Impact of Regret Aversion and Disposition Effect On Investment Behavior: A Systematic Review

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Abstract. According to numerous empirical studies on financial markets, more investors exhibit "irrational behavior"in real investment activities, rather than behaving as rational investors. This universal phenomenon is direct evidence of regret aversion and disposition effect, two deep-seated psychological biases that synergistically influence investors. The article is based on domestic and international core journals, as well as a selection of doctoral dissertations with reference value since 2000, in accordance with systematic sorting. It makes a comment about regret aversion and disposition effect, which influence investors' decisions. On this basis, this article provides a framework to sort out the framework about the difference between regret aversion and disposition effect a framework for investors' individual level as well as group level combined with irrational factors, giving intervention and correction methods after fully understanding how regret aversion and disposition effect influence investors' decisions. What's more, it offers research direction, thinking, and inspiration about regret aversion and disposition effect in the future.

Keywords: Regret Aversion; Disposition Effect; Behavioral Finance; Investment Decision-Making; Irrational Behavior.

1 Introduction

According to tons of empirical studies about the financial market, more investors express "irrational behavior" in real investment activities, and that "irrational behavior "causes people's decisions to systematically depart from the standard finance theory predicted result [1]. Kahneman and Tversky found that most investors do not always avoid risks like rational investors in behavioral finance, but with the change of wealth(or benefit) through the comparison experiment in 1992 [1]. The irrational behavior of investors also reveals that investors exhibit cognitive bias, including regret aversion and disposition effect, and furthermore, in their decision-making [2]. At present, the majority of research achievements are based on unilateral research about regret aversion and disposition effect, but numerous scholars fail to systematically review the relevant literature of the two at the same time. In this regard, existing reviews cannot sufficiently answer: how regret aversion and disposition effect influence investors' decisions, and what steps investors should take to reduce relevant influences.

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Regret aversion, specifically speaking, "regret "means the individual stubbornly made a certain decision, but the pain from losing the better result. Kahneman, Slovein and Tversky found that the process of stocks trading, despite the sense of achievement would increase by selling out stocks which prices have already risen and brought the profit to us, but the sense of achievement would decrease with the increasing of the stock price, and blamed ourselves selling out too early simultaneously [3] (see figure 1).

Disposition effect indicates that investors' preferences are not symmetrical; the majority of investors are willing to "sell out, lock in profits, hold loss-making assets ". When investors face incurring losses, they usually hope assets will return above the original purchase price. Afterwards, they will decide to sell out, but investors are not willing to incur losses in losing, failing to consider the intrinsic value of enterprise assets and future expectations at the macro level [4] (see figure 1).

Heuristic processing means that people usually judge probability not using Bayes Rule to measure. It is more about heuristic, intuitive judgement. On the one hand, heuristic processing can simplify many reasoning processes. It usually simplifies complex problems and makes accurate judgments in the financial market [5].

In view of this, the article tries to summarize , integrate pertinent literature, including regret aversion leads to incorrect characterization by investors during the decision-making process, disposition effect affects investors' decision in different markets, disposition effect affects investors' decision in different subjects, psychological factors commonly influence investors' decision, how to reduce regret aversion and disposition effect impact investors' decision- making. The five parts systematically make a comment on relevant literature. On this basis, the review puts forward an analytical framework based on investors' wrong perspective, hoping to offer beneficial ideas to foreign scholars to integrate relevant questions.

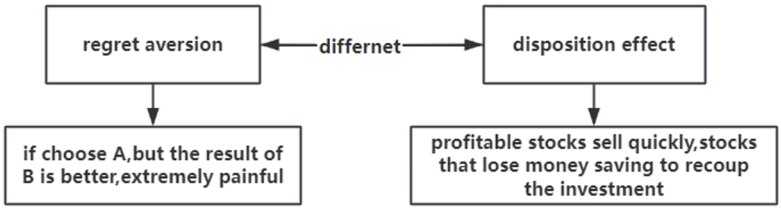


Fig.1. The different between regret aversion and disposition effect (Photo:original)

2 Literature Review

2.1 Regret Aversion and Its Induced Mischaracterization in Investor Decision-Making

As shown in figure 2, the reason about how regret aversion leads to incorrect characterisation in decision-making. When the investors make the wrong decisions,

they feel regret, self-accusation, and then change their psychological assessment risk as well as attempt to compensate for the psychological gap caused by previous decisions. This theory suggests that investors will reduce their regret feelings when they change their investment behaviors in making wrong decisions. If not accepting relevant adjudicative behaviors, which will increase investors' regret psychology [6]. Just about this psychological effect prompts investors to be reluctant to accept new information, unwilling to adjust their own decision -making. Nevertheless, this behavior is close to confirmation bias and further influences investors' selling aspirations [7]. For example, investors may develop a stop-loss order in the stock investment market; however, many investors may not sell off the stock when the stock's price is falling; this is because investors' moods change when they experience a wrongful investment in a failing stock price. They consider selling out the stock at present, which cause a loss, contrary to the original plan. Therefore, it appears the investors sell out the stock when the price is increasing in the stock market, insisting on holding on to the stock when the price is falling [6]. This type of literature, from cases and real data, enriches the process of regret aversion, which leads to incorrect characterization by investors during decision-making and influences the willingness to sell out stocks. It reveals the usual reason in the present stock market and makes the logical chain clearer about how regret aversion influences investors' decision-making, laying the foundation for other literature.

