Research on the influence of national IC fund holdings on the value of listed companies

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Abstract: Amid the accelerating global informationization and technological advancements, the integrated circuit (IC) industry has emerged as a cornerstone of national scientific and technological strength, as well as economic growth. Many countries are increasingly enhancing their investments in the IC sector through policy measures and financial support, particularly in response to intensifying international competition and technological blockades. For China, where the IC industry remains relatively underdeveloped, this global landscape presents significant challenges. In response, the National Integrated Circuit Industry Investment Fund, established in 2014 and 2019 (first and second phases), demonstrates the government's strategic market-driven initiatives aimed at bolstering the industry. The fund seeks to elevate the value of IC companies and advance domestic technological capabilities. This study examines the development trajectory of China's IC industry and the impact of the National IC Fund on firm value. Drawing on data from 2011 to 2023, with a focus on A-share-listed IC firms, the study employs a difference-in-differences (DiD) methodology to rigorously assess the fund's effects. The results indicate that the fund has successfully stimulated enterprise investment, alleviated financial constraints, optimized resource allocation, and facilitated industrial upgrading. Moreover, the mediating effects of social capital and government subsidies further substantiate the conclusion that the fund has positively influenced firm value. For instance, Northern Huachuang, among other companies, witnessed stock price increases exceeding 700% by the end of Q1 2024.

1. Introduction

The National Integrated Circuit Industry Investment Fund, as a strategic tool supported by the government for key technologies and industries, aims to promote economic structure optimization and enhance competitiveness. Through capital injection, the fund not only provides crucial financial support to listed companies but also conveys a signal of government trust, boosting investor confidence, attracting private capital inflows, and advancing the maturity and development of the integrated circuit industry. The investment from the fund has not only increased the market valuation of companies but also optimized corporate governance structures, enhancing transparency and management efficiency.

This study aims to assess how the large fund, as a policy tool, affects the development of the integrated circuit industry and reveals the impact of government capital on market competition through mediating effects. The research conducts empirical analysis to explore the role of the large fund in enhancing enterprise value, promoting technological innovation, and facilitating industrial upgrading, while evaluating its impact on the macroeconomy. Additionally, the study will propose policy recommendations for optimizing fund investment strategies and maintaining healthy market competition to promote sustainable development and socio-economic equity[1-5].

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2. Theoretical Analysis and Hypotheses

2.1 Current Status of the National Industrial Investment Fund

The origin of China's government industrial investment funds dates back to 1986 with the establishment of the China New Technology Venture Capital Company, marking the beginning of domestic equity investment.

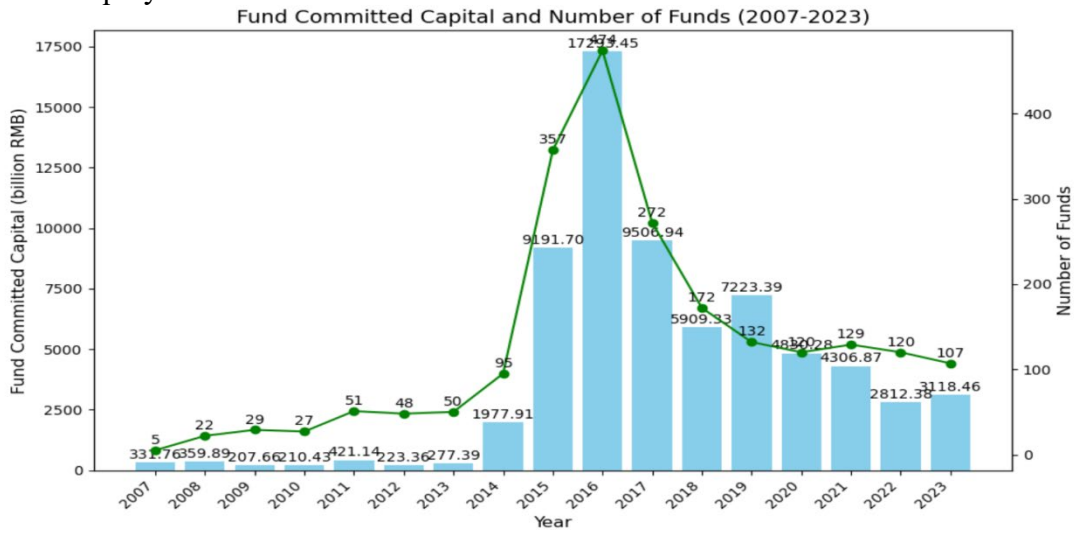

Figure 1: Development Trend of China's Government Industrial Investment Funds (2007–2022)

