Can the Participation of Party Organizations in the Corporate Governance of Chinese State-Owned Enterprises Restrain Inefficient Investment? An Empirical Study Based on a Time-Varying DID Model

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Abstract: This paper uses A-share state-owned listed enterprises as the research object from 2010 to 2020 and develops a time-varying difference-in-differences (time-varying DID) model to test the relationship between party organization participation in state-owned enterprise (SOE) corporate governance and inefficient investment. The results show that party organization participation in SOE corporate governance significantly inhibits inefficient investment behavior. A further analysis based on SOE heterogeneity reveals that the inhibitory effect of party organization participation in corporate governance on inefficient investment is more pronounced in commercial SOEs and local SOEs. The policy effect of party organization participation in corporate governance is mainly achieved by reducing agency costs by increasing total asset turnover, thus discouraging inefficient investment. This paper provides important policy implications for China to further promote the participation of party organizations in the corporate governance of SOEs.

1 INTRODUCTION

According to the report of the 19th Party Congress, "China's economy has shifted from a stage of high-speed growth to a stage of high-quality development." The digital economy assists the country's economy in developing with high quality, and SOE play a leading role in the high-quality development of the digital economy, with the Party's participation in SOEs' corporate governance being an important pillar of their digital construction. The modern SOE system with Chinese characteristics, according to General Secretary Xi Jinping, is "special" in that the Party's leadership is integrated into all aspects of corporate governance, and the Party organization is embedded in the corporate governance structure. The Party organization's role in SOEs corporate governance grows as it becomes more embedded, so its role path and governance effects are worth further investigation, with the inhibiting effect on inefficient investment being a key aspect of the Party organization's participation in SOEs corporate governance.

In recent years, empirical studies have confirmed the effects of party organization participation in SOEs corporate governance, and the findings show that party organization participation in SOE governance helps to enhance corporate information transparency (Mao and Wei 2020), restrain the problem of "insider control" (Ma et al 2012), reduce bond credit risk (Tong et al 2021), curb corporate surplus management behavior (Cheng et al 2020), tax avoidance (Li et al 2020), and financial fraud (Cheng and Zhang 2022), and help to improve corporate performance (Cui 2021). Then, this paper is concerned with whether the participation of party organizations in SOEs corporate governance can prevent inefficient investment behaviors. How do the dynamics of inefficient investment change before and after party organizations participate in SOEs corporate governance? Is its inhibitory effect on inefficient investment affected by the heterogeneity of SOEs?

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2 RESEARCH HYPOTHESIS

Compared with private enterprises, SOEs can easily alleviate financing constraints by obtaining financial subsidies and credit support under the government's "implicit guarantee" (Zhu et al 2015), so the main reason for inefficient investment in SOEs is the principal-agent problem, which is primarily reflected in the following two aspects: First, the principal-agent problem between shareholders and management. The managers of SOEs may make excessive investments that are contrary to the long-term development of the enterprise due to the tendency of "empire building" (Liu et al 2012) or to gain political promotion (Xu 2019); they may also under-invest due to their motives of risk avoidance, laziness, and enjoyment of peace and stability (Li 2011). Following the party organization's participation in the corporate governance of SOEs, the executives of SOEs become members of the party organization through the leadership mechanism of "two-way entry and cross-appointment" and tend to exercise administrative supervision on behalf of the party and the government as "stewards" (Ma 2013), thereby helping to restrain their self-interest pursuing behavior. Second, there is the issue of agency between major shareholders and small and medium shareholders. When large state shareholders interfere with SOEs investment behavior for political, social, and economic development purposes, party organizations must coordinate and protect the legitimate rights and interests of stakeholders such as small and medium shareholders, employees, and creditors of the company (Chen 2018). In summary, the first research hypothesis is proposed in this paper.

Hypothesis H1. Participation of party organizations in SOEs corporate governance discourages inefficient investment.

The general public welfare SOEs frequently make investment decisions to protect people's livelihoods, and it may be difficult for the party organization to participate in their corporate governance to suppress the resulting inefficient investment behavior. Whereas commercial SOEs operate commercially according to marketization requirements, and their investment decisions are more for market competition, and the party organization's supervisory and check-and-balance role helps to reduce inefficient investments caused by executives' self-interest motives. As a result, the second research hypothesis is proposed in this paper.

Hypothesis H2. When compared to public welfare SOEs, participation of party organizations in commercial SOEs corporate governance has a greater inhibiting effect on inefficient investment.

Central SOEs tend to make investment decisions to promote national economic development in mind, and it may be difficult for party organizations to influence their investment decisions. Whereas local SOEs are subject to local government intervention, and their executives may engage in unreasonable investment behaviors that cater to local government performance needs for political promotion, and the deterrent effect of party organizations helps to inhibit such behaviors. As a result, the third research hypothesis is proposed in this paper.

Hypothesis H3: When compared to central SOEs, participation of party organizations in local SOEs corporate governance has a greater inhibiting effect on inefficient investment.

3 METHODOLOGY AND DATA

3.1 Sample Selection

The research object in this paper is A-share state-owned listed companies from 2010 to 2020, and the raw data are processed as follows by existing research practice. (i) exclude samples from the financial industry; (ii) exclude samples with the years ST, *ST, and PT; (iii) exclude samples with a listing time of less than one year; (iv) exclude samples with an asset-liability ratio greater than or equal to 1 or less than or equal to 0; and (v) exclude samples with missing data for the main variables. Finally, 9757 annual company observations from 1194 different companies were obtained. Meanwhile, the continuous variables at the firm level were subjected to a 1% winsorize to eliminate the influence of extreme values. The personal characteristics documents of directors and supervisors provided by the CSMAR database and annual reports of companies were used to construct indicators related to party organizations' participation in corporate governance of SOEs, and all other financial data was obtained from the CSMAR database. Excel 2010 and Stata 16.0 were used to process the data in this work.

