Documentary Research of Investor Sentiments and Investment Returns in China's Stock Market

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Abstract

This study investigates the impact of investor sentiment on stock returns, focusing on the contrasting effects of retail and institutional investors' bullish sentiment in China's CSI 300 listed companies from 2015 to 2023. Investor sentiment, as a critical psychological factor in financial markets, plays a significant role in shaping stock performance. The research aims to uncover how retail and institutional investors' sentiment influences stock returns, the underlying mechanisms driving these effects, and the heterogeneity of these impacts across different types of enterprises. Using a comprehensive dataset, the study employs robust empirical methodologies to analyze the relationship between investor sentiment and stock returns, while also conducting mechanism and heterogeneity analyses to provide deeper insights.

The findings reveal three key results. First, retail investors' bullish sentiment negatively impacts stock returns, whereas institutional investors' bullish sentiment has a positive effect, a conclusion that remains consistent across various robustness tests. Second, the mechanism analysis demonstrates that investor sentiment affects stock returns primarily through its influence on analysts' attention and stock liquidity. Third, heterogeneity analyses indicate that the negative impact of retail investors' sentiment is more pronounced in non-state-owned enterprises, manufacturing firms, and non-heavily polluted industries. Conversely, the positive impact of institutional investors' sentiment is stronger in non-state-owned enterprises, non-manufacturing firms, and heavily polluted industries.

In a nutshell, the study contributes to the literature in two significant ways. First, it enriches the understanding of the economic consequences of retail and institutional investor sentiment, particularly in the context of emerging markets. Second, it deepens the knowledge of factors influencing stock returns, offering practical implications for optimizing investment strategies and mitigating risks. By expanding the scope of research on stock returns and investor sentiment, this paper provides valuable insights for both academic research and practical investment decision-making.

Keywords: Investor Sentiment; Stock Returns; Behavioral Finance

Introduction

Traditional financial theory, grounded in the efficient market hypothesis, posits that stock prices objectively reflect firm fundamentals, derived from the discounted value of expected future dividends. This framework emphasizes rational expectations and market efficiency but often neglects the role of human psychology in financial decision-making. In contrast, behavioral finance challenges this view by asserting that investor sentiment—shaped by cognitive biases, emotions, and herd behavior—plays a critical role in shaping market outcomes. The tension between these perspectives remains central to debates on stock price dynamics.

China's stock market, now the world's second-largest by market capitalization, offers a compelling context for this debate. Despite rapid institutionalization in recent decades, retail investors dominate the market, comprising over 177 million active accounts as of 2020. Their prevalence raises questions about how psychological biases, such as overconfidence and herding, influence market behavior and returns. While prior studies have explored the predictive power of investor sentiment on stock performance, the unique dynamics of China's market—marked by its retail-driven structure and evolving regulatory landscape—warrant deeper scrutiny. This paper investigates the interplay between investor sentiment (both retail and institutional) and stock returns in China, addressing a critical gap in behavioral finance literature. By analyzing how heterogeneous investor sentiments shape market outcomes, the study provides novel theoretical insights and practical strategies for optimizing investment decisions in emerging markets. Its findings hold significance for policymakers and market participants seeking to navigate the complexities of China's rapidly growing yet behaviorally driven equity landscape.

This paper analyzes the stock return data of China's CSI 300 listed companies from 2015 to 2023 to investigate the influence of bullish sentiment among retail and institutional investors on stock returns, while examining the mechanisms of these two roles through the lenses of analysts' attention and stock liquidity. Retail investors' bullish emotion has a large negative correlation with stock returns, but institutional investors' bullish sentiment demonstrates a significant positive correlation with stock returns. Furthermore, the optimistic sentiment of retail and institutional investors influences stock returns via the channels of analyst attention and stock liquidity. Heterogeneity analysis indicates that the adverse effect of retail investors' optimistic sentiment on stock returns is more pronounced in non–state–owned enterprises, manufacturing companies, and firms with low pollution levels.

Research Objectives

1. The research explores and assesses the relationship between retail and institutional investor sentiment and stock returns.