As shown in Figure 1, the development of China's government industrial investment funds can be divided into three stages. During the second stage, the National Strategic Emerging Industries Fund, the National Science and Technology Achievements Transformation Fund, and the National Integrated Circuit Industry Fund were established sequentially. Launched in 2014, the National Integrated Circuit Industry Investment Fund (known as the "Big Fund") aims to address industry issues. The first phase of the Big Fund, with a scale of 138.72 billion yuan, covers design, manufacturing, packaging, testing, and equipment materials, and participates in primary and secondary markets through private equity, adopting market-based exit strategies to optimize capacity. The first phase was completed in 2019, the second phase started the same year, and the third phase was established in 2024 with a scale of 344 billion yuan, exceeding the total scale of the first two phases.

2.2 Investment Methods

The scale of the first phase of the National Big Fund was 138.7 billion yuan, and the second phase was 204.1 billion yuan. Both phases of investment covered the entire chip industry chain, with the first phase focusing on wafer manufacturing and the second phase on semiconductor and industry chain layout, as shown in Table 1 and Table 2.

Table 1: Main Investments by the National Integrated Circuit Design Industry Investment Fund (Phase I) in A-share Listed Companies

Industry Type	Company Name	Investment Amount (Billion RMB)	Shareholding Ratio	Investment Method
Design Companies	Nari Technology	5	4.02%	Private Placement
	Goke Microelectronics	5.5	15.63%	Pre-IPO
	BDStar Navigation	15	11.98%	Private Placement
	GigaDevice	14.5	9.72%	Transfer from Existing Shareholders
	Goodix Technology	28.3	6.62%	Transfer from Existing Shareholders
	JSC Microelectronics	9.8	9.14%	Private Placement

	Chipone	1.5	8.87%	Private Placement
	China Resources Micro	18.79	6.43%	Transfer from Existing Shareholders
	Rockchip	1.44	7.00%	Pre-IPO
Manufacturing Companies	Sanan Optoelectronics	64.4	11.30%	Transfer from Existing Shareholders + Private Placement
	Shanghai Silicon Industry	54.16	22.86%	Pre-IPO
Packaging and Testing Companies	Sine Microelectronics	6	12.10%	Private Placement
	JCET Group	46.4	19.00%	Private Placement
	Tongfu Microelectronics	6.4	15.13%	Pre-IPO
	King Yuan Electronics	6.8	9.32%	Transfer from Existing Shareholders
	TG Semiconductor	9.5	6.17%	Transfer from Existing Shareholders
	VeriSilicon	13.18	7.08%	Pre-IPO
	Yacoo Technology	5.5	5.53%	Private Placement
Equipment Companies	Changchuan Technology	0.1	10.00%	Pre-IPO Private Placement
	NAURA Technology	6	7.50%	Private Placement
	Wanye Enterprise	6.8	7.00%	Transfer from Existing Shareholders

Table 2: Main Investments by the National Integrated Circuit Design Industry Investment Fund (Phase II) in A-share Listed Companies

