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Investors' Risk Aversion Preference from the Perspective of Behavioral Finance

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Abstract

Behavioral finance breaks through the limitations of the "rational man" assumption in traditional financial theory, providing a more realistic perspective to explain irrational behaviors in the market (such as "herd behavior" and "disposition effect") and abnormal phenomena like stock prices deviating from fundamentals. This discipline incorporates psychological factors such as cognitive biases and emotional fluctuations into its analytical framework, with investors' risk-averse preferences being particularly crucial. These preferences directly influence their risk-return trade-offs and, through the aggregation effect of individual decisions, profoundly shape market volatility and operational efficiency. This paper systematically reviews the relevant theories and empirical studies on investor risk aversion preference in the field of behavioral finance, exploring the topic from multiple dimensions: at the level of influencing factors, it analyzes the effects of individual cognitive biases, emotional states, and market environments on risk aversion preferences; it also examines in depth how risk aversion affects investment decisions and the resulting market anomalies; finally, it investigates the behavioral finance explanations for fluctuations in risk aversion preferences, interpreting investors' tendencies and changes in risk aversion from a behavioral finance perspective. The aim of this paper is to comprehensively analyze the significance and practical value of risk aversion preferences within the framework of behavioral finance, deepening the understanding of investors' decision-making logic, and providing practical references for investors to optimize asset allocation and improve decision-making rationality, as well as for market participants to more accurately grasp market operating rules and maintain market stability.

Keywords

behavioral finance, risk aversion preference, investment decision-making, market anomalies

1. Introduction

In the field of financial theory research, the "rational man" assumption of traditional financial theory and the Efficient Market Hypothesis (EMH) find it difficult to explain market anomalies such as the equity premium puzzle and the disposition effect, which has driven the emergence and development of behavioral finance. Existing studies have used prospect theory, mental accounting theory, and other theories to reveal differences in investors' risk attitudes, as well as the impact of factors like age, gender, and market volatility on risk aversion preferences. However, there are still shortcomings: insufficient exploration of the dynamic evolution mechanism of risk aversion preferences, and a lack of in-depth quantitative analysis on the connection between risk aversion preferences and market anomalies.

Theoretically, this study can improve the research framework for behavioral financial risk decision-making; practically, it can provide support for investors to optimize their decisions, financial institutions to design products, and regulatory authorities to maintain the stability of the global financial market. Therefore, with "Investors' Risk Aversion Preferences from the Perspective of Behavioral Finance" as the core theme, this study will sort out the theoretical basis around the logical framework of behavioral finance theory, analyze influencing factors, and explore the role of risk aversion preferences in investment decisions and their connection with market anomalies. Its objectives are to integrate existing research results to construct a systematic framework, identify the key influencing factors of global investors' risk aversion preferences and reveal their evolutionary laws, summarize the impact intensity of risk aversion preferences on investment decisions and market anomalies, and provide actionable suggestions for practice in the international financial field.

2. Theoretical Foundations

2.1 Prospect Theory

Prospect Theory, proposed by Kahneman and Tversky, is one of the core theories in behavioral finance (Kahneman and Tversky, 1979). The theory points out that when making decisions, investors do not base their judgments on the final level of wealth, but rather focus more on the changes in wealth-that is, the gains or losses relative to a reference point.

The value function exhibits an S-shaped characteristic: it is a concave function in the gain region, reflecting investors' risk aversion, while it is a convex function in the loss region, embodying investors' risk-seeking behavior. Furthermore, the slope of the loss region is steeper than that of the gain region, which indicates that investors are more sensitive to losses, and their degree of loss aversion is higher than their preference for gains. For instance, investors usually feel that the pain caused by a 100-yuan loss is far greater than the pleasure brought by a 100-yuan gain.

2.2 Mental Accounting Theory

Mental Accounting Theory, proposed by Thaler, holds that investors categorize their funds into different mental accounts based on factors such as the source of funds and purpose of use, and each account has distinct risk preferences and decision-making rules (Thaler, 1985). For example, people may regard daily savings as a low-risk account and adopt a relatively conservative approach when making investments; in contrast, they may classify windfalls into high-risk accounts and be more willing to engage in risky investments. This way of classifying and managing funds leads investors to make drastically different decisions when faced with investments that have the same risk-return characteristics, simply because these investments belong to different mental accounts.

