

Analysis of the Relationship between Financial Technology Attention and Capital Market Performance Based on VAR Model

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ABSTRACT. Based on the VAR model, we use the daily data of Fintech Baidu Index and Fintech (code: 399699) industry sector closing price between January 2019 and June 2023 to dynamically identify.^[11] The empirical analysis results show that the closing price of Fintech sector is the Glenmorangie distillery reason related to Baidu index attention, but the Glenmorangie distillery reason related to Baidu index attention is not the closing price of Fintech sector, In the long term, the closing price of the fintech sector will affect the volatility of the relevant Baidu index's attention, but the attention of the fintech Baidu index will not affect the fluctuation of the sector's closing price.^[2] Meanwhile, from the pulse response graph, it can be seen that the Baidu index's attention fluctuated relatively steadily in the 10th stage, approaching 0. Based on the above research conclusions, this article will propose corresponding policy recommendations.

Keywords: closing price; index; impulse response; content provider; VAR model

1 INTRODUCTION

Traditional financial theory believes that the market is efficient, with many rational investors who can access all information about stocks and make investment decisions that maximize value through information processing and technical analysis. Since the premise of the efficient market hypothesis is strict, investors are required to be Perfect rationality, and the cost of information acquisition and stock transaction is zero, and these premises are difficult to achieve in the real financial market, Behavioral finance was born. In 1973, Kahneman, a representative of Behavioral finance, put forward the investor concern theory, that is, when investors focus on one event, they will pay less attention to other events, which may affect the performance of the capital market.^[3]

The academic community has conducted many studies on investor attention and capital market performance. Andrei&Hasler (2015) studied the impact of investor attention on stock Risk premium, proving that attention is a key determinant of asset prices. Yuan (2015) found that when the Dow Jones Index sets records or the stock market appears in news headlines, these eye-catching events can affect investors'

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L. Moutinho et al. (eds.), Proceedings of the 2023 International Conference on Management Innovation and Economy Development (MIED 2023), Advances in Economics, Business and Management Research 260, https://doi.org/10.2991/978-94-6463-260-6_64

trading behavior and thus affect stock market returns. Wei Liya (2013) took SSE 180 Index shares as the research object, measured investors' attention with Google Search Index, analyzed the impact of investors' attention on stock liquidity and market performance, and concluded that investors' attention has a significant impact on stock market liquidity and current stock return. The main contributions of this article include: promoting the application of internet data in financial markets; Facilitate the formulation of economic policies based on market attention by regulators; Beneficial for retail investors to make reasonable investment portfolios and avoid the risks brought by blind speculation; Provide reference opinions for financing of listed companies. Cheng Feiyang (2021) measured the attention of retail investors to stocks based on Baidu search volume. The empirical results showed that attention has a significant positive short-term effect on stock liquidity, with a duration of about four weeks. This article provides readers with a deeper understanding of the impact of market attention on stock liquidity.

As an emerging technology and innovation model, FinTech is rapidly changing the face of the traditional financial industry and has had a profound impact on global capital markets. At the same time, as the core of the financial system and an important support for economic development, the capital market is also facing tremendous changes and challenges under the wave of financial technology. Therefore, there should be a close connection between the attention of fintech and the performance of the capital market.

Therefore, this article aims to explore the relationship between the attention of the fintech sector and capital market performance, using quantitative and qualitative research methods, combined with relevant statistical data and empirical research, to comprehensively evaluate the relationship between the attention of fintech and capital market performance, and analyze the impact of this relationship on the financial industry and investors.

Finally, this paper will summarize the research results, propose relevant policy recommendations and future research directions. I hope that through the research in this paper, we can enhance our understanding of the relationship between fintech and the capital market, and provide useful insights for relevant stakeholders to promote the sustainable development of fintech and the stable operation of the capital market.

