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A Conceptual Study on the Impact of Investor Sentiment on Stock Price Co-Movement in China's A-Share Market

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Abstract

With the growing interdependence of global capital markets, stock price co-movement—securities moving together—has been in the limelight. In China, synchronized industry movements are the result of speculative forces. Morck et al. (2005) ranked China second, among 40 countries, in stock price co-movement, attributing this to its unique market characteristics and strong investor influence. The dynamics reflect market efficiency, investment, and regulation. Sentiment lies at the center of China's A-share market, in which retail investors dominate. Synchronous price dynamics and speculation underlie volatility and inefficiency. Sentiment's contribution to stock price co-movement is explored to capture how psychological variables drive asset prices and market trends and inform risk based on sentiment and regulatory reaction. The present study analyzes China's A-share stock co-movement focusing on firm size and industry-based investor sentiment drive. Its novelty lies in the construction of an investor sentiment index with turnover rate, trading volume, and the Consumer Confidence Index (CCI) for a more sensitive capture of sentiment. The composite index provides a systematic means of identifying sentiment-driven market behavior. The research examines intensity of stock co-movement, sentiment changes, and the moderating roles of firm size and industry. It quantifies sentiment-based synchronization and examines how market structure determines this interaction, revealing behavioral and structural ingredients in the Chinese market. Findings are beneficial to a number of stakeholders. Investors are alerted to sentiment-driven price action and industry trends. Regulators can react to sentiment-driven volatility and investor sentiment. In behavior finance, the study applies sentiment models to China's market, demonstrating unique patterns. From a market efficiency perspective, it investigates sentiment-driven mispricing and industry behavior, filling research gaps in investor sentiment and stock co-movement.

Keywords: Stock Price Co-Movement, Investor Sentiment, China's A Share Market, Industries

Introduction

The efficient market theory assumes that the intrinsic values of assets are reflected by market prices, with a generation of fluctuations caused largely by new information (Ackert & Deaves, 2009). From this idealized point, real-world financial markets take a different turn as some anomalies have been documented based on econometric improvement in the 1980s (Shiller, 2000). This phenomenon, where stock prices move in sync regardless of individual company fundamentals, undermines the market's ability to discover prices and allocate resources efficiently (You & Wang, 2022). Understanding the drivers of this co-movement presents an opportunity to address these inefficiencies. By investigating the role of factors such as investor sentiment, this research aims to explore mechanisms that influence stock price co-movement. The results may assist investors in effectively managing portfolio risks, guide policymakers in improving market transparency, and enhance the efficiency of resource allocation within the securities market.

Recent studies indicate that stock price co-movement is an important phenomenon in developed and emerging markets. Sahabuddin et al. (2022) confirmed the high degree of co-movement between different national markets, putting a greater emphasis on the global interconnectivity driven by shared economic influences and investor psychology. Mobeen (2021) also identified strong co-movement and spillover effects among energy markets in developed countries during crisis periods, emphasizing the heightened interconnectedness during economic stress. Zehri (2021), noticed remarkable co-movement in stock prices between the US and East Asian markets during the COVID-19 pandemic, underlining the far-reaching impacts of such crises on market dynamics.

This raises the question of what actually drives this stock price co-movement phenomenon. Traditional financial theories also assume that investors are essentially rational and that the markets are efficient-that the available information is already factored into stock prices (Samuelson, 1965) (Markowitz, 1952). Real-life financial markets, however, often provide ample evidence against these suppositions (Shiller, 2000). Most traditional finance studies explain stock price co-movements in terms of information efficiency, regulatory environments, and firm-specific information. The information efficiency theory is of the view that the level of efficiency in the markets significantly affects the co-movement in the prices of stocks, a fact verified by several studies (Wang, 2024). In China, however, the market is still in a state of weak efficiency, where corporate financial information and major event details are not evenly distributed among investors. Although historical price data and trading volumes are relatively equitably shared, such asymmetry in corporate information challenges the complete explanation of the information efficiency theory in regard to stock price co-movement in the Chinese context.

