Analysis of the Impact of Investor Sentiment on Stock Returns

Xinya Tang

Department of Economics, University of Southampton, Southampton, United Kingdom xt3y24@soton.ac.uk

Abstract: In recent years, the role of investor sentiment in financial markets has received widespread attention, and an increasing number of studies have shown that investor sentiment can affect stock returns through behavioral biases, market liquidity, and risk premiums. This article systematically reviews the theoretical framework of investor sentiment and explores its impact on market volatility, asset pricing, and trading behavior. In addition, this study analyzed the stabilizing role of institutional investors in market sentiment regulation and proposed future research directions, including measurement optimization of investor sentiment, market liquidity interaction, different types of regulatory effects of institutional investors, cross market transmission effects of sentiment, and the effectiveness of policy regulatory tools. Research has found that investor sentiment may lead to irrational market volatility and generate spillover effects in global markets, while institutional investors can to some extent reduce market imbalances driven by sentiment. Policy makers can use these research findings to optimize market regulatory measures and reduce the irrational impact of market sentiment on stock returns.

Keywords: Investor sentiment, market liquidity, stock returns, institutional investors

1. Introduction

In recent years, the development of behavioral finance has posed challenges to traditional financial theories, particularly questioning the Efficient Market Hypothesis (EMH). More and more research indicates that investor sentiment plays an important role in market volatility, asset pricing, and trading behavior. The irrational emotions of investors, such as optimism, pessimism, panic, or greed, may cause stock prices to deviate from fundamental values, thereby affecting market stability [1]. The changes in market sentiment not only affect individual investors' decisions, but also further exacerbate price fluctuations through factors such as market liquidity and risk premiums, and even generate transmission effects in the global market [2].

Li et al. [3] studied the impact of investor sentiment on stock returns in the US stock market and found that sentiment can increase stock returns in extreme market environments, indicating that irrational investor behavior may drive asset prices up in extreme market conditions. In addition, Hirshleifer et al. [4] pointed out that stock returns exhibit cyclicality, with certain stocks performing better when investor sentiment rises and relatively lower returns when sentiment falls. This provides empirical evidence for the cyclical impact of investor sentiment.

However, from the current research status, both the theoretical and practical circles have insufficient understanding of investor sentiment. Therefore, it is necessary to analyze China's stock

[@] 2025 The Authors. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (https://creativecommons.org/licenses/by/4.0/).

market from the perspective of investor sentiment. Although previous studies have explored the formation, measurement methods, and impact of investor sentiment on the market, there is still a certain knowledge gap: (1) the specific path through which investor sentiment affects stock returns through mechanisms such as market liquidity and risk premium still needs further exploration; (2) The stabilizing role of institutional investors in emotion driven markets has not been fully studied. Therefore, the purpose of this study is to systematically sort out the impact mechanism of investor sentiment on stock prices, analyze its specific role in market volatility, asset pricing, and trading behavior, in order to provide valuable theoretical basis and practical guidance for investors, market participants, and regulators.

2. Measurement methods of investor sentiment

2.1. Measurement methods of investor sentiment

The measurement of investor sentiment is mainly divided into direct indicators and indirect indicators. Direct indicators are subjective, difficult to measure, and have low applicability, while indirect indicators use existing indicators in the market and have obvious comprehensive characteristics, so they are widely used in scholars' research. In the early days, some foreign scholars used direct indicators for research. Benjamin [5] used the Consumer Confidence Index as a measurement indicator in his study, which also laid the foundation for subsequent research on the relationship between investor sentiment and stock prices; Greenwood and Shleifer [6] integrated questionnaire data distributed to investors by various associations and institutions to construct different indicators of investor sentiment. Although the two scholars had different question settings for the questionnaire, they concluded that there was a highly positive correlation.

