Analysis of Abnormal Phenomena in China Securities Market Based on Behavioral Finance

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Abstract. Compared with western mature markets, China securities market started late and has some obvious deficiencies, which leads to traders, especially individual investors, easy to make irrational investment decisions which cannot be explained by traditional finance. Based on the relevant facts and references, this paper believes that there are overtrade and exceptional open-style fund redemption in the fund market, dramatic fluctuation, and Irrational reaction in the stock market. The main reasons based on behavioral finance are: noise trading, herd behavior, prospect theory and disposal effect and overreaction. Finding out the typical anomalies and reasons of the two markets is conducive to study how to improve the efficiency and stability of China security market. This paper innovatively puts forward the background reasons and gives three suggestions in the conclusion: imitating trading, avoiding duplication of decision-making, and increasing the development of financial derivatives, which also has a certain reference significance for the improvement of policies and systems.

Keywords: Behavioral finance, China securities market, Abnormality.

1. Introduction

In recent years, China securities market has developed rapidly. However, the development of the securities market has not yet entered a virtuous cycle, especially the investment return of the vast majority of small and medium-sized investors is not satisfactory. The key reason is that investors lack scientific and reasonable investment strategies based on the deficiencies of the Chinese market and irrational behavior caused by cognitive and behavioral bias. In China, small and medium-sized investors account for the vast majority of investors. Their decision-making behavior essentially determines the development of the market, and they appear as vulnerable groups. Their irrational decision-making behavior has seriously led to the instability of the market. Therefore, it is impossible to correctly analyze China's securities market only with the help of modern financial methods. We should pay full attention to behavioral finance, a new theoretical method, and use it to develop and perfect modern finance, and apply it to China securities market. Based on the basic theory of behavioral finance, this paper intends to preliminarily explore the abnormal phenomena in China securities market and explore the causes.

This paper chooses to analyze the fund and the stock market since there is a complementary relationship between the fund and the stock market. Stock is a direct investment tool. Investors buy shares of a company, become shareholders of the company, and share the company's profits and risks. As an indirect investment tool, the fund is raised by professional institutions for investors and invested in stocks, bonds and other investment varieties to obtain a more stable return. Therefore, through the choice of these two markets, we can more completely analyze the anomalies of the financial market.

The following sections of this paper are organized as follows: Section 2 and 3 analyze the phenomenon, which is divided into fund market anomalies and stock market anomalies; Section 4 analyzes the reasons, first gives three reasons based on behavioral finance, and then further analyzes the background reasons behind these anomalies; Section 5 draws a conclusion and gives three referential suggestions.

2. Fund Market Anomalies

2.1. Overtrade

The excessive trading scale in the financial market has been particularly prominent in China since the early stage of the stock market. Whether compared with the mature securities market or the emerging securities market, the average annual turnover rate of China's stock market is much higher than that of other countries. In the 1990s, the annual average turnover rate of the NYSE was between 20% and 50%, that is, the average stock turnover rate was once every 2-5 years. Even in 1999, when Greenspan believed that there was "irrational Mania" in the U.S. stock market, the average annual turnover rate of NYSE was only 75%. In the same year, the turnover rates of the stock markets in Tokyo, London, Hong Kong, Thailand and Singapore were 49%, 57%, 51%, 78% and 75%, respectively (*China Securities and futures statistical yearbook 2001*). Compared with these countries, in the 1990s, the average turnover rate of China's Shanghai stock market reached 1134.65% (1994); The average turnover rate in Shenzhen stock market reached 1350.35% (1996). In 2002, when the trading situation of China's stock market fell into a downturn, the turnover rate of Shenzhen and Shanghai markets also reached 198.8% and 214% respectively [1].

In essence, funds have higher stability, so the number of frequent transactions will decline. However, the phenomenon of excessive trading in the China fund market is still very significant.

