Analyze the Equity Premium Puzzle from the Perspectives of the Momentum Effect and Reversal Effect

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Abstract: Against the backdrop that traditional asset pricing models fail to adequately explain the equity premium puzzle, this paper explores the reasons for the stock premium from the momentum effect and reversal effect in behavioral finance. Through the research of stock premium, this paper attempts to put forward suggestions for enhancing market efficiency and reducing irrational behaviors in the market. Based on the theoretical basis of momentum effect and reversal effect, this paper takes the Chinese stock market and the US stock market as the research objects, and focuses on analyzing the performances of the stock markets in the two countries. The research findings show that: in the short term, the Momentum Effect has a significant impact on stock premium. In the long term, the Reversal Effect has a significant impact on stock premium. This study also explores the influencing factors of the Momentum Effect and the Reversal Effect, the efficiency of the financial market will be reduced. The conclusions of this study can effectively demonstrate the role of irrational behaviors in the stock market, providing a practical basis for improving the efficiency of the financial market.

Keywords: Momentum Effect, Reversal Effect, Equity Premium Puzzle.

1. Introduction

Stocks are certificates of ownership issued by companies, representing the partial ownership of the company held by the stockholders. Stocks are usually traded on stock exchanges, and their prices will fluctuate due to various factors such as market supply and demand relationships, a company's performance, and the economic environment [1]. In the current international stock markets, stocks are characterized by risks, liquidity, and price volatility. Due to the frequent fluctuations in stock prices, the phenomenon of stock premium has also occurred frequently. Many predecessors have conducted a lot of studies on this phenomenon, but none of them have been able to explain the Equity Premium Puzzle satisfactorily.

In 1985, Mehra and Prescott raised the issue of the stock premium [2]. Equity premium means that the historical average return rate of stocks is much higher than that of short - term risk - free debt. In 1978, Lucas proposed to study the Equity Premium Puzzle based on the Consumption Capital Asset Pricing Model (CCAPM) [3]. In 1995, Benartzi and Thaler put forward the theory of "myopic loss aversion", arguing that the reason for the equity premium is that investors are more sensitive to losses than they are delighted by equivalent gains, and that investors tend to pay frequent attention to their investment performance. This leads them to overly focus on short-term returns while ignoring long-term returns [4]. Many scholars have already conducted a great deal of research on the Equity

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Premium Puzzle, but no unified conclusion has been reached. It has been quite common to explore the Equity Premium Puzzle based on the assumption of rational economic agents. Exploring the Equity Premium Puzzle from the new perspectives of the Momentum Effect and the Reversal Effect can make up for the deficiencies in the research on the Equity Premium Puzzle.

In 1993, Jagadeesh and Titman found that stocks that had performed well over a certain period in the past tended to continue to perform well in the subsequent period, while stocks that had performed poorly would still perform poorly in the future. This phenomenon is known as the momentum effect [5]. This reflects the inertia of the rate of returns. In 1985, De Bondt and Thaler found that over a long period of time, stocks that had performed poorly would experience significant improvement in the future, while stocks that had performed well would show poor performance. This phenomenon is known as the reversal effect [6].

Based on the above theoretical basis, this paper will analyze the psychology of investors from two aspects of momentum effect and reversal effect in behavioral finance, and explore their roles in the stock market, thereby explaining the Equity Premium Puzzle. This paper studies the equity premium from the perspective of investors' psychology, which can broaden the scope and application of the momentum effect and the reversal effect in the research of the stock market. In addition, this paper provides a theoretical basis for investors in terms of investment, helping them to make use of this phenomenon, better understand the market, allocate assets rationally, control investment risks, and thus make more informed decisions.

2. Analyzing the momentum effect and reversal effect with the examples of Chinese and US stock markets

This paper takes the Chinese stock market and the US stock market as examples to analyze the momentum effect and reversal effect of the two, and further studies their impacts on the mystery of the equity premium.

Taking the A-share market of China's stock market as an example. In the A-share market, investors are mainly individual investors. There are relatively more irrational behaviors among individual investors. They are often influenced by emotions, and lack the ability to acquire and analyze information. Most individual investors trade frequently for short-term benefits, which leads to their relatively short stock holding period [7].

In contrast, institutional investors are dominant in the US stock market. Therefore, compared with the A-share market, there are fewer irrational behaviors. They have excellent analytical techniques and capabilities and maintain a long investment cycle. Moreover, the US stock market features a high level of information transparency [8].

