A Study of Investor Decision-Making Behavior Based on Behavioral Finance

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Abstract. This article endeavors to provide an in-depth exploration of the intricate factors influencing investor decision-making behavior, with a particular emphasis on cognitive biases, emotional heuristics, and social influences through the lens of behavioral finance. Synthesizing research from various scholars, this study elaborates on how investment decisions under these factors impact individual portfolio performance and the efficiency of financial markets. Specifically, the analysis examines how behavioral biases can lead to suboptimal decisions by individual investors, such as excessive trading and momentum investing. Furthermore, it investigates the macroeconomic implications of these biases, including their effects on market volatility and the formation of market bubbles. The findings of this research aim to enhance investors' understanding of the limitations inherent in their decision-making processes, thereby facilitating more informed investment strategies. In addition, this paper provides a theoretical framework for financial regulators to inform the development of policies that maintain market stability and protect investor interests.

Keywords: Behavioral Finance; Cognitive Biases; Emotional Biases; Investment Decision.

1 Introduction

In their pursuit of optimal portfolios across diverse investment landscapes, investors generally adopt a cautious and systematic approach, aiming to secure substantial profits within competitive markets [1]. In traditional financial theories, such as the Efficient Market Hypothesis [2], investors are assumed to be rational, risk-averse, and capable of making optimal decisions based on all available information. However, real-world investment behavior often deviates from these theoretical predictions. With the increasing complexity of financial markets, phenomena such as stock market crashes and bubble bursts have emerged. Smith et al. describe how Economic bubbles inflate when asset prices surge far beyond their intrinsic value, eventually triggering panic and a dramatic drop in demand [3]. This rapid deflation, known as a "crash" or "bubble burst," has occurred dozens of times in the past century, causing substantial financial losses for institutions and the broader market. Mirdala argues that Centralized

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institutions like banks and investment firms traditionally control finance, dictating transactions, account management, and monetary policy [4]. This often results in high fees, slow transactions, and restricted access. Consequently, investment decisions are vulnerable to investor biases, and the systemic risks inherent in this structure are evident in the widespread impact of major bank failures during financial crises.

To complement and correct investor behavior, behavioral finance elaborates on the different behaviors of investors in the financial realm, incorporating theories from disciplines such as psychology, cognitive science, and sociology to explain the irrational behavior of individual and institutional investors and its impact on financial markets [5]. Behavioral finance moves beyond the assumption that people are purely "economic beings," recognizing the inherent limitations in human cognition, emotions, and decision-making processes. It explores how people actually make financial decisions and how these decisions diverge from purely rational, theoretical models. The research field of behavioral finance is broad, covering multiple dimensions such as cognitive biases, emotional biases, and social elements.

The article is aimed at exploring the profound effect of investor behavior on introjection decisions in the financial domain, integrating multiple cognitive biases and emotional factors to construct a more comprehensive investor behavioral decision-making framework, thereby systematically analyzing the interactions between different biases and how they collectively influence investors' final decisions. At the same time, this paper will also explore how to apply the principles of behavioral finance to improve the quality of investment decisions, helping investors better achieve their financial goals. Through the study and application of behavioral finance, investors can better understand the market, avoid risks, and ultimately succeed in the complex and volatile financial markets. Finally, this paper will explore how behavioral finance can help build more robust and sustainable financial markets.

2 Research Content and Methods

2.1 Research on Cognitive Biases

Cognitive biases include recency bias: the most recently presented information in a set is the most prominent in memory formation [6], familiarity bias: investors allocate resources to a single type of venture capital instead of spanning numerous fields or speculation types [5], confirmation bias: seeking data that supports one's preconceived notions and beliefs [5], and so on. These biases distort investors' processing and judgment of information, leading to erroneous investment decisions.

Mohanty et al. employed a convenience sampling method to conduct a survey examining the influence of cognitive elements on investors' economic choices in India [1]. The sample size consisted of 200 participants, with the goal of understanding the various facets of "cognitive factors influencing investment choices." Four independent factors (mental accounting, herding behavior, anchoring, and framing effects) and one dependent variable (financial decisions) were taken into consideration following a thorough review of the body of research on cognitive biases and investors' monetary decisions. The validity of the model structure in relation to the data was assessed using

goodness of fitness, the research hypotheses were assessed using multivariate statistical techniques, specifically multiple regression and discriminant function analysis, were employed, and a matrix was created to assess their relationship to individual investment.