While many research has explored investor sentiment's relationship with market volatility and stock returns, few studies have specifically focused on its direct impact on stock price co-movement. This represents a gap since co-movement is still one of the critical issues in the stock market of China, given the domination by retail investors and therefore high level of susceptibility to sentiment-driven trading behavior (Chen, 2019; Ma et al., 2020; Han & Li, 2017). Even though various studies like Miller and Scholes (1982) and Shiller (2000) demonstrate how investor irrationality acts as a factor in the diversion of price away from fundamental values, De Long et al. (1990) and Baker & Wurgler (2006) document how noise

traders and initial investor sentiment give a cue as to subsequent returns. However, its direct role in driving co-movements in stock price has not been discussed at large, especially in Chinese context.

Besides, although the Chinese stock market has been developed since 1990, there is still a shortage in the research about how investor sentiment particularly influences the co-movement of stock prices in this special market. Previous research is mainly focused on market efficiency, regulatory environments, and corporate transparency while neglecting the behavioral aspect, which plays an increasingly essential role in modern markets. Liang (2002) and Wen et al. (2007) have documented irrational behavior of Chinese investors, propelled by short-term expectations and exaggerated sensitivity to fluctuations in returns. Recently, Li et al. (2024) proved that investor sentiment influences stock index returns, but how this investor sentiment causes synchronism in the stock prices of China's policy-driven stock market has not been appropriately addressed.

This gap in understanding is important given China's unique market characteristics, including the high concentration of retail investors and the strong influence of government policies. Addressing this gap is essential for providing new empirical insights into how investor sentiment shapes stock price co-movement and for enhancing our understanding of China's capital market dynamics.

Literature review & Conceptual Framework

Stock Price Co-movement

The concept of co-movement, or synchronization, in economics was first introduced by Lucas (1977), who shifted the focus in business cycle theory from analyzing GDP as a single time series to exploring the interconnections of multiple time series. In stock markets, co-movement refers to the correlated movement of stock prices, such as synchronized rises and falls (Gregory, Huang & Niu, 2013).

Co-movement has grasped the increasing attention of researchers with the rapid growth of economy and expansion of the international capital markets for analyzing the stock market price. Co-movement or synchronicity in stock price simply means the prices of various securities increase and decrease collectively in the stock market. This notable relationship in asset price movements is driven by both macroeconomic factors—such as interest rates, inflation, and GDP growth—and non-economic factors, including investor sentiment, market psychology, and regulatory policies. This phenomenon is particularly pronounced in emerging markets like China's A-share market, where investor sentiment plays a crucial role (Zhu, 2022). Sentiment-driven co-movement arises when investor collective behavior driven by market sentiments or perceptions yields a synchronized stock price dynamics not entirely justified by the fundamentals of firm-specific events.

Investor sentiment can amplify co-movement in stock prices. When investor sentiment dominates market behavior, stock prices tend to move together even regardless of companies' fundamental performance. Indeed, such a phenomenon could occur not only within but also across sectors, industries, and even geographical regions and between different nations in their respective stock markets. Therefore, this phenomenon can be

witnessed across the entire gamut of industries and sectors, especially in sentiment-driven markets such as that of the A-share market in China.

Effectiveness of the Chinese Security Market

The Efficient Market Hypothesis is a concept derived from traditional financial theory, which Fama (1970) first put forward; it has subsequently been categorized into three forms: weak, semi-strong, and strong. In its weak form, all historical stock prices are reflected in current prices, wherein it is impossible for investors to consistently realize excess profits by using technical analysis. Fama (1965) confirms this empirically, finding that stock prices follow a random walk-a finding consistent with weak-form efficiency. However, the assumption of full investor rationality is not always realistic. Investor sentiment may influence the demand for assets based on irrelevant information, which, in turn, undermines the EMH since irrational behavior could be systematic in the market. Weak-form efficiency, which asserts that stock prices already incorporate all historical price data, has been the subject of extensive research and ongoing debate. Under this concept, predicting future prices or consistently earning excess returns through technical analysis is deemed impossible.