2.3 Cognitive Bias Theory

In the process of processing information and making decisions, investors are prone to being influenced by various cognitive biases, such as overconfidence, representativeness bias, and anchoring effect.

Overconfidence leads investors to overestimate their own abilities and the accuracy of their judgments, which may result in excessive trading. Representativeness bias causes investors to make judgments based on the typical characteristics of things while ignoring base rates. Anchoring effect makes investors overly rely on initial information when making decisions.

These cognitive biases can interfere with investors' objective assessment of risks, thereby affecting their risk aversion preferences and investment decisions.

2.4 The Internal Connections of Behavioral Finance Theories

With "revising the 'fully rational man' assumption of traditional finance" as its core, the behavioral finance theory system forms a tight connection among various theories around the internal logic of "psychological

mechanism - individual behavior - market outcome," jointly constructing an interpretive framework for real-world financial decisions and market phenomena.

Among these theories, Prospect Theory serves as the core cornerstone of the entire system. The three core viewpoints it proposes - "reference point dependence," "loss aversion," and "diminishing sensitivity"-provide the underlying psychological basis for other branch theories. Whether it is the in-depth analysis of individual irrational cognitions (such as availability bias and anchoring bias) in Cognitive Bias Theory, or the interpretation of behavioral anomalies (such as the disposition effect and excessive trading) in Investor Behavior Theory, they are essentially the specific manifestations of the irrational psychology revealed by Prospect Theory in different decision-making scenarios. For instance, the behavior of investors in the disposition effect - "being unwilling to cut losses but eager to lock in gains"-is precisely caused by the asymmetric psychological perception of losses and gains under "loss aversion."

Collectively, these theories further point to the interpretation of macro-market anomalies: cognitive biases and irrational behaviors at the individual level converge in the market, giving rise to phenomena that are difficult to explain with traditional financial theories, such as the equity premium puzzle, herding effect, and disposition effect. For example, in the equity premium puzzle, due to "loss aversion," investors are extremely sensitive to potential losses caused by short-term stock fluctuations. Consequently, they demand a risk premium far higher than that of bonds to compensate for the psychological cost. The formation of the momentum effect, on the other hand, is closely related to anchoring bias-this bias leads investors to anchor on the previous price increases of stocks and continuously overestimate the upward trend.

Overall, with Prospect Theory as their logical starting point, various behavioral finance theories build a bridge from "micro-level psychology to individual behavior" through Cognitive Bias Theory and Investor Behavior Theory. Ultimately, they collectively complete the interpretation of macro-market anomalies, forming a complete theoretical loop from psychological mechanisms to market outcomes.

3. Definition of Concepts

3.1 Risk Aversion Preference

Risk Aversion Preference is a core concept in economics, finance, and decision theory that describes the risk attitude of decision-making entities. It refers to a stable behavioral tendency exhibited by decision-making entities (including individuals, enterprises, or social organizations) when facing choice scenarios with uncertain outcomes: When two decision-making options have equal expected returns (i.e., average returns calculated based on probability weighting), the decision-making entity will prioritize the option with a certain outcome over the one with the risk of return fluctuations. If the decision-making entity is required to accept an uncertain option with risks, the expected return of this option must be significantly higher than that of the certain option-with a "risk premium" (i.e., the difference in expected returns between the uncertain option and the certain option) used to compensate for the cost of bearing risks.

From the perspective of the theoretical core, the essence of risk aversion preference lies in the fact that the marginal sensitivity of decision-making entities to "losses" is higher than their marginal sensitivity to "gains of the same amount" (Kahneman and Tversky, 1979); in other words, it is an extension of risk attitude under the psychology of "loss aversion".

From the perspective of mathematical expression, risk aversion preference can be strictly defined through the concave characteristic of the utility function: the utility function of risk-averse individuals takes a concave form, which means that the marginal utility of gains decreases as the amount of gains increases. Therefore, "the utility brought by certain gains" is always higher than "the expected utility brought by uncertain gains with the same expected return" (Arrow, 1965, Pratt, 1964).

In research contexts, risk aversion preference serves as the core theoretical basis for explaining real-world economic behaviors such as the formation of insurance demand, the tendency toward low-risk asset allocation, and risk-compensated pricing. It is also a key variable for characterizing the heterogeneous risk attitudes of decision-making entities and analyzing the logic behind risk decision-making behaviors.

