Relation Between Loss Aversion and Human Behavior

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Abstract: A cognitive bias known as loss aversion occurs when people would rather avoid losses than experience comparable gains; in other words, the psychological pain of losing is greater than the psychological pleasure of winning. This fundamental idea of prospect theory aids in the explanation of risk-averse decision-making behaviour. In general, loss aversion is a psychological phenomenon that refers to people's aversion to losses greater than their preference for gains of equal value. This paper reviews the conceptual history of loss aversion and discusses the existence of loss aversion and its significant impact on human investment behavior. Through experiments and case studies, it is revealed that individuals show different levels of disgust in different decision-making environments. The study also investigated the effects of self-protection mechanisms, gender, and age on loss aversion. Through the experiment of three experiments and measurement scale, it is proved that they do have a correlation effect on people's attitude of loss aversion. At last, it deals with the future research direction of the concept of loss aversion, hoping to provide better investment decision support for investors and not fall into the emotional trap of loss aversion.

1 INTRODUCTION

Loss aversion describes a psychological phenomenon in which an individual feels negative emotions when faced with a situation in which they may suffer a loss. These negative emotions outweighed the positive emotions they felt when faced with potential gains of equal value.

This concept plays an important role in the field of behavioral economics and decision theory, explaining why people tend to be cautious and risk-averse in the face of potential losses. This suggests that people tend to weigh losses more strongly than they do objectively equivalent gains. Given a $100 loss versus a $100 gain, people may value a $100 loss more than a $100 gain. In consumer behavior, they are sensitive to subtle changes in price, especially when the price rises, they will look for substitutes or reduce the amount of purchases. In investment activities, they are more inclined to choose low-risk investment products, even if the expected return of these products is not high. They are often reluctant to sell losing assets, but hold them in the hope that they will recover to their original purchase price to avoid real money losses. Their behavior tends to be overly conservative. So loss aversion has a significant effect on people's behavior.

Therefore, in-depth research on the causes and manifestations of loss aversion and its impact on investment decisions is of great significance for understanding market behavior and formulating effective investment strategies. The purpose of this study is to explore the specific impact of loss aversion on investment decisions, including the performance of people in different decisions, the impact of others on their decisions, and the impact of gender, age and other factors on loss aversion. Through these studies, this paper will reveal how loss aversion affects investors' risk appetite and investment strategy selection.

This study adopts the methods of questionnaire survey and data analysis interview. Firstly, the conceptual framework of loss aversion is sorted out through the review of relevant literature. Secondly, through questionnaire survey and analysis of previous experiments, including the experiment of measuring loss aversion, the experiment of the impact of loss aversion under the self-protection mechanism, and the case study of the Indian stock market. Through the above methods, the influence of loss aversion on investment decision is revealed, and corresponding suggestions and future research directions are put forward.

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2 THE HISTORY AND INFLUENCING FACTORS OF LOSS AVERSION

Since Thaler introduced it to decision theory in 1980, loss aversion has gradually become key to understanding human behavior. Kahneman's, Knetsch's, and Thaler's cup experiments, as well as Tversky's and Kahneman's in-depth studies, have confirmed the existence and impact of this phenomenon. It shows up not only in transactions, but also in consumers' sensitive reactions to price fluctuations, especially strong reactions to price increases. So what factors shape the loss aversion? Let's take a closer look at how reference dependency, emotional influence, and risk attitudes work together to shape the decision-making process.

2.1 A Brief History of Loss Aversion

Thaler was the first to extend the concept of loss aversion to risk-free decision-making, arguing that the valuation of gaining an item is much smaller than the valuation of losing the same item. Loss aversion is also used to explain the endowment effect. Kahneman, Knetsch, and Thaler's (1990) cup study provided more evidence for their research and linked it to loss aversion. Tversky and Kahneman (1991) reviewed the evidence and formally dealt with loss aversion. Since then, many studies have found loss aversion in trading (Kahneman & Tversky, 2013). In addition, loss aversion is also reflected in consumers' sensitivity to price changes. They react more strongly to rising prices than to falling prices. This effect applies even when people have never owned goods, such as choices in decision-making.