Since the inception of China's securities market, domestic researchers have conducted empirical studies, produce conflicting results. Some studies suggest that the Chinese securities market exhibits weak-form efficiency, while others argue it has not yet achieved this level of efficiency. One major issue in the research on Chinese stock market efficiency is the short duration of time series used, making it difficult to fully assess the market's efficiency. In this context, investor sentiment likely fills the gap caused by inefficient information dissemination, leading to more sentiment-driven stock price co-movement. This study will examine how investor sentiment interacts with these inefficiencies to drive co-movement in China's A-share market

Investor Sentiment

Baker and Wurgler (2006) defined investor sentiment as a speculative tendency that drives speculative demand and affects cross-sectional stock returns. Baker and Stein (2004) used market liquidity as a sentiment indicator, suggesting that overconfident, irrational investors increase liquidity and create sentiment shocks. When sentiment is positive, stocks become overvalued. Baker and Wurgler (2006) also studied mispricing due to investor sentiment from a liquidity perspective, noting that under short-selling constraints, high liquidity reflects irrational trading behavior, leading to frequent trading and pricing errors. Black (1986), building on Kyle's concept of "noise traders", argued that noise traders mistakenly perceive irrelevant information as valuable and trade accordingly, causing stock prices to reflect their erroneous pricing levels. De Long et al. (1990) proposed the noise trader model, which attributes deviations in expected stock returns from rational arbitrageurs' beliefs to investor sentiment. This model suggests that differing judgments about asset values and psychological factors lead to non-rational expectations, causing asset prices to deviate due to investor sentiment. Barberis (1998) observed that investor sentiment affects the value preferences of noise traders in the asset pricing process. Brown & Cliff (2004, 2005) described investor sentiment as market participants' expectations of stock returns, with bullish or bearish expectations deviating from the market average. This sentiment is present not only among individual investors but also institutional investors.

In Chinese research, studies on investor psychology and behavior have emerged later than in Western countries. Given the large proportion of individual and retail investors in China's stock market, which shows notable herding effects (Sun & Shi, 2002), researching investor sentiment is particularly important. Individual investor sentiment in China can quickly spread across the market, causing widespread fluctuations. This sentiment not only affects individual investors but also influences institutional investors, who may develop cognitive biases under pressure and the influence of noise traders (Wang et al., 2004). Wang et al. (2004) used the proportion of bullish respondents in CCTV's market survey as an investor sentiment index, indicating that investor sentiment stems from cognitive biases that shape individual judgments of the market.

Measurement of Investor Sentiment

The direct indicators are obtained from the survey of the general investing public and reflect the investor sentiment. These indicators may be further categorized into two groups: the first for market trends, such as the Bull-Bear Index for reflecting the bullish or bearish condition in the market, proposed by Cheng & Liu (2005) and the CCTV Market Sentiment Index, proposed by Rao & Liu (2003).

The second category, to which this paper belongs, studies confidence in the general macroeconomic environment of investors. For instance, the Consumer Confidence Index indicates individuals' optimism or pessimism towards economic conditions (Lemmon & Portniaguina, 2006). In this study, CCI is particularly germane because it provides an aggregate view of sentiment conditions that is highly useful for considering how macroeconomic confidence impinges on the co-movement of stock prices. Han and Ren (2006) find that CCI is positively correlated with short-term returns in China's stock markets, further underpinning the relevance of CCI in reflecting investor sentiment. The selection of CCI thus allows for an analysis of how general economic sentiment influences investor behavior that may lead to stock price synchronization in China's A-share market.

Indirect indicators use publicly available market transaction data, in retrospect, to indirectly or partly reflect investor sentiment. Mainstream research identifies several key measures, among these indirect indicators, trading volume is a critical indicator because it captures the collective behavior of investors during periods of heightened sentiment. As noted by Baker and Wurgler (2006), trading volume tends to spike during emotionally charged periods, often disregarding firm-specific fundamentals. Therefore, this kind of sentiment-driven trading in the retail-dominated market of China raises the co-movement of stock prices.

Similar to trading volume, the turnover rate indicates the frequency of trading and reflects the short-term trading behavior triggered by investor sentiment. According to Baker and Stein (2004), a high level of the turnover rate is positively related to market optimism, which may further facilitate the synchronization of stock prices. In a market featuring information asymmetry, such as China, the turnover rate serves as an essential indicator of how emotion-driven trading amplifies the co-movement in stock prices.