In more research related to investor sentiment, scholars often use data obtained from the market as indirect indicators for analysis. It is generally an objective reflection of market conditions and has a certain representativeness. Foreign scholar Lan et al. [7] constructed a comprehensive index of investor sentiment based on the principal component analysis method, using the experienced stock issuance of listed companies as the background, and analyzed the relationship between investor sentiment and stock returns; Li and Ran [8] used principal component analysis and partial least squares to construct a comprehensive index of investor sentiment and found that overall investors are a strong predictor of the A-share market; Çepni et al. [9] used partial least squares method PLS has constructed a new comprehensive index of investor sentiment to predict the excess returns of US government bonds maturing in 2-5 years, which has stronger predictive ability than the index constructed through principal component analysis; Kim and Park [10] proposed through their study of the S&P 500 index and S&P 500 index options that implied volatility may also be an indirect indicator representing investor sentiment.

2.2. Research on investor sentiment models

Investor sentiment can effectively reflect investors' judgments on future stock trends and their level of participation in trading. Therefore, behavioral finance scholars have constructed a series of models to analyze investor sentiment, including DSSW model, DHS model, BSV model, and BHS model.

De Long et al. [11] published the DSSW model, also known as the noise trading model, which uses a simple iterative model to describe investors' trading behavior and analyzes the survival ability of noise traders. The DSSW model divides investors into two categories: rational traders and noise traders. The behavior of noise traders is difficult to control and predict, while irrational investment behavior can cause stock prices to deviate from their actual value, thereby reducing the trading enthusiasm of rational traders. The model reflects the impact of the mutual game between rational traders and noise traders and noise traders.

Daniel et al. [12] proposed the DHS model, which assumes that investors have two behavioral biases when making investments, namely overconfidence and biased self attribution. The most significant difference between the DHS model and the DSSW model lies in the classification of investors. This model divides investors into relatively informed and relatively uninformed individuals, and believes that only those with relevant information will have an impact on stock prices.

Barberis et al. [13] proposed the BSV model, also known as the Investor Decision Model, which suggests that investors tend to have two erroneous paradigms when making investments: selective bias and conservative bias, which often lead to overreaction and underreaction. Investors either perceive the current changes in returns as a short-term phenomenon and fail to adjust their expectations for future returns in a timely manner, or overly focus on historical information while ignoring new information, resulting in an inability to make accurate judgments about the market. This model is based on empirical rules and adjustment rules, and believes that investors cannot fully understand the information in the market, which is used to explain the problems of overreaction and underreaction in the stock market.

Barberis et al. [14] constructed the BHS model, which is based on prospect theory and combines the research results of behavioral psychology on frame dependence. It assumes that investors are risk averse, but when the stock trend is good and investors gain returns, they will maintain a more optimistic attitude when investing in the next period, thereby reducing their risk aversion; When stock prices decline, their risk aversion will further deepen. In the BHS model, the utility of investors is determined by both consumption and fluctuations in risk asset prices.

Therefore, investors should consider both utilities when trading, so that the resulting model can better explain investors' abnormal behavior.

3. The impact mechanism of investor sentiment

3.1. Influence stock prices through behavioral biases

In recent years, research in behavioral finance has shown that the impact of investor sentiment on stock market prices cannot be ignored. Especially, investors' behavioral biases, such as overconfidence, herd mentality, and loss aversion, often lead to irrational market reactions to information, causing stock prices to deviate from their fundamental values.

Firstly, overconfidence refers to investors overestimating the accuracy of their own information and underestimating market uncertainty. Daniel et al. [12] proposed an asset pricing theory based on overconfidence and biased self attribution, which suggests that investors' overconfidence leads to an overreaction to private information and an inadequate response to public information. This behavior can lead to short-term momentum effects (positive autocorrelation) and long-term reversal effects (negative autocorrelation). In addition, Odean [15] pointed out that overconfidence increases trading volume, deviates market pricing from reasonable levels, and leads to high volatility. Bouteska et al. [16] also found that during the COVID-19, investors' overconfidence led to an increase in trading volume, but the market return rate did not increase, further proving the negative impact of overconfidence on market efficiency.