Industry Type	Company Name	Investment Amount (Billion RMB)	Shareholding Ratio	Investment Method
Design and Material Companies	Gekewei Microelectronics	1	0.0227	Pre-IPO
	Huizhiwei Microelectronics	2.2	0.0654	Private Placement
Manufacturing Companies	SMIC	98.7	0.2308	Transfer from Existing Shareholders
	Canqin Technology	0.666	0.02775	Pre-IPO
	Nata Opto-electronic	1.833	0.1833	Private Placement
Packaging and Testing Companies	Huada Technology	11.3	0.0321	Private Placement
	AMEC	25	0.0397	Private Placement
Equipment Companies	Biwin Storage	0.1844	0.0952	Pre-IPO
	SmartSens	4	0.1563	Pre-IPO
	Changchuan Technology	3	0.333	Private Placement
	NAURA Technology	15	0.0094	Private Placement
	Nari Technology	15	0.0789	Private Placement

2.3 Hypotheses

Based on preliminary analysis, the following hypotheses are proposed:

H1: The National Big Fund's holdings influence the Return on Equity (ROE) of strategic industry enterprises.

H2: The National Big Fund's holdings influence the Tobin's Q ratio of strategic industry enterprises.

Mediating Effects of Social Capital:

H3: Social capital mediates the effect of the National Big Fund on the ROE of strategic industry enterprises.

H4: Social capital mediates the effect of the National Big Fund on the Tobin's Q ratio of strategic industry enterprises.

Mediating Effects of Government Subsidies:

H5: Government subsidies mediate the effect of the National Big Fund on the ROE of strategic industry enterprises.

H6: Government subsidies mediate the effect of the National Big Fund on the Tobin's Q ratio of strategic industry enterprises[6-10].

3. Selection of Indicators and Model Construction

3.1 Selection of Indicators

This paper uses ROE and Tobin's Q as the main indicators to measure enterprise value. ROE reflects a company's profitability, while Tobin's Q measures the ratio of market value to asset replacement cost. The paper employs a difference-in-differences (DID) approach to study the impact of the Big Fund on the value of strategic listed companies, with the experimental group being companies held by the Big Fund and the control group being those not held by the fund.

The main variables include ROE and Tobin's Q as the dependent variables, a dummy variable (Big Fund Phase I Investment) as the independent variable, and mediating variables such as social capital and government subsidies. Control variables include company size, debt-to-equity ratio, market growth rate, return on equity, and fixed assets , as shown in Table 3.

Table 3: Model Variable Selection Table

Variable Nature	Variable Name	Variable Symbol	Variable Description
Dependent	Return on Equity	*ROE*	Net profit divided by net assets
	Tobin's Q	*Tq*	Tobin's Q = (Total market value + Total liabilities) / Total assets
Independent	Big Fund Phase I	*treat*time=did*	Companies held by the Big Fund: treat=1, otherwise treat=0; Time before 2015.1.1: time=0, otherwise time=1
Mediating	Social Capital	*SoF*	Sum of funds raised from IPO and follow-on offerings (natural logarithm)
	Government Subsidies	*GovSub*	Net amount of government subsidies at year-end for each company (natural logarithm)
	R&D Investment	*InI*	R&D investment of the company (natural logarithm)
Control	Total Assets	*LNTA*	Total assets (natural logarithm)
	Industry Market Growth Rate	*IMGR*	Difference between this year's market size and last year's market size divided by last year's market size
	Earnings per Share (EPS)	*EPS*	Net profit divided by the total number of ordinary shares
	Fixed Assert Scale	*FAS*	Fixed assets divided by total assets at the end of the period
	Industry Export Value	*IExp*	Industry export value (natural logarithm)
	Dependence on Foreign Trade	*DepFT*	Industry import and export value divided by GDP (Gross Domestic Product)
	Price-to-Earnings Ratio (PE)	*PE*	Stock price divided by EPS
	R&D Output	*InO*	Ratio of new patents added annually to the total number of patents of the company

3.2 Model Construction and DID Test

This paper uses the difference-in-differences (DID) method to study the impact of the Big Fund on the value of strategic listed companies, with the experimental group being the companies held by the Big Fund and the control group being those not held by the fund.