3.2 Risk Aversion Preference from the Perspective of Behavioral Finance

From the perspective of behavioral finance, risk aversion preference refers to a tendency of decision-making entities to favor certain gains when facing choice scenarios with uncertain outcomes, which is influenced by factors such as cognitive biases and emotions.

Behavioral finance holds that risk aversion is not fully rational; instead, it is affected by cognitive biases (e.g., the mental accounting effect and anchoring effect) and emotions. According to Kahneman and Tversky's Prospect Theory, people evaluate whether an outcome is a "gain" or a "loss" based on a subjective "reference point," and their psychological perception of losses is stronger than that of gains of the same amount-a phenomenon known as loss aversion. In the gain domain, people tend to be risk-averse, preferring certain small gains over uncertain large gains; in the loss domain, however, they tend to be risk-seeking, preferring uncertain large losses over certain small losses. For example, when options are framed in terms of gains, individuals are more likely to choose risk-averse options; when options are framed in terms of losses, they are more likely to choose risk-seeking options.

Therefore, from the perspective of behavioral finance, risk aversion preference is a dynamic concept influenced by a variety of psychological and situational factors. Different from the assumption of stable and unchanging risk aversion in traditional financial theory, it can better explain some "irrational" phenomena in real financial markets, such as the disposition effect and the equity premium puzzle.

4. The Influence of the Investors' Risk Aversion Preference

4.1 Individual Characteristics

4.1.1 Age

Age shows a significant correlation with risk aversion preference. Generally speaking, as age increases, investors' degree of risk aversion gradually rises. Young investors tend to have greater potential for future income growth and relatively stronger risk tolerance, so they are more inclined to engage in risky investments to pursue high returns. In contrast, elderly investors are either approaching retirement or already in retirement; with reduced sources of income, they pay more attention to the preservation of assets and thus have a higher degree of risk aversion. For example, a study by Yoo and Alavi found that for every 10-year increase in age, the investor's risk aversion coefficient rises by approximately 10% to 15% (Yoo and Alavi, 2005).

4.1.2 Gender

Gender differences also influence risk aversion preference. A large body of research shows that women usually exhibit higher risk aversion than men. Women tend to be more cautious in making investment decisions and more sensitive to risk perception, which may be related to the fact that women bear relatively less risk responsibility in social roles and attach greater importance to financial security. By analyzing stock trading data, Barber and Odean found that female investors have a lower trading frequency than male investors, and the risk level of their investment portfolios is also lower (Barber and Odean, 2001).

4.1.3 Wealth Level

The impact of wealth level on risk aversion preference is relatively complex. On one hand, investors with more accumulated wealth may have a relatively lower degree of risk aversion due to their stronger risk buffering capacity, and are more willing to attempt high-risk investments to pursue further appreciation of their assets. On the other hand, when wealth reaches a certain high level, investors may pay more attention to the stability and inheritance of their wealth, leading to a subsequent increase in their degree of risk aversion. Kumar's research points out that investors with a medium wealth level have a relatively lower degree of risk aversion, while investors with ultra-high net worth and low net worth have a higher degree of risk aversion (Kumar, 2009).

4.2 Market Environment

4.2.1 Market Volatility

When market volatility intensifies, investors face increased uncertainty, and their overall degree of risk aversion tends to rise. During periods of sharp stock market declines, investors' fear of losses is amplified, making them more inclined to sell risky assets and shift to safer assets such as bonds and cash. Baker and Wurgler's research found that for every 1 standard deviation increase in market volatility, the average investor's risk aversion coefficient rises by approximately 20%. This leads to capital outflows from the stock market, further exacerbating downward pressure on the market (Baker and Wurgler, 2006).

4.2.2 Economic Cycle

There are significant differences in investors' risk aversion preferences across different phases of the economic cycle. During the economic expansion phase, corporate profit prospects are promising, market confidence is sufficient, and investors' degree of risk aversion decreases-they are more willing to invest in risky assets to obtain higher returns. In contrast, during the economic recession phase, enterprises face operational difficulties, the unemployment rate rises, investors hold a pessimistic outlook on the future economy, their degree of risk aversion increases significantly, and their asset allocation tends to be conservative. Through empirical research, Campbell and Cochrane showed that the investors' risk aversion coefficient during economic recessions can be 30% to 50% higher than that during expansion phases (Campbell and Cochrane, 1999).

