

Behavioural Biases in Retail Investment Decisions

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ABSTRACT

Retail investors do not consistently use rational or complete information processing to make their investment decisions. Behavioral biases (systematic errors in decision-making) have a significant impact on retail investor's decisions regarding security selection, portfolio design, trading frequencies, and risk-taking. This paper will examine how overconfidence, loss aversion, herding, anchoring, confirmation bias, and the disposition effect influence retail investor's decision-making process. The research method utilized for this paper was a qualitative literature review. Peer-reviewed literature reviews and foundational theories of behavioral finance were analyzed using thematic analysis. Thematic analysis focused on how each bias influences investment behaviors. The analysis suggests that overconfidence is linked to increased trading activity and unrealistic views of an individual's ability to perform well in the marketplace. Loss aversion may cause individuals to react negatively to a loss differently from a gain. The disposition effect may lead individuals to sell winning investments prematurely and hold on to losing investments longer than necessary. Herding occurs primarily when there is uncertainty about available information and/or when investors base their decisions on what other investors have done. Anchoring and confirmation bias may limit an individual's ability to objectively analyze incoming information. The paper concludes that although financial education may help reduce behavioral biases, it is likely that developing better decision-making processes, diversifying portfolios, establishing pre-commitment rules, and reflecting deliberately will be more effective ways of minimizing the negative impacts of behavioral biases. Due to the fact that this study was conducted using existing literature, the results should be considered a conceptual synthesis rather than estimates derived from a survey of investors.

Keywords: Behavioural finance; retail investors; overconfidence; loss aversion; herding behaviour; anchoring; investment decisions

INTRODUCTION

Traditional Finance typically assumes that all investors are rational; they will use all the information at hand to maximize their expected utility. Although this approach has been helpful in helping us understand how markets work, it does not explain why retail investors consistently exhibit similar types of behaviours. Retail investors often engage in excessive trading, have highly concentrated portfolios, react emotionally to loss, follow popular investment fads, or interpret information in a manner that supports their current beliefs. Behavioural finance attempts to address these shortcomings using both traditional financial theory and findings from psychology and decision science. Behavioural biases are not merely random errors. They represent a pattern of behavior that can impact how individuals perceive information, assess risk, evaluate potential profits or losses, and respond to uncertainty. Byrne and Brooks note that behavioural finance provides evidence against the notion that investors are consistently free from bias when processing information (Byrne & Brooks, 2008).

In addition to providing an alternative perspective regarding the relationship between an investor's psychological makeup and his/her investment decision making processes, behavioural finance directs our focus away from the "ideal" behavior of an investor and toward the actual behavior of an investor in his/her everyday decision making environment. Retail investors are particularly vulnerable to behavioural biases. Compared to large institutional investors, retail investors generally do not have access to as much professional research, they do not possess as much expertise in assessing the risks associated with their portfolios, nor do they typically have as many formal mechanisms for controlling their trading activities.

On the other hand, the advent of online brokerage services and social networking sites has made investing much easier to access than ever before and has facilitated the dissemination of opinions and market narratives at a rapid pace. As such, retail investors may be at a greater risk of making investment decisions based upon emotions, attention-driven trading, and social influences. This paper examines several of the primary behavioural biases affecting retail investment decisions.

Specifically, this paper examines six such biases: overconfidence, loss aversion, herding, anchoring, confirmation bias, and the disposition effect. The goal of this paper is not to suggest that retail investors will always make irrational investment decisions. Instead, it is intended to illustrate how various predictable psychological tendencies can affect an investor's otherwise typical investment decisions.

Finally, this paper identifies a potential area of future research and presents several practical implications for investors, educators, and financial service providers.

LITERATURE REVIEW

Behavioral finance provides an alternative perspective

Behavioral finance emerged at least partially due to the difficulty of explaining the behavior of both financial markets and individual investors using completely rational models. The core idea is not that financial markets are completely irrational. Rather, behavioral finance acknowledges that investors are often constrained by their own limited attention, their inability to process all available information efficiently, their emotions, and their inconsistent preferences.