2.1. The equity premium puzzle under the influence of the momentum effect

Existing research has shown that the momentum effect will cause the continuous growth of stock prices within a certain period of time, thus forming a premium. Studies have found that investors' irrational behaviors are the main cause of the momentum effect [5]. Investors' emotions and the liquidity of the stock market will indirectly give rise to investors' irrational behaviors, thereby generating the momentum effect [9,10]. Therefore, this part will analyze the reasons why the momentum effect leads to stock premiums from the perspectives of investors' emotions and the liquidity of the stock market.

2.1.1. Investor sentiment

Existing research has proven that investor sentiment can influence investors' judgment [9]. For example, when investors are in a positive mood, they tend to overestimate their abilities and have

excessive confidence in their decisions. Overconfident investors believe that they can accurately predict the trend of the stock market. They overestimate the future performance of a certain stock based on its current performance. These investors participate in investing in such stocks, thereby increasing the momentum effect of these stocks and sustaining this performance for a certain period of time.

Selecting the CSI 300 Index as the representative object for studying the Chinese stock market, this paper analyzes the relationship between investors' sentiment and the performance of the stock market. The results are shown in Figure 1. Overall, the trends of the comprehensive investment sentiment index and the CSI 300 Index are basically consistent, and there is a high degree of correlation [11]. Thus, it can be seen that investors' sentiment is closely related to the performance of the stock market.

Meanwhile, investors' sentiment may trigger their overconfidence or over pessimism, thereby intensifying the momentum effect and further affecting the stock prices [9].



Figure 1: Comparison between investors' sentiment and the CSI 300 index [11]

2.1.2. Market liquidity

When analyzing the indirect impact relationship between market liquidity and the momentum effect, this paper analyzes the relationship of the mutual influence between market liquidity and investors' sentiment, as well as the conclusions of the relationship between investors' sentiment and the momentum effect studied above, so as to summarize the impact relationship of market liquidity on the momentum effect [10].

By observing the data in Figure 2 and Figure 3, it can be seen that the liquidity of the stock market is closely related to investors' sentiment and they influence each other [12]. Market liquidity interacts with consumers' sentiment and further affects the momentum effect of the market:

First, when there is high liquidity and investors are in high spirits, they trade actively, driving the prices to move in the direction of the trend, and the momentum effect is significant.

Second, when there is high liquidity but investors are in low spirits, they may sell off their assets, and the momentum effect weakens.

Thirdly, when there is low liquidity but investors are in high spirits, the transaction costs are high and the price fluctuations are large, and the momentum effect may weaken.

Fourthly, when there is low liquidity and investors are in low spirits, investors are conservative, and the momentum effect weakens further.



Figure 2: The impulse response of stock market liquidity to investor sentiment [12]



Figure 3: The impulse influence of investor sentiment on market liquidity [12]

The momentum effect in the A-share market is vulnerable to the emotional influence of individual investors, manifesting as intense and short-term. Due to the relatively rational behavior of institutional investors in the US market, the momentum effect there is characterized by stability and a longer duration.

2.2. The equity premium puzzle under the influence of the reversal effect

The research findings indicate that investors' irrational behavior is the main cause of the reversal effect [6]. Investors' sentiment and the mean reversion of stock prices will indirectly give rise to investors' irrational behavior, thus leading to the reversal effect [9,13]. Therefore, this part will

analyze the reasons why the reversal effect causes stock premiums from the perspectives of investors' sentiment and the mean reversion of stock prices.

2.2.1. Investor sentiment

As mentioned above, investor sentiment is closely related to the performance of the stock market [9]. Investor sentiment is often influenced by a variety of factors, such as certain information events, policy changes, and market rumors, etc. These factors can cause investors to overreact and make some irrational decisions. Such emotion-driven irrational decisions often trigger an overreaction in the market, causing the short-term fluctuations of stock prices to far exceed the changes that should be reflected by their fundamentals, and giving rise to the price reversal effect [6].

2.2.2. Mean reversion

Due to the irrational behavior of investors, the price of a certain stock in the market fluctuates excessively, causing the price to deviate from the mean. The process in which the price gradually returns to the long-term mean is called mean reversion. Mean reversion gives rise to the reversal effect through the correction of prices [14]. When the price of a certain stock in the market fluctuates excessively, causing the price to deviate from the mean, and then the price gradually returns to the long-term mean is called mean reversion [14].