2. The study aims to confirm that analyst attention and stock liquidity serve as the underlying mechanism that drive the relationship between investor sentiment and stock returns.

Literature Review

The emergence of behavioral finance and its extensive research have demonstrated via various theoretical and empirical investigations that the capital market is not entirely efficient and its players are not wholly rational. Investor sentiment, a fundamental component of behavioral finance research, underscores the significant part of investor irrationality. Investor sentiment, an undeniable aspect, has garnered significant attention in both academic and industrial spheres.

Investor sentiment is perceived as a subjective conviction regarding future cash flows and investment dangers that lacks factual basis (Baker & Wurgler, 2006). Furthermore, investor sentiment influences not only aggregate market returns (Brown & Cliff, 2004; De Long et al., 1990) but also individual stock returns and significantly impacts liquidity (Debata, Dash & Mahakud, 2018), which in turn moderates the informational efficiency of the capital market and affects the information content in stock prices (Baker & Wurgler, 2006). Moreover, investor sentiment is significantly linked to financing constraints (You & Wang, 2024), corporate green innovation (Dong, Zhang & Chen, 2024), market–wide liquidity pricing (Yaakoubi, 2024), the risk

of stock price crashes (Bashir et al., 2024), and sectoral returns (Rohilla, Tripathi and Bhandari, 2023).

Stock returns, as the fundamental indicator of the capital market, significantly reflect the market's changes and trends. Comprehensive study and analysis of stock returns is essential for uncovering market intricacies and understanding investing dynamics, serving as a crucial guide for investors aiming to optimize returns. In a study of stock returns, Kontoghiorghes (2024) employs the 2013 legislative amendment that permitted, for the first time, tax-exempt capital gains and dividend investment accounts for stocks listed on the Alternative Investment Market, a sub-market of the London Stock Exchange, to examine the causal impact of personal investment taxation on stock returns. The causal impact of personal investment tax on stock returns is analyzed. Cakici and Zaremba (2024) employ machine learning methodologies to explore the cross-sectional variation in national equity returns by synthesizing data from various market attributes.

Perspectives on geopolitical risk, economic policy uncertainty, financial stress (Korsah & Mensah, 2024), and biodiversity risk (Ma, Wu & Zeng, 2024) examine the correlation between these issues and stock returns. (Korsah & Mensah, 2024) Cheema and Fianto (2024) investigated the correlation between elevated investor sentiment and market returns during Ramadan in Muslim nations, examining this phenomenon via the framework of the Ramadan effect. Korsah and Mensah (2024) employed the American Association of Individual Investors (AAII) attitude Index to evaluate the influence of individual investor attitude on stock returns, volatility, and trading volume. (Shah, 2024) examined the influence of cultural characteristics, investor mood, and uncertainty on bank stock returns.

Nevertheless, the current body of research reveals a paucity of literature that particularly investigates the influence of investor sentiment on stock returns, utilizing retail investors' positive sentiment and institutional investors' bullish sentiment as markers of investment attitude. The optimistic feeling of individual investors frequently coincides with a surge of capital that elevates the short-term stock prices. Nevertheless, price increases devoid of essential backing resemble rootless trees and are challenging to maintain. When market sentiment peaks or adverse fundamental changes occur, a decline in stock prices becomes unavoidable.

Conceptual Framework

This study aims to investigate the relationship between investor sentiment and stock returns. The researcher defines the conceptual framework based on investor sentiment theory and

stock price volatility theory. The independent variables in this study include retail investors' positive sentiment, institutional investors' bullish sentiment, and psychological biases such as overconfidence and herd behavior. The dependent variables are stock returns, market dynamics, and liquidity.