It can be seen that the fund has the institutional investor's professional advantage, and the public funds are in good condition. In 2020, 59.79% of the total funds were equity funds with profits of more than 50% (*annual report of China's securities investment fund industry*) [2]. However, due to cognitive bias and behavioral bias, the profitability of individual investors in the fund has been significantly reduced. They continue the tradition of over trading in stock purchases and despise the stability of the fund and the high handling fees. In 2021, 50% of the people operated the same fund 3-5 times, 26% of the people operated more than 6 times, and the proportion of people who operated more than 6 times lost money (especially large losses) was relatively higher [3].

2.2. Exceptional Open-style Fund Redemption

Compared with the redemption of developed capital markets, China emerged the "survival of the fittest" phenomenon, that is, the better the performance of funds, the greater the redemption rate. Wang finds that from 2008 to 2016, the average net redemption rate in China was 14.63%, while that in the United States was -2.34%. He found that Chinese funds generally faced long-term small net redemptions. Chinese investors prefer to adopt the strategy of batch subscription when subscribing for funds, and prefer one-time redemption when redeeming [4], which makes the fund vulnerable to the impact of huge redemption, thus bringing greater liquidity risk to the fund. Wu states that in China, abnormal redemptions of equity open-end funds and the shock adjustment stage are the most obvious [5], which indicates that people are more likely to make abnormal redemptions when the market prospect is not clear. Liao's study also considerations that when investors see that the excess return of the fund manager is high, they tend to realize the return [6].

3. Stock Market Anomalies

3.1. Dramatic Fluctuation

China's stock market has always been a difficult problem that cannot be solved. This paper compares the fluctuations of the Chinese and American stock markets from three perspectives, namely, the switching frequency of bull and bear, the average rise and fall of bull and bear market, and the volatility of the representative index.

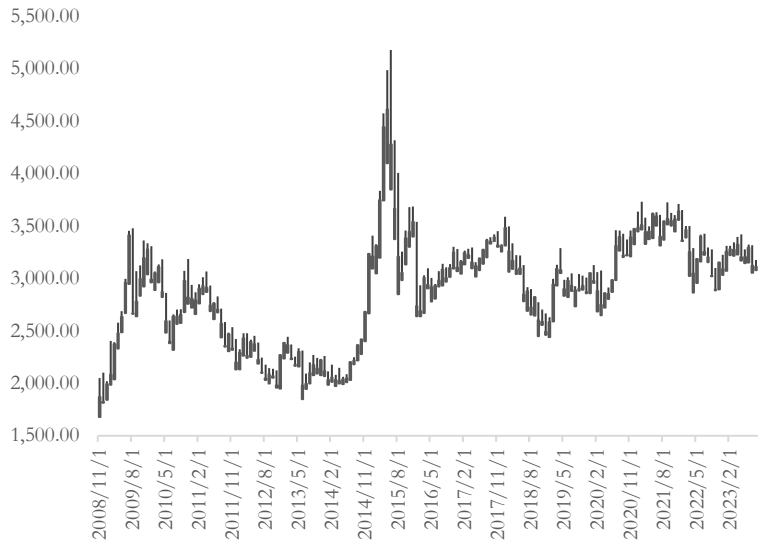

Figure 1. Shanghai Securities Composite Index

Data source: Investing (https://cn.investing.com/)

Generally speaking, bull and bear markets alternate. If the successive bull and bear markets are regarded as a complete cycle, the average duration of A-share cycle is about 1.97 years, while the average duration of the corresponding U.S. stock cycle is about 5.95 years. Therefore, the bull bear switching frequency of a shares is significantly faster than that of U.S. stocks. According to the statistics of bull bear distribution of A-share and US stock market, the average rise and fall of A-share bull market and bear market are 201.96% and -44.15%, respectively, while the average rise and fall of US stock bull market and bear market are 159.55% and -38.13%, respectively. Therefore, the average rise and fall of bull and bear market of a shares are greater than those of U.S. stocks. In addition, from the comparison of the volatility between the Shanghai Securities Composite Index and the S&P 500 Index from 2012 to today, the volatility of the Shanghai Securities Composite Index is higher than that of the S&P 500 most of the time, except for the outbreak of the new crown epidemic in February 2020 to June 2020 (during which the U.S. stock market suffered four circuit breakers). Therefore, by comparing the trend of the S&P 500 Index in the United States and the Shanghai Securities Composite Index in China in the past 15 years, it can be seen that the trend chart of the S&P 500 Index shows a relatively stable upward trend, while the Shanghai Securities Composite Index has been in a state of sideways fluctuation for a long time.