While single investor sentiment indicators as showed below are widely used, they are fundamentally constrained by researchers' subjective choices of indicators, with concerns about the accuracy and authenticity of these measurements. This is particularly true in

China's financial market, where the market is relatively young and still developing, making it difficult for sentiment organizations to obtain reliable data. Existing sentiment indices often lag behind those in other countries in terms of time coherence and data accuracy, and the limited variety and quantity of financial derivatives in China's capital markets mean that selected indicators may only capture partial changes in investor sentiment, leading to potentially biased empirical results. To tackle these challenges, researchers have developed composite sentiment variables by mathematically combining different individual sentiment indicators.

To date, the research on investor sentiment has not yielded a precise definition, largely due to the subjective, complex, and variable nature of sentiment. Consequently, there is no consensus within the academic community on how to quantitatively measure investor sentiment. However, since the introduction of the BW Index, constructing composite market sentiment indicators has gradually become the predominant approach in sentiment research. This paper will also adopt this method to examine the impact of investor sentiment on stock price co-movement.

Noise Trading Theory

Noise Trading Theory, introduced by Black (1986), defines noise traders as investors who make decisions based on whims, misinformation, or other non-fundamental factors rather than on intrinsic values of stocks. Unlike rational traders, who base decisions on all relevant information, noise traders are influenced by emotions or trends, often driving prices away from their true values. This theory contrasts with the Efficient Market Hypothesis (EMH), which assumes that stock prices reflect all available information, leading to an accurate alignment with intrinsic values. De Long, Shleifer, Summers, and Waldmann (1990) suggest that the irrational sentiments of noise traders can cause prices to deviate from their fundamental values for extended periods, often leading to extreme fluctuations. The uncertainty in the beliefs of these noise traders introduces a risk that opposes the actions of rational arbitrageurs, leading to price deviations from fundamentals even when no fundamental risk is present. Noise traders create their own market dynamics, and arbitrage is insufficient to eliminate their impact. Their DSSW model mathematically illustrates how noise traders contribute to these deviations by acting on sentiment-driven beliefs, which generate risk that opposes rational arbitrage. In effect, noise traders' expectations and sentiment establish a significant dynamic in the market, one that rational arbitrage alone cannot neutralize.

Returning to the study of stock price co-movement phenomenon, as the market return can be expressed as a portfolio of different risky assets in the market, the linkage between it and individual stocks can be considered as a weighted combination of the linkage between different risky assets, Zhang improves the noise trading model of De long et al. (1990) to obtain the expression for the expected return of risky assets that includes investor sentiment.

Relationship between Trading Volume and Stock Price Co-Movement

It is generally considered that trading volume is one of the most significant indicators of investor sentiment and market activity. Generally speaking, a high volume signifies an increased investor sentiment (Campbell, Grossman & Wang, 1993). In recent literature also, after significant market events, there has been an upsurge of trading volume responding to

changes in investor sentiment (Simon & Violet, 2015). In this way, aggregated investor behavior driven by sentiment and not by fundamentals leads to the increased co-movement of stock prices.

For example, Chaiyuth et al. (2019) further develop the view that trading volume surges in periods of high sentiment, particularly in less efficient markets like China. The trading of investors in such markets is therefore usually based on sentiment and noise, further increasing stock price co-movement. Therefore, trading volume can be viewed as a good predictor of stock price co-movement since it reflects investors' emotional response toward market trends. Therefore, the following proposition is formulated:
Proposition 1: Trading volume affects stock price co-movement in China's A-share market.

Relationship between Turnover Rate and Stock Price Co-Movement
In the literature, one proxy often used to represent liquidity is turnover, which is also an important proxy for investor sentiment. The turnover captures the intensity of trading of the stock in markets that can reflect the degree of market activities or investor excitement. According to Chaiyuth et al. (2019), high turnover is normally referred to as high investor sentiment. Chen et al. (2020) analyze how higher turnover increases stock price volatility due to a collective trading behavior in favor of firm-specific fundamentals. If investors are optimistic about the market, they all trade in the same direction, thereby forcing the stock prices to move together. Although their study focuses on price volatility, the same collective trading behavior in China's A-share market, dominated by retail investors, may also cause stock price co-movement, particularly when investor sentiment drives correlated trading across multiple stocks Xu & Malkiel (2003).

