Investor Attention Correction in Asset Pricing Models: An Empirical Study Based on Internet Search Index and the A-Share Market

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ABSTRACT

In the context of digitalization and information explosion, traditional Capital Asset Pricing Models (CAPM) based on the assumptions of efficient markets and rational actors are insufficient to fully explain many anomalies in returns in the China's A-share market, which is dominated by retail investors and experiences significant fluctuations in investor sentiment. This study uses individual stock data from 2015 to 2024 and, based on the Fama-French three-factor model, introduces an "abnormal investor attention" index constructed based on individual stock online search indices to build an extended pricing model, systematically examining its impact on stock excess returns. The study finds that abnormal attention has a significant positive impact on current excess returns, supporting the "attention-driven buying" hypothesis. Secondly, this effect exhibits scale heterogeneity, with a stronger driving effect on the stock prices of large-cap companies than small-cap companies. Finally, the previous abnormal concern has a great negative "reversal" effect on the current income. This shows that the market has its own function to correct the price deviation caused by excessive attention. This study reveals the complete working process of "eye-catching price correction" This can not only give us a new view of market mentality and price efficiency, but also help investors to find trading signals and pay attention to reversal risks, and also help regulatory authorities to monitor abnormal fluctuations and guide reasonable investment.

Keywords: Abnormal Investor Attention; Asset Pricing; Size Heterogeneity; Reversal Effect; Market Correction

1. INTRODUCTION

Traditional Capital Asset Pricing Model (CAPM) is the foundation of modern finance, which is based on the strict premise of efficient market and reasonable investors. But in recent years, macroeconomic policies, technological innovation, geopolitics and other factors are intertwined, and great changes have taken place in the world financial market. As an important content of connection information and transaction behavior, investor attention has a growing influence. In 2024, during the interest rate cut cycle of the Federal Reserve, US stocks hit a new high, and the price of Bitcoin exceeded $100,000, which attracted worldwide attention. However, due to the interest rate increase of Bank of Japan, the Nikkei 225 index experienced a record one-day decline. In August of the same year, the "Black Monday" occurred under the large-scale yen arbitrage behavior, which clearly showed that investors' mood and behavior patterns were easily contagious and would have an impact on the world market. These events clearly show that in the digital age where information is rapidly spreading, the attention of many investors will soon form a huge market pressure, which will make the asset price far from the original basic value in a short time.

In the actual market, individual investors play a major role, especially in emerging markets like China's A-share market, which need to improve market efficiency. Here, the unreasonable behavior of investors is very good, which makes the price divorced from the basic value. Then create "anomalies" that traditional pricing model can't explain. In recent years, with the popularization of the internet, the way investors obtain information has undergone fundamental changes, and internet search behavior has become a real-time window for understanding market attention dynamics. At the same time, behavioral finance also points out that due to bounded rationality and information overload, investors' decision-making process is often affected by attention allocation bias, which in turn affects trading decisions and asset prices. Numerous empirical studies have confirmed that abnormally high investor attention can often push up short-term asset prices, forming an "attention-driven buying" effect. However, existing literature still falls short in exploring two key dimensions: first, there is no consensus on the heterogeneity of the attention effect among different types of assets, especially listed companies of different sizes; second, and more importantly, the sustainability of attention-driven price changes, the existence of an inherent "price correction" mechanism in the market, and the time lag and intensity of such correction still require more systematic and refined empirical testing.

Based on this, this study uses data from the China's A-share market from 2015 to 2024 to construct a proxy variable for "abnormal investor attention" using individual stock network search indices, aiming to systematically examine its dynamic impact on the excess returns of Chinese stocks. This paper not only verifies the immediate positive effect of attention but also focuses on examining the scale heterogeneity of its impact and, more importantly, demonstrates whether abnormal attention in the early stages leads to a reversal in subsequent returns, i.e., the existence of a market "correction" mechanism. The marginal contribution of this paper is: first, it clearly reveals the existence of a complete dynamic process of "attention-driven price correction" in the A-share market, providing new evidence from the perspective of investor behavior for the market's self-correcting function. Second, this study found a phenomenon contrary to intuition. In large-cap companies, the attention effect is stronger, which is a new hint to understand the role of liquidity and institutional investor behavior when the attention effect is extended. Thirdly, in theory, this study promotes behavioral finance to match the classic asset pricing theory well. Then, regulatory agencies will also provide empirical references for monitoring market sentiment and investor to identify the risk of behavioral deviation.

