

Investor Sentiment and The Stock Market

Ziheng Wang

School of Finance, Chongqing Technology and Business University, Chongqing 400000, China

* Corresponding Author Email: jy00180463@hhu.edu.cn

Abstract. Investor sentiment wields substantial influence within the stock market, reflecting emotional states and beliefs held by investors, encompassing optimism, pessimism, and fear. As attention to its impact surges, the interplay of sentiment, trading decisions, stock prices, and trading volumes gains prominence. This paper examines investor sentiment's mechanisms, exploring its distinct forms and transmission channels, and highlights its critical role in shaping market expectations. Optimistic sentiment fosters a belief in market upswings, potentially leading to over investment and market bubbles. Conversely, pessimistic sentiment drives market pessimism, leading to panic selling and steep market declines. Fear sentiment triggers market volatility, amplifying fluctuations during significant events. The diffusion of investor sentiment through media channels and its interplay with market expectations is explored. Insights into investor sentiment's integration with stock market returns, classification methods, and proxy variables are showcased. Domestic research innovation is underscored, combining foreign insights with China's unique context. However, challenges remain, owing to sentiment's subjectivity and market complexities. Future research avenues are identified: understanding sentiment drivers, enriching theoretical frameworks, and leveraging technology for predictive accuracy. Psychological theories, behavioral finance, and AI-driven analytics offer promising directions. Interdisciplinary collaboration is advocated to unveil the intricate relationships between investor sentiment, market fundamentals, and external factors, enabling more informed decision-making and refined risk management. Investor sentiment's significance is undeniable. By unraveling its complexities, academia and practitioners can fortify their ability to predict market volatility and strategize effectively in an ever-evolving financial landscape.

Keywords: Investor sentiment; stock market; market volatility; behavioral finance; market expectations.

1. Introduction

Investor sentiment plays a crucial role in the stock market, representing the emotional state and beliefs held by investors, including but not limited to optimism, pessimism, and fear [1]. In recent years, scholars and practitioners have been paying significant attention to how investor sentiment influences the stock market. It not only impacts trading decisions but also significantly affects stock prices and trading volumes through information dissemination and the formation of market expectations. Therefore, understanding the mechanisms of investor sentiment in the stock market is of paramount importance for predicting market volatility and formulating investment strategies [2].

Firstly, optimistic sentiment refers to investors' positive attitudes towards the future market performance. Under such sentiment, investors generally believe that stock prices will continue to rise, leading to more investors entering the market and driving stock prices higher. This optimism is often associated with favorable economic data, company performances, and market expectations. However, excessive optimism can also lead to overinvestment and the formation of market bubbles, ultimately causing market adjustments and corrections.

Conversely, pessimistic sentiment refers to investors' negative attitudes towards future market performance. During pessimistic sentiment, investors commonly believe that market prospects are unfavorable, leading them to be more inclined to sell stocks. This sentiment often arises during economic downturns, declining company performances, or uncertain political and economic environments. The spread of pessimistic sentiment may result in panic selling and sharp market declines.

On the other hand, fear sentiment represents investors' fear and nervousness when facing market fluctuations and uncertainties. When the market experiences significant volatility or adverse news, investors tend to feel fearful, worrying about potential losses. This fear can prompt investors to quickly sell stocks to avoid losses, further magnifying market volatility.

The transmission and influence of investor sentiment are also essential areas of research. Investor sentiment can be disseminated through news media, social media, and interactions among investors. When significant events or critical information impact the market, such information significantly affects investor sentiment, consequently influencing market prices and trading volumes. For instance, a positive news report may boost investor optimism, encouraging more people to buy stocks and driving stock prices higher.

Furthermore, market expectations are also a critical factor influencing investor sentiment. Investors' expectations of future market trends directly affect their trading decisions. If investors expect the market to continue rising, they are more likely to buy stocks. Conversely, if they anticipate a market downturn, investors may be more inclined to sell stocks. Thus, the formation of market expectations has a significant impact on investor sentiment and stock prices [3].