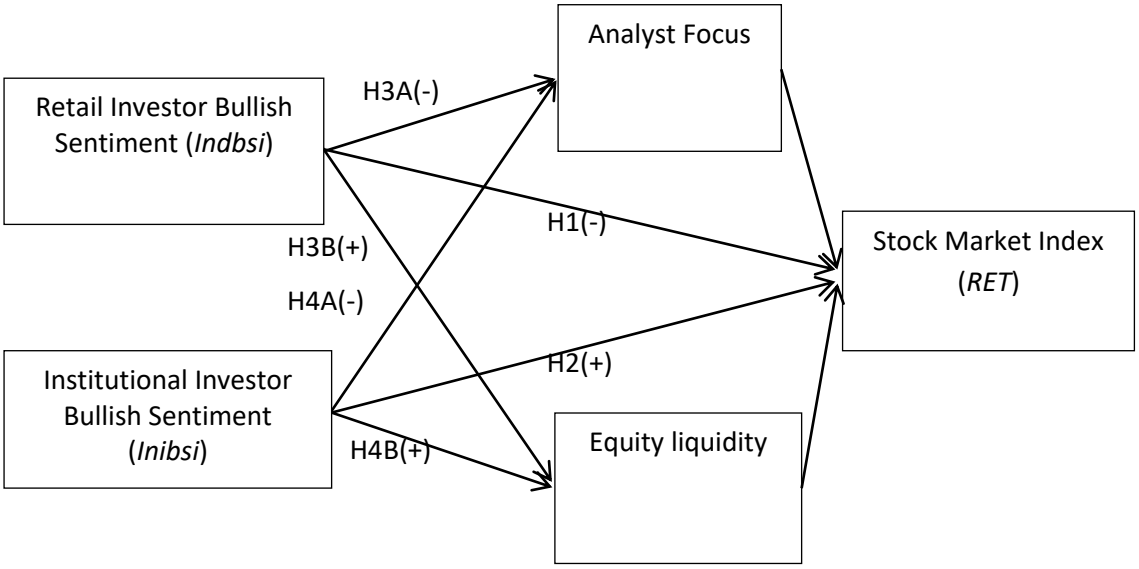

Figure 1 Modeling the relationship between investor sentiment and stock returns

Research Methodology

Sample

The research object of this paper is the constituent stocks of CSI 300 index. The CSI 300 Index comprises the 300 largest and most liquid stocks from China's Shanghai and Shenzhen stock exchanges, intending to accurately represent the overall performance of the A-share markets in these cities. The sample period spans from January 1, 2015, to December 31, 2023, with a daily data frequency. Stock market data is obtained from the WIND and CSMAR databases.

Variable

We formulate the subsequent variables. This research initially computes the bullish sentiment of retail and institutional investors by analyzing inflows and outflows, as outlined below that is consistent with Kumar and Lee (2006).

$$BSI_{i,t} = (INFLOW_{i,t} - OUTFLOW_{i,t})/(INFLOW_{i,t} + OUTFLOW_{i,t}), \quad (1)$$

In the above equation (1), INFLOWi,t and OUTFLOWi,t represent the inflows and outflows of investor capital to stock i at time t, respectively. The computed bullish sentiment indicators for retail and institutional investors are referred to as Indbsi and Inibsi. The dependent variable is the logarithmic return of the stock (RET), calculated as the natural logarithmic difference between two successive stock price measurements. In accordance with prior research (Fama & French, 2015), we also account for the market risk factor (MKT), the size risk factor (SMB), the book-to-market ratio risk factor (HML), the profitability risk factor (RMW), and the investment level risk factor (CMA). This paper, in conjunction with existing literature on stock returns, also accounts for firm size (SIZE), defined as the logarithm of total assets at the end of the period; book-to-market ratio (MB), which is the ratio of shareholders' equity to the firm's market capitalization; and gearing ratio (LEV), representing the ratio of total liabilities to total assets.

Table 1 below presents the descriptive statistics of the primary variables of the study. The dataset comprises 531,354 observations of stock returns, with a mean value of 0.001, suggesting that RET has marginally positive returns throughout the study period. The dataset comprises 531,880 observations of Bullish Sentiment among Retail Investors and 521,723 observations among Institutional Investors, with mean values of 0.045 and -0.077, respectively, indicating that retail investors exhibit greater optimism than institutional investors.