2. LITERATURE REVIEW

The main goal of asset pricing theory is to explain the source of expected profits of assets. The new development of this theory began with portfolio theory. Portfolio theory first established a mathematical framework to explain risk and the balance of interests. Subsequently, the Capital asset Pricing Model (CAPM) explained that expected profits is attributed to systematic risk the asset bears. However, this model has disadvantages. Because market anomalies such as scale effects and value premiums cannot be explained, the theory becomes larger within a reasonable framework. Fama-French three-factor model greatly improves the explanatory power of the horizontal difference of stock profits by adding firm size and book-to-market ratio [1]. In the later research, besides the factors such as momentum, profitability and investment, a model system composed of multiple factors was formed. This series of progress is an attempt to the traditional framework, trying to improve the pricing of "reasonable risk" by finding a broader alternative variable for the fundamental risk of enterprises.

The development of behavioral finance gives us a new view to understand the incredible phenomenon of the market. This theoretical framework fundamentally questions the core premises of "complete rationality" and "efficient market" based on the traditional asset pricing theory. The starting point of the theory is that "the actual judgment of investors is influenced by cognitive ability and psychological deviation in a certain way". Among them, Limited Attention Theory is an important foundation. He pointed out: "The ability of investors to process information is objectively limited, and they cannot process all relevant information at once. The distribution of attention is selective and unequal." This theoretical progress has transformed "investor attention" from a descriptive concept into an academic research object that can be measured and experimented by mathematical methods. Researchers have further developed diversified measurement methods, evolving from early indirect proxies such as abnormal trading volume and media reporting frequency as attention to direct measurement using big data such as search engine data and social media sentiment. In research on China's capital market, researchers have also adopted metrics based on local contexts such as limit-up events. Cai et al. [2] in 2022, based on A-share data, measured investor attention by the number of days the stock hit its monthly limit-up or limit-down, and verified a negative predictive relationship between this and future stock returns through a long-short strategy.

Investor's identity has many layers of influence on asset pricing. To put it simply, attention is the function of "information catalyst". From the information that everyone knows, the choice of what investor uses in his decision is finally reflected in the price. Information that no one has noticed may delay the price change. Many studies have shown that the unusual investor attention will greatly increase the stock price and increase the trading volume in a short time. However, the price changes caused by this attention are usually temporary, and in the long run, they will often return to the original state. Further research is investigating whether attention itself will produce systemic risk. Some studies show that the great change of investor attention itself sometimes becomes a special source of risk, which is called "attention risk". Due to the strong impact of this risk, asset will usually get higher profits in the future, which is a new explanation of the risk compensation effect of attention in long-term pricing. At the same time, the research from "limited attention" to "attention spillover" has further deepened this mechanism. It means that investor sometimes transfers attention from an asset to related assets in a combat way, thus forming a financial path that links the prices between assets. In related research, in 2023, Chen et al. [3] used the exogenous setting of stock code order to investigate the interaction between overconfidence and limited attention. They found that after investors made a profit, investors' attention would also spread to the nearby stocks. Then the short-term income and turnover rate rise, and there will be a return to the original state in the long run. Therefore, it is possible to establish forecasting elements for generating excess returns. In addition, in previous studies, we have considered the attention of different types of investors separately. Ben-Rephael [4] uses the number of posts and replies of Bloomberg Financial Data Terminal information platform to measure the attention of institutional investors. Then, the

