

## **Risk analysis of financial portfolio based on behavioral finance**

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**Abstract:** Behavioral finance has flourished as a prominent discipline, with mainstream economics increasingly turning to the study of individual behavior and increasing empirical evidence suggesting that existing financial theories have some fundamental flaws. Securities investment is a kind of risky investment. In order to gain as much income as possible and reduce the possible risks to the minimum, investors should form analysis and prediction opinions on the trend of securities prices according to various information collected and sorted out. Then form a set of fixed and operable investment methods and methods. When investors actually make investment decisions, the influence of rational and irrational factors on their decisions is often parallel, and irrational factors often play a more prominent role in investment selection. Therefore, this paper analyzes investors' securities investment behavior based on behavioral finance, which is helpful to study the abnormal investment phenomenon in the securities market and put forward possible solutions more specifically.

### **1. Introduction**

Securities investment is a kind of risky investment! For as much revenue as possible! And minimize the possible risks! Investors should collect and collate all kinds of information according to the information! Form the analysis and forecast opinion to stock price trend! To form a set of fixed investment way and methods of the operable "stock market investors are often uncertain under the actual condition of judgment and decision making, and this decision will be affected by their personality, emotions, habits, and the influence of cultural environment and so on, resulting in a cognitive, psychological deviation or preference [1]. This study will help market participants to recognize themselves, correct or reduce irrational behaviors, and seek investment opportunities beyond the market by applying investment strategies that follow behavioral finance theory, so as to obtain returns [2]. The research on capital market, like many other theories, embodies the evolution and development of human culture and civilization. The ancient Greeks brought rationality to Western culture.

While observing that life is full of seemingly chaotic random events, they search for pure form and order hidden beneath the noise of everyday life. They expected to reduce nature to these pure forms. Math is their tool. The theoretical framework of traditional finance is composed of the so-called asset pricing theory, which mainly studies investors' decisions, and the corporate finance theory, which mainly studies companies' investment and financing decisions. Behavioral finance assumes that investors perform irrational investment behaviors, so the uncertainty and randomness of transactions are born in the process of market transactions [3]. When behavioral finance theory integrates human psychology and behavior into the study of investment behavior, the study of securities investment behavior opens a new perspective and provides a brand new path for us to further explore the financial system and financial theory [4].

### **2. Characteristics of operating behavior of securities market**

#### **2.1. Using the behavioral finance theory analysis**

Judgment, and explain the reality of the securities market operation, can see clearly that due to investor psychology and behavior deviation, the basic characteristics of the securities market

operation performance for inefficiencies, or what the market is inefficient way to run, irrational investors because of the overconfidence, herd behavior and disposition effect behavior deviation, Often causing securities prices to deviate from their basic value [5]. Investors' overreaction, noise trading and herd behavior to some extent lead to and magnify the high systemic risk, high p/E ratio, high turnover rate, high risk premium and abnormal bubbles in China's securities market [6]. The risks in China's securities market are greater than those in developed countries, because there are not only general risks but also special risks in the securities market. High market risk and artificially magnified institutional risk. Due to the non-circulation of 23% equity in China's securities market, the market size is small and there is no short-selling mechanism. The central bank has little regulation mechanism to affect the fund flow in the securities market by adjusting interest rates. The capital channels in the securities market are not smooth, the market returns are unbalanced, and administrative intervention intensifies market risks [7]. Due to the "financing" function of the stock market, the government simultaneously plays three different "roles" in the stock market: the regulator of the stock market, the representative of the largest shareholder in the stock market, and the guardian of the investing public in the stock market. It shows that the government also undertakes the obligation of balancing the market while fulfilling its regulatory responsibilities. When the stock market fell into a trough and remained depressed for a long time, the government authorities introduced a series of favorable policies to promote the stock market to warm up. When the stock market soared, regulators worried that excessive speculation in the stock market would lead to a "bubble", so they introduced various measures to curb market speculation. After investment, the basic model of investment decision process is shown in Figure 1

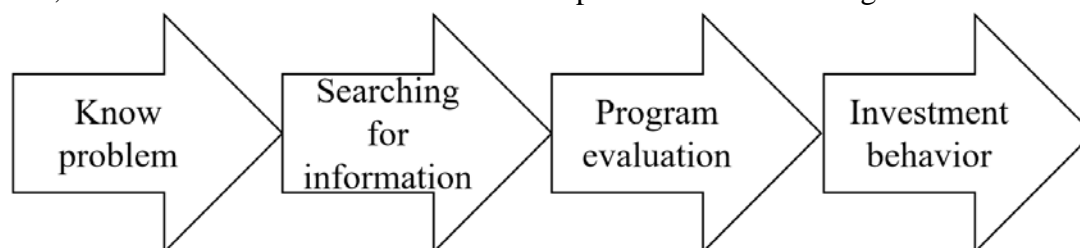


Figure 1. Basic model of investment decision process in post-investment stages

## 2.2. An empirical approach to policy dependence bias

This paper mainly adopts the event research analysis method to study the influence of major policy events on individual investors' behavior. Event research refers to the use of stock market data to determine the impact of a particular event on the listed company or the stock market as a whole. The research idea is to take a certain policy behavior as an event to study the impact of this event on abnormal stock price fluctuations, which are usually expressed by abnormal return rate, volume or frequency fluctuation before and after the occurrence of the event [8]. Of course, if a specific event is leaked in advance, it will have a great impact on the event research, and the resulting insider trading may cause the failure of the event research. There are also great differences between traditional finance and behavioral finance in the risk measurement methods of decision making.