Table 1 Summary Statistics

	Obs.	Mean	Std.	Min	50%	Max
Indbsi	531,880	0.045	0.173	-1.000	0.045	1.000
Inibsi	521,723	-0.077	0.344	-1.000	-0.069	1.000
RET	531,354	0.001	0.031	-0.200	0.000	3.590
MKT	627,900	0.000	0.013	-0.093	0.001	0.065
SMB	627,900	0.000	0.009	-0.080	0.001	0.055
HML	627,900	-0.000	0.008	-0.038	-0.000	0.054
RMW	627,900	0.000	0.006	-0.037	-0.000	0.062
CMA	627,900	-0.000	0.005	-0.039	-0.000	0.022
SIZE	557,009	25.094	2.035	19.955	24.843	31.431
MB	549,577	0.674	0.324	0.044	0.702	1.559
LEV	603,529	0.533	0.232	0.014	0.538	2.290

Empirical specification

We employ benchmark regression models (2) and (3) to analyze the influence of bullish sentiment from retail and institutional investors on stock return performance.

$$RET_{i,t} = \alpha_0 + \alpha_1 Indbsi_{i,t} + \sum Controls_{i,t} + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (2)$$

$$RET_{i,t} = \alpha_0 + \alpha_1 Inibsi_{i,t} + \sum Controls_{i,t} + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (3)$$

RET is the dependent variable, which stands for stock returns; Indbsi and Inibsi are the explanatory variables, which stand for the bullish sentiment of retail investors and institutional investors, respectively when it comes to the stock market. The term "controls" refers to those variables that are under control. Year and Industry are examples of fixed effects, which represent the consistent effects of the year and industry, respectively. The symbol $\mathcal{E}$ represents the common error term, and the subscripts i and t relate to individual businesses and time, respectively.

Research Results

Research Objective 1: There is a significant relationship between investor sentiment and stock returns.

Table 2 presents the findings about the influence of individual investors' bullish sentiment and institutional investors' bullish sentiment on stock performance. Columns (1), (2), and (3) present the findings about the influence of retail investors' optimistic sentiment on stock returns, devoid of control variables and fixed effects, incorporating control variables without fixed effects, and including both control variables and fixed effects, respectively. The coefficients are –0.082, –0.066, and –0.068, all significant at the 1% level, demonstrating that increased positive attitude among retail investors correlates with decreased stock returns, so confirming Hypothesis 1: The optimistic sentiment of ordinary investors will diminish stock returns. Columns (4), (5), and (6) present the outcomes of the influence of retail investors' bullish sentiment on stock returns, under three conditions: without control variables and fixed effects, with control variables but without fixed effects, and with both control variables and fixed effects. Outcomes of the influence of institutional investors' optimistic sentiment on stock returns, considering the inclusion of control variables and fixed effects. The coefficients are 0.031, 0.024, and 0.024, respectively, and are all significant at the 1% level, demonstrating that increased bullish attitude among institutional

investors correlates with decreased stock returns, so confirming Hypothesis 2: The positive sentiment of institutional investors will enhance stock returns.

Table 2 Results of Regressing Investor Sentiment on Stock Returns

	(1)	(2)	(3)	(4)	(5)	(6)
Indbsi	-0.082***	-0.066***	-0.068***			
	(-370.300)	(-326.680)	(-330.490)			
Inibsi				0.031***	0.024***	0.024***
				(260.890)	(227.350)	(227.170)
MKT		0.879***	0.874***		0.958***	0.958***
		(310.280)	(308.920)		(322.170)	(321.780)
SMB		0.108***	0.114***		0.112***	0.113***
		(18.030)	(18.930)		(17.700)	(17.740)
HML		-0.421***	-0.416***		-0.416***	-0.415***
		(-69.990)	(-69.410)		(-65.370)	(-65.180)
RMW		-0.021*	-0.024*		-0.034***	-0.034***
		(-2.250)	(-2.550)		(-3.430)	(-3.460)
CMA		0.078***	0.090***		0.051***	0.057***
		(7.790)	(8.970)		(4.850)	(5.360)
SIZE		-0.001***	-0.001***		-0.001***	-0.001***
		(-25.410)	(-12.62)		(-12.910)	(-16.340)
MB		0.003***	0.003***		0.000	0.001***
		(15.870)	(12.620)		(1.440)	(5.400)
LEV		0.003***	0.003***		0.001**	0.001*
		(15.390)	(12.710)		(3.010)	(2.230)
Constant	0.004***	0.019***	0.013***	0.003***	0.019***	0.019***
	(95.550)	(30.120)	(13.520)	(29.560)	(16.110)	(17.880)
Year fixed effect	*No*	*No*	*Yes*	*No*	*No*	*Yes*
Sector fixed effect	*No*	*No*	*Yes*	*No*	*No*	*Yes*
N	531,263	528,830	528,830	521,246	518,851	518,851
Adj. R^2	0.202	0.351	0.354	0.115	0.290	0.291