differences between institutional investors and individual investors and their influence on the market are clarified. There are different opinions in academic circles about the diversity of attention effects, especially the adjustment effect of company size on influence. The opposition of this opinion may come from the differences of samples, measurement methods and model conditions. Since ancient times, the company information asymmetry of small-cap has been serious, and there are few reports from analysts. Therefore, it is generally believed that the marginal value of new concerns is large and the price response should be more sensitive. For example, Hao [5] found that the attention of individual investors increased the company's unique risks, and its impact was even greater in small-cap companies. However, the opposite opinion is that large-cap stocks says liquidity is better and can accept the huge capital inflow that is concerned. Furthermore, when institutional investors hold large-cap stocks, due to the same attention signal, "herding behavior" sometimes appears, thus increasing the price change. Garcia (2025) [6] investigated the effect of institutional investors and attention to macroeconomic news on stock liquidity. The results show that the liquidity of large-cap stocks is very high, and the price can rise more smoothly while absorbing the buying pressure, and the liquidity will get better. And Welch (2022) [7] conducted a study on Robinhood investors, and found that individual investors mainly like stocks with high turnover and dollar trading volume, and most of them are large-cap stocks. This means that even if the attention of individual investors is focused on large-cap stocks, the price will sometimes rise sharply due to the benefits of liquidity of large-cap stocks. In addition, when the uncertainty of economic policy is high, investors tend to increase the reaction of stock price to settlement announcement. Especially for companies with high systemic risk and high information content. Large-cap companies are often classified as "high system risk" or "high information content" [8].

In a word, the traditional asset pricing theory is centered on "risk compensation". On the other hand, behavioral finance started with cognitive biases such as "limited attention" and put forward a new explanation method. Up to now, many results have been achieved in the determination of investor attention, short-term price change and spillover effects, but there are still three shortcomings. First, almost all the studies regard this as the cause of abnormal results, and few studies put it into the traditional pricing model as an independent risk factor for investigation. Second, the analysis of the difference of attention effect (such as the difference of scale) and the working principle of small market is not deep enough. Third, there is a lack of systematic investigation on its dynamic influence channels (such as price reversal process). Therefore, the purpose of this study is as follows. First, make an abnormal attention factor and investigate how many new pricing power it has in Fama-French three-factor model. The second is to investigate the scale difference of its influence and its fundamental reasons. Thirdly, the multi-period lag analysis systematically describes the dynamic correction process of price driven by attention, thus providing new evidence for understanding the pricing mechanism of A-share market.

3. RESEARCH HYPOTHESES AND RESEARCH DESIGN

3.1 Research Hypotheses

3.1.1 The impact of abnormal investor attention on asset pricing

As an emerging market, China's A-share market suffers from problems such as a high proportion of retail investors and inadequate information disclosure, forcing investors to rely on limited information for investment decisions. Meanwhile, the research conclusions of Barber and Odean (2008) [9] indicate that due to bounded rationality, it is impossible for people to pay attention to all stock information, so they tend to choose stocks that attract their attention. This attention-based buying leads to higher prices for stocks with high attention. Subsequently, with the emergence of search engine data, Da et al. (2011) [10] pioneered the use of the Google Search Volume Index (SVI) as a direct proxy variable for investor attention, constructing an "abnormal search volume" indicator and finding that it has a positive predictive ability for short-term returns of individual stocks in the US stock market. Numerous studies in China focusing on individual stocks have also confirmed a positive correlation between abnormally high Baidu search volume and abnormal returns of stocks in the coming days or weeks. Based on the A-share market, Wen et al. [11] found that investor attention has a positive impact on market anomaly returns during the same period, which usually means that increased attention pushes up the returns of the assets being watched. Speculation creates buying pressure due to unusually high attention, thus driving up stock prices. Given the imperfections in the A-share market mechanism, the positive impact on stock returns should be even more pronounced. Based on this, we propose the first hypothesis of this paper:

Hypothesis 1: Expected abnormal investor attention has a significant positive impact on current stock excess returns.

3.1.2 Heterogeneity of Attention Effect: From the Perspective of Company Size

The impact of investor attention on asset prices is not homogeneous; its strength may vary depending on company characteristics. Company size is a key moderating variable. Small companies typically experience greater information asymmetry, have less analyst coverage, and receive less media coverage, thus being in the "information shadow." When unusually high-profile events occur (such as breaking news or social media buzz), these companies receive greater marginal value from the information, attracting more investors who would otherwise ignore them, resulting in a stronger price reaction. Many studies, including Da et al.'s (2011) [10] research in the US market, support the view that the attention effect should be stronger in small-cap companies. Secondly, Hao et al.'s examination of the impact of investor attention on the idiosyncratic risk of Chinese companies from 2011 to 2017 also shows that small-cap companies are generally more sensitive to investor attention [12]. Therefore, in the A-share market where retail investors make up a large proportion, small-cap companies experience high levels of information asymmetry and have a large proportion of retail investors, making their stock prices more sensitive to attention-driven trading. Based on this, we propose the second hypothesis of this paper:

Hypothesis 2: The positive impact of abnormal attention on excess returns is stronger in small cap companies than in large cap companies.