As a result, investors are capable of making systematic deviations from what would be predicted by traditional financial theory. In a large-scale review of the literature on behavioral finance from the early 1970s up until 2016, Zahera and Bansal found that there were 17 different types of biases identified in the research. They noted that researchers have studied biases exhibited by individual investors, institutional investors, and financial advisers (Zahera & Bansal, 2018). More recently, a systematic review conducted by Badola, Sahu, and Adlakha analyzed 71 peer-reviewed articles published in the years 2007 through 2021. The authors identified 24 biases that influenced individual investor decision-making.

Furthermore, they created a framework for understanding how a bias's characteristics related to its behavioral consequences and market impact (Badola et al., 2024). Overall, these two reviews demonstrate that behavioral finance research has expanded beyond a limited number of anomalies to include a wide variety of cognitive and emotional factors influencing investor decision-making. There is also a larger body of theoretical literature that links investor sentiment to the formation of prices (Barberis et al., 1998), overreaction and momentum (De Bondt & Thaler, 1985; Hong & Stein, 1999), investor psychology (Daniel et al., 1998; Hirshleifer, 2001), and the limitations to arbitrage that could result in mispricing persisting (Shleifer & Vishny, 1997).

Additionally, there is a substantial amount of empirical evidence documenting excessive trading (Odean, 1999), reluctance to realize losses (Odean, 1998), and the disposition effect (Shefrin & Statman, 1985). Collectively, these contributions expand the scope of analysis beyond mere individual psychology to illustrate how biased decisions can impact market outcomes.

Prospect Theory and Loss Aversion

Prospect Theory is a major theoretical framework for analyzing the behavior of investors. Kahneman and Tversky argued that the way individuals perceive the value of outcomes (e.g., how much money an individual has) depends upon their current financial position rather than just their absolute level of financial well-being. Individuals tend to view gains and losses relative to some baseline or starting point (Kahneman & Tversky, 1979).

For example, if an investor bought a share of stock at \$100 per share, then any movement above \$100 per share would be viewed as a "gain" and any movement below \$100 per share would be viewed as a "loss". The authors' value function is concave for gains and convex for losses. They further note that the slope of the value function is greater for losses than for gains. In essence, a loss of a specific amount of money feels like a much larger loss than a gain of the exact same amount of money. The concept of loss aversion has many implications for retail investors. One implication is that retail investors may not invest in a potentially good opportunity if they have recently lost money on a similar type of investment. A second implication is that retail investors may liquidate a portion of their portfolio during a downturn in the market simply to eliminate the negative feelings associated with viewing their investments lose value. Kahneman and Tversky's Prospect Theory also implies that people tend to be risk averse when making decisions involving potential gains but risk seeking when attempting to recoup losses. As such, it is possible that this phenomenon contributes to the tendency of some investors to sell winning stocks rapidly and hold onto losing stocks in hopes that they will eventually return to their original cost.

Overconfidence and Excessive Trading

Overconfidence occurs when an individual investor overestimates their own knowledge, analytical ability, or ability to forecast future market events. Overconfidence can occur when an investor has too much confidence in the reliability of personal information. Investors who are overconfident tend to underestimate the risks associated with investing and tend to view themselves as having a superior decision making process than other investors in the same markets. An excellent example of overconfidence is illustrated through the research conducted by Barber and Odean. Barber and Odean studied over 35,000 household investment accounts during the period of 1991 to 1997. They found that men made 45% more trades than women during this time frame.

Additionally, men experienced a 2.65% reduction in annual net returns due to trading activity. Women experienced a 1.72% reduction in annual net returns due to trading activity (Barber & Odean, 2001). Barber and Odean interpreted these patterns as being consistent with overconfidence and excessive trading.

While Barber and Odean's research does not suggest that every male investor is overconfident nor does it indicate that gender alone determines investment performance; it does show how investor confidence-related behavior creates measurable costs. For retail investors, overconfidence may result in frequently purchasing and disposing of investments. Overconfidence may also result in under-diversification of a portfolio, excessive use of leverage and an inflated belief that short-term market fluctuations can be anticipated. Overconfidence may also result in investors attributing positive outcomes to skill and negatively attributing negative outcomes to either misfortune or outside influences.

Herding Behavior

In herding behavior, investors imitate the behavior of others instead of making decisions based upon their own research and/or opinion. There are many reasons why investors may choose to engage in herding. One possible reason is that investors have a reasonable expectation that others know something they do not; thus, they assume others have more knowledge than they do.

