

Research on the Impact of Behavioral Finance in Investment Decision-making

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Abstract: Behavioral finance combines disciplines such as psychology, behavior, and sociology to reveal the irrational behavior of investors in the decision-making process and its impact on the financial market. This article explores the impact of behavioral finance on investment decisions from the perspectives of cognitive biases, emotional fluctuations, and market anomalies. Mainly using qualitative research methods, relying on the synthesis and analysis of existing literature and theoretical frameworks to draw conclusions and propose future research approaches. It analyzes key concepts such as overconfidence, anchoring effects, loss aversion, and psychological account theory, and points out the shortcomings and future directions of current research. Research has shown that investors' psychological biases and emotional fluctuations significantly affect their decision-making behavior, leading to market anomalies and price fluctuations. This article also explores the interactive relationship between financial literacy and behavioral finance, emphasizing the importance of improving financial literacy and correcting behavioral biases to promote stability and efficiency in financial markets.

Keywords: behavioral finance, investment decision-making, cognitive bias, emotional fluctuations, financial literacy

1. Introduction

Traditional finance, based on modern portfolio theory and efficient market hypothesis, believes that the market is efficient and all investors are rational. Behavioral finance combines disciplines such as finance, psychology, behavior, and sociology to reveal the irrational behavior and decision-making patterns of financial markets. Generally speaking, investors are a perfect calculator to absorb all the information contained in the market and make reasonable investment decisions and optimal decisions. But in practice, different things are manifested, that is, everyone has different perspectives when receiving information, leading to bias and irrationality in the investment decision-making process. [1] Specifically, cognitive biases and emotional fluctuations in the decision-making process of investors can significantly affect their risk preferences and investment behavior, leading to overreaction or underreaction in the financial market. An example of a preference hypothesis is that people dislike losses - a \$2 gain may make them feel better, and a \$1 loss may make them feel worse. [2]

This article aims to address the shortcomings of traditional finance and promote the development of financial theory by revealing the driving mechanisms behind investors' irrational behavior and exploring the impact of investors' emotional processes on investment decisions. Understand the

psychological biases of investors in the decision-making process, in order to gain a more comprehensive understanding of their irrational behavior and financial market dynamics, and explain abnormal phenomena in the market. In addition, financial regulatory authorities and market participants can better identify and correct irrational behavior in the market, thereby improving its overall efficiency.

2. Relevant Concepts and Theories

2.1. Overconfidence

Overconfidence is an important cognitive bias in behavioral finance, which refers to investors' overconfidence in their abilities, knowledge, and judgments, leading to irrational investment decisions. Research has shown that overconfidence is prevalent in investment behavior, particularly among male investors. For example, Barber and Odean's [2] study found that male investors trade more frequently due to overconfidence, but their investment returns are lower than those of female investors.

Overconfidence manifests in various forms, including frequent trading, insufficient diversification (such as overinvestment in familiar fields or company stocks), hindsight bias (believing that one can predict the outcome of events afterwards), and a preference for high-risk investments.

This deviation not only affects the decisions of individual investors, but also may lead to irrational behaviors of the market as a whole, such as asset price foam or excessive volatility. In addition, overconfidence is particularly prominent among entrepreneurs and professionals, such as Detroit's automotive industry employees or Silicon Valley engineers who may overinvest in assets related to their careers, thereby ignoring the importance of diversification. [2] Despite strong economic incentives that encourage people to accurately assess their own abilities, research in psychology and behavioral finance suggests that humans generally tend to overestimate their skills and predictive abilities, and this overconfidence may ultimately lead to investment failures or low market efficiency. [3]

Therefore, understanding and correcting the impact of overconfidence is of great significance for improving investment decisions and promoting market stability.

2.2. Anchoring Effect

Anchor bias was introduced by Tversky and Kahneman [4] in a pioneering study that reported judgments under uncertain conditions. It refers to the fact that people's thinking is often influenced by the first information they receive when making decisions, like an anchor sinking to the bottom of the sea, fixing your thinking in a certain place.

