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The Impact of Direct Purchase Policy on Stock Price Trend: Evidence from China in First Quarter of 2024

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ABSTRACT

In recent years, with the global economic recession brought about by the COVID-19 pandemic and the turbulence in the international situation, countries have been actively rescuing financial markets. Particularly in China, the national team has invested hundreds of billions of yuan to directly purchase stocks from the stock market to save the market. Research indicates that the direct purchase of stocks indeed leads to an increase in the price of these stocks. Conversely, stocks that are sold within this plan have also clearly experienced a decline. However, it is important to note that this impact is most pronounced in the initial thirty trading days. Over time, the influence gradually diminishes, especially by the fourth thirty-trading-day period, there is a significant drop in stock prices.

KEYWORDS

Direct Purchase Policy; Chinese stock market; Stock price fluctuations

1. INTRODUCTION

During the time of significant crisis in the capital market, except the deterioration of the economic environment and the fundamentals of listed companies, the market often experiences extreme deviations due to investor sentiment, mentality, and the investment game between buyers and sellers. In such circumstances, the government will employ a variety of means to control the deteriorating situation and ensure the stable development of the stock market. This includes the use of financial tools such as adjustments to monetary policies, the establishment of lending facilities, and the investment of fund into troubled sectors (such as the Troubled Asset Relief Program), along with direct regulatory actions in the secondary market, including short selling ban (Li, liu et al., 2024) [1]. An exceedingly meaningful and novel method is intervention through direct purchase of securities, which is a government plan to buy domestic securities directly on stock market. This article will analyze the market conditions and changes in company stock prices after the national team spent hundreds of billions of funds to rescue the market in the first half of 2024, and identify the impact of the purchase plan on the market and companies.

In December 2019, a novel infectious case affecting residents emerged in Wuhan, Hubei Province, China, which was identified as the COVID-19. This virus rapidly spread globally, posing significant challenges to every nation. These challenges were not only directed at the health of people but also had a profound impact on the social and economic landscape. At the onset of the pandemic, most countries implemented comprehensive or partial lockdown measures to mitigate the spread of the virus. However, this lockdown significantly decelerated global economic activities, leading to many companies reducing operations or even ceasing business, which increased unemployment rates and affected multiple sectors, including manufacturing, services, agriculture, food industry, construction, and entertainment (Naseer et al., 2023) [2].

China's struggle with the COVID-19 pandemic lasted for three years, the cost of which can be imagined. Consequently, the Chinese economy has not been able to regain its previous high-speed growth momentum after the pandemic, which is particularly evident in the stock market. At the end of 2022, the Chinese government lifted all pandemic-related restrictions, and society returned to previous situation. However, the stock market did not enter the anticipated "bull market" as expected. In 2023, spurred by advancements in artificial intelligence like chatGPT, the technology sector experienced a resurgence. Yet, apart from this, the weighted stocks (which determine the stock market index) and other industries did not rise but continued to decline. During the period from 2023 to the first half of 2024, the Shanghai Securities Exchange Index saw its largest drop at 20.41%, while the Shenzhen Component Index fell by 33.52%. particularly, the Shanghai 50 Index, which is one of the most stable comprehensive indices in the Chinese stock market and had been steadily growing before the pandemic, recorded the largest decline of 21.09%. During this period, the turbulent international environment also heightened investors' anxiety. To deal with such situations, the government actively adopted various measures to resolve the prolonged downturn in the stock market. A straightforward approach was to directly purchase stocks from the market to increase liquidity and boost investor confidence. This plan was particularly evident from the second half of 2023 to the beginning of 2024. When discussing the direct purchase of stocks from the market to stabilize it, we must look back at the United States' "Troubled Asset Relief Program" (TARP). This was an emergency measure introduced for the financial system following the bankruptcy of Lehman Brothers in September 2008. TARP was proposed by then-U.S. Treasury Secretary Henry Merritt Paulson during the 2008 financial crisis and was signed into law by President George Walker Bush after being approved by Congress. Congress allocated $700 billion in bailout funds, divided between the Bush and Obama administrations. This significant program was later analyzed by many researchers to research the impact and feasibility of market rescue plans.