Another possible reason is that investors may be influenced by emotions or peer pressure (i.e., social influence), especially if they perceive that they will miss out on an opportunity if they do not participate in an activity with others. The most common types of retail investor herding include herding around popular stocks, themes, IPOs, or assets advertised on social media. The rise in price of an asset creates interest and attention. This attention encourages additional purchases of that same asset. Conversely, the decline in price of an asset creates concern and attention. This concern and attention leads to collective selling of that same asset.

Therefore, herding has the ability to amplify market momentum and create volatility. Literature also indicates that herding should not be viewed as one type of behavior. Investors may herd due to lack of complete information, fear of being seen as wrong, social pressure, or believing that other traders are better informed. Each of these reasons for herding requires a unique response. Increasing information flow may decrease the

amount of uncertainty related to herding, while redesigning trading platforms and providing incentives for users to post on social media may be more applicable when behavior is influenced by social pressure.

Anchoring and Confirmation Bias

Anchoring refers to the tendency for people to base judgments on an initial value (the anchor) and then make insufficient adjustments to the initial value as additional information becomes available. In the case of investment decisions, an investor could use the original cost of a stock, a past high point in the market, an analyst's target price, or even a "round number" level of the stock index as the anchor. Once the anchor is set, it is difficult to adjust sufficiently from the initial value even when there is new information. Anchoring can affect both buying and selling decisions. An investor might consider a stock to be "cheap" simply because the current price of the stock is lower than what it was during its prior peak.

However, if the firm's financial performance has declined significantly since that time, then it would not necessarily be considered cheap based on those factors.

On the other hand, an investor might refuse to sell a losing stock at all costs. The original purchase price has now turned into a psychological goal for recovering some portion of the loss. Confirmation Bias refers to the tendency for individuals to seek out, recall and assign greater importance to information that confirms their pre-existing belief systems. An investor who believes that a certain company will do well may only pay attention to the positive news and ignore any negative reports concerning the company's profitability. Online environments can exacerbate confirmation bias since users can choose to interact with communities and read content that supports their pre-existing opinions. Because of confirmation bias, investors are less likely to seriously examine other possible explanations prior to making a decision.

The disposition effect

It is an investor's tendency to hold onto investments which are losing money, as opposed to selling them; and conversely, to sell investments which are making money. This behavior is closely related to "loss aversion", "reference dependence" and an investor's desire to avoid feeling regret. An investor will often feel satisfied after selling a winning investment, and therefore will have a positive view of their investment skills.

On the other hand, if an investor sells a losing investment, they must accept responsibility for making a poor investment choice. Although this type of behavior can be detrimental to an investor's performance (i.e., by cutting short potential profits), it also creates inefficiencies in an investor's tax strategy and distorts how an investor rebalances their portfolio.

Therefore, the degree to which the disposition effect affects an investor's decision-making process depends upon many factors including the level of experience the investor has in investing, whether the current market environment supports this type of behavior, what tax consequences result from selling either winning or losing investments, and what long-term financial objectives an investor has for his/her portfolio.

Research Gap

The first gap in the existing literature is that while there is much evidence regarding the influence of individual biases on investment decision making, there is little research regarding how these biases interact. Biases do not typically operate in isolation when making decisions about investing.

For example, overconfidence can lead to increased trading activity; confirmation bias can protect an overconfident individual's beliefs; and herding can provide social validation for those beliefs.

Therefore, a study that examines only one type of bias may fail to capture the full scope of the decision-making processes of retail investors. The second gap in the existing literature is that the available data spans many different countries, investor groups, markets, and methodologies. As such, the findings from experienced investors in a developed equity market cannot necessarily be applied to new investors who use digital platforms

in emerging markets. Further comparative studies are needed to determine what aspects of investor behavior are universal and what aspects are specific to particular market environments based upon factors such as financial literacy, regulatory frameworks, cultural norms, and technological advancements. The third gap in the existing literature is that while there is considerable documentation of the presence of biases, there is very little information regarding how investors can mitigate the negative consequences of those biases through practical intervention.