The empirical model is:

$$y_{i,t} = \beta_n + \beta_1 * treat_{i,t} * time_{i,t} + \sum \beta * controls + \mu_i + \theta_t + \epsilon_{i,t} \quad (1)$$

Where $y_{i,t}$ represents the dependent variable$treat_{i,t}$, $time_{i,t}$, the value of the company. The variable DID is a dummy variable. The DID model shows that ROE is significant in the pre-fund holding period, and Tobin's Q is significant in the four post-fund holding periods, validating hypotheses H1 and H2. The pre-fund ROE significantly reflects the growth considerations in selecting investment targets, while the lagged effect of Tobin's Q reflects the long-term strategic significance of the fund. Although the increase in enterprise value is not significant in the short term, long-term observations show a positive impact of the Big Fund on the integrated circuit industry, reflecting its long-term investment characteristics and strategic significance , as shown in Table 4 and Table 5.

Table 4.Multi-Period DID Test for ROE

roe	Coefficient	Std. err.	t	P>|t|	[95% conf. interval]
did	-22.51383	6.720439	-3.35	0.001	-35.71408 ~ -9.313584

Table 5.Multi-Period DID Test for Tobin's Q

L4.tq	Coefficient	Std. err.	t	P>|t|	[95% conf. interval]
did	-1.83813	0.6210563	-2.96	0.003	-3.059018 ~ -0.6172427

Renowned scholar Wen Zhonglin has proposed that a complete mediation effect model typically assumes that one variable affects a third variable through an intermediary variable, as shown in Figure 2.

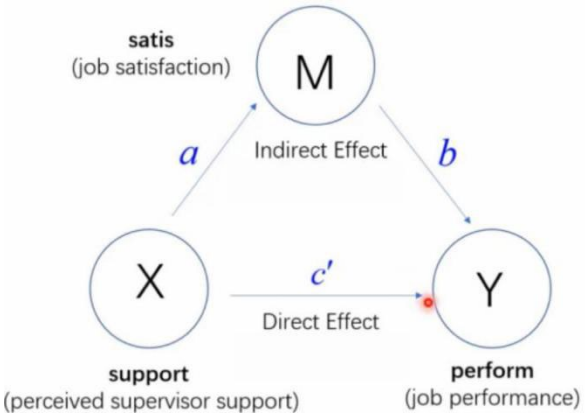

Fig.2 Mediation Effect Diagram

This study examines the direct and indirect impact mechanisms of independent variables on dependent variables. Direct effects are measured by coefficient cc, where a significant cc indicates a direct effect. Mediation effect analysis is conducted through coefficients aa (effect of the independent variable on the mediator) and bb (effect of the mediator on the dependent variable), verifying the existence of mediation paths. Finally, coefficient c′c′ is used to test whether the mediation effect is complete or partial; if c′ is not significant, it indicates a complete mediation effect, otherwise, it is partial. Based on market barrier and signaling theory, this paper hypothesizes that government subsidies and social capital mediate the effect of the Big Fund on enterprise innovation, and verifies their bridging role through the model.

The mediating effects of social funds (SoF) and government subsidies (GovSub), where M represents different mediating variables. For example, when M=SoF, it represents social funds with i=2; when M=GovSub, it represents government subsidies with i=5.

$$ROE_{i,t}(Tq_{i,t}) = \beta_0 + \beta_1 \cdot treat_{i,t} * time_{i,t} + \beta_2 \cdot treat_{i,t} + \beta_3 \cdot time_{i,t} + \sum\beta \cdot controls + \epsilon_{i,t} \quad (2)$$

$$M = \beta_0 + \beta_1 \cdot treat_{i,t} * time_{i,t} + \beta_2 \cdot treat_{i,t} + \beta_3 \cdot time_{i,t} + \sum\beta \cdot controls + \epsilon_{i,t} \quad (3)$$

$$\mathrm{ROE}_{i,t}(\mathrm{Tq}_{i,t}) = \beta_0 + \beta_1 \cdot \mathrm{treat}_{i,t} * \mathrm{time}_{i,t} + \beta_2 \mathrm{M} + \beta_3 \cdot \mathrm{treat}_{i,t} + \beta_4 \cdot \mathrm{time}_{i,t} + \sum \beta \cdot \mathrm{controls} + \epsilon_{i,t} \quad (4)$$