2 REPRESENTATIONAL ANALYSIS AND DESCRIPTIVE STATISTICS

From the figure 1, the data used in this article comes from the closing prices of the fintech industry sector in the capital market from January 2019 to June 2023, as well as the Baidu index related to fintech. The difference results are used for relevant data analysis.



Fig. 1. Daily data trends of the closing prices of the fintech industry sector and the Baidu index related to fintech from January 2019 to January 2023

Overall, under the comprehensive influence of various complex factors, the differential trend of the closing price of the fintech industry sector is roughly the same as that of the Baidu index related to fintech. The differential change of the Baidu index related to fintech is greater than the differential change of the closing price of the fintech industry sector.

 Table 1. Descriptive statistics of the difference in closing prices of the fintech industry sector and the difference in Baidu index related to fintech

Variables	dgzd	dclose	
Minimum value	-3320.000	-325.4500	
Maximum value	2951.000	241.9600	
Average	0.0553	1.1559	
Median	-4.000	0.3600	

From the table 1, it can be seen that there is a significant difference between the maximum and minimum values of the two variables, and overall, the absolute value of the difference in the Baidu index of fintech is relatively large, while the absolute value of the difference in the closing price of the fintech industry is relatively small. At the same time, the average and median values are both the difference in the closing price of the fintech industry sector, which is greater than the difference in the Baidu index of fintech.^[4]

3 EMPIRICAL STUDIES

3.1 Data sources and model construction

The data used in this article comes from the closing prices of the fintech industry sector in the capital market from January 2019 to June 2023, as well as the Baidu index related to fintech. The difference results are used for relevant data analysis. Due to the dynamic correlation between the closing price of the fintech industry sector and the attention of the fintech Baidu index, in order to accurately analyze the internal relationship between the two, this article constructs a VAR model to explore the dynamic relationship between the fluctuations of the two. The difference in attention of the Baidu Index for financial technology is dgzd, while the difference in closing price of the financial technology industry sector is dclose.

3.2 Root of unity Test and Selection of Lag Order

From the table 2, BVAR model time series regression is applicable to the trend smoothing process, otherwise there will be false regression. Therefore, Root of unity test is carried out on the closing price of the Fintech industry sector and the related Fintech Baidu Exponential time time series, that is, to test whether there is a root in the characteristic equation of the series, this study uses the ADF test, and the test results are listed in the following table:

Table 2. Root of unity Test Results and ADF Test Results and Conclusions

Variable	ADF inspection	Conclusion
dCP	-8.6822	Smooth and stable
dIA	-11.302	Smooth and stable

The results show that all the original variables have Root of unity. The same series is not smooth, but after the first order difference, the first order difference variables have no Root of unity, so the variable sequence after the first order difference is smooth, and the original variable conforms to the characteristics of the first order single integer. A VAR model can be established to explore the dynamic relationship between price fluctuations between the two. According to the AIC criterion, the lag term of the model is determined to be 5.

3.3 VAR model regression results

The estimated parameters of the VAR model are shown in the table below. It can be seen from the parameter estimation results that some variables in the model may have Multicollinearity, and the significance level of the regression coefficient is not high, but the analysis of the model does not focus on the regression coefficient.

From the overall regression results, there is a certain correlation between the quality of the two variables in table 3 below.

Variable	dgzd	dclose
11	0.1836	0.8638
	0.7305	0.8693
12	0.0817	0.3616
	0.5772	0.2261
13	0.0212*	0.9965
	0.8118	0.1642
14	0.0009***	0.6676
	0.1499	0.0214*
15	-0.162***	0.6402
	0.1365	0.3775
p-value	0.0000	0.1656

Table 3. Parameter Estimation Results

3.4 Granger Causality Test

From the results of the Glenmorangie distillery causality test, we can see that in the original hypothesis that the closing price of the financial technology industry sector is not the cause of the concern of the relevant Baidu index Glenmorangie distillery, the p value of the test result is 0.05061, and the value is about 0.05. Therefore, the original hypothesis can be rejected at the level of 5%, and the closing price of the financial technology industry sector is accepted as an alternative hypothesis for the Glenmorangie distillery cause of the closing price of the financial technology industry sector. Therefore, the original assumption that the price of Ether is not Glenmorangie distillery's reason for the price of Bitcoin cannot be rejected again at the level of 5%.