3.1.3 Persistence of attention: reversal effect and market correction

The persistence of the attention effect, i.e., whether it drives a trend or a deviation, is key to testing market pricing efficiency. Behavioral finance has proposed hypotheses such as "overreaction" and "attention-driven bubbles." If the increase in attention stems from non-fundamental factors (such as entertainment news or online hype), it may attract emotional buying. Investors may trade based on emotion or following the crowd, pushing prices above intrinsic value and forming a price bubble. Subsequently, when attention declines, prices will revert to value, resulting in a return reversal. Some empirical studies support this, finding that the future returns of highly-attracted stocks may experience negative correction. In 2023, Chen et al. used the display characteristics of A-share trading software to identify causality and found that investors would trade more stocks within their attention range after making a profit. The buying pressure driven by attention spillover would lead to an increase in the short-term return of the target stock, but due to the lack of fundamental support, the price would revert in the long term [3]. However, some studies have found that attention may contain incompletely digested fundamental information, thus producing a persistent effect. In the China's A-share market, due to the high proportion of retail investors and strong policy sensitivity, the dynamic characteristics of the attention effect may be more complex. Based on this, the third hypothesis of this paper is proposed:

Hypothesis 3: The positive impact of abnormal attention on stock returns is temporary and will reverse in subsequent periods.

3.2 Research Design

3.2.1 Data and Variables

The research sample of this paper is all A-share listed companies from 2015 to 2024. The initial data were processed as follows: (1) financial companies were excluded; (2) companies that were specially treated as ST, *ST, etc. during the sample period were excluded; (3) samples that were listed after 2024 and those with incomplete main data variables were excluded; (4) all continuous variables were winsorized at the 1% and 99th percentiles to control the impact of extreme values. The final result is an unbalanced panel dataset containing 1,469,572 "stock code-week" observations. The original investor attention data for this study came from the China Research Data Service Platform (CNRDS) web search index database, while other data came from the CSMAR database.

This paper imitates the special method used by Da et al. [10] to measure anomalous investor attention, and establishes the main variables. Convert the daily web search index of a single stock into a weekly average web search index and take its logarithm. Then, the rolling window method is used to calculate the median of the logarithm of the web search index in the past 8 weeks, which is regarded as the "ordinary" or "benchmark" attention of the stock in this period. Finally, the difference between the actual weekly web search index logarithm and the median value of this rolling is "abnormal investor attention". This index aims to eliminate the original trend of long-term attention of stocks, so as to capture the abnormal changes of investors' attention caused by short-term events and information shocks.

$$abnormal\_attention_{i,t} = log(svi_{i,t}) - log[med(svi_{i,t-1}, \dots, svi_{i,t-m})] \quad (1)$$

Where med represents the median, and m is the length of the rolling window.

To analyze the relationship between abnormal investor attention and excess returns, it is necessary to control for other variables affecting stock returns. Referring to the Fama-French three-factor model, the market risk factor mkt, the size risk factor smb, and the book-to-market ratio risk factor hml are used as the control variables in this paper.

3.2.2 Model Specification

The core variable of abnormal investor attention (abnormal_attention) was introduced into the Fama-French three-factor model to analyze its impact on individual stock excess returns. Based on this model, the following settings were made:

$$\mathrm{ER}_{i,t} = \mathrm{R}_{i,t} - \mathrm{Rf}_t = \alpha_i + \beta_1 abnormal\_attention_{i,t} + \beta_2 mkt_t + \beta_3 smb_t + \beta_4 hml_t + \varepsilon_{i,t} \quad (2)$$

Where, $\mathrm{ER}_{i,t}$ is the excess return, $\mathrm{R}_{i,t}$ is the individual stock return, Rf_t is the risk-free rate, mkt_t is the market risk factor, smb_t is the size risk factor, hml_t is the book-to-market ratio factor, $\varepsilon_{i,t}$ is the residual term.