In general, the so-called anchoring effect refers to the tendency of people to rely on the initial reference point in their judgments of things, and cannot be fully adjusted. The anchoring effect indicates that even if the initial information is irrelevant or inaccurate to the decision, it still significantly affects people's judgment and behavior. For example, when shopping, merchants set anchor points by labeling "original price" and "current price" to make consumers feel that the current price is more cost-effective, thereby promoting purchases. Similarly, luxury stores reduce consumers' sensitivity to subsequent product prices by displaying high priced items. The terrifying aspect of the anchoring effect is that it silently changes people's judgment standards, causing decisions to deviate from rationality.

Therefore, identifying and avoiding the impact of anchoring effects is crucial for making more scientific and rational decisions. Realizing the existence of anchoring effects in investment and

consumption can help us reduce the possibility of being misled by initial information, thus making wiser choices.

2.3. Prospect Theory and Loss Aversion

The prospect theory proposed by Kahneman and Tversky [5] is an important theoretical cornerstone of loss aversion. This theory holds that individual decision-making is not based on the absolute value of wealth, but on changes in relative reference points. In the profit domain, individuals exhibit risk aversion; In the loss domain, individuals present risk seeking. The value function is steeper in the loss domain, where the negative utility brought by loss is 2 to 2.5 times the positive utility of equal returns, which intuitively reflects the loss aversion characteristic. For example, when investors face the same amount of profit and loss, the pain caused by the loss far outweighs the joy of the profit.

Loss aversion is a cognitive bias characterized by individuals feeling more pain from loss than pleasure from equivalent gains. This phenomenon is at the core of behavioral finance and has a significant impact on investor behavior and market dynamics. [6]

2.4. Psychological Account Theory and Representative Deviation

Psychological accounting is a system that people use to track their relative gains and losses to a reference point and feel rewarded or punished for it. It involves narrow frames, where people optimize placement in different psychological accounts. Investors occasionally recheck each account action. In psychological accounting, people care about marking expenses by account, even when accounts are completely interchangeable, as this can affect the attribution of gains or losses. [7]

According to Tversky and Kahneman, representative bias is a psychological shortcut defined as the tendency to irrationally attribute one feature to another. Shefrin [8] once again defined representative heuristics as relying on stereotypes used to form quick but irrational opinions.

2.5. Regret Theory

Bell [9] defined regret as the emotional response resulting from comparing actual outcomes with possible choices. For example, when consumers choose between familiar and unfamiliar brands, they often believe that choosing an unfamiliar brand may lead to greater regret, and therefore are more inclined to choose a familiar brand.

This theory of regret also applies to the psychology of investors in the stock market. Investors often avoid selling stocks that have already fallen when making decisions to prevent regret and discomfort in reporting losses due to investment failures. In addition, investors may be more inclined to buy "popular stocks of the week" or follow the "crowd" because if the investment fails, they can rationalize their choices by saying "everyone is losing money", thereby reducing regret or anxiety. This herd behavior not only reduces personal responsibility, but also helps investors accept the results more easily when their investments fail. [3]

2.6. Decision Theory

Hansen's [10] decision theory is a theory about decision-making that describes how a person makes decisions based on their own freedom. When making a decision, a person will face some options they must choose and consider one of them as a factor, which will lead to achieving the desired self-standard. It can be explained that decision theory is related to the behavior of achieving goals through various choices. There are two types of decision theory, one is normative decision theory

and the other is descriptive theory. Normative decision theory defines a decision-making theory that explains how decisions must be made using rational decision-making methods.