Secondly, the herd effect refers to investors relying on the decisions of other investors rather than independently analyzing market information. This behavior can lead to trend fluctuations in asset prices in the short term and return to equilibrium levels in the long term. Daniel et al. [12] found that herd behavior may be one of the reasons why the market responds insufficiently or excessively to certain public information. Especially in situations of high market uncertainty, investors tend to follow market trends, thereby exacerbating price fluctuations. In addition, Bouteska et al. [17] found that investors in different industries are affected to varying degrees by the herd effect. Industrial

company investors are more likely to be driven by market trends, while service industry investors are more independent in their decision-making.

Finally, the loss aversion theory suggests that investors are more sensitive to losses than to equal returns, and this psychological bias can lead to excessive pessimism when the market falls and excessive optimism when the market rises. Bouteska and Regaieg's [18] empirical study found that loss aversion has a negative impact on a company's economic performance, especially during market downturns when investors engage in irrational selling out of fear of losses, further exacerbating market volatility.

3.2. Influence stock prices through market liquidity

Investor sentiment is widely regarded as one of the important factors affecting stock market price fluctuations, and market liquidity is one of its mechanisms of action. Baker and Stein [19] proposed a model that suggests that in a market environment where short selling is restricted, the dominant position of irrational investors will increase market liquidity, which often means that the market is overvalued and predicts lower future stock returns. This study suggests that the surge in investor sentiment can lead to an increase in market liquidity and affect stock prices through this channel. Liu [20] further validated the impact of investor sentiment on market liquidity through empirical research. He investigated data to construct an investor sentiment index and found that when investor sentiment rises, market liquidity significantly increases. In addition, the study also found that even after controlling for market trading volume, the impact of investor sentiment on market liquidity still exists, indicating that investor sentiment not only affects liquidity by increasing trading volume, but may also improve liquidity by influencing factors such as market information structure. Yin and Wu [21] analyzed the dynamic relationship between investor sentiment, market liquidity, and market excess returns using high-frequency data and DCC-GARCH model, and found a significant time-varying correlation between investor sentiment and market liquidity. This correlation is more stable in bear markets, indicating that market liquidity is more sensitive to emotional fluctuations in bear market environments. Chordia et al. [22] studied the long-term changes in market liquidity and their influencing factors. They found that market liquidity not only fluctuates over time, but is also influenced by short-term interest rates, market volatility, and macroeconomic announcements. In addition, their research shows that during market downturns, the bid ask spread and trading costs significantly increase, while during market downturns, this effect is relatively mild. This result suggests that a decrease in liquidity may exacerbate the magnitude of market decline, while an increase in liquidity may push up asset prices. Existing research suggests that investor sentiment can affect stock prices by influencing market liquidity. Market liquidity is not only a channel for transmitting investor sentiment, but may also become an important indicator for measuring market sentiment.

3.3. Influencing asset pricing through risk premium

Investor sentiment, as an important factor affecting asset pricing, has received widespread attention in recent years. Research has shown that investor sentiment can affect asset returns through changes in risk premiums, leading to deviations in market pricing and having a significant impact on the effectiveness of asset pricing models. Frugier [23] found that by constructing investment portfolios for investor sentiment management and comparing them with passive management portfolios, the former had better returns and lower risks under specific conditions. This discovery suggests that investor sentiment not only affects asset returns, but can also be a part of asset management strategies. Sakariyahu et al. [24] further expanded the impact of investor sentiment on asset pricing by constructing a sentiment index based on principal component analysis and incorporating it into the asset pricing model. In addition, the study emphasizes that the market activity of noise traders may be a key factor leading to abnormal asset pricing, further verifying the profound impact of investor sentiment on market volatility. Bouteska et al. [17] proposed an improved Investor Sentiment Index (ISI) in their study of the Korean market and explored its role in asset pricing. Research has found that this sentiment index has strong predictive power for total stock market returns, especially in explaining the excess returns of small cap stocks.