4. EMPIRICAL ANALYSIS

4.1 Descriptive Statistics

Table 1 reports the descriptive statistics of the main variables. A total of 1,469,572 observations were recorded in the full sample. The mean of the explained variable, excess return (ER), is close to 0, consistent with the general characteristics of market efficiency. The core explanatory variable, abnormal investor attention calculated based on an 8-week window, has a mean of -0.0012 and a standard deviation of 0.2466, indicating significant differences in investor attention across different companies and time points. Furthermore, the descriptive statistics of the Fama-French three-factor model (mkt, smb, hml) are consistent with the conclusions of classic literature.

Table 1. Descriptive Statistics.

	mean	sd	min	p25	p50	p75	max	N
ER	0.0009	0.0646	-0.1760	-0.0349	-0.0028	0.0316	0.2271	1469572
abnormal_attention	-0.0012	0.2466	-0.5804	-0.1400	-0.0268	0.1022	0.9274	1469572
mkt	0.0004	0.0269	-0.0957	-0.0131	0.0009	0.0167	0.0784	1469572
smb	0.0007	0.0224	-0.0803	-0.0113	0.0009	0.0139	0.0584	1469572
hml	-0.0002	0.0156	-0.0426	-0.0090	-0.0008	0.0082	0.0418	1469572

Note: 1. All continuous variables have been shortened at the 1% and 99% quantiles

2. abnormal_attention is the abnormal investor attention over 8 weeks

4.2 Benchmark Regression: The Main Effect of Abnormal Attention on Stock Returns

To test hypothesis H1 (abnormal investor attention has a positive impact on the current excess return of stocks), this paper conducts multiple linear regression analysis, and the results are shown in Table 2.

Column (1) shows the results of the benchmark model with three factors as control variables. The coefficient of the core explanatory variable abnormal_attention is 0.050 and is highly significant at the 1% level (t=177.60). This indicates that for every unit increase in abnormal investor attention, the average excess return of stocks in that week increases by 5.0 percentage points, supporting hypothesis H1. Column (2) adds company size (ln_size) as a control variable to the benchmark model. The coefficient of abnormal_attention and the significance level (0.050, t=177.32) are almost identical to those in Column (1), and the conclusions are robust. Column (3) further clusters the standard error to the company level to alleviate potential sequence correlation problems. The estimated value of the core coefficient (0.050) and its statistical significance (t=157.16) remain unchanged. The signs of the coefficients of the three-factor control variables are basically consistent with the theoretical expectations. The adjusted R-squared of the model is approximately 0.342, indicating that the model has good explanatory power.

Table 2. Hypothesis H1 Test - Main Effect of Abnormal Attention on Excess Returns.

	(1) Benchmark Model	(2) Control Size	(3) Company Clustering
abnormal_attention	0.050***	0.050***	0.050***
	(177.60)	(177.32)	(157.16)
mkt	0.976***	0.975***	0.976***
	(475.51)	(475.48)	(357.58)
smb	0.686***	0.683***	0.686***
	(232.60)	(232.42)	(84.94)
hml	-0.036***	-0.040***	-0.036***
	(-8.72)	(-9.52)	(-3.67)
ln_size		0.002***	
		(38.62)	
Constant	0.000	-0.027***	0.000
	(0.97)	(-38.60)	(1.27)
Control Variables	Yes	Yes	Yes
Standard Error	Yes	Yes	Company Clustering
Observations	1469572	1469572	1469572
Adjusted R-squared	0.342	0.343	0.342

Note: The values in parentheses are t-values. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

4.3 Heterogeneity Analysis: Test Based on Company Size

To test heterogeneity in scale, the entire sample was divided into a "small market value group" and a "large market value group" based on the median company market value. Table 3 presents the heterogeneity analysis results based on company size grouping, aiming to test hypothesis H2 (the return effect of abnormal attention is more significant in small market value companies).