In conclusion, investor sentiment plays a crucial role in the stock market [4]. It not only directly affects investors' trading decisions but also significantly influences stock prices and trading volumes through information dissemination and the formation of market expectations. Therefore, in-depth research and understanding of the mechanisms of investor sentiment are of great significance for predicting market volatility and formulating effective investment strategies. Investors and practitioners should closely monitor changes in market sentiment to better grasp market opportunities and mitigate investment risks.

2. Unveiling the Intricacies of Investor Sentiment: From Foundational Concepts to Empirical Explorations

Research on investor sentiment is an essential part of building behavioral finance theory, and its importance is self-evident. In modern capital markets, investor sentiment is one of the significant variables affecting stock market price fluctuations, stock price changes, and stock returns. Some scholars use indicators such as the number of new investors see Table 1, turnover rate as shown in Table 1, price-earnings ratio (PE ratio) as shown in Table 1, and volatility as the basic indicators of investor sentiment, as defined and explained in Table 1. The concept of bearish sentiment index was first proposed in 1963 by the U.S. magazine "Investor's Wisdom," laying the foundation for later research. Since then, empirical studies on investor sentiment have continued and gradually become one of the most important research topics in finance. In-depth research by Black revealed the essence of financial market behavior and introduced a new concept - noise traders, laying a solid foundation for future research that combines irrational factors with financial markets. As investor sentiment gained more attention in financial markets, researchers began to focus on the correlation between investor sentiment and market returns [5]. Based on the concept of noise traders, DeLong et al. proposed a quantitative research framework called the noise trader model (DSSW model). The core idea of this model is the subjectivity of irrational components, the complexity of collective fluctuation of investor sentiment, and relative unpredictability, all of which make asset price forecasting more challenging. Therefore, they constructed an asset pricing model by incorporating sentiment factors into their study. Charles studied the relationship between investor sentiment factors and funds and investigated the impact of investor sentiment on closed-end fund discounts [6]. He found that investor sentiment characteristics did not affect the fundamentals of the stock market but could influence overall price fluctuations, and then fund prices could be affected by investor and trader sentiment, establishing a link between investor sentiment factors and fund prices. Bernstein et al. used system analysis to quantitatively study the emotional status of investors on Wall Street and its correlation with the S&P 500 index, revealing a negative correlation trend between them [7]. Before 1988, scholars mainly focused on standard econometric analysis of stock prices, dividends, and returns.

However, with the research by Solt and Statman in 1988, the focus shifted to financial models related to investor psychology and gradually incorporated investor sentiment into their research scope. So far, there have been different views among foreign scholars on the definition of investor sentiment. According to Lee, Shleifer, and Thaler, investor sentiment is a judgment based on emotion, stemming from psychological or cognitive biases [8]. They pointed out that various factors influenced investors' decision-making, such as market conditions, information sources, company characteristics, and the investors themselves. According to Shleifer and Vishny, investor sentiment originates from their erroneous application of the Bayes' theorem for judgment. On this basis, scholars proposed the investor sentiment hypothesis and conducted empirical tests. Lee et al. used the GARCH model to study the impact of investor sentiment on stock market volatility and found that low investor sentiment could lead to increased stock market volatility [9]. Based on the research by Baker and Wurgler, investor sentiment has a significant impact on stock returns. Under different emotional states, stock returns exhibit unique characteristics. They also examined the short-term and long-term effects of changes in investor sentiment. When sentiment is low, high returns tend to occur in small-cap, high-volatility, non-profitable, non-dividend-paying, extremely growth-oriented, and suppressed stocks, consistent with the trend of these stocks being undervalued. When sentiment is high, this pattern may be weakened or even completely reversed. Gerhard King and Gao Li found no significant correlation between investor sentiment and stock returns in the long run. However, they discovered a significant impact of investor sentiment on stock returns in the short term [10].