2.2 Influencing Factor

The influencing factors of loss aversion mainly involve the following three aspects:

Reference dependence: Loss aversion is closely related to an individual's reference point. Reference points are benchmarks against which individuals assess their gains and losses, most commonly their current state or desired state. When people face the phenomenon of "loss aversion", they are more inclined to give more weight to their losses, even if the losses and gains are objectively equivalent. At the same time, the evaluation of the decision will overemphasize the loss caused by the decision. If the reference point is identified as the current state of the individual, then any loss can cause the state to drop, triggering a stronger negative response. But if the reference point is taken as an individual's desired state, then the loss can be seen as a defeat for not meeting expectations and can also cause strong negative emotions. Loss aversion is therefore easily influenced by an individual's choice of reference point (Kahneman & Tversky, 1979).

Emotional impact: Losses often elicit strong negative emotional responses, such as fear and upset. Gains, on the other hand, cause less emotional upheaval. Regret is a negative, cognitively determined emotion that people experience when realizing or imagining that the present situation would have been better, had they acted differently (Zeelenberg 1996, p. 6） This emotional asymmetry is an important factor in loss aversion. It is psychological phenomenon where people would rather avoid a loss than gain an equal amount. When it comes to decision-making, people's strong emotional reactions to potential losses can lead individuals to make risk-averse decisions, potentially missing out on opportunities to gain. People who repeatedly experience loss can lead to changes in behavior, may become more conservative, and even begin to avoid situations where loss might occur (Loewenstein, 1996).

Risk attitude: Loss aversion affects an individual's attitude towards risk. In the face of losses, people tend to show higher risk aversion,fearing of losing money or other resources can lead people to make more conservative decisions. Therefore, they are reluctant to engage in activities that may lead to loss. In the face of returns, people may show a higher appetite for risk. The prospect of profit makes them more willing to take on additional risk, because the likelihood of a positive outcome may outweigh the fear of a negative outcome. This could lead to more risky and aggressive investment strategies. For example, when it comes to decision making, a loss-averse investor may avoid investments with larger moves, preferring safer and more stable investments. In terms of strategy, entrepreneurs may be more cautious when pursuing new ventures (Tversky & Kahneman, 1991).

3 THE INFLUENCE OF LOSS AVERSION ON INVESTMENT DECISION: A MULTIDIMENSIONAL ANALYSIS

Based on previous studies, how does loss aversion affect investors' risk appetite and how does this psychological tendency affect their investment decisions. Through literature review and empirical analysis by different experts, this paper attempts to reveal the specific impact of loss aversion on investment strategy selection. here are three aspects involved: (1)Analyze the performance of loss aversion in different decision-making environments by using different measurement methods, and analyze people's reaction to loss aversion in investment activities (Xing, 2023).

(2)Whether decision makers' risk appetite changes when others make decisions for them (Mengarelli et al., 2014).

(3)Take the Indian stock market as an example to study the impact of loss aversion on investment decisions (Kumar & Babu, 2018).

3.1 Behavioral Patterns of Loss Aversion and Their Impact on Investment Decisions

Schmidt et al. designed an experiment to measure loss aversion in a new dimension. The survey found that 51 percent of respondents showed strong loss aversion, which indicated that they had a positive view of loss. Emotions in this environment could cause them to be more inclined to avoid losses when making decisions, even if this might forego gains. Meanwhile, in 2005, Book and other organizations recruited 49 students to participate in an experiment to explore their behavior patterns in a real gambling game.Finally, the subjects' behavior reflected a clear preference for loss (Xing, 2023). This shows that loss aversion behaves differently in different decision-making environments, and people may exhibit stronger risk aversion behaviors when facing losses, which may affect their future investment decisions.