In the years following the adoption of this rescue plan, assessing the costs and benefits of the TARP remains highly challenging. This is not merely about addressing a singular issue but also about tackling the various ever-changing solutions and problems that arise throughout the process (Calomiris & Khan 2015) [3]. Some researchers have analyzed the social effects of TARP and concluded that its outcomes are robust and positively guiding society, as it reduced bankruptcies among individuals and businesses and increased employment opportunities, which also indicates that TARP more effectively rescued the common people on Wall Street (Berger & Roman 2015) [4]. At the same time, because economic depression poses threats to multiple aspects, such as affecting the survival, reproduction, entertainment, education, arts, and social capabilities of Americans at that time, the original intention of the act was to protect the most intrinsic and fundamental human values, thus TARP is regarded as a fair action (Kline 2015) [5]. Others have analyzed its impact on the stock market, such as the influence of TARP on investor sentiment and stock market volatility. Especially on the day of the bailout and the following day, stock market fluctuations and investor fear significantly decreased, proving that direct government assistance has a clear role in stabilizing the financial market and alleviating investors' anxiety in the short term (Huerta et al., 2011) [6]. However, there has been a little research on China's direct purchase rescue plans, especially There is less research for analyzing the latest direct purchase action. Under the dual impact of the post-COVID-19 pandemic economic environment and international situation, the overall downward trend of A-shares is quite evident. Therefore, whether the government's direct purchase rescue plan has a positive impact on the stock market is very much worth considering and studying.

This article will utilize the Difference-in-Differences (DID) method to examine whether the national team's direct purchases (sales) of stocks from the secondary market in February 2024 had a positive (negative) impact on stock prices, and it will analyze the sustainability of the impact caused by this policy.

2. INSTITUTIONAL BACKGROUND

The "National Team" for Market Rescue refers to a market intervention team established in July 2015 during the financial "stock market disaster" in China. It was led by Zhang Yujun, then assistant to the Chairman of the China Securities Regulatory Commission, with the China Securities Finance Corporation taking the lead, and comprised 21 domestic securities firms. This group included leading securities companies such as CITIC Securities, Guosen Securities, Haitong Securities, GF Securities, Huatai Securities, Founder Securities, and others.

Based on various media sources such as Sina Finance and Securities Times, After integrating and confirming various information, the "National Team" can be essentially divided into seven parts. As shown in the Figure 1 below, these financial entities are divided into seven principal categories and highlights the interconnected relationships among key financial institutions. This schematic representation underscores the strategic allocation and operational dynamics of state-backed investment vehicles within the financial ecosystem. Here is an introduction to these seven departments:

The first part Huijin can be divided into two companies. First one is Central Huijin Investment Limited Liability Company, which is incorporated as a wholly-owned subsidiary into China Investment Limited Liability Company in September 2007. The second part is Central Huijin Asset Management Company.

The second part Securities Finance involved China Securities Finance Corporation (CSFC) and 5 "National Team" public offering of funds, including E Fund Management, Harvest Fund, China Merchants Fund, Southern Asset Management, and China Asset Management.

The third part is China Securities Finance Asset Management, which has 10 segregated fund account, including ICBC Credit Suisse Asset Management, Southern Asset Management, Zhong Ou Asset Management, Bosera Asset Management, Da Cheng Fund Management, GF Fund Management, Harvest Fund, China Asset Management, YinHua fund management, E Fund Management.

The State Administration of Foreign Exchange (SAFE) is the fourth part, which initiated the Wutong Tree Investment Platform in November 2014, and functioned as a direct investment channel for SAFE in the A-share market, with a noted exit in the third quarter of 2020.