The noise trading factor becomes more active in the less efficient markets; thus, the turnover rates spike due to the sentiment-driven behavior and further increase the stock price co-movement. Han & Li (2021) noted that turnover rate is a good predictor of stock price, given that investors mainly respond to the overall stock market sentiment rather than to specific firm fundamentals. Therefore, it may provide an important source of understanding the co-movement in emerging markets such as China's A-share market. In light of the above study, the following proposition is formulated:
Proposition 2: Turnover rate positively affects stock price co-movement in China's A-share market.

Relationship between CCI and Stock Price Co-Movement
The CCI is an indicator that widely reflects the optimism or pessimism of consumers in the general economic environment. This heightened confidence can fuel more enthusiasm in the stock market, as investors are much more willing to take risks, leading to increased activity in the stock market (Li & Piao, 2019). For instance, studies have shown that when consumer confidence is at its peak, investors are usually optimistic, hence always having a positive effect on the equity markets, as well as increased trading volume (Wang et al., 2021; CFA Institute, 2022).

In emerging markets like China, where sentiment-driven behaviors prevail, changes in the CCI may be an important factor for collective investor decisions. An increased CCI reflects increasing optimism over future economic performance and hence can result in synchronized

trading behavior that, in turn, leads to increased co-movement in stock prices. Therefore, the CCI is an indirect proxy for investor sentiment, perhaps driving stock price co-movement through emotional responses to macroeconomic trends. The following proposition is:
Proposition 3: CCI positively affects stock price co-movement in China's A-share market.

Relationship between Investor Sentiment and stock Price Co-Movement
It is specially designed to capture the market-wide investor sentiment, reflecting factors of both positive and negative market sentiments. The index combining the key indicators of the sentiment, such as volume of trading, turnover ratio, and the Consumer Confidence Index. MIS is constructed because a single indicator cannot fully capture the degree of investor sentiment that reflects the collective emotional response to market conditions.

The DSSW model in the previous section indicates that the correlation between asset returns is partially driven by investor sentiment. This relationship shows that the co-movement of stock prices can be influenced by the degree of irrational behavior among investors, where sentiment-driven trading results in synchronized price movements. The MIS captures both contemporaneous and lagged investor sentiment, with lagged sentiment exerting a stronger effect due to the slower transmission of noise and sentiment. This leads to collective decision-making that amplifies stock price co-movement.

The MIS is essential because it aggregates multiple sentiment indicators, offering a more robust representation of investor sentiment in China's A-share market, where noise trading and sentiment-driven behaviors play a dominant role. Consequently, based on the study above, the following proposition is drawn:
Proposition 4: Investor sentiment positively affects stock price co-movement in China's A-share market.

Conceptual Framework
The conceptual framework of the study will employ the influence of investor sentiment on the co-movement of stock prices in China's A-share market, taking investor sentiment as the independent variable and the co-movement of stock price as the dependent variable. The framework uses a composite market sentiment index that will include trading volume, the turnover rate. As might be expected, the variations across industries and company size naturally lead to a natural group analysis-segmentation based on co-movement of stock prices by industry and by firm size-enabling one to explore how investor sentiment affects co-movement in these different sectors and by varying company sizes.