4. Empirical Analysis

4.1 Data Selection

This study aims to analyze the impact of the National Big Fund on A-share listed integrated circuit companies. The data includes both financial and non-financial indicators, such as R&D expenditure and patent authorizations, primarily sourced from the WIND and IFinD databases, supplemented by data from the China Semiconductor Industry Association. The study period spans from 2011 to 2023, covering both Phase I and Phase II of the Big Fund. The sample includes 22 companies funded during Phase I and 13 companies funded during Phase II, with the experimental group comprising semiconductor companies such as Zhongwei Company and Zhaoyi Innovation. The control group consists of 24 A-share listed semiconductor companies. This setup helps in analyzing the impact of the Big Fund investment on companies and the industry[11-14].

4.2 Descriptive Statistical Analysis

The descriptive statistical analysis in this study reveals significant differences between companies in key variables such as ROE and Tobin's Q, as indicated by their mean values and standard deviations. This suggests that the fund's investment has a notable impact on company value , as shown in Table 6.

Table 6. Descriptive Statistics of Main Variables

Variable	Obersvation	Mean	Standard Deviation	Minimum Value	Maximum Value
ROE	689	-1.875821	66.00679	-452.527	111.3131
Tq	689	2.792193	3.16817	-.3720973	14.77716
Did	689	0.3207547	0.4671058	0	1
SoF	689	20.69311	1.801006	11.85375	24.69789
GovSub	689	16.28968	2.701749	3.149465	21.99753
InI	689	18.41854	1.655261	12.85363	22.33101
LNTA	689	21.14289	1.911419	15.80866	25.04406
IMGR	689	0.2334992	0.0585871	0.079933	0.312281
EPS	689	0.7062821	2.050659	-5.4427	11.2447
FAS	689	0.13126	0.1587747	-0.3369276	0.6043291
IExp	689	18.49586	2.869584	5.82535	24.12318
DepFT	689	0.0422252	0.0106639	0.026939	0.065839
InO	689	0.1588512	0.529527	-0.384615	1

4.3 Correlation Test Analysis

The correlation analysis indicates that ROE is significantly positively correlated with GovSub, Ini, and LNTA, and significantly negatively correlated with IMGR. TQ is significantly positively correlated with Ini and LNTA, and significantly negatively correlated with IMGR. Did is significantly positively correlated with LNTA, Ini, and GovSub. Overall, the company's profitability and market value are highly correlated with its size, government subsidies, and investment intensity , as shown in Table 7.

Table 7. Main Variables Correlation Test Analysis

	roe	tq	did	sof	govsub
roe	1.000				
tq	0.100*	1.000			
did	0.095*	0.171***	1.000		
sof	-0.095*	-0.024	0.216***	1.000	
govsub	0.424***	0.163***	0.333***	0.289***	1.000

4.4 Heteroscedasticity Test

In analyzing models with inputs and outputs of technological innovation as the dependent variables, both the White test and Breusch-Pagan (BP) test were used to assess heteroscedasticity in the model. Generally, the White test is more sensitive than the BP test, so if the conclusions from the two tests differ, the results from the White test are typically preferred. The null hypothesis for these tests is that heteroscedasticity does not exist. The results indicate that for both Return on Equity (ROE) and Tobin's Q, the p-values from both tests are less than the significance level of 0.05, leading to the rejection of the null hypothesis. This suggests the presence of heteroscedasticity, and corrections can be made using Robust Standard Errors or Weighted Least Squares (WLS) , as shown in Table 8.

Table 8. Heteroskedasticity Test Analysis

ROE				Tq			
White Heteroskedasticity Test		BP Test		White Heteroskedasticity Test		BP Test	
Chi-Square Value	P-Value	Chi-Square Value	P-Value	Chi-Square Value	P-Value	Chi-Square Value	P-Value
639.56	0.000	1029.83	0.000	176.63	0.000	84.40	0.000

Fixed Effects Model (FE), Random Effects Model (RE), and Pooled Model can all handle panel data. The final model is selected using a pairwise comparison method, as detailed below , as shown in Table 9.