From the perspective of investors' participation in loss reaction： Thaler and other researchers first discovered the existence of Myopia Loss Aversion (MLA) in 1997 (Xing, 2023). The results of this experiment showed that when the evaluation period was short, the proportion of participants' investment in risky assets was lower, indicating that their aversion to short-term losses was higher. This study reveals that under certain conditions, people are more inclined to avoid short-term losses, and this behavior may have a profound impact on investment decisions, because they pay more attention to short-term losses and ignore the potential for long-term gains.

3.2 The Role of Moral Hazard and Loss Aversion in Decision Making

Earlier, an economist had proposed the concept of moral hazard. In a broad sense, moral hazard was described as a situation involving two parties, in which one party's interests were the responsibility of the other party, but the other party had an incentive to pursue its own interests (Mengarelli et al., 2014). While most people focused on their own choices and interests, in the real world, people often delegated their choices to others. So, what happened when someone else made the decision for the decision maker?

This experiment had two tasks: (1) The "self" condition: Subjects had to make choices for themselves, and their choices only affected their own payoffs. (2) The "other" condition: Subjects asked another unknown person to make a choice, and that person's choice only affected the outcome for that individual. The results of the experiment show that when the probability of high risk is high, there is a significant difference in the proportion of high risk choices in the "self" and "others" conditions. At low probability, there is no significant difference between the two conditions. This suggests that when subjects ask others to make economic decisions, they show a higher risk seeking tendency than when they make their own choices, and they are more willing to take risks in this situation (Mengarelli et al., 2014).

When the economic consequences of a decision involve others, it is perceived as less risky and loss aversion is minimized. Self-selected individuals (Self-selection is the process by which individuals make decisions based on their own judgment and preferences in the face of potential losses and gains.) have higher levels of loss aversion than others, perhaps they feel more remorse for their own choices than for the choices made by the other person. Therefore, the decisions of others are more rational than the risk assessment of individual decisions.

3.3 The Influence of Loss Aversion on Investment Decision and Market Stability Analysis

Thaler and Johnson (1990) pointed out that when people had experienced losses, they would become

more averse to future losses, and this attitude could lead to a state of paralysis in investment decisions (Kumar & Babu, 2018). This phenomenon became even more apparent during the financial crisis of 2008. The research results of Soosunghwang and Steve E. Satchel (2010) showed that investors participating in the financial market were seriously affected by loss aversion behavior, and the sensitivity of investment to loss aversion behavior varied across different periods (Kumar & Babu, 2018). It could be seen that investors were influenced by loss aversion when making decisions. Therefore, researcher collected data based on questionnaires and adopted sampling techniques to investigate Indian companies.

Table 1. Results of regression model fitness for loss aversion bias and investor risk perception.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error Of the Estimate
1	.581	.338	.332	.51366
a, Predictors:(Constant), LA				

The research treats investor decisions as dependent variables and loss aversion bias as independent variables. It is concluded that there is a positive correlation between loss aversion and investment behavior (Kumar & Babu, 2018) (See Table 1.).

Therefore, through the above three aspects of research, it can be confirmed that loss aversion is a key factor affecting investors' decision-making behavior. It not only affects the investment choices of individuals, but can also have a profound impact on the stability of financial markets.

4 GENDER, AGE, AND LOSS AVERSION: EXPERIMENTAL RESEARCH AND INVESTMENT APPLICATIONS

4.1 Self-Protection Mechanism and Loss Aversion

It is well-known that loss aversion is a cognitive bias that is well suited to solving problems related to survival, specifically protecting oneself from physical danger, the self-protection mechanism. So experimentally, how does self-protection affect gains and losses? What effect will this have on loss aversion?

Researcher set up three experiments to examine how loss aversion was affected by courtship and self-protection mechanisms. In experiments 1 and 2, the degree of loss aversion of male subjects was reduced under the stimulation of courtship motivation, while the degree of loss aversion of female subjects was not significantly affected. In experiment 3, the use of guided imagination exercises to motivate self-preservation, unlike the previous two experiments, resulted in both men and women becoming more loss-averse (Li et al., 2012).

This suggests that people are more inclined to value potential losses in the face of threats, and this behavior may have a profound impact on investment decisions, because it makes people pay more attention to short-term losses and ignore long-term gains.

