literacy further weakens this relationship (Kulkarni, Patil, & Pramod, 2025).

Other research, however, warns of the dangers of hyperbole when referring to robo-advisors' debiasing effect. In an empirical study, researchers compared overconfidence and loss-aversion biases among investors who use robo-advisors and those who do not, revealing that overconfidence is significantly reduced by their use, but that there is no significant difference between those who use a robo-advisor and those who do not in terms of loss-aversion bias (Wijaya et al., 2025). Interestingly, the study on the moderating effect of robo-advisor use on Indonesian investors reveals that robo-advisor use sometimes

does not reduce the influence of behavioral biases on irrational investment decisions, except for loss aversion, which implies that the use of robo-advisors does not always correct investor psychology but can at times strengthen it (Ambarwati, 2025). The mixed results are also consistent with the broader academic debate on whether algorithmic financial advice is a true antidote to behavioural bias or if it simply shifts the bias from the investor to the design choices that go into the algorithmic financial advice (Kytölä & Valtanen, 2025).

7. Behavioural Finance and Financial Inclusion

In addition to investment decision-making in developed capital markets, behavioural finance has now been used to address and understand the study of financial inclusion and the impact of the cognitive and psychological dimensions on limiting access to formal financial systems. In a recent conceptual review that combines the behavioural finance and financial-inclusion literature, a framework is proposed that brings together behavioural factors, including present bias, limited financial literacy, and mistrust of formal institutions, with structural barriers to determine if individuals adopt and use financial products effectively (Behavioral Finance and Financial Inclusion, 2024). This model has significant policy implications: a policy of extending access, but not attempting to overcome the behavioural barriers that determine real use is likely to produce limited results. Conventional strategies for enhancing financial inclusion are access-oriented, and there are several reasons why interventions that explicitly address behaviour are identified as potential complements, including the possibility of reducing errors in financial decision-making and the fact that many financial-inclusion policies are designed to address positive behaviours, e.g. saving for education and retirement. Conventional financial-inclusion policies are access-oriented and there are several reasons why interventions that explicitly target behaviour are identified as potential complements: errors in financial decision-making could be reduced, and many financial-inclusion policies are designed to target positive behaviour such as saving for education and retirement.

That this is an example of behavioural finance beyond the context of trading and portfolio behaviour demonstrates the general scope of its conceptualisation: that the same psychology that can explain why sophisticated investors miss the market can explain why underserved populations aren't using available financial products, suggesting that behavioural finance isn't only a criticism of investor rationality, but a general framework for understanding financial decision-making under uncertainty across vastly different economic contexts.

8. Conclusion

The study of behavioural finance has evolved from the early rejection of the rational-actor assumptions of classical finance theory to a field that is now substantive and empirical, and that has been able to help articulate the investor's behavior, asset-price puzzles, and the dynamics of markets that cannot be captured by the classical rational-actor model. These accounts are supported by a well-developed theoretical framework, namely, prospect theory, heuristic-driven bias, and the Adaptive Markets Hypothesis, as well as by an emerging body of neurofinance research, which offers biological foundations for these psychological explanations. The practical relevance of behavioural finance, which has been growing more urgent as financial markets become more and more AI-mediated and algorithm-driven in their advice, has,

if anything, increased, as shown by the evidence presented here: AI-driven robo-advisors can effectively reduce some biases, like overconfidence, while less effectively reducing others, like loss aversion, and sometimes even exacerbating some of them. This indicates that the future of behavioural finance does not lie in the expectation that technological solutions can "fix" investor psychology, but in the thoughtful design of financial products, financial advisory systems and the regulatory environment that considers in a deliberate and deliberate manner the enduring and diverse ways in which investor psychology can influence financial decision making.

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