4.3 Information Factors

4.3.1 Information Asymmetry

Information asymmetry intensifies investors' risk perception and increases their degree of risk aversion. When investors struggle to obtain sufficient and accurate investment information, they cannot effectively evaluate the risks and returns of investment projects, and thus tend to adopt conservative strategies to avoid potential losses. For instance, in emerging industries or cross-border investments, due to low information transparency, investors exhibit a significantly higher degree of risk aversion toward investment projects compared to investments in mature markets with adequate information.

4.3.2 Information Overload

Information overload also affects investors' risk aversion preference. In the era of information explosion, investors are confronted with massive amounts of information, which increases the cost of screening and processing information, raises the difficulty of decision-making, and easily leads to anxiety and uncertainty-thus increasing their degree of risk aversion. For example, when faced with a large number of stock research reports and financial news, investors may be unable to effectively integrate the information and therefore tend to choose investment products that are lower in risk and more familiar to them.

5. The Impact of Risk Aversion Preference on Investment Decisions

5.1 Asset Allocation Choices

Investors with a high degree of risk aversion typically allocate a large proportion of their funds to low-risk assets with stable returns-such as government bonds and money market funds-in their asset allocation to ensure asset safety. In contrast, investors with a low degree of risk aversion are more inclined to allocate to high-risk, high-return assets-such as stocks and equity funds-to pursue rapid asset appreciation. For example, Markowitz's Modern Portfolio Theory states that investors will select the optimal asset portfolio on the efficient frontier based on their own risk aversion level to achieve a balance between risk and return (Markowitz, 1952).

5.2 Timing of Investment Decisions

Risk aversion preference influences investors' judgment of investment timing. During a market uptrend, investors with a low degree of risk aversion may enter the market relatively early and actively chase upward price movements; in contrast, investors with a high degree of risk aversion may adopt a wait-and-see attitude and only enter the market cautiously after the market trend becomes clearer. When the market is declining, investors with a high degree of risk aversion often exit the market first to avoid losses, while those with a low degree of risk aversion may see it as a bottom-fishing opportunity, continuing to hold their positions or even increasing their holdings. Gervais and Odean's research found that risk-averse investors adjust their portfolios on average 2 to 3 weeks in advance before market volatility intensifies, reducing their allocation to risky assets (Gervais and Odean, 2001).

5.3 Portfolio Diversification

Risk aversion drives investors to pursue portfolio diversification. By investing in a variety of assets with low correlation, investors can reduce the impact of fluctuations in a single asset on the overall portfolio and achieve risk diversification. The higher the degree of risk aversion, the more investors focus on the level of diversification of their portfolios. For instance, investors may allocate funds to stocks from different industries and regions, as well as different types of assets such as stocks and bonds, to lower the overall risk of their portfolios.

6. Market Anomalies Driven by Risk Aversion Preference

6.1 The Equity Premium Puzzle

Traditional financial theories struggle to explain the long-standing equity premium phenomenon in stock markets-specifically, the fact that stock returns are significantly higher than bond returns. From the perspective of behavioral finance, investors' risk aversion preference is one of the key contributing factors. Since investors are more sensitive to losses from risky assets, they demand a higher risk premium as compensation, which leads to stock expected returns being higher than those of bonds. For example, Mehra and Prescott pointed out that after accounting for the time-varying nature of investors' risk aversion coefficients, the equity premium puzzle is alleviated to a certain extent (Mehra and Prescott, 1985).

6.2 Herd Behavior

Investors' risk aversion preference can drive the emergence of herd behavior. When facing uncertainty, investors tend to follow the actions of the majority of investors in the market to reduce their own decision-making risks. The higher the degree of risk aversion, the more investors rely on group decisions, thereby forming herd behavior. For example, when market panic spreads, risk-averse investors rush to sell stocks, triggering a collective decline in stock prices and further strengthening the herd effect.