While it is known that overconfidence and loss aversion exist, simply knowing this fact does not automatically alter behavior. Future research will need to explore whether various interventions (e.g., pre-commitment rules, automatic diversification, cooling off periods, suitability prompts, and structured financial education) contribute to long-term improvements in decision-making quality. This paper contributes to filling these gaps by providing an integrative conceptual framework. Rather than examining behavioral biases as distinct errors, this paper links the biases to each stage of the retail investment process: information searching, evaluating risks, selecting assets, executing trades, and reviewing portfolios.

Objectives

The objectives of this paper are:

1. To explain the meaning and relevance of behavioural biases in retail investment decisions.
2. To examine how overconfidence, loss aversion, herding, anchoring, confirmation bias, and the disposition effect influence investor behaviour.
3. To connect specific biases with common outcomes such as excessive trading, panic selling, under-diversification, and holding losses too long.
4. To synthesise established findings from behavioural-finance literature using a transparent secondary-research approach.
5. To identify practical and research implications for improving retail investment decision-making.

METHODOLOGY

This study adopts a **qualitative narrative literature review and conceptual synthesis** to examine how behavioural biases influence retail investment decisions. The study does not generate primary data through questionnaires, interviews, experiments, or transaction-level datasets. Instead, it synthesises established theoretical and empirical evidence from the behavioural-finance literature. Accordingly, the findings should be interpreted as a conceptual synthesis of existing evidence rather than as statistically estimated relationships for a specific investor population.

Review Approach and Source Identification

The literature search was structured around the six behavioural biases examined in this study: **overconfidence, loss aversion, herding, anchoring, confirmation bias, and the disposition effect**. The search strategy also incorporated broader terms relating to behavioural finance and retail investment decisions. The principal search terms included combinations of:

- “behavioural finance” OR “behavioral finance”
- “retail investor” OR “individual investor”
- “investment decision” OR “investment decisions”
- “overconfidence” AND “investment”

- “loss aversion” AND “investment”
- “herding” OR “herding behaviour” AND “investor”
- “anchoring” AND “investment decision”
- “confirmation bias” AND “investment”
- “disposition effect” AND “investor”
- “behavioral biases” AND “individual investment decisions”

The search was directed toward peer-reviewed journal articles, systematic literature reviews, foundational theoretical works, and established scholarly research that directly addressed investor behaviour or provided a theoretical basis for understanding behavioural biases. The reference base ultimately used in the review includes foundational contributions such as Kahneman and Tversky’s Prospect Theory, empirical studies on trading and disposition effects, and systematic reviews of behavioural biases, including Zahera and Bansal (2018) and Badola et al. (2024).

The review did not impose a single publication-year cut-off because the purpose was to combine **foundational theoretical contributions with subsequent empirical and review-based evidence**. Consequently, older seminal studies were retained where they established the theoretical or empirical basis for a particular behavioural bias, while more recent review literature was used to capture developments in the field. This approach is appropriate for a conceptual review in which historical theoretical development is relevant to understanding contemporary behavioural-finance findings.

Inclusion and Exclusion Criteria

Sources were considered eligible when they met one or more of the following criteria:

1. They developed or substantially contributed to a recognised behavioural-finance theory relevant to investor decision-making.
2. They provided empirical evidence concerning one or more of the six behavioural biases examined in this study.
3. They examined individual or retail investor behaviour in relation to investment decisions, trading, risk perception, asset selection, or portfolio management.
4. They constituted systematic or substantial literature reviews capable of synthesising findings across multiple studies.
5. They provided evidence that could be mapped to one or more stages of the retail investment process.

Sources were excluded when they were primarily unrelated to investor decision-making, did not provide a meaningful theoretical or empirical contribution to the six selected biases, duplicated evidence already represented in a more comprehensive source, or consisted primarily of unsupported commentary rather than scholarly research.

The final evidence base consisted of **peer-reviewed empirical studies, systematic literature reviews, theoretical contributions, and scholarly review material**. The principal sources used to establish the six behavioural themes and their documented consequences are identified in Table 1. The purpose of this table is to distinguish evidence reported in the existing literature from the conceptual relationships developed by the present study.