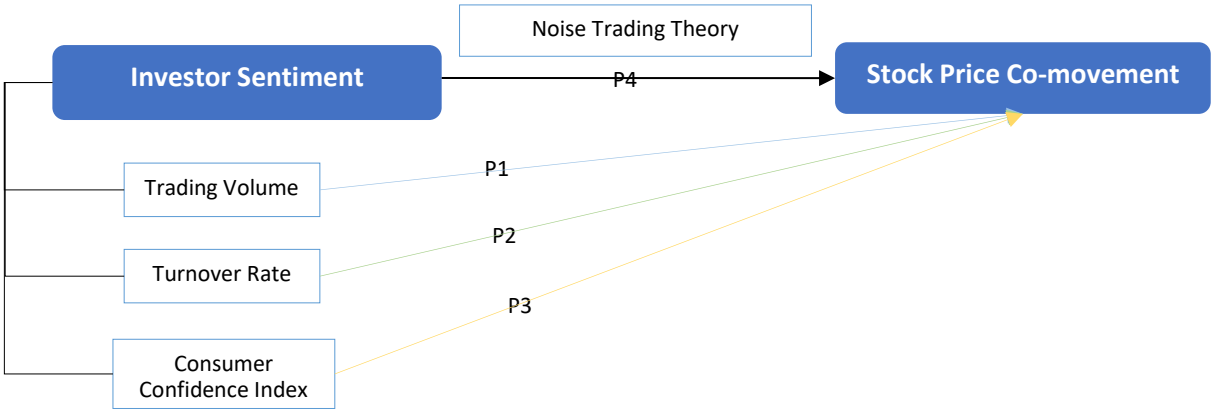

Figure 1: Conceptual Framework

Research Implications

This study has created literature gaps, particularly in China's A-share market, and developed hypotheses for stock price co-movement and investor sentiment. Through the industry classification of stocks and firm size, this study identifies unique market dynamics, allowing it to provide rich insight into how sentiment-based actions drive stock price movement. This segmentation approach is a main innovation, and it allows sentiment's impact to be examined with more accuracy among different segments within the market. Theoretically, this research provides contribution by bringing investor sentiment into the co-movement analysis of stock prices and suggesting an industry- and size-based classification scheme. Unlike existing studies that are generally market-wide in style, this study reveals how different types of firms are affected differently by sentiment, providing empirical evidence to China's peculiar economic environment for behavioral finance literature.

In conclusion, the findings have implications for practice to investors, policy-makers, and financial analysts. It enables investors and financial analysts to better form risk judgments and investment decisions with an understanding of how sentiment causes stock price synchronization across industries and firm sizes. The findings of this work also have important implications for regulatory policy aimed at stabilizing China's dynamic financial system by uncovering market inefficiencies driven by sentiment fluctuations across different sectors.

References

Abdi, H., & Williams, L. J. (2010). Principal component analysis. *Wiley interdisciplinary reviews: computational statistics*, 2(4), 433-459.

Akin, I., & Akin, M. (2024). Behavioral finance impacts on US stock market volatility: an analysis of market anomalies. *Behavioural Public Policy*, 2024, 1-25.

Ang, A., Hodrick, R.J., Xing, Y. & Zhang, X. (2006). The Cross-Section of Volatility and Expected Returns. *The Journal of Finance*, 61, 259-299.

Arsham, H., & Lovric, M. (2011). Bartlett's Test. *International encyclopedia of statistical science*, 2, 20-23.

Ballinari, D., & Behrendt, S. (2021). How to gauge investor behavior? A comparison of online investor sentiment measures. *Digital Finance*, 3(2), 169-204.

Ball, R., Gerakos, J., Linnainmaa, J. T., & Nikolaev, V. (2020). Earnings, retained earnings, and book-to-market in the cross section of expected returns. *Journal of Financial Economics*, 135(1), 231-254.

Baker, M., & Wurgler, J. (2007). Investor Sentiment in the Stock Market. J*ournal of Economic Perspectives*, 21(2), 129-151.

Belimam, D., Lakhnati, G. (2018). Beta, Size and Value Factors in the Chinese Stock Returns. Advances in Time Series Data Methods in Applied Economic Research. *ICOAE*, 2018.

Beny, L. N. (2004). A comparative empirical investigation of agency and market theories of insider trading. Harvard Law School John M. Olin Center for Law, *Economics and Business Discussion Paper Series*, (475).

Black, F. (1986), Noise. *The Journal of Finance*, 41, 528-543.

Bradfield, J. (2007). The Efficient Markets Hypothesis. *Introduction to the Economics of Financial Markets*, pp. 257-293.

Carpenter, J. N., Lu, F., & Whitelaw, R. F. (2021). The real value of China's stock market. *Journal of Financial Economics*, 139(3), 679-696.

Chan, K., & Hameed, A. (2006). Stock price synchronicity and analyst coverage in emerging markets. *Journal of Financial Economics*, 80(1), 115-147.