Note: ***, **, and * indicate significant at the 1%, 5%, and 10% levels, respectively; t-values adjusted for robust standard errors are in parentheses.

Research objective 2: Analyst attention and stock liquidity mediate the relationship between bullish sentiment and stock returns among retail and institutional investors. After validating our first research objective, this paper further analyzes the mechanism of retail and

institutional investors' bullish sentiment on stock returns from the perspectives of analyst attention and stock liquidity.

Table 3 presents the findings from the examination of the "investor sentiment–analyst attention–stock returns" influence pathway. This research utilizes the perspective of analyst attention to examine the moderating influence of external monitoring on the relationship between investor mood and stock returns, as informed by previous literature. In this study, analyst attention refers to the count of analysts monitoring the company within a year, with data sourced from the CSMAR database. Columns (1) and (2) present the findings of the mechanism test on retail investors' optimistic sentiment and its impact on stock returns. In column (1), the regression coefficient for retail investors' bullish sentiment concerning analyst attention is –0.420 and is significant at the 1% level, indicating that retail investors' bullish sentiment diminishes analyst attention. As demonstrated in column (2), the regression coefficients for both retail investors' bullish sentiment and analyst attention are significantly negative at the 1% level, suggesting a partial mediation effect of analyst attention. This indicates that analyst attention serves as a partial mediator between retail investors' bullish attitude and stock returns, suggesting that analyst attention is a potential method by which retail investors' sentiment influences stock returns, so confirming Hypothesis 3A.

Columns (3) and (4) present the findings of the mechanism test regarding the influence of institutional investor optimistic mood on stock returns. In column (3), the regression coefficient for institutional investor bullish sentiment on analyst attention is 0.313 and significant at the 1% level, indicating that institutional investor bullish sentiment enhances analyst attention. Column (4) also shows that the regression coefficient for institutional investor bullish sentiment is significantly positive at the 1% level. Column (4) demonstrates that the regression coefficient of analyst worry is significantly positive at the 1% level, while the regression coefficient of analyst concern is notably negative at the 1% level, indicating a partial mediation impact of analyst concern. This indicates that analyst attention serves as a partial mediator between institutional investors' optimistic sentiment and stock returns, suggesting that analyst attention is a potential mechanism through which institutional investors' sentiment influences stock returns, thereby confirming Hypothesis 3B.

Table 3 Analyst Attention Mechanism

	(1)	(2)	(3)	(4)
	Analyst	**RET**	**Analyst**	**RET**
Indbsi	-0.420***	-0.067***	0.313***	0.025***
	(-7.170)	(-326.330)	(11.060)	(225.900)
Indibsi				
Analyst		-0.001***		-0.001***
		(-16.010)		(-10.300)
Controls	Yes	Yes	Yes	Yes
Constant	-124.200***	0.007***	-125.200***	0.016***
	(-21.990)	(6.820)	(-24.710)	(12.610)
Year fixed effect	Yes	Yes	Yes	Yes
Sector fixed effect	Yes	Yes	Yes	Yes
N	518,405	518,370	509,963	509,930
Adj. R2	0.505	0.352	0.504	0.290

Note: ***, **, and * indicate significant at the 1%, 5%, and 10% levels, respectively; t-values adjusted for robust standard errors are in parentheses.