Table 1. Principal Sources and Evidence Extracted for the Six Behavioural Biases

Behavioural bias	Principal source(s) used	Evidence extracted from the literature
Overconfidence	Barber & Odean (2001); Odean (1999)	Overconfidence is associated with excessive trading and measurable trading-related costs. Barber and Odean examined more than 35,000 household investment accounts and reported substantially higher trading activity among male investors, with corresponding reductions in annual net returns.
Loss aversion	Kahneman & Tversky (1979); Odean (1998)	Losses tend to have greater psychological impact than equivalent gains. This evidence helps explain reluctance to realise losses and different responses to gains and losses.
Herding	Badola et al. (2024); Zahera & Bansal (2018)	Individual investors may imitate other investors under conditions of uncertainty, limited information, or social influence. The literature identifies herding as an important behavioural phenomenon affecting individual investment decisions.
Anchoring	Kahneman & Tversky (1979); Badola et al. (2024)	Investors may rely excessively on an initial reference point and make insufficient adjustments when new information becomes available. Purchase price and previous price levels can therefore influence subsequent judgements.
Confirmation bias	Badola et al. (2024); Daniel et al. (1998); Hirshleifer (2001)	Investors may give greater attention to information that is consistent with existing beliefs and insufficiently consider contradictory information, thereby contributing to persistent beliefs and delayed corrective action.
Disposition effect	Shefrin & Statman (1985); Odean (1998)	Investors may sell winning investments prematurely while retaining losing investments for longer periods. The phenomenon is closely related to loss aversion, reference dependence, and the desire to avoid regret.

Note: Table 1 identifies the principal evidence used in the thematic synthesis. The relationships among the six biases and the stages of the investment process represent the conceptual synthesis developed by the authors rather than a claim that every cited study tested all of these relationships simultaneously.

Screening and Selection Process

The source-selection process involved three sequential stages. First, potentially relevant scholarly sources were identified using combinations of the behavioural-finance, investor-behaviour, and six bias-specific search terms described above. Second, titles, abstracts, and where necessary the full texts were examined against the inclusion and exclusion criteria. Sources were retained when they made a direct contribution to understanding behavioural biases in investment decision-making or provided an important theoretical foundation for the analysis.

Third, the retained literature was examined for evidence relating to the **mechanism of each bias, investor behaviour associated with the bias, and its potential consequences for investment decisions**. Particular attention was given to evidence that could be consistently mapped across studies rather than to isolated or unsupported claims.

The final set of sources therefore represents a **purposively selected evidence base rather than a statistical sample of all publications in behavioural finance**. The selection prioritised seminal theoretical works, influential empirical studies, and systematic reviews that could provide either foundational evidence or broader synthesis. This approach is consistent with the study's designation as a narrative/conceptual review and avoids implying the comprehensiveness or quantitative reproducibility expected of a formal systematic review.

Data Extraction and Thematic Analysis

Because the study is literature-based, the “data” consist of findings, theoretical mechanisms, and documented behavioural patterns reported in the selected literature rather than observations collected directly from respondents. The analysis was conducted in three interconnected phases.

First, the selected sources were reviewed to identify the definition, theoretical mechanism, and principal behavioural consequence associated with each of the six biases. This stage established the conceptual boundaries of overconfidence, loss aversion, herding, anchoring, confirmation bias, and the disposition effect.

Second, the extracted evidence was organised according to the principal stages of the retail investment process identified in this study: **information searching, information processing and evaluation, risk perception, asset selection, trade execution, and portfolio monitoring**. This stage enabled the analysis to move beyond treating each bias as an isolated phenomenon and instead examine where different biases may become relevant during an investment decision.

Third, recurring findings were compared across the selected sources to identify common behavioural mechanisms, consequences, and potential interactions among the six biases. Particular attention was given to evidence concerning excessive trading, under-diversification, reactions to losses, social influence, persistence of existing beliefs, and decisions to realise or retain investments.

The thematic synthesis also distinguishes between **established findings reported in the literature and conceptual relationships proposed by this study**. For example, the association between overconfidence and excessive trading is supported by empirical evidence (Barber & Odean, 2001; Odean, 1999), whereas the proposed sequence through which herding, overconfidence, confirmation bias, anchoring, and loss aversion may interact across different stages of an investment decision represents the authors’ integrative conceptual synthesis of findings from multiple sources.

Conceptual Integration of Behavioural Biases

The literature was further examined to determine how the six biases may interact across the investment process rather than operate independently. The conceptual framework developed from the thematic synthesis follows the sequence of **information searching → information evaluation and risk perception → asset selection → trade execution → portfolio monitoring**.