$$\begin{aligned} ER_{i,t} = R_{i,t} - Rf_t \\ = \alpha_i + \beta_1 abnormal_{attention_{i,t}} + \beta_2 abnormal_{attention_{i,t}} * size\_group_{i,t} + \beta_3 mkt_t \\ + \beta_4 smb_t + \beta_5 hml_t + \varepsilon_{i,t} \end{aligned} \quad (3)$$

Column (1) is the baseline result for the full sample. Columns (2) and (3) show the regression results for the small-cap and large-cap subsamples after grouping by median market capitalization, respectively. In the small-cap group, the coefficient of abnormal_attention is 0.043 (t=109.73), while in the large-cap group, the coefficient is 0.057 (t=143.24). Compared with large-cap companies, small-cap companies have a weaker response to abnormal attention, which is contrary to the expectation of hypothesis H2. Column (4) conducted a more direct test by introducing the interaction term (atten_size) of the abnormal attention and size grouping dummy variables. In this model specification, we define a size dummy variable, size_group, which takes a value of 1 if a firm's market capitalization exceeds the annual cross-sectional median of the full sample, and 0 otherwise (1 denotes the large-cap group, 0 denotes the small-cap group).The coefficient of the interaction term was 0.010 and was significantly positive at the 1% level, which confirmed that the positive effect of abnormal attention increased with the size of the company, that is, it was more obvious in large-cap companies. To further verify the statistical significance of the inter-group difference, we employ a Seemingly Unrelated Estimation (SUEST) test to examine the coefficient disparity. The results reveal a statistically significant difference in the β_1 coefficients between the large-cap and small-cap groups (Chi-square=641.79, $p < 0.01$). Consequently, we formally reject Hypothesis H2.

Column (5) further limited the sample to the 30% of companies with the smallest market capitalization, and its abnormal attention coefficient was further reduced to 0.037 (t=77.59), which further strengthened the above conclusion. Therefore, if hypothesis H2 is not true, the price shock of abnormal attention has significant "size heterogeneity", and the effect is stronger in large-cap stocks.

Table 3. Hypothesis H2 Test - Size Heterogeneity Analysis.

	(1) Full Sample	(2) Small Market Capitalization	(3) Large Market Capitalization	(4) Interaction Term	(5) Minimum 30%
abnormal_attention	0.050***	0.043***	0.057***	0.045***	0.037***
	(177.60)	(109.73)	(143.24)	(114.31)	(77.59)
mkt	0.976***	0.969***	0.996***	0.974***	0.967***
	(475.51)	(352.83)	(335.68)	(474.93)	(294.56)
smb	0.686***	1.036***	0.314***	0.683***	1.131***
	(232.60)	(277.29)	(74.57)	(232.39)	(259.92)
hml	-0.036***	0.137***	-0.240***	-0.040***	0.198***
	(-8.72)	(25.19)	(-39.18)	(-9.57)	(30.87)
abnormal_attention×size				0.010***	
				(18.94)	
size_group				0.003***	
				(33.17)	
Constant	0.000	-0.001***	0.002***	-0.001***	-0.002***
	(0.97)	(-23.89)	(29.49)	(-23.46)	(-30.50)
Sample Grouping	Full Sample	Small Market Capitalization	Large Market Capitalization	Interaction Term Model	Minimum 30%
Observations	1469572	734786	734786	1469572	489858
Adjusted R-squared	0.342	0.385	0.321	0.343	0.393

Note: The values in parentheses are t-values. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

4.4 Further Analysis: Reversal Effect of Abnormal Attention

To test the reversal effect, variables with lags of one to four periods for abnormal attention were constructed. We included the abnormal attention in the first to fourth periods (L1_abnormal_attention to L4_abnormal_attention) as explanatory variables in the model. The model is as follows:

$$\mathrm{ER}_{i,t} = \mathrm{R}_{i,t} - \mathrm{Rf}_t = \alpha_i + \Sigma\theta_k * L_k abnormal\_attention_{i,t} + \beta_2 mkt_t + \beta_3 smb_t + \beta_4 hml_t + \varepsilon_{i,t} \quad (4)$$

Where k=1,2,3,4, representing the lag order. Ifθ_kIf significantly negative, it supports the "correction" hypothesis.