Table 4 presents the findings from the examination of the "investor sentiment–stock liquidity–stock returns" influence pathway. The Amihud illiquidity proxy is employed to assess stock liquidity, as referenced by Amihud and Mendelson (1986). Amihud serves as an illiquidity indicator; thus, a higher value signifies reduced stock liquidity, with data sourced from the CSMAR database. Columns (1) and (2) present the findings of the mechanism test on retail investors' optimistic sentiment and its impact on stock returns. In column (1), the regression coefficient for retail investors' bullish sentiment on stock liquidity is –0.363 and is significant at the 1% level, indicating that retail investors' bullish sentiment enhances stock liquidity. Column (2) reveals that the regression coefficients for both retail investors' bullish sentiment and stock liquidity are significant at the 1% level, suggesting a partial mediation effect of stock liquidity. This indicates that stock liquidity has a partial mediating effect between retail investors' bullish emotion and stock returns, suggesting that stock liquidity is a potential mechanism by which retail investors' sentiment influences stock returns, thereby confirming hypothesis 4A.

Columns (3) and (4) present the findings of the mechanism test regarding the impact of institutional investor bullish sentiment on stock returns. In column (3), the regression coefficient for institutional investor bullish sentiment on stock liquidity is 0.061 and is significant at the 1% level,

indicating that institutional investor bullish sentiment diminishes stock liquidity. Conversely, as illustrated in column (4), the regression coefficients for institutional investor bullish sentiment are significantly positive at the 1% level for stocks. Column (4) indicates that the regression coefficient for institutional investors' bullish sentiment is significantly positive at the 1% level, and the regression coefficient for stock liquidity is also significantly positive at the 1% level, suggesting a partial mediation effect of stock liquidity. This indicates that stock liquidity exerts a partial mediating effect between the bullish sentiment of institutional investors and stock returns, suggesting that stock liquidity is a potential mechanism by which institutional investors' sentiment influences stock returns, thereby confirming Hypothesis 4B.

Table 4 Stock Liquidity Mechanism

	(1)	(2)	(3)	(4)
	Amihud	**RET**	**Amihud**	**RET**
Indbsi	-0.363***	-0.067***		
	(-31.100)	(-326.790)		
Indibsi			0.061***	0.024***
			(21.720)	(224.660)
Amihud		0.001***		0.003***
		(39.330)		(47.310)
Controls	Yes	Yes	Yes	Yes
Constant	1.197***	0.013***	0.514***	0.018***
	(14.000)	(12.510)	(15.220)	(16.690)
Year fixed effect	Yes	Yes	Yes	Yes
Sector fixed effect	Yes	Yes	Yes	Yes
N	529,980	529,980	520,072	520,072
Adj. R2	0.003	0.350	0.002	0.289

Note: ***, **, and * indicate significant at the 1%, 5%, and 10% levels, respectively; t-values adjusted for robust standard errors are in parentheses.

Conclusion

The first conclusion is that there is a significant connection between the emotion of retail and institutional investors and the results on stock investments. An increase in the bullish sentiment of retail investors is associated with a decrease in stock return, but an increase in the bullish sentiment of institutional investors is associated with an increase in stock return. This conclusion remains true even after several robustness tests have been conducted. The second conclusion is

that the findings of the mechanism of action test indicate that retail and institutional investor sentiment is the primary factor that influences stock returns further. The third conclusion is that this study can pass the heterogeneity test. The findings indicate that the negative impact of retail investors' bullish sentiment on stock returns is greater in non-state-owned.