Based on a comprehensive review of foreign literature, research in this field started with the assumption of "rational economic agents," giving rise to many related theories in economics and finance. However, as financial markets evolved and improved, traditional rationality theories faced challenges due to the presence of numerous irrational elements among market participants. As a result, foreign research gradually incorporated non-rational factors, including investor sentiment, into their scope of investigation. As investor sentiment is subjective and complex, scholars worldwide have adopted different methods to empirically test investor sentiment. From the perspective of defining investor sentiment, it is an abstract concept lacking direct data support, making quantitative analysis difficult. Foreign researchers mainly focused on finding indicators that logically mapped to investor sentiment, such as consumer indices, fund subscriptions and redemptions, information usage, and even directly manipulating investor sentiment. However, compared to the vast number of participants in the securities market, sampling-based methods have limitations in practical applications. Therefore, establishing an appropriate proxy measurement standard to describe investor sentiment has been a focal point of foreign scholars and an essential direction for international research in this field.

3. Navigating China's Stock Market Development: Challenges, Distinctive Research Approaches, and Empirical Explorations of Investor Sentiment

China's stock market has developed for more than 30 years. With the improvement of institutional construction, the maturation of investors, and the increasing role of the stock market in serving economic development, remarkable achievements have been made. Figure 1 shows the trend of A-share market capitalization from 1991 to 2021. However, compared to foreign stock markets that have hundreds of years of history, China's market still faces significant challenges in terms of soft power, such as insufficient institutional construction, lack of guidance education, and issues with the management mechanism of listed companies. Considering the unique characteristics of China's securities market, researchers have not only drawn on the common features of foreign research but have also demonstrated their own distinctive characteristics. In the definition of investor sentiment by domestic scholars, Rao Yulei and Liu Dafeng consider investor sentiment as the expectations arising from systematic cognitive biases among investors about the future market. According to Wang Meijin and Sun Jianjun, investor sentiment is, in fact, an emotionally based judgment made by investors when investing. This erroneous judgment arises from investors' systematic cognitive biases about the expected return on risk assets in the market. This shows that both domestic and foreign

scholars have not reached a consensus on investor sentiment. In the classification of investor sentiment by domestic scholars, Han Zexian uses different classification methods based on the nature of investor sentiment and the method of obtaining data, dividing it into explicit sentiment indicators (also known as direct sentiment indicators), implicit sentiment indicators (also known as indirect sentiment indicators), and sentiment proxy variables. Explicit investor sentiment indicators are obtained through various surveys of investors to obtain their optimistic or pessimistic views of the market, directly reflecting investors' overall sentiment attitude toward the market. On the other hand, implicit sentiment indicators are extracted from investor behavior, such as the psychological changes of investors based on their trading records and their judgments about the future trend of the market, among others. Besides directly surveying investor sentiment, some financial variables can be considered as implicit indicators reflecting the market sentiment, which are also used to reflect investor sentiment. Sentiment proxy variables are represented in specific forms, such as using stock returns to represent investor sentiment. Chen Jiawei used three emotion proxy variables in his study: the average weekly premium rate of closed-end funds, IPO issuance volume, and IPO first-day return. He analyzed investment behavior and strategies in China's securities market from the perspective of investor sentiment, concluding that sentiment proxy variables have a considerable impact on stock returns. According to the differences in the role mechanism of investor sentiment in investment decision-making, Yi Cuilin divided investor sentiment into expected sentiment and instantaneous sentiment. Research shows that emotion is a psychological state generated by individuals in response to certain stimuli, usually related to the objectives of the activities they engage in, manifesting as pleasure or displeasure. This indicates that Dr. Yi Cuilin mainly explored investor sentiment from a psychological perspective. According to Rao Yulei, the stock market exhibits an "emotional cycle," and the emotional state of investors has a serious impact on stock prices. Stocks with a high level of subjectivity in value evaluation are more susceptible to emotional factors. Investor sentiment is particularly pronounced in new stocks, small-cap stocks, stocks of less stable companies, growth-oriented stocks, and stocks with no dividends expected. Cheng Kun and Liu Renhe studied the interaction between investor sentiment and the stock market and found that the medium-term investor sentiment index has a much greater impact on stock market returns' volatility than the short-term investor sentiment index. Moreover, the medium-term sentiment index is part of the Granger causality of stock market returns because investor sentiment about the medium-term trend is not significantly influenced by stock market returns and short-term expectations. Liu Renhe and Chen Liuqin conducted an in-depth study of the capital market using psychological knowledge and concluded that positive and optimistic emotional states effectively promote investors' continuous optimism about the future stock market, providing robust support for predicting stock market returns. Based on this, they introduced investor sentiment into stock market returns, studying whether investor sentiment would lead to changes in stock price returns through theoretical analysis and empirical tests. Zhang Qiang and Yang Shue used the econometric GARCH-M (1,1) model, based on the noise trader model proposed by DeLong et al. (1990), to study the impact of investor sentiment on stock market returns. They found that the influence of individual investors' sentiment on stock market returns is almost negligible, as long as it is affected by institutional investors' sentiment.