Within this framework, herding may influence the information-searching stage by increasing reliance on social cues and market narratives. Overconfidence may influence the evaluation of information and the assessment of personal forecasting ability. Anchoring and confirmation bias may influence the interpretation and evaluation of subsequent information. Loss aversion may become particularly important when investors assess risk or experience adverse outcomes, while the disposition effect may influence decisions concerning whether to realise gains or continue holding losing investments.

These relationships are treated as **conceptual linkages derived from the reviewed literature rather than empirically tested causal pathways**. The framework therefore provides an organising structure for the thematic findings and identifies how multiple biases may potentially reinforce one another during a single investment episode.

Rigour, Scope and Limitations of the Review

Several steps were taken to improve the transparency of the review. The study specifies its search concepts, source-selection principles, inclusion and exclusion criteria, thematic categories, and evidence-extraction approach. The use of foundational theoretical works, empirical studies, and systematic reviews also enables comparison between theoretical propositions and documented investor behaviour.

Nevertheless, the methodology has limitations. As a narrative and conceptual synthesis rather than a formal systematic review or meta-analysis, it does not estimate the statistical magnitude of individual behavioural biases, test causal relationships, or calculate pooled effect sizes for any particular investor population. The selected literature may also be affected by publication, geographical, methodological, and contextual differences. Findings derived from different countries, investor groups, market environments, and research designs cannot automatically be assumed to have identical implications for all retail investors.

Accordingly, the conclusions of this study should be understood as a **thematic synthesis of established behavioural-finance evidence and an integrative conceptual interpretation of that evidence**. The practical implications suggested later in the paper should likewise be regarded as implications derived from the reviewed literature rather than as empirically validated interventions. Further primary research using longitudinal surveys, experimental designs, and transaction-level data would be required to test the proposed relationships and determine the effectiveness of specific strategies for mitigating behavioural biases.

Data Analysis and Results

Because the study is literature-based, the “data” consist of findings and concepts reported in the selected research rather than observations collected directly from respondents. The thematic analysis produced the following summary.

Behavioural bias	Main psychological mechanism	Likely retail-investor behaviour	Possible consequence
Overconfidence	Overestimating knowledge, skill, or predictive accuracy	Frequent trading and concentrated positions	Higher transaction costs and weaker risk control
Loss aversion	Feeling losses more strongly than equivalent gains	Avoiding necessary selling or reacting strongly to declines	Panic selling, risk-seeking recovery attempts, or poor rebalancing
Herding	Following others under uncertainty or social pressure	Buying popular assets or copying market narratives	Momentum, crowded trades, and greater volatility
Anchoring	Relying too heavily on an initial reference point	Focusing on purchase price or past price highs	Slow adjustment to new information
Confirmation bias	Preferring information that supports existing beliefs	Ignoring contradictory evidence	Persistent errors and delayed corrective action
Disposition effect	Realising gains while postponing recognition of losses	Selling winners too early and holding losers too long	Unbalanced portfolios and inefficient exits

For example, an investor reads positive online comments about a company before making a decision to purchase that company's stock. Herding could have contributed to the investor's initial decision to buy. Overconfidence may cause the investor to feel confident that the stock will increase in value. Confirmation bias may cause the investor to seek out additional evidence that confirms this belief. As long as the stock continues to increase in value, the investor will continue to receive positive feedback.

However, should the stock begin to fall in value, anchoring to the original purchase price and loss aversion may lead the investor to hold onto the stock instead of reevaluating its potential. This scenario demonstrates why a model explaining investor behavior using only one type of bias may be incomplete. A third finding is that the same type of bias may result in different forms of action depending upon the condition under which the bias is occurring. For example, loss aversion may cause an investor to avoid taking risks after experiencing a prior loss.

Loss aversion could potentially result in increased risk-taking for investors seeking to recover money lost through previous investments. Conversely, the tendency to follow the crowd may be a logical choice for investors who have reason to believe that other investors possess superior knowledge.

However, herd behavior may evolve into irrationality if an investor follows the crowd based solely upon what is popular.

Therefore, behavioral biases interact with the context of each investor's circumstances, which include but are not limited to the quality of the information available to the investor, the length of time over which the investor plans to hold their investment, and the amount of capital that the investor has at their disposal. The fourth area in which findings relate to performance, is the relationship between excessive trading and/or poor timing decisions and lower than average returns on investments.