3. Research Status and Existing Gaps

3.1. Insufficient Research on Cross-cultural Behavioral Differences

Western scholars came up with the idea of behavioral finance, and most of the existing literature is based on data from Western markets. There isn't much systematic analysis of how investors behave in different cultural settings, especially in localized research on emerging markets like China and Southeast Asia. For example, the deep-rooted saving habits in Chinese traditional culture enable people to rely on savings to maintain their lives in the face of large-scale disasters (such as the New Champions epidemic), which reflects the more stable and secure lifestyle of eastern countries, and also makes Chinese investors generally show a conservative risk preference and strong loss aversion.

In contrast, Western countries started their financial economy earlier, and investors may be more accustomed to risk-taking. This cultural difference leads to significant differences in global attitudes and preferences regarding financial investment and decision-making. However, existing research lacks in-depth exploration of investor behavior biases and decision-making characteristics in cross-cultural contexts, and lacks systematic comparisons, making it difficult to fully understand the impact of behavioral finance on investment decisions on a global scale.

Therefore, future research needs to strengthen cross-cultural perspectives and conduct in-depth analysis of investor behavior under different cultural backgrounds, in order to more comprehensively reveal the universality and cultural specificity of behavioral finance.

3.2. Lack of Observation of Long-term Evolution Patterns of Investment Behavior

Current research mainly focuses on the analysis of short-term behavioral biases (such as overreaction, loss aversion, etc.), but lacks in-depth exploration of the evolutionary patterns of investor behavior in the long term. For example, with the increasing maturity of the market and the popularization of financial knowledge, whether the behavior of the younger generation of investors is becoming more rational, and how intergenerational cognitive differences affect investment decisions, these issues have not been fully studied.

In addition, the mechanism by which investor behavior patterns will self correct in the long term (such as through experience accumulation or educational improvement) and their dynamic changes is not yet clear. This research gap limits the ability to comprehensively understand investor behavior, especially the inability to reveal the evolutionary patterns of behavioral finance from a long-term perspective. Therefore, future research needs to strengthen its focus on long-term behavioral evolution, explore the impact of factors such as market maturity, intergenerational differences, and education on investor behavior, in order to more comprehensively reveal the dynamic characteristics of behavioral finance and its long-term impact on investment decisions.

4. Discussion

4.1. Important Findings and Research Results

In the field of financial markets, investors have common cognitive biases such as overconfidence, anchoring effects, representativeness bias, and regret theory. A large number of existing studies have experimentally or empirically proven that these psychological cognitive biases, to varying degrees, affect every investor in the financial field. And this precisely demonstrates that psychology

guides people's actions, and psychological concerns make it difficult for investors in the financial market to see the entire market operation and changes clearly, and make the most rational decisions, resulting in extreme investment decisions such as overconfidence and loss aversion.

On the other hand, investors are not cold robots. The daily emotional fluctuations also have a significant impact on their investment decisions, as the driving forces of happiness and depression often lead investors to make completely opposite investment decisions. For the market, when the market sentiment is extremely optimistic, investors may crazily chase after the rise, be optimistic about investment trends, and purchase a large number of financial products; When the market sentiment is extremely pessimistic, investors are likely to panic and sell, or even short sell.

Behavioral finance has indeed largely explained market anomalies that traditional finance cannot explain. It has stripped away the problems inherent in the market and focused on the underlying reasons behind investors' behavior, providing a more comprehensive explanation for the causes and consequences of financial market anomalies. Typical behavioral finance theories include momentum effect, value effect, and scale effect. These anomalies further indicate that the market is not entirely efficient, and investor behavior has a significant impact on asset prices.