The Glenmorangie distillery causality test is conducted on the closing price of the financial technology industry sector and the attention of the related Baidu index to explore whether there is a short-term causal relationship between them. The test results are shown in Table 4 below.

Table 4. Results of	Glenmorangie	distillerv	Causality T	est

Orifinal hypothesis	Lagging order	F-Test	Р	Conclusion
dIA is not dCP	2	2 0021	0.04802	Paiastian
Franger's cause	2	2.9921	0.04802	Rejection
dCP is not dIR	2	0 2216	0 7251	No Dejection
Franger's cause	L	0.5210	0.7231	no Rejection

From the above results, we can see that the closing price of the Fintech sector is the Glenmorangie distillery reason for Baidu Index's attention, but the Glenmorangie distillery reason for Fintech sector's closing price. There is a one-way Granger causality causality between the two. So overall, the closing price trend of the financial technology sector can drive the attention trend of the Baidu index.

3.5 Impulse Response Analysis

Since Baidu Index's attention is not the Granger causality of Fintech's closing price, this paper only needs to analyze the fluctuation range of Baidu Index's attention when Fintech's closing price is impacted by units, and the response of Baidu Index's attention to its own impact. The pulse response analysis results are as follows:

According to the pulse response chart, it can be seen that the disturbance of the closing price difference of the financial technology industry sector to the attention difference of the relevant Baidu index reaches its minimum in the first cycle, followed by a gradual increase in volatility, and returns to its minimum in the 10th cycle. At the same time, it can be seen that the latter has a driving effect on the former, is relatively stable, and has a long-term support effect.

The disturbance of Baidu Index's attention difference to itself reaches its maximum value in the first cycle, followed by a decrease in volatility, and starts to approach zero around the 9th and 10th cycles in figure 2 below.



Fig. 2. Pulse response analysis of closing price difference and related Baidu index attention difference in the financial technology industry sector

3.6 Stability Test

The recursive least squares CUSUM test is used to determine the stability of the model, and the test results are shown in the figure 3.

From the above figure, it can be seen that the cumulative residual of the closing price of the financial technology industry sector and the attention of the relevant Baidu index are both within the critical line, indicating that the residual of the current model is in a stable state.



Fig. 3. OLS-CUSUM Stability Test for the Closing Price Difference of the Financial Technology Industry Segment and the Concern Difference of the Related Baidu Index

4 Empirical Analysis

This article selects the closing price of the fintech industry sector as a representative indicator of capital market performance, constructs a VAR model using the closing price of the fintech industry sector and the attention level of the fintech Baidu index, and studies the correlation between fintech attention and capital market performance.^[5] The research conclusion of this article is summarized as follows:

Firstly, in the long term, the closing price of the fintech industry sector can significantly and positively affect investors' attention to the fintech sector based on the Baidu index. According to cognitive resource theory and limited attention theory, the total amount of attention that investors have is limited, leading them to prefer a classified thinking approach, guiding their investment decisions by focusing on information about a certain concept in a certain industry or sector. Therefore, if there is a change in the closing price of a sector in the fintech industry, it will inevitably increase the attention of investors in the fintech sector.

Secondly, investors' attention to the fintech sector measured by the Baidu index will not affect the closing price of the fintech sector. The Baidu index reflects the number of times users search for keywords, reflecting investors' initiative. However, the closing price of the sector is influenced by many factors and will not rise or fall solely due to the number of searches. Therefore, there is only a unidirectional relationship between the investor attention of the fintech sector and the closing price of the fintech industry sector.

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