Table 9. Model Selection

Test Type	Purpose of the Test	Test Value	Test Conclusion
F-Test	Comparison between FE model and POOL model	P-Value<0.05	FE model
LM Test	Comparison between RE model and POOL model	P-Value<0.05	RE model
Hausman Test	Comparison between FE model and RE model	P-Value<0.05	FE model

For hypothesis H1, a panel data model with ROE as the dependent variable was established. Based on the model test results shown in Table 10, the Random Effects Model was chosen for subsequent regression analysis.

Table 10. Model Selection (ROE)

Test	Statistics	P-Value	Conclusion
F-Test	19.13	0.000	Fixed effects model is more suitable than pooled model
LM Test	636.88	0.000	Random effects model is more suitable than pooled model
Huasman Test	3.85	0.9539	Random effects model is more suitable

For hypothesis H2, the panel model was established with TQ as the dependent variable. Based on the model test results shown in Table 11, the Fixed Effects Model was chosen for subsequent regression analysis.

Table 11. Model Selection (Tobin's Q)

Test	Statistics	P-Value	Conclusion
F-Test	16.03	0.000	Fixed effects model is more suitable than pooled model
LM Test	24.95	0.000	Random effects model is more suitable than pooled model
Huasman Test	51.721	0.000	Random effects model is more suitable

4.5 Parallel Trends Test

The Difference-in-Differences (DID) approach requires randomization and the assumption of homogeneity, particularly the homogeneity assumption that the treatment group and control group should exhibit similar trends before the policy impact. If the trends before the policy are different, changes in innovation and firm value may not be attributed to the policy. Therefore, this study constructed interaction terms for the period before and after the National Big Fund investment and verified homogeneity through the parallel trends test. Figure 3 and figure 4 show that the two groups of companies exhibited similar trends before the policy implementation. The parallel trends

test for ROE before the last two periods and for Tobin's Q before the last five periods passed, although Tobin's Q experienced some fluctuations during the pandemic.

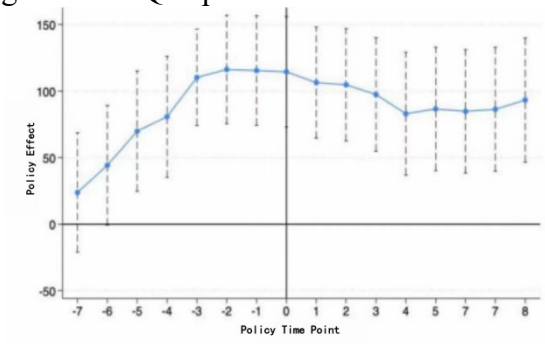

Fig. 3 Parallel Trend Test Analysis(ROE)

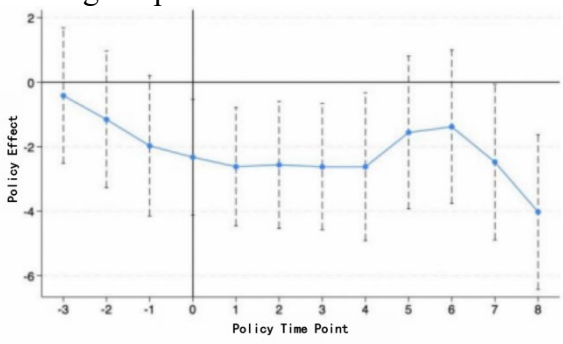

Fig. 4 Parallel Trend Test Analysis(Tq)

4.6 Regression Results Analysis

The regression analysis results in Tables 12 and 13 show that GovSub, IEXP, and PE have a significant positive impact on ROE, while SoF and FAS have a negative impact on both ROE and Tobin's Q. Other variables, such as DID and LNTA, do not have a significant impact on either ROE or Tobin's Q and are not analyzed in detail in the tables.