As mentioned above, there are many irrational investments in the A-share market, which leads to rapid and intense reversal effects; while in the US stock market, there are more rational investments, and the resulting reversal effect is stable, usually showing a gradual change. In the A-share market, due to the fact that the investor structure is mainly composed of individual investors and the market mechanism is relatively immature, there are a large number of irrational investment behaviors in the market. Therefore, the price fluctuations in the A-share market tend to be more intense, and the reversal effect is more rapid and obvious.

By contrast, the U.S. stock market is dominated by institutional investors, with a more mature market mechanism. Investors' behaviors are also more rational and oriented towards the long term. Institutional investors usually possess stronger information analysis capabilities and risk control awareness. Therefore, when confronted with market fluctuations, they are often able to maintain a relatively calm attitude. As a result, the reversal effect in the U.S. stock market usually manifests as a gradual change, and price fluctuations are relatively stable.

The differences between the A-share market and the U.S. stock market in terms of investor structure, market mechanisms, and investment behaviors have led to significant distinctions in their reversal effects.

2.3. Comparison of the momentum effect and reversal effect between the Chinese stock market and the U.S. stock market

It can be clearly seen from observing Figure 4 that:

First, in terms of the volatility of market indices, the volatility of the Chinese stock market is more obvious, and the reversal effect is more significant and intense. In contrast, the volatility of the U.S. stock market is relatively stable. Although the reversal effect exists in the U.S. stock, its amplitude and frequency are both lower than those of the Chinese market. The intense fluctuations of the Chinese stock market are often closely related to policy changes, market sentiment, and investors' behaviors. Especially when there are major positive or negative news in the market, the index fluctuates more intense.

Secondly, in terms of the long-term trend, the Chinese stock market generally shows a downward trend with fluctuations, while the U.S. stock market manifests a relatively stable long-term upward

trend. This difference mainly stems from the significant disparities in the market environments and investor structures of the stock markets in the two countries.

Thirdly, information transparency is also an important influencing factor for the differences between the Chinese and U.S. stock markets. The U.S. stock market has a high level of information transparency. The information disclosure system for listed companies is well-established, and the market supervision is strict. Investors can obtain accurate market information in a timely manner, enabling them to make more rational investment decisions. In contrast, the Chinese stock market still has room for improvement in terms of information disclosure and market supervision. The phenomenon of information asymmetry is relatively common, which further intensifies market volatility and investors' irrational behaviors.



Figure 4: Comparison of the trends of representative stock indexes of China and the United States from 1991 to 2020 (unit: %) [14]

2.4. Suggestions

This paper studies the impacts of the momentum effect and the reversal effect on stock premiums respectively, aiming to provide some suggestions and investment strategies for irrational investors.

2.4.1. Contrarian investment

The core concept of the contrarian investment strategy is "buy low and sell high". By taking advantage of the irrationality and the reversal effect of the market, it provides investors with a unique investment approach. Especially in the Chinese stock market, which is dominated by individual investors, emotional trading behavior among investors is more common, and the reversal effect is often more significant. In this case, the contrarian investment strategy can be a very good choice [15].

2.4.2. Portfolio construction

The core idea of constructing a portfolio is to diversify funds by investing in different asset classes, industries, regions, or financial instruments, in order to achieve risk diversification and optimization of returns. Such diversified investment can not only reduce the volatility of the portfolio but also enhance the safety and stability of the investment. By constructing a portfolio of combined investments, investors can make trade-offs among different assets and select those portfolios that achieve the best balance between risk and return. Therefore, this strategy can diversify investment risks, maximize expected returns, and enhance the stability of long-term investments [16].

3. Conclusion

In the research of the financial field, traditional asset pricing models hold a significant position. However, they are unable to satisfactorily explain the phenomenon of the equity premium puzzle. This paper, from the perspective of behavioral finance, studies the influencing factors of the momentum effect and the reversal effect on stock premiums. Through the collection and organization of existing research, it systematically answers the mystery of stock premiums from the perspectives of the momentum effect and the reversal effect. Based on the research conclusions, this paper provides investors with some practical suggestions, which help investors improve the rate of return and stability of their investments and reduce investment risks.

This paper has a single perspective of introduction. It only focuses on the equity premium puzzle from the aspects of the momentum effect and the reversal effect, while the equity premium puzzle should be considered comprehensively from multiple aspects. Secondly, in terms of research methods, this paper summarizes and analyzes existing research results. In the future, more data models and formula calculations should be added to provide data support. Finally, this paper only studies the Chinese A-share market and the U.S. stock market. In the future, other Chinese stock markets as well as stock markets of other countries should be included.

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