The fifth part involves Social Security Funds. the Social Security Fund Investment Portfolio and the Basic Pension Insurance Investment Portfolio are involved.

The sixth part is the National Integrated Circuit Industry Investment Fund (National IC fund), which is a state investment platform established under China Reform Holdings Corporation Limited, with a second industry investment established in 2019.

The final part is China Reform Holdings Investment Co., Ltd. This is a state-owned capital investment and operation platform established under China Reform Holdings Corporation Limited, which officially announced the first increase in holdings of central enterprise technology ETFs in December 2023.

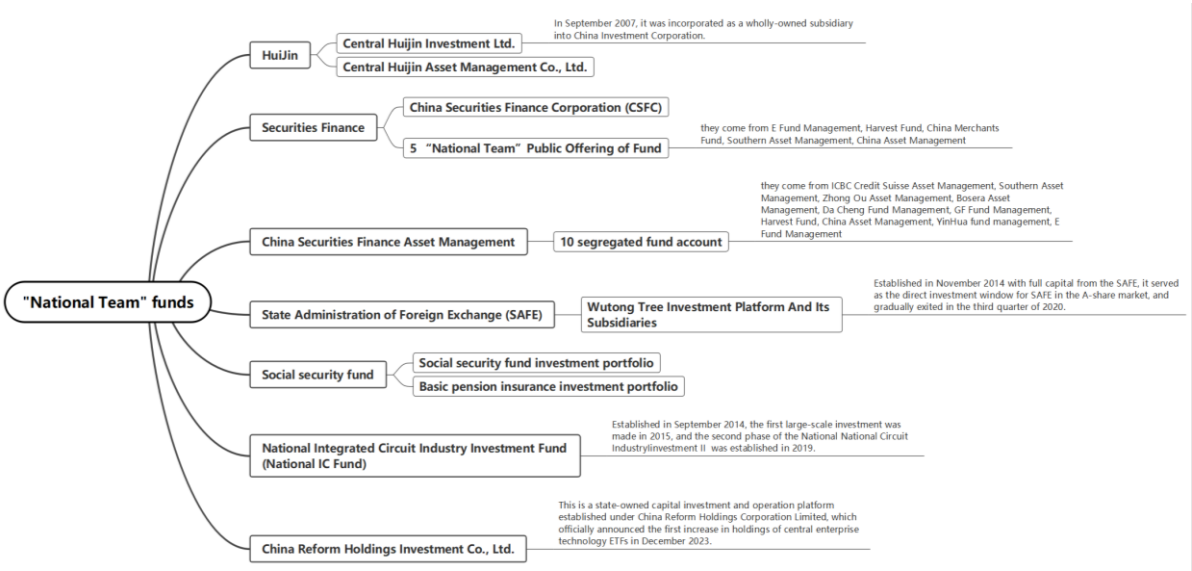

Figure 1. This is a state-owned capital investment and operation platform established under China Reform Holdings Corporation Limited

For the sake of consistency, the data in the article comes from Wind, and the classification of WIND is emphasized again. It includes: Central Huijin Holdings, China Securities Finance Corporation Holdings, China Securities Finance Asset Management Holdings, State Administration of Foreign Exchange Holdings, Social Security Funds Holdings, and other Customized Fund Holding. This aligns fundamentally with the previously stated information.

3. SAMPLE AND DATA

3.1. Sample

In the selection of the sample, it is essential to first identify the specific time period for the sample. The period is determined based on publicly established policies, and this round of market intervention involves four announcements as follows:

(1) On October 11, 2023, Industrial And Commercial Bank of China, China Construction Bank, Agricultural Bank Of China, Bank Of China successively issued announcements stating that their controlling shareholders had increased their holdings by 24.89 million shares, 37.27 million shares, 18.38 million shares, and 27.61 million shares, respectively, with plans to continue increasing their holdings in the secondary market within the next six months.