Table 4 tests hypothesis H3, which posits that price increases driven by contemporaneous abnormal attention will reverse in subsequent periods. Column (1) shows that the coefficient on lagged abnormal attention is －0.010 and significant at the 1% level, indicating a strong reversal effect in the first week. Columns (2) through (4) report negative and significant coefficients for the second, third, and fourth lags, measuring －0.006, －0.004, and －0.003, respectively. However, when all four lags are included simultaneously in column (5), the coefficient pattern changes: while the coefficients on the first (L1) and fourth (L4) lags remain significantly negative at －0.011 and －0.002, respectively, the coefficient on the

second lag (L2) turns significantly positive (0.001), and the third lag (L3) becomes statistically insignificant (0.000). To assess the overall presence of the reversal effect, we conduct a joint significance test on the four lagged terms (H_0: $\theta_1 = \theta_2 = \theta_3 = \theta_4 = 0$), which strongly rejects the null hypothesis (F =509.76, p < 0.01). In summary, Hypothesis H3 receives partial support. The empirical results confirm a distinct "first-week reversal" pattern and suggest a correction toward month-end (week 4); however, price dynamics during the intermediate period (weeks 2 – 3) are more complex, potentially reflecting noise interference that renders the reversal trend unstable.

Table 4. Hypothesis H3 Test - Reversal Effect of Abnormal Attention.

	(1)	(2)	(3)	(4)	(5)
	(1)	(2)	(3)	(4)	(5)
L1_abnormal_attention	-0.010***				-0.011***
	(-44.14)				(-37.07)
L2_abnormal_attention		-0.006***			0.001***
		(-29.06)			(3.40)
L3_abnormal_attention			-0.004***		0.000
			(-19.62)		(0.79)
L4_abnormal_attention				-0.003***	-0.002***
				(-14.04)	(-5.97)
mkt	1.024***	1.023***	1.023***	1.024***	1.027***
	(493.54)	(492.37)	(490.90)	(489.14)	(491.18)
smb	0.730***	0.727***	0.722***	0.720***	0.726***
	(244.20)	(242.79)	(241.02)	(240.38)	(242.12)
hml	-0.007	-0.011***	-0.011**	-0.010**	-0.002
	(-1.54)	(-2.62)	(-2.55)	(-2.43)	(-0.53)
Constant	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(-2.95)	(-3.66)	(-3.82)	(-3.58)	(-3.82)
Lag Period	Period t-1	Period t-2	Period t-3	Period t-4	Period t-1 to t-4
Expected Sign	negative	negative	negative	negative	negative
Observations	1464828	1460084	1455340	1450596	1450596
Adjusted R-squared	0.310	0.310	0.310	0.311	0.312

Note: The values in parentheses are t-values, *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively; the reversal effect is expected to be negative.

4.5 Robustness test

To ensure the reliability of the research conclusions, this paper conducted several robustness tests, and the results are summarized in Table 5.

(1) Change the variable measurement window: Columns (1) and (2) changed the calculation window of abnormal attention from 8 weeks to 26 weeks. The results showed that the coefficient of abnormal attention (abnormal_attention_26w) in the current period was still significantly positive (0.029), while the coefficient of its lagged period (L1_abnormal_attention_26w) was significantly negative (-0.009). The conclusions of the main effect and the reversal effect remained unchanged.

(2) Sample adjustment: Column (3) excluded the small-cap company sample (i.e., only the large-cap sample group was retained). The coefficient of the core variable abnormal_attention was 0.056, which was still highly significant at the 1% level, and the coefficient value was greater than the baseline result of the whole sample. This is consistent with the "large-cap effect" found above.

(3) Standard Error Adjustment: Column (4) repeated the robust standard error regression of the company-level clustering in Column (3) of Table 2, and the results were completely consistent.

In summary, after changing the measurement method of the core variables, adjusting the sample range, and changing the statistical inference method, the core conclusion of this paper—that abnormal investor attention can significantly drive the stock price in the current period, but this effect is stronger in large-cap companies and will reverse in subsequent periods—remains robust.