The results showed that most investors were male and invested monthly, and familiarity bias played a decisive role in the investors' financial decision-making process. At the same time, recency bias and confirmation bias also play an important role in the financial decision-making process. It is essential for investors to have financial literacy before making any financial decisions, which is critical to reduce the chances of being manipulated or deceived by third parties or affected by any external factors. The significance of cognitive biases is established by these findings. Consequently, logical financial judgments are not always made by investors.

Based on the experiment's findings, it's recommended that organizations conduct plants to empower hirelings to make sound monetary choices. Policymakers, in collaboration with these organizations, should implement targeted strategies to enhance financial literacy, mitigating the impact of preconceptions on investor psychology. Governments should also foster the establishment of reputable brokerage firms to educate individual investors. Ultimately, investors must recognize that a thorough understanding of capital markets and investment principles is essential for achieving profitable financial outcomes.

2.2 Research on Emotional Biases

Emotional biases include emotions such as fear, greed, regret, and pride, which can affect investors' risk preferences and trading behavior, leading them to make irrational choices.

Siratan et al. propose that various factors influence the decision-making process when investors make stock investment decisions [7]. One of these factors is risk tolerance, which refers to the willingness, desire, and preparedness of investors to take on risk when making investments. It can vary according to the conditions and circumstances faced by investors and involves psychological (emotional and cognitive) factors. However, based on the characteristics of investors, only investors themselves can understand and establish the limits of risk tolerance [8]. For example, Siratan et al. (2024) propose that this tendency is evident in stock investing, where investors often prioritize information from sources, they deem trustworthy, such as family, friends, relatives, reputable securities firms, social media influencers, or online forums [7]. Enticed by public fervor and overwhelmed by the rapid-fire information flow of social media during uncertain market conditions, they may rush into hasty decisions, seeking convenient shortcuts.

Moorthy et al. studied what factors influence employee job performance (JP) through psychological capital (PsyCap), proposing different questions to statistically correlate the connections [9]. The population studied was the total number of employees in Malaysia, non-probability sampling was used, and self-administered questionnaires were sent via email and social media platforms to collect data, allowing researchers to obtain quick and immediate responses. A preliminary investigation, constituting

10% to 20% of the anticipated final sample size, was undertaken to assess feasibility and refine methodological protocols, and then conclusions were statistically drawn through multiple linear regression.

The findings reveal a significant impact of emotions on the Psychological Capital (PsyCap) of Malaysian employees ($p < 0.05$). This suggests that emotions indeed influence individuals' thoughts, behaviors, and actions during decision-making and information processing. It reinforces the idea that individuals who can effectively understand their own emotions are better equipped to avoid job burnout. Furthermore, the ability to regulate personal emotions contributes to the psychological stability of others. Consequently, when employees collaborate effectively, their capacity to manage others' emotions positively impacts their PsyCap, enhancing their self-efficacy, optimism, hope, and workplace resilience, ultimately leading to improved job performance.

2.3 Research on Social Influence

Social factors, such as herd behavior and information cascades, can influence investors' decisions, causing them to blindly follow others and ignore their own independent judgment.

Another factor influencing investor behavior is social influence. Common social influences include herd behavior and information cascades. As Balcilar et al. pointed out, herd behavior stems from the impact of risk perception on stock returns. Many investors tend to follow the crowd or exhibit overconfidence bias when making investment decisions [10]. This conformity behavior stems from investors' low-risk propensity or risk aversion, as they hope to minimize the risk of financial losses [11]. During herding, originally rational people begin to rely on the judgment of others to make irrational behaviors. Almansour et al. propose that herd behavior tends to increase during periods of high market uncertainty and volatility [12]. This increased herd behavior amplifies the potential risks associated with investing, as investors are more likely to make decisions based on market sentiment rather than objective risk assessments. Zhao points to the "GameStop" event in the US stock market as an example. In a bid to challenge established investment firms, a collective of retail investors convened on the USB forum [13]. Spearheaded by financial analysts and early GameStop stock adopters, their almost frenzied demand for GameStop shares triggered unprecedented volatility, causing the US stock market to experience 17 trading halts. Eventually, regulators intervened to restore market stability. This event exemplifies the influence of herd behavior. For the USB retail investors, the big data-driven online platform amplified the narrative of "GameStop's stock price soaring and retail investors defeating institutions," fueling their enthusiasm. This praise emboldened them to blindly follow the "leader," driving up GameStop's share price. However, with a calmer approach, they might have recognized that the constant tug-of-war between long and short positions had significantly decoupled GameStop's stock price from its underlying value, making a correction inevitable. Regrettably, in today's digital landscape, where information reinforces herd mentality, they lost the capacity to independently assess their portfolios, ultimately suffering as the stock price plummeted back to $51.09.