The "equity premium puzzle" proposed by Mehra and Prescott [25] provides a theoretical background for the impact of investor sentiment on risk premium. They pointed out that historically, the average return rate of stocks has been much higher than the risk-free rate, and traditional equilibrium asset pricing models cannot reasonably explain this phenomenon. The core of this issue may not be a high equity premium, but a low risk-free rate, and investor sentiment fluctuations may be a key factor leading to changes in market risk premium. Yu and Yuan [26] further explored the impact of investor sentiment on the market mean variance trade-off. They found that emotional traders during high emotional periods can disrupt the originally positive risk reward balance, leading to a decrease in market risk premium. This result is of great significance for asset allocation strategies, indicating that when market sentiment is high, investors may need to reduce their allocation of high-risk assets to mitigate return losses caused by insufficient risk compensation.

4. Countermeasures of investor emotions

4.1. Policies and regulatory measures

Investor sentiment has a significant impact on the stability and price volatility of the stock market, therefore, how to effectively regulate investor sentiment has become a focus of attention for financial regulatory agencies and policy makers. Orsmond and Price [27] pointed out that policy makers have extensively used macroprudential policies in the past decade to address systemic risks in financial markets and promote financial stability. The core of this policy framework is to develop flexible regulatory measures for different countries' economic environments to cope with the drastic fluctuations in investor sentiment. Research has shown that the effective implementation of macroprudential policies helps to enhance market confidence, reduce investors' irrational emotions, and thus lower the risk of excessive market volatility.

In recent years, scholars have focused on the impact of economic policy uncertainty (EPU), interest rate and oil price fluctuations on investor sentiment. Guenich et al. [28] used a nonlinear autoregressive distribution lag (NARDL) model and found that the uncertainty of EPU and interest rates has a negative asymmetric impact on investor sentiment. In other words, an increase in EPU or interest rates significantly impacts investor sentiment, while their decline results in a relatively small recovery effect. Based on these findings, researchers suggest that policy makers strengthen monitoring of the determinants of investor sentiment and enhance investor confidence through a stable economic policy environment to reduce market volatility. This conclusion is consistent with Orsmond and Price's [27] study, indicating that policy uncertainty can exacerbate investor sentiment volatility. Therefore, developing stable macroeconomic and monetary policies is an important means of regulating investor sentiment. Li [29] found that emotional shocks have a greater impact on stock prices than monetary policy shocks, and the duration of stock market downturns is longer than that of stock market expansions, exhibiting significant asymmetric effects. This indicates that relying solely on monetary policy to stabilize market sentiment may have certain limitations and requires coordination with other regulatory tools, such as fiscal policy or regulatory measures, to enhance market stability. This study complements Orsmond and Price's [27] discussion on macroprudential policy, which suggests that macroprudential policy can serve as an auxiliary tool for monetary policy to respond more flexibly to volatile investor sentiment.

Market information dissemination is also an important factor affecting investor sentiment. Gu et al. [30] found that in situations where investor sentiment is high, the market's response to macroeconomic news is significantly weakened. The high sentiment may lead the market to ignore macroeconomic fundamental information, thereby hindering the effective transmission of information. For policy makers, this means that it is necessary to guide investors to interpret market information rationally through improving market information transparency, strengthening investor education, and other means, in order to reduce the damage of emotions to market efficiency.

4.2. The stabilizing role of institutional investors

Investor sentiment plays an important role in the stock market, influencing market price fluctuations and investment decisions. However, institutional investors are believed to have a certain degree of stabilizing market sentiment and reducing irrational market fluctuations. Eaempati and Srivastava [1] found that investor sentiment mainly comes from market news rather than information disclosed by companies. This indicates that the formation of market sentiment may be influenced by media coverage and market noise, rather than rational analysis based on company fundamentals. In this case, institutional investors may reduce the market's overreaction to noisy news through more professional information interpretation abilities, thereby stabilizing market prices. In addition, the study suggests that the market typically discounts the information disclosed by companies in advance, and institutional investors can leverage their information advantage to intervene in the market when prices are undervalued, thereby reducing market volatility caused by information asymmetry.