Figure 2. S&P 500 Index

Data source: Investing (https://cn.investing.com/)

3.2. Irrational Reaction

Macroeconomic regulation and control policies, such as adjusting the bank reserve ratio, deposit and loan interest rates and stamp duty, which have been proved to be relatively effective on behalf of the capital markets of developed countries and can curb the overheating of the stock market or stimulate economic development, have basically not played any positive role in China's stock market. Hu remarks on "policy efficiency". China's policy efficiency is insufficient, and investors have obvious phenomena of "insufficient policy response" or "excessive policy response", leaving serious policy "sequelae" [7]. This is also reflected in the questionnaire survey on the policy effect. Hao arguments that market participants have the same evaluation on the effect of the policies issued by the regulatory authorities in the market crash: there is no substantial effect, which may boost confidence. In addition, he also pointed out that in 2007, when the stock market was booming, the regulatory authorities suddenly announced the high jump stamp tax to suppress the overheated growth of the stock market, and investors did not agree with its practice [8]. This reflects that when the policy is not comprehensive and effective, and the stock market is in a special period of two-tier factors superimposed, investors and policies cannot produce effective linkage in taking measures.

4. Cause Analysis

4.1. Noise Trading and Herd Behavior

The noise trading theory is based on the criticism of the efficient market hypothesis. Due to information asymmetry, traders with information advantages or disadvantages have different behavior characteristics. Black defined noise traders as investors who trade based on noise and regard noise as valuable information [9]. The sources of noise can be divided into two categories. Objectively speaking, noise refers to information unrelated to the value of securities, such as false financial statements of listed companies, abnormal fluctuations caused by illegal manipulation of stock prices by some institutions, etc; Subjectively, noise also refers to the information that has been misinterpreted and misjudged by investors. Investors will be affected by these cognitive biases when using this information to calculate risks and returns, which will lead to irrational decisions.

Compared with the herding behavior of American securities managers who choose to follow the strong ability of securities managers for interests and reputation, in China, most investors are mainly concerned about the impact of policies and gossip (including news channels such as stock online forums) on the stock price, and lack of consideration of the fundamentals of stocks. These individual investors constitute noise traders with relatively more information disadvantages in the Chinese market. It should be explained that "policy driven" is a new trend formed by noise traders' accumulation of overconfidence and failure experience of ignoring policy factors in the early years. In the early stage, the above phenomenon of irrational response to market information and related policies is particularly obvious. Therefore, the moderate rationality of noise investors in the period of no major events in recent years is reflected on following the policy. When the market is not mature enough, the speculative nature of small and medium-sized investors will lead to the behavior of "blindly following the dealer", thus forming a herding effect. Song discusses that there is significant herding behavior in China's overall market, and there are differences in investors' investment psychology under different backgrounds, resulting in varying degrees of dependence on noise trading, resulting in varying degrees of severity of herding behavior [10]. "Herding" noise trading will increase the range of price fluctuation and frequent market transactions, reduce the real reflection ability of the stock market and significantly increase the system risk.

4.2. Prospect Theory and Disposal Effect

Individual investors are most likely to produce prospect theory and disposal effect in their daily investment behavior. Tversky and Kahneman point that the value function of prospect theory is different from the utility function of expected utility theory. The value function of prospect theory is