The traditional financial model believes that the most important assessment direction of the overall change of the market is the data of the final flow of capital. The company with good growth is the "dark horse" in the future. In the stock market, due to the psychological and behavioral biases of irrational investors, investors will be slow to respond to new information, unable to use a dynamic perspective to look at the development prospects of some growing companies, and deviation of the expected value of future profits of these companies, thus underpricing their stock prices. Policy factors have a significant impact on investors' trading frequency and turnover rate, which can directly affect investors' trading activity and their willingness to enter and exit the market. As can be seen from the chart of the influence of positive and negative policies, the turnover rate and trading volume of investors increased significantly after the introduction of positive policies, and lasted for more than ten trading days. On the contrary, after the issuance of bearish policies, investors' trading frequency will decrease to a greater extent after a long trading

day, but it has no significant impact on the change rate of trading volume [9]. The correlation between the discount rate of closed-end funds and large and small stocks is shown in Table 1.

Table 1 Correlation between discount rate of closed-end funds and large, small and medium-sized stocks

	Shenwan Index	Shenwan mid-cap index	Shen Wan small cap index
A discount rate Absolute logarithm	0.0473	-0.1514	-0.3263

### 3. Behavioral finance theory and securities investment decision deviation

#### 3.1. The government should set a goal of streamlining efficiency

The government introduces policies to influence the securities market mainly for the following reasons: First, it regulates the securities market to avoid the stock market boom and slump and ensure its healthy development in accordance with its own development direction. The other is to effectively crack down on insider trading and market manipulation, safeguard the fairness and impartiality of securities market trading and protect the rights and interests of small and medium investors. In practice, the roles of the two are often confused and harm the interests of market participants. Therefore, the government must make great determination to give up the original goal of stock market diversification. The main purposes of the government's policy influence on the stock market are as follows: First, it is to adjust the stock market to avoid the boom and slump of the stock market and ensure its healthy development in accordance with its own development direction. The other is to effectively crack down on insider trading and market manipulation, safeguard the fairness and impartiality of securities market trading and protect the rights and interests of small and medium investors. In practice, the roles of the two are often confused and harm the interests of market participants. Therefore, the government must make a strong determination to give up the original goal of stock market diversification [10]. As for the young of the securities market in our country, not only has the characteristic of virtual economy all securities market the resulting market endogenous risk, namely the real production data once you enter the capital market, to become a virtual capital, itself has no value, but it represents the possession of a certain amount of real capital, has exchange value and the exchange value depends not only on the reality of the capital it represents Small is also related to the earning capacity of this part of real capital, and is the comprehensive result of both real capital and earning capacity.

#### 3.2. Overconfidence

From the conclusion of scientific research, when people make decisions on extremely difficult problems, people's decision-making will appear the phenomenon of overconfidence. People tend to overestimate the correctness of their decisions, and their self-expectation is often higher than their actual ability to accomplish something. I was determined not to sell my shares. But couldn't resist selling, only to see the market turn around and start to rise after selling; And when the stock price rose to a certain extent, was not ready to build positions at a high level, but could not resist buying stocks, the result was that the market began to fall after buying, resulting in high trapped.

When a rational investor learns a piece of good news and trades on it, he realizes that the initial price move may encourage the irrational trader to buy, so he will buy more. And sell at a profit when no new noise traders follow. I was determined not to sell my shares. But couldn't resist selling, only to see the market turn around and start to rise after selling; And when the stock price rose to a certain extent, was not ready to build positions at a high level, but could not resist buying stocks, the result was that the market began to fall after buying, resulting in high trapped. When a rational investor learns a piece of good news and trades on it, he realizes that the initial price move may encourage the irrational trader to buy, so he will buy more. And sell at a profit when no new noise traders follow. Therefore, in the selection of investment strategy, the division of investment groups

according to age reflects the role of time factor in the selection of investment strategy, that is, the diversification of time will also have an important impact on the selection of securities investment.

#### 4. Conclusions

Portfolio theory tells us that the portfolio should be as diversified and differentiated as possible so as to avoid non-systemic risks, that is, do not put all eggs in the same basket. Regular rest and adjustment can make investors withdraw their attention from the last round of investment and transfer it to a new round of investment, avoiding the "anchoring" effect caused by past investment experience. The function of information disclosure system is certain, and its full play must be based on certain market conditions and supporting legal environment. It is not a panacea for all ills, and the authenticity and accuracy of information disclosure cannot solve all problems, reasonably plan, overcome human greed and desire, and obtain investment benefits within the range of self-risk tolerance. Diversification and differentiation of investment portfolio as far as possible is an effective way to achieve the above objectives.

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