Verma and Soydemir [2] explored the differences in the impact of market sentiment between institutional investors and individual investors. Their research suggests that the impact of institutional investor sentiment on the market is relatively stable, while the impact of individual investor sentiment is more volatile. Especially in the US stock market, the rational emotions of institutional investors have a significant impact on market returns, while the role of irrational emotions is relatively small. Furthermore, the study revealed that institutional investors' emotional influence can transcend national boundaries, particularly in developed and emerging markets. This indicates that institutional investors are not only able to stabilize market sentiment in their domestic markets, but may also reduce market volatility globally through cross-border investment behavior.

5. Future directions

Although existing research provides rich theoretical and empirical support for the impact mechanism of investor sentiment, there are still many issues worth further exploration. Future research can optimize the measurement methods of investor sentiment, such as combining machine learning and big data analysis to improve the accuracy of sentiment indices. In addition, the long-term effects of market liquidity on emotional transmission have not been fully studied, and the differences in its impact in different market environments also need to be analyzed in depth. Meanwhile, the specific role of institutional investors in regulating market sentiment is still unclear, and it is worth further exploring whether different types of institutions (such as mutual funds and hedge funds) have different stabilizing effects. Finally, the cross market transmission effect of investor sentiment and the effectiveness of policy regulation measures still need more empirical analysis to help optimize market regulation and improve market stability.

6. Conclusion

This study systematically examined the impact mechanism of investor sentiment on stock returns and explored the role of institutional investors in market sentiment stability. Research has found that investor sentiment mainly affects stock returns through behavioral biases (such as overconfidence,

loss aversion, conformity effect), market liquidity, and risk premiums. Fluctuations in market sentiment may exacerbate price deviations from fundamentals, leading to asset pricing imbalances, while institutional investors can play a stabilizing role in the market, reducing the impact of irrational emotions on the market. In addition, the cross market transmission effect of investor sentiment suggests that emotional changes may not only affect domestic markets, but also have spillover effects on global markets.

However, there are still shortcomings in current research on measuring investor sentiment, the role of institutional investors, the interactive effects of market liquidity, and policy regulation. Future research can further utilize technologies such as big data analysis and machine learning to improve the accuracy of sentiment indices and explore the long-term impact of investor sentiment in different market environments. Policy makers can use the findings of this study to develop effective market regulation measures to reduce emotion driven market volatility and improve market efficiency and stability.