based on a reference point. The profit and loss at this reference point determines the value, rather than the ultimate wealth [11]. People tend to avoid the risk of medium probability return but tend to seek the risk of medium probability loss. If the stock held by an investor appreciates, he may think that the stock is making a profit. When he is hedging against earnings, he may tend to sell stocks. Similarly, when stocks fall, he may hold stocks because he takes risks to reduce losses. The psychological attitude towards profits and losses and the impact of risk aversion on investment decisions make investors tend to sell their fund shares, resulting in a "disposal effect". The prospect theory can be linked with the disposal effect, which is confirmed in the prospect theory has a reliable prediction of the prospect theory in the excess realized profit and loss model [12]. Shi conducted an experiment on investors in Shanghai stock market. In China, small and medium-sized retail investors have a significant disposal effect, and the disposal effect will increase with the change of market environment [13]. Based on the current downturn in China's economic situation, fund investors with high risk aversion index are better at using the disposal effect. However, the continued sales earnings of a large number of individual investors will further promote the rise of the price of "winner shares", which is easy to form asset price bubbles and inhibit the development of the bull market; Holding losses will cause the trading volume of stocks to continue to decline, the stock volume will shrink, the stock market will fall further, prolong the bear market, and affect the stable operation of the market.

4.3. Overreaction

Overreaction is caused by the systematic psychological cognitive bias of investment decision-makers under uncertain conditions. When facing sudden or unexpected events, some investors tend to pay too much attention to the immediate information and despise the previous information, resulting in the over rise or over fall of stock prices. When the market is prosperous, it is easy for investors to make money, which will be attributed to their own operation, forming a positive feedback loop. Investors are more and more confident about themselves, amplifying the interpretation of good news, ignoring potential bad news, and it is also easy to put more and more money into the stock market, and the stock market will continue to rise, exceeding the intrinsic value of the company. On the contrary, when the market falls, investors continue to lose money and become more and more pessimistic about the future. The market sentiment is depressed. They are too sensitive to bad news and slow to respond to good news. Zhang states that the degree of overreaction in China's stock market is greater than that in the United States, and many cognitive biases and information biases will eventually indirectly lead to overreaction [14]. Therefore, the abnormal phenomenon of China's stock market is largely due to the overreaction of investors, coupled with the lack of risk prevention measures, which further increases the oversold and oversold.

4.4. Further Study

In further research, based on previous scholars' surveys, this paper found that the reasons behind the anomalies in China's fund and stock markets roughly coincided with the research results of behavioral finance, and some of the anomalies were higher than those in the United States. At the same time, some anomalies were almost absent in China. The following will study the background of the reasons for the anomalies in the Chinese market.

4.4.1. Excessive Volatility

Too strong volatility will lead to greater influence of investors' psychological factors. The United States has had a total of seven major financial crises in more than 200 years, while China's financial market has accelerated the frequency of troughs while reproducing the trend of rising volatility in the past, which has led to Chinese investors' unwillingness to invest in the long term, and it is easy to "eliminate the superior" and even lose confidence in the market.

Therefore, on the surface, the main reason for the above explanation lies in the lack of experience and data sources of small and medium-sized investors. The underlying reason lies in the lack of clear expectations for the return of the Chinese market, the lack of high-quality and stable listed companies,

the high concentration of fund investment, the lack of fund products and other problems due to rapid development and the lack of a stable foundation. These factors will have various psychological effects on investors.

4.4.2. The Mode Difference

Generally speaking, the American market has a relatively mature system, which is different from that of China. On the one hand, a relatively mature system with a sounder risk prevention system and better portfolio investment decisions can make the market more effective and weaken some anomalies; On the other hand, some existing research results of behavioral finance also come from the system itself, such as scale premium and value premium. Therefore, such anomalies are not obvious or even almost non-existent in China.

Separately, in terms of stocks, there are differences in trading systems. First of all, the US stock market allows short selling and stock option trading, and its stock price fully reflects the will of all market participants, which is relatively fair and reasonable. However, there is no short selling and stock option trading in China's stock market. For example, when stocks are rising, those who do not have stocks and are bearish and those who hold stocks and are bearish and worried about the rise of stocks can only look at the market. At this time, the stock price does not reflect the will of these two kinds of people, but only reflects the will of those who are bullish. So, the stock price will keep rising. It can be seen that the price of China's stock market does not fully reflect the wishes of all market players, which is relatively unfair and reasonable. Secondly, the United States promotes the specific market maker system for retail investors to effectively overcome the drawbacks of solving transaction inequality. Market makers are market participants who provide real-time trading services. They provide real-time services by setting up purchase and sale quotations to improve innovation and the liquidity of small and medium-sized enterprises, which has played a huge role in overcoming information asymmetry and quantifying the difference in trading orders.