4.2. Correlation Between the Financial Literacy and Behavioral Finance

In addition to psychological effects that can have a certain impact on investors' financial decisions, people's financial literacy also plays a significant role in their investment decisions

PACFL [11] describes financial literacy as the ability to effectively manage financial resources and achieve lifelong financial health by utilizing knowledge and skills. Financial literacy is an important component when considering wise investment decisions. Lusardi and Mitchell [12] revealed that demographic factors affecting financial literacy include gender, educational qualifications, marital status, retirement status, household income, age, and number of children. Research indicates that men possess greater financial knowledge compared to women in terms of socioeconomic factors (such as employment type and status, personal and household income), risk preferences, and investment characteristics (such as the number and framework of investment choices) [13]. Chen and Volpe [14] studied the lower levels of financial literacy among the general population, college students, and elderly people in the United States (USA). Low levels of financial literacy have a negative impact on investment decisions and lead to irrational investment decisions [15], while investors with higher financial literacy make better investment decisions. [16]

According to research discussions, the impact of financial literacy and behavioral finance on investment decisions is not isolated, but intertwined. Taken together, investors with high financial literacy are more likely to identify and correct cognitive biases, and they are able to realize the harm of overconfidence to investment decisions, thereby reducing frequent trading.

Secondly, investors with higher financial literacy are better able to manage their emotions and avoid making impulsive decisions during market fluctuations. Most importantly, investors with high financial literacy tend to maintain their ability to think independently, thereby reducing the impact of herd behavior. By combining the two, investors can develop more effective strategies, improve the scientific and effective nature of decision-making, and promote the stability and efficiency of financial markets.

4.3. Comparison of Different Cognitive Biases and Different Market Anomalies

Barber and Odean's [2] study found that overconfident investors trade more frequently but with lower returns. From this, it can be concluded that overconfidence leads to overtrading, increases transaction costs, and reduces investment returns.

Odean's study found that investors are more inclined to sell profitable stocks and hold loss making stocks. Thus, it can be concluded that loss aversion leads investors to lock in profits too early and hold loss making assets for too long.

Overconfidence and loss aversion can both lead to irrational investment decisions, but in different forms. Overconfidence tends to favor proactive behavior (such as frequent trading), while loss aversion tends to favor passive behavior (such as holding loss making assets).

The momentum was originally used in classical mechanics and defined as the product of mass and velocity. However, in recent years, it has also been widely applied in the financial field. In the financial field, momentum refers to the observed trend of asset prices further rising and continuously falling. Momentum is commonly used to describe the continuation of short-term stock price sequences, in which prices tend to move in the same direction over a specific time range of 3 to 12 months. [17]

Fama and French [18] found that stocks with low price to earnings ratios (P/E) and low price to book ratios (P/B) outperform stocks with high P/E and high price to book ratios in the long run. So, the effect supports the value investment strategy. In the scope of management, it usually refers to the value impact that an economic activity or project of a company brings to the company. This value impact may manifest as positive outcomes such as increasing the company's revenue, increasing profits, enhancing brand value, and expanding market share.

The momentum effect is more suitable for short-term investment strategies, while value effect is more suitable for long-term investment strategies. The momentum effect may be influenced by market sentiment, while the value effect may be affected by investors' cognitive biases (such as representativeness bias).

5. Conclusion

Behavioral finance addresses the shortcomings of traditional finance by revealing investors' psychological biases and emotional fluctuations, providing a new perspective for understanding irrational behavior in financial markets. Research has shown that cognitive biases (such as overconfidence, anchoring effects, and loss aversion) and emotional fluctuations significantly affect investment decisions, leading to market anomalies and price fluctuations.

Although behavioral finance has made significant progress in explaining market anomalies and optimizing investment strategies, existing empirical research relies heavily on historical market data, which may be influenced by specific market environments, time spans, or sample selection biases, limiting the generalizability of conclusions. Therefore, there are still research gaps, such as insufficient cross-cultural comparisons and a lack of long-term behavioral evolution research.

Future research should improve the systematic comparison of how investors behave in different cultural settings. It should also find out whether behavioral finance is universal or specific to certain cultures. Finally, it should use technological tools like big data, AI, and blockchain to really understand how investors' behavior changes over time. At the same time, future research should combine the theories of financial literacy and behavioral finance to explore the dynamic mechanisms of investor behavior, and improve the stability and efficiency of financial markets by strengthening investor education, optimizing financial product design, and implementing effective policy interventions, creating greater value for investors.

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