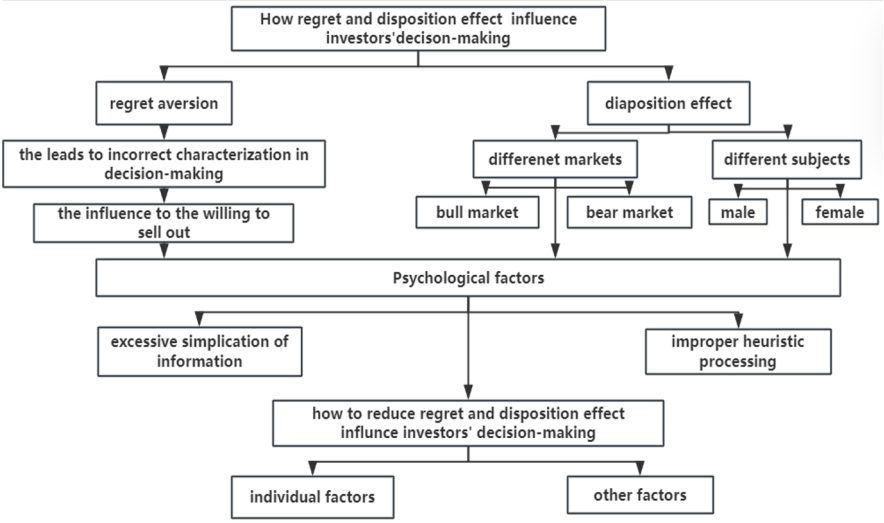


Fig. 2. A Framework for Understanding How Regret Aversion and the Disposition Effect Influence Investor Decision-Making (Photo:original).

2.2 The Influence of the Disposition Effect on Investor Decision-Making Across Different Markets

Some scholars find that the disposition effect will also influence investors' decision-making. In a different market environment, the influence on investors is not the same. Disposition effect decreases the effect of investors' decision-making because the

overall earnings environment is under pressure for impairment in the bull market; nevertheless, disposition effect increases the effect of investors' decision-making in the bear market [8]. With the increase in the stock market index in the bull market, disposition effect causes investors to have the idea of "selling winners, leaving the losers ". Thereby, investors quickly sell out existing beneficial stocks, firmly holding on to loss-making stocks. Ultimately, it causes investors 'performance to underperform the market average in an overall rising market and waste an excellent opportunity provided by the bull market. Moreover, the stock market index continues to decline in the bear market. Disposition effect causes investors to firmly hold on to the losing stocks, holding the mindset that the stock market is bottoming out and rebounding to make a profit. In addition, stocks with slight profits will be unable to wait to sell out all the stocks. At least it causes investors' principal suffering heavy losses, entirely wasting the use of rebound to reduce losses in the bear market, building positions in batches during the low valuation stage to optimize the overall cost structure. These articles are not too many; subsequent scholars will write to provide a new direction.

2.3 The Influence of the Disposition Effect on Investor Decision-Making Across Different Asset Classes

Many scholars find that disposition affects different influences on investors' behaviour in diverse objects. Disposition effect is more obvious in female investors than in male investors [8]. For example, the tendency to sell out female investors is remarkably higher than that of male investors when the stock prices are increasing; the tendency to sell out of male investors is higher than that of female investors when the stock prices are decreasing. However, the litterateurs bout this are not too many, so the scholars can construct the data model or case analysis to deepen research in the future.

2.4 The Influence of Psychological Factors on Investor Decision-Making

What's more, excessive simplification of information and improper application of heuristic processing are common psychological factors that influence investors' decision-making.

Excessive simplification of information. Excessive simplification of information means that the ability of cognitive investors is limited, so they also selectively process information [5]. When individual investors select perceptions, they also choose the information that supports their viewpoints. It is "confirmation bias ". The reason to generate confirmation bias is to avoid inner cognitive dissonance of investors, try the best to rationalize the decisions. Choose which one to further process, or when the stock pricing is decreasing, investors should focus on good news or bad news. All of those either depend on investors' belief, expectation, desire, and emotion, or the object and its own stimulus structure.