(2) On October 23, 2023, Central Huijin Investment Ltd. stated that it had purchased ETFs on that day and would continue to increase its holdings in the future.

(3) On December 1, 2023, the state-owned enterprise capital, China Reform Holdings Investment Co., Ltd, announced an increase in its holdings of state-owned enterprise ETFs.

(4) On February 6, 2024, Central Huijin Investment Ltd, expressed its "full recognition of the current configuration value of the A-share market, and has recently expanded the range of Exchange Traded Funds (ETFs), and will continue to increase the intensity of the increase, expand the scale of the increase, and resolutely maintain the smooth operation of the capital market".

From the aforementioned publicly released policy news, it is evident that the current round of direct purchasing plans by the national team commenced in October 2023 and concluded in February 2024. Concurrently, observations of the actual conditions of the stock market have indicated clear signs of the national team's significant stock purchases from January 18, 2024, to February 7, 2024. This activity is particularly evident in the HS300 ETF, ZZ500 ETF, and ZZ1000 ETF. Consequently,

stocks with national team holdings changes in the first quarter report are very suitable as observation samples.

To ensure the uniformity of data sources, all data were uniformly sourced from the regular reports published by the companies, and collected by WIND. An aggregation was conducted on companies with National Team holdings as reported in the 2023 annual reports and those with National Team holdings in the first quarter reports of 2024. After excluding the companies facing delisting, a total of 1,041 valid stock samples were identified. Concurrently, the changes in “National Team” holdings for these stock samples during the first quarter were statistically analyzed, which can be categorized into three situations: as of the companies' announcement dates, some enterprises have witnessed an increase in the proportion of "national team" holdings, while others have seen a decrease, and for a portion, there has been no change in the "National Team" holdings.

3.2. Variables

In addition to examining the changes in "national team" shareholdings, a selection of control variables has been incorporated to enhance the accuracy of the model, including Shanghai Stock Exchange Index (SSE), Growth Enterprise Index (GE), Net profit, Market Value, and Total Operating Income (TOI).

3.3. Methodology

To investigate the impact of national teams' direct stock purchases on the future stock prices of these stocks, a Difference-in-Differences (DID) analysis is required between stocks influenced by this policy and those unaffected by the policy. It is important to note that stocks influenced by policy are categorized into two directions: one is the positive policy guidance direction, where the national team purchases its stocks, denoted by a value of 1. On the other hand, there is the negative policy guidance direction, where the national team sells its stocks, with a value of -1.

Firstly, a multicollinearity check was conducted on the variables. The Variance Inflation Factor (VIF) is a measure used to assess the severity of multicollinearity among predictors in a multiple linear regression model. A higher VIF indicates a stronger multicollinearity between the independent variables. Typically, a VIF value greater than 10 is considered indicative of a serious multicollinearity issue. From Table 1, it can be observed that there is practically no multicollinearity present. That is, the selected variables do not exhibit multicollinearity and all of them can be directly analyzed.

Table 1. Variable Multicollinearity Test

	(1)		(2)	
Variable	VIF	1/VIF	VIF	1/VIF
SSE	6.510	0.154	6.510	0.154
GE	6.400	0.156	6.400	0.156
Netprofit	2.380	0.421	2.280	0.439
marketvalue	2.080	0.480	2.020	0.494
TOI	1.480	0.676	1.480	0.676
did	1.090	0.921	1.080	0.925

Secondly, it is necessary to select an appropriate model to test the hypothesis. The Hausman test is utilized in panel data analysis to determine whether a random effects model or a fixed effects model is more suitable. From Table 2, it can be deduced that the Hausman statistic for the first model is 29.69, and for the second model, it is 51.54, with p-values of 0.000 for both, which are statistically highly significant. This leads to the rejection of the hypothesis that the random effects model is appropriate, thus choosing the selection of a fixed effects model.

Table 2. The selection between the random effects model and the fixed effects model is conducted using the Hausman test.