3 Impact of Behavioral Biases

3.1 Impact on Individual Investors

Zhao proposes that the traditional Efficient Market Hypothesis assumes that individual investors possess absolute rationality, underpinned by perfectly symmetrical and transparent market information, enabling them to make fully rational investment decisions [13]. However, investors often find themselves trapped in information silos, hindering optimal decision-making. Consequently, the herding effect exerts a significant influence, leading investors to make flawed decisions such as "buying high and selling low" (chasing gains and cutting losses), and engaging in excessive trading, ultimately diminishing investment returns. Conversely, it can also encourage underestimation of risks or the assumption of excessive risk, such as over-investing in high-risk assets and blindly following market trends, thereby amplifying investment risks. Digital transformation exacerbates the "blind obedience" tendencies of individual investors and increases the likelihood of security prices deviating from their intrinsic value. From a securities analysis perspective, a primary objective is to identify securities whose prices diverge from their intrinsic value. This deviation is rooted in the expectations of the majority of market participants regarding that particular security. Digital transformation amplifies the influence of "leaders" within the herding effect, using information to incite action, causing investors lacking financial literacy and independent investment ideas to gravitate towards a select few "leaders" and mimic prevailing market trends. For retail investors, characterized by limited expertise and investment acumen, such anomalous and unstable pricing dynamics can significantly compromise the efficacy of their fundamental securities analysis, negatively impact personal financial planning, elevate financial risk, and hinder their ability to achieve financial independence.

3.2 Impact on Financial Markets

In addition to having a certain impact on individual investors, behavioral biases also pose non-negligible risks to financial markets. From a social impact perspective, the excessive influence of the herding effect on individual financial planning, leading to increased financial risk and difficulty in achieving financial freedom, can lead to increased market volatility and the formation of bubbles or crashes. From a cognitive bias perspective, behavioral biases can lead investors to have incorrect perceptions of the value of assets, leading to asset mispricing. In addition, behavioral biases such as excessive trading and information asymmetry can lead to increased market friction and reduced market efficiency.

4 Development Trends and Challenges of Behavioral Finance

4.1 As Research Deepens and Data Accumulates, Behavioral Finance Is Evolving Towards the Following Trends

Leveraging digital transformation's informational abundance, individual investor overconfidence may be either exacerbated or mitigated, dependent upon pre-existing cognitive biases and information processing strategies. This is determined by the investor's own information gathering and comprehension abilities [13]. It enables individual investors to conduct a holistic assessment of investment efficacy based on outcome bias, demonstrating that behavioral finance is continuously refining its theoretical framework, attempting to construct a more comprehensive framework to explain investor behavior. Furthermore, with the advancements in big data technology, behavioral finance researchers can obtain more data, enabling more in-depth empirical research, validating theoretical predictions, and discovering new behavioral patterns.

4.2 Despite Significant Progress, Behavioral Finance Still Faces Some Challenges

In the study by Moorthy et al., the sample data is still not complete: this study does not have a sampling framework because detailed information on all Malaysian citizens is confidential, and obtaining data pertaining to all employees presents significant logistical challenges in this city [9]. Gaining behavioral data from individual investors remains challenging, and the representativeness and reliability of the data require further validation. Consequently, differences in behavioral finance persist across different countries. Furthermore, due to the influence of cultural differences, behavioral biases may vary across different cultural backgrounds, necessitating cross-cultural research to enhance the universality of the theory. Finally, utilizing behavioral finance theory to design investment strategies may generate moral hazards, such as inducing investors to engage in irrational transactions to obtain undue benefits.