However, the extent to which excessive trading and poor timing negatively impact returns varies significantly from study to study and from population to population.

Additionally, there is no evidence to support the extreme view that all biased decisions result in financial losses.

Although certain investors may experience positive consequences as a result of making timely decisions which appear to be emotionally-driven, there continues to be significant uncertainty about the outcome of investment decisions made within markets. A more reasonable conclusion would be that long-term and undiscovered biases can negatively affect decision-making quality, particularly where such biases lead to high transaction costs, inadequate diversification, or an inability to modify beliefs.

DISCUSSION

The research supports the idea that retail investment choices are influenced by both cognitive and emotional processes. Cognitive biases affect how investors interpret information; emotional biases affect how investors react to profit/loss, risk/uncertainty, and regret. There is no hard line between cognitive and emotional biases. Anchoring is a cognitive shortcut that becomes emotionally significant to the investor if the anchor is the investor's cost basis. Overconfidence is a cognitive mistake that is reinforced by ego/social validation. The research also suggests that while financial literacy is essential, it isn't enough. An investor may have knowledge of the definition of diversification and still be unwilling to sell a losing asset due to loss aversion. An investor may understand the risks of herding behavior and still purchase a "hot" asset because the fear of missing out is so intense. The problem is not simply a lack of information; it is also the challenge of consistently applying information under pressure. A viable solution would be to enhance the decision-making process instead of relying on willpower alone. Prior to executing a transaction, retail investors can establish an investment goal, time frame, and maximum loss threshold.

Additionally, retail investors can write down their rationale for purchasing a particular asset and compare their original rationale to subsequent data. By establishing pre-determined rebalancing rules, retail investors can limit the impact of short-term emotional responses to market fluctuations.

Additionally, position limits and diversification strategies can help minimize the negative consequences resulting from a single erroneous judgment. A cooling-off period prior to executing an exceptionally large or speculative transaction may provide an opportunity for reflection. Financial service providers can facilitate improved decision-making through clearer communication regarding risk, assessment of suitability, restrictions on impulsive trading and educational resources that explain uncertainty as opposed to promising quick gains. Digital platforms must exercise caution in transforming investing into a game in which fast-paced trading and peer-to-peer comparisons become rewards. The structure of the decision environment can either accentuate or diminish behavioral biases.

However, the discussion should refrain from classifying all retail investors as irrational in all circumstances. Adaptive shortcuts that conserve time/effort typically produce behavioral tendencies. When information is scarce, following other investors can be a logical course of action. When an investor's long-range analysis is still

accurate, retaining ownership of an asset throughout a temporary decline can be a sensible course of action. The primary consideration is whether the investor has a deliberate method for differentiating between a decision made with reasonable justification versus a decision driven primarily by an unexamined bias.

CONCLUSION

7. Conclusion This study aimed to identify the impacts of behavioral biases on retail investment decisions. A literature review identified several behavioral biases that significantly affect the ways individual investors seek out information about their investments, evaluate the risks associated with those investments, determine what types of securities or companies to invest in, trade those securities or companies, and evaluate the performance of their portfolios. The major finding of this study is that the various behavioral biases identified in the literature should be viewed as an interactive system of related errors that interact with one another to produce adverse outcomes for individuals when they are engaged in making investment decisions.

For instance, overconfidence can lead to excessive trading. Herding behavior can affect the initial investment decision. Confirmation bias can help an investor defend his/her investment decision from challenge through contradictory information. And finally, loss aversion and anchoring can hinder an investor from divesting him/herself of securities once the investment thesis has changed. When combined together, these biases can lead to costly trades, overly concentrated portfolios, extended delays in making investment decisions, and ultimately lost capital.

In addition to illustrating that knowing about behavioral finance will not automatically remove bias, this paper also illustrates that there are other methods that may provide greater defense against bias. Examples include creating structured decision rules, diversifying portfolios, documenting an investor's investment thesis in writing, regularly evaluating the investment thesis and portfolio performance, and considering the social and technological context in which investment decisions are made. Future research efforts should evaluate the effectiveness of different decision-making strategies developed to reduce bias among different groups of investors and within different market conditions using longitudinal survey methodology, experimental designs, and transaction-level data.

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