	(1)	(2)	(3)	(4)
VARIABLES	RE	FE	RE	FE
did	1.036***	1.347***	-0.921**	-2.176***
	(0.398)	(0.481)	(0.405)	(0.488)
marketvalue	0.001***	0.006***	0.001***	0.006***
	(0.000)	(0.001)	(0.000)	(0.001)
TOI	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Netprofit	-0.000	0.002	-0.001	0.002
	(0.001)	(0.002)	(0.001)	(0.002)
SSE	0.810***	0.780***	0.634***	0.571***
	(0.112)	(0.115)	(0.114)	(0.115)
GE	0.677***	0.681***	0.770***	0.778***
	(0.082)	(0.084)	(0.083)	(0.084)
Constant	1.285***	-1.501**	0.878***	-2.633***
	(0.259)	(0.617)	(0.263)	(0.649)
Observations	6,246	6,246	6,147	6,147
R-squared		0.215		0.208
Number of id	694	694	683	683
Hausman		29.69		51.54
p-value		0.000		0.000

4. MAIN RESULT

In this section, the analysis of the impact of the national team's direct stock purchase policy on the future stock price trend is divided into three main parts. The first part presents evidence regarding the stock price changes following the national team's direct stock purchases. The second part discusses the impact of the national team's stock sales during this period on stock prices. The third part studies the influence of this policy on stock returns in the four subsequent phases post-policy initiation. It is worth noting that the first two parts will be analyzed using the fixed effects model. The formula is as follows:

$$return_{it} = \beta_0 + \beta_1 did_{it} + \beta_2 marketvalue_{it} + \beta_3 margin_{it} + \beta_4 Netprofit_{it} + \beta_5 SEE_{it} + \beta_6 GE_{it} + \gamma_t + \lambda_i + \mu_{it}$$

4.1. The Impact of the National Team's Stock Purchase on Stock Return

Model (1) of Table 3 represents the positive impact results of the direct purchase plan, where the national team has directly purchased and held stocks before the release of the 2024 first quarter financial reports. The DID coefficient is 1.347, which is statistically significant. After controlling for other variables and fixed effects, the policy exerts a significant positive influence on returns. That is, the average return of the sample has increased by 1.347 units following the plan's implementation. This confirms that the national team's purchase of stocks provides a clear positive assistance to stock prices, significantly elevating the prices of the stocks that have been purchased. Meanwhile, Table 3 also reveals that the market value, SSE and GE are statistically significant in Model 1, indicating that it also exerts a positive influence on return of stock.

4.2. The Impact of the National Team's Stock Sales on Stock Return

In Model (2) of Table 3, the results reflect the negative impact of the direct purchase plan, where the national team has sold its holdings in stocks. The DID coefficient is -6.857, which is also highly statistically significant, indicating a significant negative effect on returns. That is, after the implementation of the policy, the average return of the sample decreased by 6.857 units. This confirms that stocks not purchased but sold in the national direct purchase plan are likely to experience a noticeable decline in price subsequently. At the same time, Table 3 also shows that the market value, TOI and Netprofit are statistically significant in Model 2. It is essential to clarify that Model 2 excludes the indicators 'SSE' and 'GE'. Although there are instances where the national team has reduced positions in some companies under the direct purchase policy, 'SSE' and 'GE' are index indicators that represent the overall buying of the market. Under this policy, there is only one situation for these two indexes, which is buying without selling. Consequently, these two variables are not present in Model 2.

Table 3. The impact of the national team's direct stock purchases (Model 1) on the future stock returns. The influence of the national team's sale of holdings (Model 2) on the future stock returns. ***, **, and * denote significance at the 1 %, 5 %, and 10 % level, respectively, for the two-tailed test.