5 Conclusions

Based on the theoretical framework of behavioral finance, this paper provides an in-depth examination of the cognitive biases, emotional factors, and social influences that impact investor decision-making behavior. The findings suggest that investor decisions are not wholly rational and are subject to a multitude of influencing factors. These behavioral biases not only affect individual investor decisions but also have profound macroeconomic implications for financial markets. For example, the collective irrationality of investors can lead to speculative booms and busts, exacerbate market volatility, and impair market efficiency. Therefore, this paper emphasizes the importance of behavioral finance in understanding investor behavior and the operational mechanisms of financial markets. Recognizing and understanding the cognitive biases, emotional heuristics, and social influences embedded in one's own decision-making process is a

crucial step for investors to make rational investment choices. Looking forward, behavioral finance has the potential to extend beyond the study of investor decision-making behavior and be applied to other areas of finance, such as corporate finance, asset pricing, and risk management. Furthermore, future research could focus on developing more effective investor education programs to enhance investors' cognitive abilities and rational decision-making skills, thereby safeguarding their interests and fostering the long-term health and development of financial markets.

References

1. Mohanty, S., Patnaik, B.C.M., Satpathy, I., Sahoo, S.K.: Cognitive biases and financial decisions of potential investors during Covid-19: an exploration. Arab Gulf J. Sci. Res. 42(3), 836–851 (2024).
2. Bachelier, L.: Théorie de la spéculation. Ann. Sci. Éc. Norm. Supér. 3(17), 21–86 (1900).
3. Smith, N., Wilkinson, R., Kim, D.Y., Lech, M.: Stock market crash forecasting using an assembly of deep learning classifiers. In: 17th International Conference on Signal Processing and Communication Systems, pp. 1–10. IEEE, Surfers Paradise, Australia (2024).
4. Mirdala, R.: Revolutionizing finance: decentralized finance as a disruptive challenge to traditional finance. Theor. Pract. Res. Econ. Fields 15(3), 517–538 (2024).
5. Srivastav, S., Gupta, A.: AI application and psychological biases in behavior finance. In: 3rd International Conference on Computation, Automation and Knowledge Management, pp. 1–7. IEEE, Dubai (2022).
6. Luebbers, M.B., Tabrez, A., Talanki, K.S., Hayes, B.: Recency bias in task performance history affects perceptions of robot competence and trustworthiness. In: International Conference on Robotics and Automation, pp. 11274–11280. IEEE, Japan (2024).
7. Siratan, E.D., Tannia, Susilo, S.R., Dewi, A.C., Dozen, W.: The influence of behaviour finance and demographic factors on investment decision making through risk tolerance as mediation. Dinasti Int. J. Econ. Finance Account. (DIJEFA) 4(6), 807–815 (2024).
8. Asad, H., Toqeer, I., Mahmood, K.: A qualitative phenomenological exploration of social mood and investors' risk tolerance in an emerging economy. Qual. Res. Financ. Mark. 14(1), 189–211 (2022).
9. Moorthy, K., Juan, L.M., Kamarudin, A.A., Govindarajo, N.S., T'ing, L.C.: Emotional intelligence on job performance: a study on Malaysian employees. Work 76(3), 1145–1156 (2023).
10. Balcilar, M., Demirer, R., Hammoudeh, S.: Investor herds and regime-switching: evidence from Gulf Arab stock markets. J. Int. Financ. Mark. Inst. Money 23(1), 295–321 (2013).
11. Dickason, Z., Ferreira, S., McMillan, D.: Establishing a link between risk tolerance, investor personality and behavioural finance in South Africa. Cogent Econ. Finance 6(1), 1–13 (2018).
12. Almansour, B.Y., Elkrghli, S., Almansour, A.Y.: Behavioral finance factors and investment decisions: a mediating role of risk perception. Cogent Econ. Finance 11(2), 1–20 (2023).
13. Zhao, Z.: Research on the impact of digitalization on individual investors' behavior from the perspective of behavioral finance. In: Proceedings of the 7th International Conference on Economic Management and Green Development, pp. 146–154. Springer, Singapore (2024).

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