Chen, F., & Jarrett, J. E. (2011). Financial crisis and the market efficiency in the Chinese equity markets. *Journal of the Asia Pacific economy*, 16(3), 456-463.

Chiang, T. C., & Zheng, D. (2010). An empirical analysis of herd behavior in global stock markets. *Journal of Banking & Finance*, 34(8), 1911-1921.

Chow, G. C., Huang, S., & Niu, L. (2013). Econometric analysis of stock price co-movement in the economic integration of East Asia. *Economics*, 11

DeAngelo, H., & Roll, R. (2015). How stable are corporate capital structures? *The Journal of Finance*, 70(1), 373-418.

De Long, J. B., Shleifer, A., Summers, L. H., & Waldmann, R. J. (1990) Noise Trader Risk in Financial Markets. *Journal of Political Economy*, 98, 703-738.

Dimson, E., Marsh, P., & Staunton, M. (2017). Factor-Based Investing: The Long-Term Evidence. *Journal of Portfolio Management*, 43(5), 15–37.

Eugene F. F., & Kenneth R. F. (2015). A five-factor asset pricing model. *Journal of Financial Economics*, 16(1), 1-22.

Fama, E. F. (1965). Random Walks in Stock Market Prices. *Financial Analysts Journal*, 21(5), 55–59.

Foster, L., Banton, J., & Diamond, I. (2014). Beginning statistics: An introduction for social scientists. *Sage*.

Gompers, P., Ishii, J., & Metrick, A. (2003). Corporate governance and equity prices. *The quarterly journal of economics*, 118(1), 107-156.

Green, S. (2004). The development of China's stock market, 1984-2002: equity politics and market institutions. *Routledge*.

Jansen, M., Swinkels, L., & Zhou, W. (2021). Anomalies in the China A-share market. *Pacific-Basin Finance Journal*, 68, 101607.

Jin, L., & Myers, S. C. (2006). R2 around the world: New theory and new tests. *Journal of financial Economics*, 79(2), 257-292.

Ju, X. K. (2020). Herding behaviour of Chinese A-and B-share markets. *Journal of Asian Business and Economic Studies*, 27(1), 49-65.

Junyao, L., & Jishi, P. (2019). Analysis of investor sentiment and consumer confidence index. *Guangxi Quality Supervision Guide Newspaper*, 2019(01), 171.

Kaiser, H. F. (1974). An index of factorial simplicity. *psychometrika*, 39(1), 31-36.

Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), 263–291.

Kuo, K. C., Lu, W. M., & Dinh, T. N. (2021). An integrated efficiency evaluation of China stock market. *Journal of the Operational Research Society*, 72(4), 950-969.

Lee, C. M., & Swaminathan, B. (2000). Price momentum and trading volume. *The Journal of Finance*, 55(5), 2017-2069.

Lin, Y. E., Li, Y. W., Cheng, T. Y., & Lam, K. (2021). Corporate social responsibility and investment efficiency: Does business strategy matter? *International Review of Financial Analysis*, 73, 101585.

Linbo, L., Weiqi, L., Yanan, H., & Xiaoying, Z. (2022). Investor Irrationality and Stock Anomalies in China. *Journal of Management Science in China*, 2022(6), 142-158.

Liu, J., Jiang, T., & Ye, Z. (2021). Information efficiency research of China's carbon markets. *Finance Research Letters*, 38, 101444.

Liu, S. (2015). Investor sentiment and stock market liquidity. *Journal of Behavioral Finance*, 16(1), 51-67.

Lucy, A., & Richard, D. (2009). Behavioral Finance: Psychology, Decision-Making, and Markets, *1st Edition*, pp. 10-15.

Madaan, G., & Singh, S. (2019). An analysis of behavioral biases in investment decision-making. *International Journal of Financial Research*, 10(4), 55-67.

Malcolm, B., & Jeremy, C.S. (2004). Market liquidity as a sentiment indicator. *Journal of Financial Markets*, 7(3), 271-299.

Neal, R., & Wheatley, S. M. (1998). Do measures of investor sentiment predict returns? *Journal of financial and quantitative analysis*, 33(4), 523-547.

Nissim, D., & Penman, S. H. (2001). Ratio analysis and equity valuation: From research to practice. *Review of accounting studies*, 6, 109-154.