Table 12. OLS Linear Regression Results (ROE)

Dependent Variable: ROE					
	Coefficient (Coef)	Std.Err	t	p	95% CI
SoF	-9.300955	1.523497	-6.11	0.000	-12.29231 ~ -6.3096
GovSub	11.45442	1.176053	9.74	0.000	9.14527 ~ 13.76358
FAS	-108.351	25.09159	-4.32	0.000	-157.6178 ~ -59.08413
IEXP	6.180274	1.857322	3.33	0.001	2.53346 ~ 9.827089
PE	0.0081728	0.0023923	3.42	0.001	0.0034755 ~ 0.01287
_cons	-105.2626	44.28334	-2.38	0.018	-192.212 ~ 18.31318
R 2	0.2709				
Adjusted R 2	0.2579				
F	F (10, 691)=20.93, p=0.000				

Table 13. OLS Linear Regression Results (Tq)

Dependent Variable: Tq					
	Coefficient(Coef)	Std.Err	t	p	95% CI
SoF	-0.3210983	0.0754344	-4.26	0.000	-0.4692122 ~ -0.1729844
InI	0.3007193	0.1160405	2.59	0.01	0.0728761 ~ 0.5285624
INTA	0.2911877	0.1161786	2.51	0.012	0.0630735~ 0.519302
EPS	0.2235091	0.0558971	4	0.000	0.1137563 ~ 0.3332618
FAS	-5.473284	1.242385	-4.41	0.000	-7.912681 ~ -3.033887
IEXP	0.1816622	0.0919634	1.98	0.049	0.0010939 ~ 0.3622305
DepFT	25.29657	10.67656	2.37	0.018	4.333357 ~ 46.25979
PE	0.0003203	0.0001185	2.7	0.007	0.0000878 ~ 0.0005529
_cons	-5.430554	2.192644	-2.48	0.014	-9.735766 ~ -1.125342
R 2	0.2241				
Adjusted R 2	0.2103				
F	F (10, 691)=16.27, p=0.000				

4.7 Placebo Tests and Robustness Checks

To further verify that the significant impact of the National Big Fund investment on the value of strategically listed companies is not due to other causes or merely a coincidence, the experimental and control groups and the pilot years were simultaneously shuffled and randomly generated. A placebo policy interaction term was constructed for regression, and the simulation was run 500 times. If the regression results under different placebo scenarios remain significant, it indicates that the original estimates may be biased and that the dependent variable is likely influenced by other

policies or random factors. The p-values and coefficients of the policy interaction terms show that the coefficients are far from the random mean, and p-values exceeding 0.1 in over 80% of cases indicate non-significance. According to Figures 5 and 6, the placebo test results are not significant, which suggests that the strategy is effective[15-17].

The kernel density curve (kdensity beta) being relatively concentrated indicates that the robustness check passed.

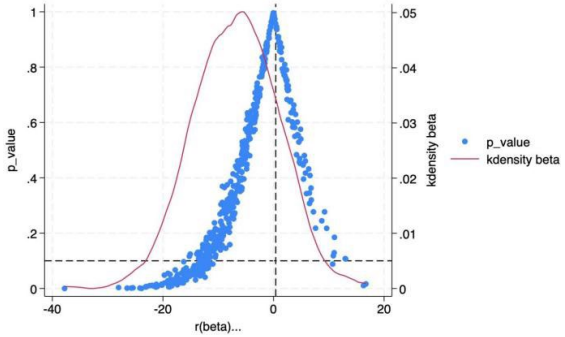

Fig. 5 Placebo Analysis(ROE)

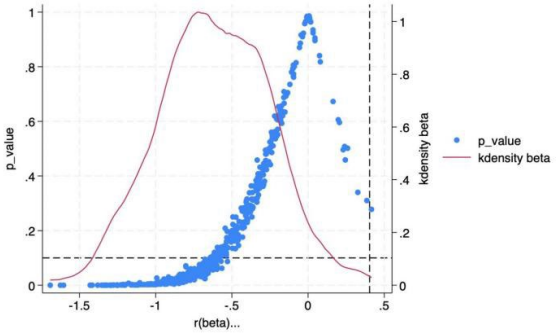

Fig. 6 Placebo Analysis(Tq)

4.8 Mediation Tests

Regarding the mediating effect of social funds, a detailed assessment can be conducted through mediation effect tests. The results show that the interaction term of social funds and government subsidies, treat*time, has different impact coefficients on ROE and Tobin's Q, which supports the validity of hypothesesH3, H4, H5 and rejects hypothesis H6 , as shown in Table 14.