	(1)	(2)
VARIABLES	return	return
did	1.347***	-6.857***
	(0.481)	(0.511)
marketvalue	0.00589***	0.00928***
	(0.00107)	(0.00112)
TOI	5.27e-05	0.000650**
	(0.000268)	(0.000283)
Netprofit	0.00201	0.00535**
	(0.00237)	(0.00258)
SSE	0.780***	
	(0.115)	
GE	0.681***	
	(0.0836)	
Constant	-1.501**	-9.048***
	(0.617)	(0.673)
Observations	6,246	6,147
R-squared	0.215	0.043
Number of id	694	683
Company FE	YES	YES
Month FE	YES	YES

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.3. The Influence of This Policy on Stock Returns in the Four Subsequent Phases Post-Policy Initiation

The impact on the stock market is primarily showed in the future fluctuations in the value of the relevant stocks. To understand the phased effects of policy influence, it is necessary to delineate different stages following the implementation of the policy. In more detail, the last significant purchasing action took place in February 2024, as previously mentioned, with the most notable acquisition taking place on February 7th. Hence an analysis of the stock price performance post-February 8th will be conducted. The methodology for the analysis is as follows: each set of thirty trading days is considered a cycle, and from February 8th to August 8th, there are exactly four such cycles. A further analysis will be conducted on the stock price performance within the aforementioned four cycles, which means that calculate the interval return rate of each stock within the sampling period for each share, serving as an indicator of the impact on the stock market triggered by policy implementation.

The figure 2 initially shows that the stock price trends are essentially similar before month 0 on the horizontal axis, indicating that the stock price fluctuation trends of all samples were roughly the same before the policy's influence. However, the first cycle clearly demonstrates an increase in stock prices after being affected by the policy, with the rise significantly exceeding the previous trend. In the second cycle, the stock prices peak and then fall back, indicating that the policy's effect has begun to diminish. By the third cycle, the stock prices have essentially returned to pre-policy levels, and in the fourth cycle, the price fluctuation is notably lower than before the policy was implemented. This suggests that the direct purchase of stocks has a clear effect on raising stock prices in the short term, but it only lasts for thirty trading days, after which the stock prices begin to retreat. In fact, by the fourth thirty-trading-day period, the policy's influence not only fails to be beneficial but also has a negative impact, accelerating the decline in stock prices.