Through these experiments, it can be concluded that there are gender differences in loss aversion in specific situations. In courtship situations, the degree of loss aversion may decrease in men, while the degree of loss aversion is relatively stable in women. However, both men and women become more loss-averse when faced with a threat. This gender difference has important implications for investment decisions, as it can lead people to be more conservative in the face of potential losses, thus missing out on opportunities for long-term gains.

4.2 Age and Sex and Loss Aversion

Hallahan, Faff and McKenzie (1999) found that gender and age can affect people's risk tolerance, which shows that age and gender variables are important reasons to explain investors' loss aversion tendency. It could be seen that age and gender variables were important factors in explaining investors' loss aversion tendency. Therefore, researcher used age and gender as exogenous variables and loss aversion and risk tolerance as endogenous variables. In the measurement, participants were asked to choose between lottery tickets that were uncertain of whether they would win or lose, so that accurate measurements could be achieved under controlled conditions (Arora & Kumari, 2015). Other researchers also examined the impact of age on loss aversion (Albert & Duffy, 2012).

It can be concluded that older participants show higher loss aversion than younger investors, and

women show higher loss aversion than men. So age and gender have an effect on loss aversion.

5 DISCUSSION

5.1 The Overall Conclusion of the Study

This paper defined the meaning and influence of loss aversion, and make it clear that loss aversion, as a psychological phenomenon, plays an important role in economics and decision theory. It explains why people tend to behave cautiously in the face of potential losses. Moreover, the influential factors of loss aversion mainly include reference dependence, emotional influence and risk attitude.

Through literature review by different experts and empirical analysis, this study reveals the specific impact of loss aversion on investment strategy selection, including the performance under different decision-making environments, the impact of others on decision making for decision makers and case studies of specific markets, as well as the relationship between gender and age and loss aversion.

5.2 Suggestion

Therefore, from the perspective of them should be aware of the impact of loss aversion on decision-making and understand the irrational psychological behaviors that may be caused by loss aversion.Through self-education and training, investors are helped to identify and overcome this psychological bias, laying the foundation for being able to make more rational decisions in the future.It also encourages investors to focus on long-term gains rather than short-term losses.Educate investors to understand the importance of long-term investment and reduce the excessive trading and frequent adjustment of decisions caused by loss aversion.

Financial institutions should design products with different risk levels to meet the needs of investors with different risk preferences. At the same time, the psychological support mechanism should be added to the product design to help investors better cope with the psychological pressure brought by market fluctuations.

Market policymakers should consider the impact of loss aversion on market stability and reduce the negative impact of market volatility on investor sentiment by strengthening regulation and guiding investment through policies.

5.3 Future Research Direction of Loss Aversion

In the context of emerging technologies, it is possible to explore how to use big data and artificial intelligence techniques to identify and manage loss aversion. Through technical data analysis, loss aversion related technologies are created to provide investors with personalized investment advice and emotion management tools.

In virtual reality technology, the simulation of investment environment and market fluctuation environment can study the loss aversion behavior of investors in the virtual investment environment, and provide a new method for investment education.

6 CONCLUSION

This paper explores the phenomenon of loss aversion in depth and reveals its profound influence on human behavior, especially investment decisions. As an important cognitive bias, loss aversion affects an individual's perception and response to potential losses and gains, often leading to risk aversion and over-conservative behavior.

Through multi-dimensional analysis, this study confirms that loss aversion has a significant impact on investment strategy. Investors show different levels of loss aversion in different decision-making environments, and short-term assessment often leads to higher loss aversion. In addition, the study found that individuals might show a different risk appetite when decisions are made on behalf of others, and are generally more willing to take risks in such situations. Moreover, case studies of the Indian stock market provide empirical evidence of the impact of loss aversion on investment decisions. Therefore, it is concluded that loss aversion is a key factor affecting economic and investment decisions. By recognizing the factors that influence loss aversion and exploring innovative solutions, investors and financial institutions can better navigate the complexity of the market and achieve more rational and profitable outcomes.

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