Improper application of heuristic processing. Heuristic processing means that people usually judge probability not using Bayes Rule to measure. It is more about heuristic, intuitive judgement. On the one hand, heuristic processing can simplify

many reasoning processes. It usually simplifies complex problems and makes accurate judgments in the financial market [5]. But if improper application of heuristic processing, it also brings various prejudices such as representative heuristic, obtainable heuristic, anchoring heuristic, adjustment heuristic and further.

Representative heuristic means people tend to determine the probability based on whether the sample can represent the population. The more representative the sample is, the higher the probability of judgement [5,9]. A large number of investors tend to hold onto loss-making stocks and are reluctant to sell them. Investors have the wrong idea that they think holding stock whose prices will increase. Meanwhile, investors also ignore the things that return to the mean tend to mean value.

The availability heuristic refers to the tendency to assess the probability of an event based on how readily relevant instances come to mind. Events that are more easily recalled are consequently perceived as more likely to occur. People always, according to the level of reliability of the object event in the memory, assess the probability of occurrence. What is easily recalled is considered to be more likely to appear.

Anchoring heuristic and adjustment heuristic mean that investors will make a rough assessment in predicting stock prices, and afterwards, according to further information, adjust to form a more reasonable price expectation.

These litterateurs fill the psychological gap of influencing the investors' decision-making to some extent, finding that the common grounds of regret aversion and disposition effect are psychological factors, laying the foundation for studies in other aspects.

3 Reducing the Influence of Regret Aversion and the Disposition Effect on Investor Decision-Making

3.1 Individual level.

Developing correct cognition means that investors should approach their assumptions from multiple perspectives in order to avoid overconfidence and blind adherence to prior beliefs. Sound decision-making, meanwhile, requires overcoming the tendency to oversimplify information; Investors should focus on relevant data, seek diverse viewpoints, collect and analyze less readily available information, and cultivate an open-minded attitude [5]. For instance, actively seek professional expertise to help investors collect and analyse unattainable information or actively reading a reverse viewpoint report to promote pluralistic cognitive.

To avoid improper application of heuristic processing, which means correctly using representative heuristics, constantly paying attention to the benchmark probability and existing errors; properly take advantage of obtainable heuristics, not hurriedly changing the decision, keeping a good mood. For instance, investors can search market data, profit rate, industry assessment average value in previous years at the same time, which makes comprehensive judgments based on multiple anchor points; properly use anchoring and adjustment. It can also be achieved through a delayed decision-making mechanism to reduce impulse trading, correctly appraising

[5], but investors avoid irrational behavior, which can establish a strict risk control mechanism for themselves. If get through setting stop-loss point to avoid emotional trading, investors take steps to multi-dimensional analysis method at the same time, replying investment psychology at fixed period, trying our best to avoid the irrational behavior in the investment processing; promoting the cognitive of investment theory and investment tools means investors should master the system modern financial analysis theory, learning the way of using the modern portfolio theory [4]. Conditional investors can also structure quantitative analysis of the market operation model, thereby realizing the capital optimal configuration [4].

3.2 Other Aspects.

The government should clear the degree of intervention and time and ensure the stable development of financial market, striking a few market and unlawful disturbance market. To normalize relevant company disclosing information system through annual report and audit supervision, making full disclosure of major information, some information should not be disclosed, which are not be known by some persons; thus establishing more fairness and informational market [6].

When the government decision-making department carries out interest rate regulation, they need to focus on the regret aversion influence of the stock market, paying attention to the disposition effect influence of the stock market at the same time, and readjusting the interest rate [10].

4 Conclusion

The existence of investors will be influenced by regret aversion and disposition effect, which means investors are not always rational, but there are many investors who behave irrationally in the financial market. After understanding how regret aversion influences investment behavior and disposition effect influences investors' decision-making, and set up a timely stop -loss mechanism to reduce the distribution of emotional and psychological biases, which will help investors build a reasonable structure, as well as help balance department targeted guidance, investors can make rational investment.

The potential for future expansion based on the article:

4.1 The Influence of the Disposition Effect on Investor Decision-Making Across Different Markets and Asset Classes

Although part of this literature is written about this question, it is relatively short or is briefly mentioned. There are no large-scale documents. Writers can combine prospect theory in behavioral finance through questionnaire surveys or construct a data model, and so on, to deepen questions. In the future, investors can combine real cases with true transaction data to double verification to enhance the conversation.

4.2 An Interdisciplinary Perspective on How Regret Aversion and the Disposition Effect Influence Investor Decision-Making

On the one hand, the article is based only on financial behavior knowledge to review how regret aversion or disposition effect influence investors' decision-making, which is single; on the other hand, if it can combine with professional psychology, neuroscience, and some professional knowledge to analysis in an interdisciplinary way. It can let investors, government, policy decision-making department, and financial products know better about the reasons for irrational decisions and generating biased errors, which can reduce or avoid irrational decision.

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