Table 5. Comprehensive Results of Robustness Tests.

	(1)	**(2)**	**(3)**	**(4)**
	(1)	**(2)**	**(3)**	**(4)**
abnormal_attention_26w	0.029***			
	(132.10)			
mkt	0.999***	1.022***	0.988***	0.976***
	(481.99)	(493.03)	(397.61)	(357.58)
smb	0.699***	0.729***	0.461***	0.686***
	(235.28)	(244.13)	(129.86)	(84.94)
hml	-0.032***	-0.007*	-0.176***	-0.036***
	(-7.55)	(-1.76)	(-34.32)	(-3.67)
L1_abnormal_attention_26w		-0.009***		
		(-46.30)		
abnormal_attention			0.056***	0.050***
			(166.83)	(157.16)
Constant	-0.000	-0.000***	0.001***	0.000
	(-0.50)	(-2.84)	(24.63)	(1.27)
Robustness Methods	Changing the variable window	Changing the variable window	Sample adjustment	Standard error adjustment
Specific operations	26-week attention	26-week lagged attention	Excluding small-cap stocks	Company Clustering
Observations	1469572	1464828	1028700	1469572
Adjusted R-squared	0.326	0.310	0.333	0.342

Note: The values in parentheses are t-values. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

5. CONCLUSIONS AND IMPLICATIONS

This paper is based on an empirical study of the China's A-share market from 2015 to 2024, and systematically investigates the dynamic influence of abnormal attributes of investor on stock excess returns. The main results are as follows: First, the abnormal attention of investor has a significant positive impact on the current excess returns of stock, which supports the "attention-driven buying" hypothesis. This is a market with too much information, which shows that the attention gathered

by investor will immediately turn into buying power, thus raising the price of stock. Secondly, we find that there are obvious scale differences in this effect. In other words, large-cap companies have a stronger positive influence on exception attributes than small-cap companies. This is different from the traditional expectation, because the information asymmetry of small companies is more severe, so they are more sensitive to identity. This unusual result may be related to the trading characteristics of large-cap stocks. In theory, large-cap firms are usually very liquid. Even if the surge in attention leads to a large amount of funds entering, turnover cost will not rebound immediately and can accept the funds. At the same time, as an important shareholding of institutional investors, large-cap stocks has a wide range of "herding behavior" in response to changes in concern. Due to the limited data, it is impossible to directly investigate the intermediary role of liquidity or institutional ownership, but this result studies the role of market microstructure in the spread of investor attention. Finally, this study finds that the former abnormal concern has a nonlinear negative correction effect on current profits. In detail, the reversal effect mainly focuses on the first one-week delay (one week at the same time) and four-week delay, and the evidence of correction between the second and third delays is still relatively unstable. Nevertheless, the results of the joint significance test support that the sharp price increase that attracts attention is temporary. This shows that the market has an inherent trend of returning to the basic value in the next few weeks, which can be used as conclusive evidence that there is a self-correction mechanism for price deviation caused by excessive attention.

Theoretically speaking, this study brings the important variable investor attention of behavioral finance into the testing mechanism of asset pricing. This can not only explain many anomalies in the return of A-share market with a small mechanism based on investor behavior, but also reveal a complete "drive-correction" path. Give the limited viewpoint of market efficiency a new empirical evidence, and promote the integration of classic asset pricing theory and behavioral finance. In practice, for investors, the result of this study only tells us the risk of catching up with the popularity of the market. Because the price rising on the abnormal attention sometimes lacks basic support, and then it will have the effect of restoring the price to its original state, so the strategy of "following everyone" has great risks. Investors should cultivate the ability of rational analysis and avoid becoming passive traders led by attention. For the regulator of the market, this study confirms that anomaly attention index based on online search data can be a convenient tool to monitor the mood of the market and find unreasonable changes. Regulatory agencies can use this to find early signs that the market is getting too hot. And we can show everyone a lot of information or have investors study it to guide them to make the right investments. In this way, we maintain the correctness of the price and financial stability. This research is based on the characteristics of investor behavior in the digital age, and provides a new perspective for understanding market sentiment and how asset prices are priced in China.

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