In China's research, scholars have been deeply exploring foreign research directions and combining them with quantitative research on China's A-share market (as shown in Figure 1) to promote theoretical innovation. To describe the two sets of variable sequences in a more detailed and accurate way, researchers decompose stock market returns, such as splitting them into different stock market sectors, analyzing and examining each separately. After determining and analyzing the proxy indicators, they have used various related research methods, including but not limited to direct application of multiple linear regression and the utilization of the VAR model, to lay the foundation for subsequent analysis. Domestic scholars have conducted extensive and in-depth research on stock market returns, the measurement of investor sentiment, and analysis methods, covering both single sequences and combined sequences, and have used appropriate analytical methods for empirical research to achieve effective results.

Table 1. Definition of the variables

Variable name	Symbol	Definition	Computational method	Expected relationship
The number of new investors	NIA	Number of investors opening new accounts each week	Direct logarithm with positive	Positive correlation
Turnover rate	TURN	The frequency of a stock changing hands over a certain period of time	Total market volume / total market value in circulation	Positive correlation
PE (priceearnings) ratio	PE	The overall valuation of the stock market	The transaction is obtained directly	Positive correlation

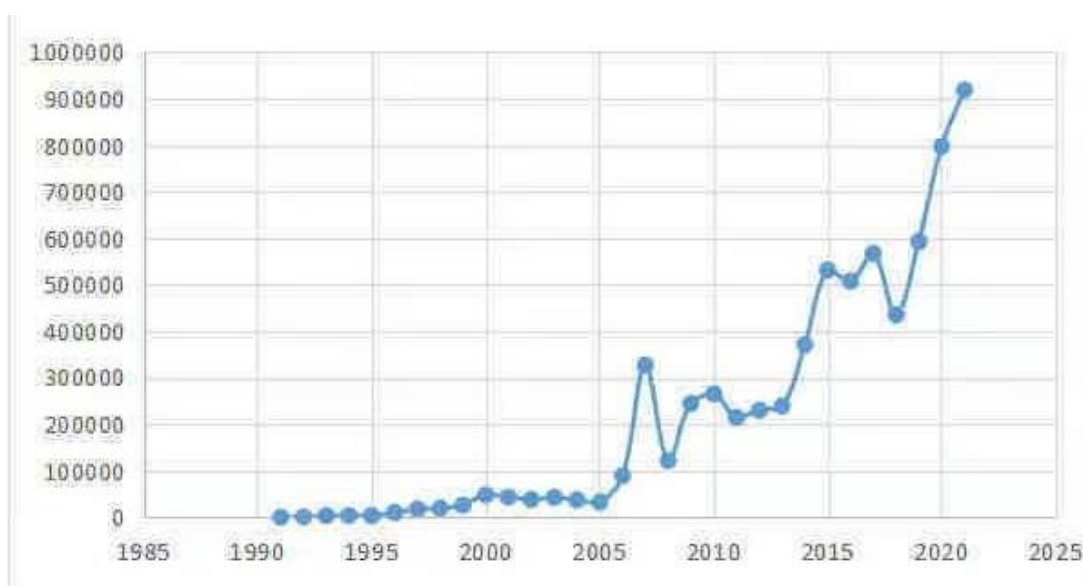


Fig. 1 Total market value of A-shares (100 million yuan) trend chart

4. Conclusion

In conclusion, the increasing attention towards the impact of investor sentiment on the stock market is a testament to its significance in shaping market dynamics. Researchers have made substantial progress in uncovering meaningful conclusions, demonstrating that investor sentiment exerts a significant influence on stock market price fluctuations and trading behaviors. However, the relationship between investor sentiment and other market factors, as well as its predictive capabilities, remain subjects of debate and require further exploration.