Pearson, K. (1905). The problem of the random walk. *Nature*, 72(1867), 342-342.

Peng, L., Zhang, L., & Chen, W. (2021). Capital market liberalization and investment efficiency: evidence from China. *Financial Analysts Journal*, 77(4), 23-44.

Qiu, L., & Welch, I. (2004). Investor sentiment measures. *National Bureau of Economic Research*, 185, 10794

Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European journal of education studies*, 3, 369-387.

Rafael, L. P., Florencio, L., Andrei, S., & Robert, V. (2000). Investor protection and corporate governance. *Journal of Financial Economics*, 58(1), 3-27.

Randall, M., Bernard, Y., & Wayne, Y. (2000). The information content of stock markets: why do emerging markets have synchronous stock price movements? *Journal of Financial Economics*, 58(2), 215-260.

Robert, C. M. (1980). On estimating the expected return on the market: An exploratory investigation. Journal of Financial Economics, 8(4), 323-361.

Roll, R. (1988), R^2. *The Journal of Finance*, 43: 541-566.

Ruxandra, T. (2020). Behavioral Biases and Stock Market Reaction: Evidence from Six Post-communist Countries. *Journal of Economics*, 68(8), 811 – 826.

Saiti, B. (2015). Cointegration of Islamic stock indices: Evidence from five ASEAN countries. *International Journal of Scientific & Engineering Research*, 6(7), 1392-1405.

Saloni, R., & Babli, D. (2020). How do emotional intelligence and behavioral biases of investors determine their investment decisions? *Rajagiri Management Journal*, 14(1), 35-47.

Sang, I. S., Hoon, C., & Doojin, R. (2019). Firm-specific investor sentiment and daily stock returns. *The North American Journal of Economics and Finance*, 50, 100857.

Shrestha, N. (2021). Factor analysis as a tool for survey analysis. *American journal of Applied Mathematics and statistics*, 9(1), 4-11.

Velez, D. G. (2016). Capital structure in the family firm: Exploring the relationship between financial sources and family dynamics (Doctoral dissertation). Kennesaw State University. ProQuest Dissertations & Theses Global.

Wang, W., Su, C., & Duxbury, D. (2021). Investor sentiment and stock returns: Global evidence. *Journal of Empirical Finance*, 63, 365-391.

Wen, F., Xu, L., Ouyang, G., & Kou, G. (2019). Retail investor attention and stock price crash risk: evidence from China. *International Review of Financial Analysis*, 65, 101376.

Wu, H., & Xie, Q. (2024). Volatility spillovers and asymmetric effects of Chinese A-share markets—enterprise-Level data based on high-dimensional social network models. *Applied Economics*, 56(57), 7732-7756.

Xiaotong, Z. (2023). Exchange Rate, Investor Sentiment, and Fluctuation of China A-share Market. *FFIT*, EAIA.

Yanhui, C., Hanhui, Z., Ziyu, L., & Jinrong, L. (2020). A dynamic analysis of the relationship between investor sentiment and stock market realized volatility: Evidence from China. *PLoS ONE*, 15(12), e0243080.

Zhang, B., & Li, X. M. (2014). Has there been any change in the comovement between the Chinese and US stock markets? *International Review of Economics & Finance*, 29, 525-536.

Zhang, T., Gu, G. F., & Zhou, W. X. (2019). Order imbalances and market efficiency: New evidence from the Chinese stock market. *Emerging Markets Review*, 38, 458-467.

Zhao, X. G., Wu, L., & Li, A. (2017). Research on the efficiency of carbon trading market in China. *Renewable and Sustainable Energy Reviews*, 79, 1-8.

Zhou, G. (2018). Measuring investor sentiment. *Annual Review of Financial Economics*, 10(1), 239-259.

Zilong, L., Susheng, W., & Mingzhu, H. (2021). International investor sentiment and stock returns: Evidence from China. *Investment Analysts Journal*, 50(1), 60-76.

Zimei, H., & Zhenghui, L. (2021). What reflects investor sentiment? Empirical evidence from China. *Data Science in Finance and Economics*, 1(3), 235-252.