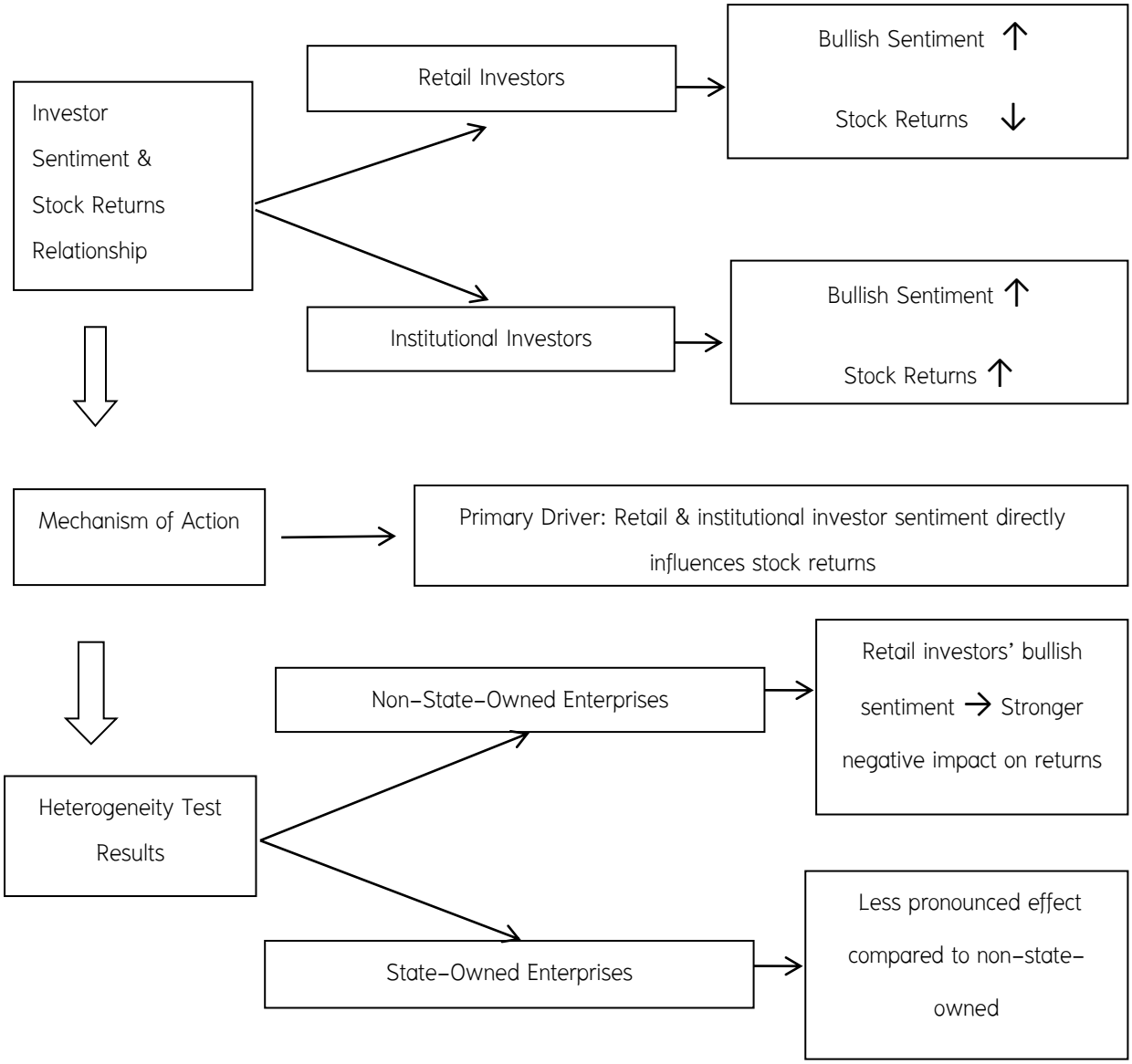

Figure 2 Mind Mapping the Study Conclusions on Investor Sentiment and Stock Returns.

Suggestions

Investors, policy officials, and academics can all benefit from the following recommendations, which are based on the findings of the study: In the first place, it is essential for investors to have a complete understanding of the differing effects that bullish sentiment has on

stock returns between retail investors and institutional investors. The second thing that policymakers need to do is pay close attention to swings in investor sentiment, particularly during times of extreme volatility or stress in the market. Finally, for researchers, this study sheds light on the intricate mechanism that underlies the impact of retail and institutional investor sentiment on stock returns. This study, in its entirety, not only highlights the significant role that sentiment variations between retail and institutional investors have in the establishment of stock prices, but it also calls for additional academic research that is both more in-depth and more systematic in nature in this research field.

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