Moving forward, future research endeavors can delve deeper into the factors that influence investor sentiment. Understanding the drivers behind this emotional state is crucial in unraveling the complexities of the stock market. Economic indicators, political events, media coverage, social trends, and even external global factors can all contribute to shaping investor sentiment. By identifying and comprehending these key influencers, researchers and market participants can gain valuable insights into the underlying forces driving market movements.

Enriching the theoretical framework of investor sentiment is another essential avenue for advancement. Integrating psychological theories, behavioral finance concepts, and cognitive biases can provide a more holistic understanding of how human emotions and beliefs influence investment decisions. Emotions such as fear, greed, and overconfidence can significantly impact investor behavior, leading to herd mentality and market inefficiencies. By developing more robust theoretical

models, we can better capture the nuances of investor sentiment and its subsequent effects on the stock market.

Moreover, embracing cutting-edge technologies, such as big data analytics and artificial intelligence, can be a game-changer in enhancing stock market forecasting capabilities. The abundance of data generated daily in the digital age offers a treasure trove of information. Analyzing vast amounts of data from diverse sources can uncover hidden patterns and sentiment trends in real-time. Combining these data-driven insights with advanced machine learning algorithms can lead to more accurate predictions of market trends and potential risks.

However, it is essential to acknowledge that despite the progress made in understanding investor sentiment, challenges persist. The inherent complexity of human behavior and emotions makes predicting market movements an intricate task. Moreover, the interplay between various market factors remains elusive, and incorporating all relevant variables into forecasting models can be a daunting challenge.

To address these challenges, interdisciplinary collaboration among economists, psychologists, data scientists, and finance professionals is critical. By pooling expertise from diverse fields, we can create a more comprehensive understanding of market dynamics and investor behavior. Cross-disciplinary research efforts can shed light on the intricate relationships between investor sentiment, market fundamentals, and external factors, leading to more accurate and robust models for stock market analysis and prediction.

In conclusion, investor sentiment plays an integral role in the stock market, exerting a profound impact on price fluctuations and trading behaviors. As this area of research continues to evolve, there are promising opportunities to deepen our understanding of investor sentiment's influence, explore influencing factors, enrich theoretical frameworks, and leverage advanced technologies. By harnessing the collective knowledge and expertise of various disciplines, we can move closer to unraveling the intricacies of the stock market and develop more reliable strategies for navigating the ever-changing financial landscape. Embracing a multidimensional approach to studying investor sentiment will not only benefit academics but also empower market participants to make more informed decisions and manage risks effectively.

References

- [1] Shen Yue. Analysis of the impact of investor sentiment on stock returns. Hebei Finance College, 2023.
- [2] Jiao Mengru. Analysis of the impact of investor sentiment on stock excess returns. Lanzhou University of Finance and Economics, 2023.
- [3] Tian Yunzhu, Li Yawen, Wang Xinyue. The relationship between investor sentiment and stock market returns. *National Circulation Economy*, 2023, 10: 156-159.
- [4] Xiao Qiang, Jiao Mengru. Analysis of the interaction between investor sentiment and stock excess returns: based on the MS-VAR model. *Gansu Finance*, 2023, 4: 74-80+73.
- [5] Zhou Haiyan. Research on the impact of investor sentiment on china's stock market index. *Investment and Cooperation*, 2023, 4: 38-41.
- [6] Li Wenxiu. An empirical study on the impact of investor sentiment on stock market returns. *Old Brand Brand Marketing*, 2022, 24: 55-57.
- [7] Yao Fusheng. Stock market, exchange rate market, and investor sentiment. *Economic Research Guide*, 2022, 23: 92-94.
- [8] Han Shaofei. Analysis of the impact of investor sentiment on stock market returns under the background of the COVID-19 pandemic. Shandong Business College, 2022.
- [9] Ji Chengjie. Research on the relationship between investor sentiment and stock market returns in China. Anhui Agricultural University, 2022.
- [10] Chen Qiuhaohao. Research on the correlation of domestic and foreign stock markets. Guangxi University, 2022.