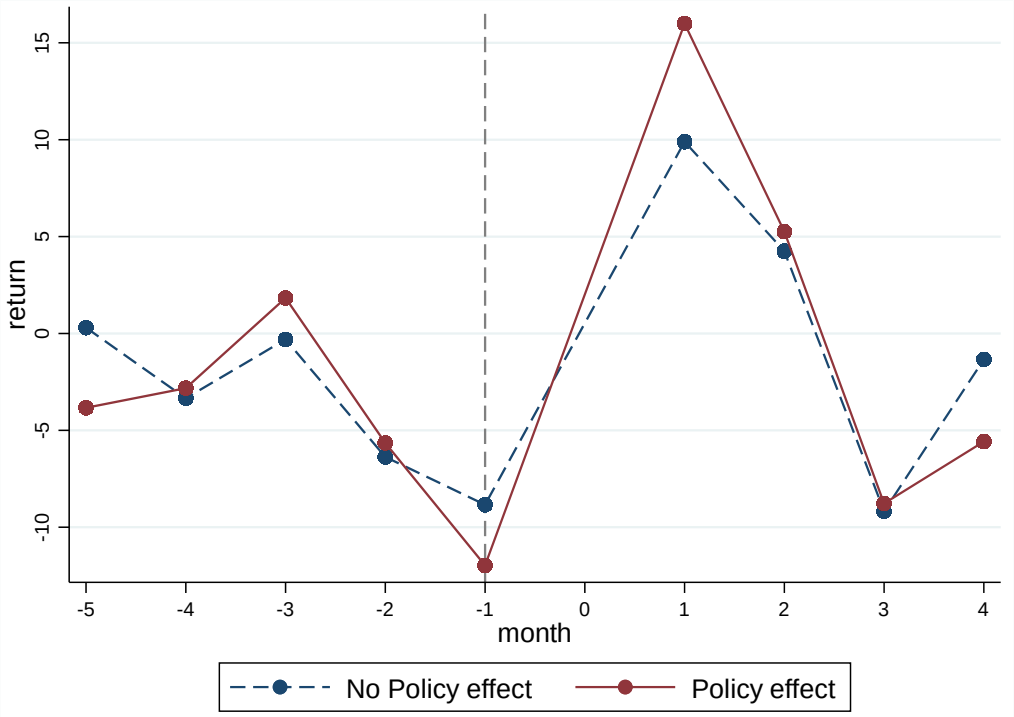

Figure 2. The figure illustrates the time trend of stock returns by regressing the interaction of each cycle with stock returns. The x-axis represents each cycle, defined as every 30 trading days, looking back at both the period before and after the policy's impact. The y-axis indicates the stock's interval change in price within that range.

Some rational explanation for this phenomenon can be articulated as follows: Initially, the short-term increase in stock prices is attributed to the national team's purchases, which lead to a temporary imbalance in supply and demand. In a sluggish stock market where trading activity is inherently low, the sudden acquisition of selected stocks by the national team with a substantial volume of capital can significantly amplify demand, thereby causing an increase in stock prices. However, as time progresses without additional stimuli, the market is expected to revert to equilibrium, resulting in stock prices returning to their mean levels or even continuing a downward trend due to inertia.

Furthermore, the finite fund from national team implies that this is not a sustainable long-term plan. It is precisely this uncertainty in policy that can lead to a decline in employment, investment, and output. Companies that are particularly sensitive to policy uncertainty may experience a reduction in liquidity (Baker et al., 2016) [7]. In summary, investors realize that the simple purchase of stocks is a short-term action and cannot fundamentally improve the economic situation. This will only lead to a decline in market sentiment, a decrease in liquidity, an intensification of investors' pessimistic attitudes towards the market, and a further deepening of the stock market crisis. Therefore, such uncertain policies can only bring short-term benefits and cannot affect long-term returns.

5. LIMITATIONS

Initially, during the research process, it is challenging to precisely ascertain the timing of the direct stock purchases by the national team. In other words, after February 7, 2024, the national team may continue to purchase stocks, but the frequency and volume of transactions have decreased compared to the period preceding this date. Such a trend is challenging to discern and there are no explicit news reports or significant transaction volumes to substantiate this perspective. Consequently, in the initial cycles following February 7, particularly the first thirty-trading-day period, there may be a passive increase in stock prices due to the national team's continued small-scale purchases, which could introduce certain interferences to the results.

Secondly, the fluctuations in the stock market are by no means determined solely by simple factors such as stock purchases or the fundamentals of a company. They also involve the strategic interactions between buyers and sellers, as well as the mentality and emotions of investors, including their expectations and judgments of the market—a series of human factors. Therefore, the impact of policy must be considered in conjunction with a comprehensive array of factors.

6. CONCLUSION

It is noteworthy that the most recent intervention, which occurred in February 2024, involved the national team's direct purchase strategy to stimulate the development of the stock market. While such actions can indeed exert a positive influence on the stock market, this effect is transient. Once market participants realize that the national team's buying plan is incapable of bolstering investor confidence or providing sustained and substantial purchasing power, market sentiment may plummet once again. Over time, this adverse effect could become increasingly pronounced. In other words, the plan, failing to fundamentally alter the predicament of the stock market, may lead to a temporary increase in stock prices followed by a decline to levels prior to the implementation of the purchasing policy, or even a retaliatory plunge that exceeds the situation before the plan was initiated. Consequently, the mere act of national team purchases cannot resolve the stock market's predicament in the long term. Policymakers need to continue researching ways to improve the fundamentals of the financial market from multiple angles, bolster investor confidence, and employ a multifaceted financial policy to sustain the sustainable development of the capital market.

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