References

- [1] Eachempati, P. and Srivastava, P.R., 2022. Accounting for investor sentiment in news and disclosures. Qualitative Research in Financial Markets, 14(1), pp.53-75.
- [2] Verma, R. and Soydemir, G., 2006. The impact of US individual and institutional investor sentiment on foreign stock markets. The Journal of Behavioral Finance, 7(3), pp.128-144.
- [3] Li, H., Guo, Y. and Park, S.Y., 2017. Asymmetric relationship between investors' sentiment and stock returns: Evidence from a quantile non-causality test. International Review of Finance, 17(4), pp.617–626.
- [4] Hirshleifer, D., Jiang, D. and DiGiovanni, Y.M., 2020. Mood beta and seasonalities in stock returns. Journal of Financial Economics, 137(1), pp.272-295.
- [5] Benjamin, D.L.B., 2014. Investor Sentiment and Stock Returns. Massachusetts Institute of Technology, pp.106-124.
- [6] Greenwood, R. and Shleifer, A., 2014. Expectations of returns and expected returns. The Review of Financial Studies, 27(3), pp.714-746.
- [7] Lan, Y., Huang, Y. and Yan, C., 2021. Investor sentiment and stock price: Empirical evidence from Chinese SEOs. *Economic Modelling*, 94, pp.703-714.
- [8] Li, Y. and Ran, J., 2020. Investor sentiment and stock price premium validation with Siamese twins from China. Journal of Multinational Financial Management, 57, p.100655.
- [9] Çepni, O., Guney, I.E., Gupta, R. and others, 2020. The role of an aligned investor sentiment index in predicting bond risk premia of the US. Journal of Financial Markets, 51, p.100541.
- [10] Kim, M. and Park, J., 2015. Individual investor sentiment and stock returns: Evidence from the Korean stock market. Emerging Markets Finance and Trade, 51(sup5), pp.S1-S20.
- [11] De Long, J.B., Shleifer, A., Summers, L.H. and Waldmann, R.J., 1990. Positive feedback investment strategies and destabilizing rational speculation. The Journal of Finance, 45(2), pp.379–395.
- [12] Daniel, K., Hirshleifer, D. and Subrahmanyam, A., 1998. Investor psychology and security market under- and overreactions. The Journal of Finance, 53(6), pp.1839–1885.
- [13] Barberis, N., Shleifer, A. and Vishny, R., 1998. A model of investor sentiment. Journal of Financial Economics, 49(3), pp.307–343.
- [14] Barberis, N., Huang, M. and Santos, T., 2001. Prospect theory and asset prices. The Quarterly Journal of Economics, 116(1), pp.1–53.
- [15] Odean, T., 1998. Volume, volatility, price, and profit when all traders are above average. The Journal of Finance, 53(6), pp.1887-1934.
- [16] Bouteska, A., Harasheh, M. and Abedin, M.Z., 2023. Revisiting overconfidence in investment decision-making: Further evidence from the US market. Research in International Business and Finance, 66, p.102028.
- [17] Bouteska, A., Sharif, T. and Abedin, M.Z., 2024. Does investor sentiment create value for asset pricing? An empirical investigation of the KOSPI-listed firms. International Journal of Finance & Economics, 29(3), pp.3487-3509.
- [18] Bouteska, A. and Regaieg, B., 2020. Loss aversion, overconfidence of investors and their impact on market performance: Evidence from the US stock markets. Journal of Economics, Finance and Administrative Science, 25(50), pp.451-478.
- [19] Baker, M. and Stein, J.C., 2004. Market liquidity as a sentiment indicator. Journal of Financial Markets, 7(3), pp.271-299.

- [20] Liu, S., 2015. Investor sentiment and stock market liquidity. Journal of Behavioral Finance, 16(1), pp.51-67.
- [21] Yin, H. and Wu, X., 2019. Daily investor sentiment, excess return and market liquidity—research on time-varying correlation based on DCC-GARCH model. Journal of Beijing Institute of Technology (Social Sciences Edition), (5), pp.76-87.
- [22] Chordia, T., Roll, R. and Subrahmanyam, A., 2001. Market liquidity and trading activity. The Journal of Finance, 56(2), pp.501-530.
- [23] Frugier, A., 2016. Returns, volatility and investor sentiment: Evidence from European stock markets. Research in International Business and Finance, 38, pp.45-55.
- [24] Sakariyahu, R., Paterson, A., Chatzivgeri, E. and Lawal, R., 2024. Chasing noise in the stock market: an inquiry into the dynamics of investor sentiment and asset pricing. Review of Quantitative Finance and Accounting, 62(1), pp.135-169.
- [25] Mehra, R. and Prescott, E.C., 1985. The equity premium: A puzzle. Journal of Monetary Economics, 15(2), pp.145-161.
- [26] Yu, J. and Yuan, Y., 2011. Investor sentiment and the mean-variance relation. Journal of Financial Economics, 100(2), pp.367-381.
- [27] Orsmond, D. and Price, F., 2016. Macroprudential Policy Frameworks and Tools. Bulletin–December 2016.
- [28] Guenich, H., Hamdi, K. and Chouaibi, N., 2022. Asymmetric response of Investor sentiment to Economic Policy Uncertainty, interest rates and oil price uncertainty: Evidence from OECD countries. Cogent Economics & Finance, 10(1), p.2151113.
- [29] Li, J., 2015. The asymmetric effects of investor sentiment and monetary policy on stock prices. Applied Economics, 47(24), pp.2514-2522.
- [30] Gu, C., Chen, D. and Stan, R., 2021. Investor sentiment and the market reaction to macroeconomic news. Journal of Futures Markets, 41(9), pp.1412-1426.