In addition, there are differences in fund operation modes. China's fund market operation has a unified data interface specification, but this has resulted in path dependence. There is no further investment in improving the control degree of system data, and the refined management is insufficient; In addition, there are differences in core operating concepts. China's less business outsourcing and efficiency-oriented business processes make a large number of risks exposed at the back end of the business and increase instability.

4.4.3. Risk of Decision-making

The whole development process of China's stock market has grown up under the guidance and promotion of the government. The government not only uses legal and economic means to regulate the operation of the stock market, but also often implements policy intervention on the stock market. However, this also leads to the fact that China's shortcomings in decision-making will affect the stock market to a greater extent. Therefore, this paper calls this reason decision risk.

First of all, the decision-making will be repeated. Its purpose is to match the overall policy objectives, but it ignores the impact of the repeatability of the decision-making on the stock market. The recurrence phenomenon is not only reflected in the incomplete decision-making, lack of foresight, and even the failure of decision-making, which leads to the need for multiple decisions, but also reflected in the disunity of decision-making subjects, so there is confusion between decisions. Zhao remarks that the CSRC, the direct regulator of China's stock market, cannot participate in making many major decisions, that is, there is no unified financial supervision system, which leads to the lack of continuity and even contradiction of decisions [15]. In addition, Zhang finds that the large-scale policy has a great impact on the stock market, so it is necessary to prevent the superposition of the impact of multiple decision-making events from making it difficult for the market to absorb the impact [16].

In addition, at present, China is facing the problem of liquidity trap, that is to say, the range of economic growth and the size of excess currency gradually lose relevance. This is also one reason why it is difficult for China's economic situation to recover. Based on this, small and medium-sized

investors participating in the market will have stronger loss aversion and conduct frequent transactions to ensure their vested interests.

5. Conclusion

As a relatively new concept of finance, behavioral finance has been paid more and more attention by scholars at home and abroad, but there are few literatures to sort out the corresponding content of behavioral finance according to the situation of a country. Therefore, it is of great significance to explore the representative anomalies in China and explore the reasons related to behavioral finance and the Chinese market background for the unique anomalies. This paper first expounds the anomalies of the fund market and finds that there are excessive trading and abnormal redemption of open-end funds; Then it expounds the stock market and finds that there are sharp rises and falls and irrational reactions. Then, this paper compares the theory of behavioral finance with anomalies one by one, and sorts out three relatively coherent causal chains, which are overtrading, and sharp rise and fall caused by noise trading and herding; open-end fund redemption and bull short bear long caused by prospect theory and disposal effect; and stock market anomalies caused by overreaction. Based on this, this paper will give some suggestions for reference.

1. imitate the trading of more mature and rational investors. Rational investors play a positive role in discovering information, reducing the negative impact of noise trading and improving the effectiveness of the market. Many experiments have demonstrated that different investors' personality and mentality will affect the choice of behavior, and rational and experienced investors can gain more benefits. For investors with different personalities, although they cannot change their psychology, they can control their irrational behavior through imitation.

2. enhance decision stability. So far, China has not yet formed a set of laws and regulations to regulate the operation of the securities market and a relatively stable regulatory system with policy continuity. Therefore, the securities regulatory authorities are constantly developing new methods, policies and measures. Market regulation has been replaced by a large number of temporary and volatile policies and measures, making it difficult for the market to form stable policy expectations and highly uncertain. Enhancing the stability of decision-making can not only improve policy efficiency and give play to market subjectivity, but also reduce the interference of decision-making impact on investors' cognition and decision-making.

3. strengthen the development and listing of stable financial derivatives. This paper also mentioned that the abnormal degree of China's securities market has increased due to different systems, so it is necessary to broaden effective investment channels to achieve more investment portfolios, enhance the comprehensive competitiveness and anti-risk ability, and provide power for the sustainable development of the market. In addition, the trading of financial derivatives such as stock options and stock index futures can make the stock market price fairer and more reasonable.

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