Table 14. Mediation Effect Test of SoF

	SoF on ROE		SoF onTq	
	1	2	1	2
did	0.665***	-9.266	0.665***	-0.378
	(4.72)	(-1.29)	(4.72)	(-1.01)
SoF		-6.585**		-0.325**
		(-3.26)		(-3.11)
_cons	13.76***	-260.9***	13.76***	-2.718
	(12.56)	(-4.23)		(12.56)
N	689	689	N	689
R-sq	0.76	0.54	R-sq	0.76
adj. R-sq	0.73	0.49	adj. R-sq	0.73

The tables indicate that both did(1) and SoF(2) are highly significant, suggesting that SoF has a mediating effect on both ROE and TQ. Since did(2) is not significant, this indicates that SoF has a complete mediating effect on both ROE and TQ, as shown in Table 15.

Table 15. Mediation Effect Test of GovSub

	GovSub on ROE		GovSub on Tq	
	1	2	1	2
did	0.557*	-19.76**	0.557*	-0.551
	(2.55)	(-2.92)	(2.55)	(-1.49)
GovSub		10.97***		-0.0779
		(8.84)		(-1.14)
_cons	-5.042**	-296.2***	-5.042**	-7.586**
	(-2.97)	(-5.62)	(-2.97)	(-2.62)
N	689	689	689	689
R-sq	0.74	0.59	0.74	0.46
adj. R-sq	0.71	0.54	0.71	0.40

The tables show that did(2) and GovSub(2) are significantly strong, indicating that GovSub has a mediating effect on ROE. Since did(2) is significant, it suggests that GovSub has a partial mediating effect on ROE. Additionally, did(1) is not significant, which requires further analysis using the

BootStrap test , as shown in Table 16.

Table 16. Bootstrap Test

	Observed coefficient	Bootstrap std. err.	z	P>|z|	Normal-based [95% conf. interval]
_bs_1	-0.0011863	0.007352	-0.16	0.872	-0.0155961~ 0.0155961
_bs_2	-0.126188	0.3189175	0.40	0.692	-0.4988787 ~ -0.7512548

According to Table 16, the confidence interval for _bs_1 includes 0, indicating that GovSub has a dilution effect on TQ rather than a mediating effect.

5. Policy recommendations and Summary

This paper provides specific policy recommendations regarding the investment of the National Big Fund and the development of the integrated circuit industry, and summarizes its profound impact on enterprise value. The study shows that the Big Fund, through high leverage effects and government subsidies, has guided a significant inflow of social capital into the integrated circuit industry, markedly enhancing companies' profitability, market value, and management efficiency, particularly in the long-term promotion of ROE and Tobin's Q.

In the future, the Big Fund should continue to focus on investing in the semiconductor, memory, and high-value-added chip sectors, especially in critical areas such as chip design, manufacturing, and packaging. It should accelerate the localization of equipment, promote deep collaboration between domestic equipment companies and manufacturers, and build a results transformation system centered on enterprises.

At the same time, the government should further support industrial development by broadening financing channels, increasing R&D investment in technological innovation, and improving talent development. This includes policy incentives and cooperation with universities to introduce advanced international technology and talent, ensuring the industry maintains continuous innovation capabilities. The launch of Phase III of the Big Fund will continue to play a strategic role, not only supporting enterprises in terms of funding and resources but also addressing "bottleneck" technology issues, further enhancing the global competitiveness of Chinese integrated circuit companies, and driving the long-term development and technological breakthroughs of the entire industry.

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