6.3 Disposition Effect

The disposition effect is manifested in investors' tendency to sell profitable stocks too early while holding onto losing stocks for an extended period. Risk aversion preference has strong explanatory power for this phenomenon. When investors are in a profitable position, to avoid the reversal of gains (i.e., profit give-back), their degree of risk aversion increases, leading them to choose to lock in profits promptly. When facing losses, due to their reluctance to accept the losses that have already occurred, their degree of risk aversion decreases, and they tend to continue holding the stocks in the hope of recovering the losses. Odean's analysis of a large amount of investors' trading data shows that the disposition effect is more pronounced among risk-averse investors (Odean, 1998).

7. Behavioral Finance Theory-Based Causes of Fluctuations in Risk Aversion Preference

From the perspective of existing domestic and international research, the causes explaining the changes in investors' risk aversion preference within the framework of behavioral finance theory can be summarized into three core mechanisms:

7.1 Cognitive Bias-Driven Mechanism

Cognitive biases exhibited by investors during information processing and decision-making directly alter their degree of risk aversion. For instance, overconfidence bias leads investors to overestimate the accuracy of their own judgments and underestimate investment risks during market uptrends, thereby reducing their level of risk aversion. In contrast, the anchoring effect causes investors to overly rely on initial market information (such as historical prices and policy signals); even when the market environment has changed, they still maintain a relatively high state of risk aversion during periods of volatility (Li, 2004). Meanwhile, Kumar's research also points out that representativeness bias can lead investors to regard short-term market trends as long-term laws (Kumar, 2009). When the market declines, investors significantly increase their risk aversion preference due to misjudging risks.

7.2 Emotion Fluctuation Transmission Mechanism

The "loss aversion" principle in prospect theory reveals that investors are far more emotionally sensitive to losses than to gains. When investment losses occur, negative emotions (such as anxiety and fear) are quickly transmitted to the risk decision-making process, significantly increasing the level of risk aversion. Conversely, during periods of market prosperity, investors' optimistic emotions weaken their perception of potential risks and reduce their degree of risk aversion. Mehra and Prescott verified this mechanism through research related to the equity premium, and Odean's analysis of the disposition effect further shows that emotion-driven changes in risk aversion directly affect investors' position-holding and trading decisions (Mehra and Prescott, 1985, Odean, 1998).

7.3 Interaction Mechanism Between External Environment and Individual Characteristics

The interaction between the external market environment (such as the economic cycle and market volatility) and investors' individual characteristics (such as age and wealth level) indirectly regulates risk aversion preference by altering investors' risk perception and risk-bearing capacity. For example, Campbell and Cochrane (1999) found that the decline in corporate profits and the rise in the unemployment rate during an economic recession strengthen investors' pessimistic expectations for the future. Meanwhile, research by Yoo and Alav shows that as age increases, risk-bearing capacity decreases (Yoo and Alavi, 2005). The superposition of these two factors (economic recession impacts and age-related capacity decline) significantly intensifies investors' risk aversion preference through the dual effects of "deteriorated expectations + weakened capacity". In addition, Baker and Wurgler's (2006) research on market volatility and investor sentiment also indicates that there is a positive feedback loop between a high-volatility environment and investors' risk aversion preference, which further amplifies the dynamic changes in preference.

8. Conclusions

From the perspective of behavioral finance, investors' risk aversion preference is influenced by multiple factors such as individual characteristics, market environment, and information factors, showing complex dynamic changes. This preference profoundly affects investors' decision-making behaviors, including asset allocation, investment timing selection, and portfolio construction. At the same time, it is closely related to anomalies in the financial market, such as the equity premium puzzle, herd behavior, and the disposition effect. Accurately understanding and measuring investors' risk aversion preferences is conducive to explaining the irrational behaviors of investors in the market and improving the effectiveness and rationality of investment decisions.

Future research can be expanded in the following directions: First, further deepen the research on the dynamic evolution mechanism of risk aversion preference, and combine technologies such as machine learning and big data analysis to track in real time the changes in investors' risk aversion degree and their driving factors. Second, strengthen the comparative research on investors' risk aversion preferences under cross-cultural backgrounds, and explore the differences in the impact of different cultural environments on investors' risk attitudes and decision-making behaviors. Third, combine the research on risk aversion preference with financial innovative products, and design financial products and investment strategies that are more in line with investors' risk preferences to meet diverse investment needs. Fourth, conduct research at the macro level on the impact of investors' risk aversion preference on financial market stability and the monetary policy transmission mechanism, to provide more forward-looking suggestions for financial supervision and policy formulation.

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