3.2 Time-Varying DID Model

The most commonly used measure in estimating treatment effects is DID model. In contrast to the traditional DID model, which implements the policy at a single point in time, time-varying DID model is applicable to the progressive implementation of the same policy in the impact group.

Given that party organizations are not involved in the corporate governance of each SOE at the same point in time during the sample selection period, this paper develops a time-varying DID model for testing to investigate whether party organization participation in the corporate governance of SOEs can suppress inefficient investment.

$$Inefficient_{i,t} = \alpha_0 + \alpha_1 post\_party_{i,t} + \gamma Controls + \varepsilon_{i,t} \quad (1)$$

3.3 Variables and Data Description

Explained variables: This paper draws on Richardson's (2006) investment efficiency model, and the absolute value of the residuals in the model is used to measure inefficient investment, with a higher value indicating a more serious degree of inefficient investment by the firm. The following is the investment efficiency model that was used in this paper.

$$\begin{aligned} Invest_{i,t} &= \beta_0 + \beta_1 Size_{i,t-1} + \beta_2 Level_{i,t-1} \\ &+ \beta_3 Age_{i,t-1} + \beta_4 Growth_{i,t-1} \\ &+ \beta_5 Retern_{i,t-1} + \beta_6 Cash_{i,t-1} \\ &+ \beta_7 Invest_{i,t-1} + \sum Industry \\ &+ \sum Year + \varepsilon \end{aligned} \quad (2)$$

Explanatory variables: In this paper, referring to existing studies (Tong et al 2021; Cheng et al 2020; Xie et al 2019), the members of enterprise party organizations serve on the board of directors, supervisory board, and managerial level are taken as the measure of party organization participation in corporate governance of SOEs, and due to the inconsistent time points of party organization participation in corporate governance of SOEs, the dummy variable *post_party* is set, and the annual interval after party organization participation in corporate governance is assigned as 1, otherwise 0. Its coefficient is the net policy effect of the time-varying DID model.

Control variables: *Size*, *Level*, *Growth*, *First*, *Lnpay*, *Period*, and *Fcf* were chosen as control variables in this paper based on the design of previous studies (Xie et al 2019).

The variable definitions and descriptive statistics results are shown in Table 1.

Table 1: Descriptive statistics of all variables.

Variables	Description	Mean	StDev	Min	Max
Inefficient	The absolute value of the residuals in model (2).	0.0364	0.0422	0.000387	0.250
post_party	The annual interval after the participation of party organizations in corporate governance of SOEs is assigned a value of 1, otherwise, it is 0.	0.775	0.417	0	1
Size	Natural logarithm of total assets at the end of the period.	22.82	1.401	20.14	26.94
Level	Gearing ratio.	0.509	0.198	0.0853	0.909
Growth	Operating income growth rate.	0.127	0.343	-0.522	2.089
First	Number of shares held by the largest shareholder/total share capital.	38.90	15.16	11.49	76.13
Lnpay	Natural logarithm of the total compensation of the top three executives.	14.38	0.685	12.67	16.29
Period	Retained earnings/total assets at end of period.	0.152	0.165	-0.499	0.579
Fcf	Net cash flow from operating activities per share.	0.554	1.009	-2.563	4.578

4 RESULTS AND ROBUSTNESS TEST

4.1 Main Results

The basic regression results from the time-varying DID model are shown in Table 2. Column (1) demonstrates that, in the absence of control variables, participation of party organizations in SOEs corporate governance significantly reduces inefficient investment (coefficient of -0.005, which is statistically significant). Column (2) demonstrates that the results remain robust after the inclusion of control variables, and the regression coefficient is negative at the 1% significance level, indicating that the level of inefficient investment in SOEs where the party organization is involved in corporate governance decreases by 0.3 percent when compared to SOEs where the party organization is not involved in corporate governance, and the inhibitory effect of the party organization is significant. Thus, hypothesis H1 is confirmed.

Because the potential inhibitory effects of party organization participation in corporate governance of different types of SOEs on inefficient investment differ, this paper runs grouped regressions based on the basic regression results according to the functional positioning and management level of SOEs.

The regression coefficient of *post_party* in column (3) of Table 2 is not significant, most likely because the investment decisions of public welfare SOEs are centered on safeguarding people's livelihood and serving society, and it is difficult for the party organization to influence the resulting inefficient investment phenomenon. Whereas the regression coefficient of *post_party* in column (4) is negative and significant at the 5% level, indicating that in commercial SOEs, the party organization effectively suppresses the inefficient investment phenomenon. As a result, hypothesis H2 is confirmed.

The regression coefficient of *post_party* in Table 2 column (5) is not significant, most likely because central SOEs cover major industries related to national security and the lifeline of the national economy, and it is difficult for the party organization to play a decisive role in major investment decisions after participating in the corporate governance of central SOEs. Whereas the regression coefficient of *post_party* in column (6) is -0.004 and significant at the 1% level, indicating that the party organization participation in corporate governance of local SOEs plays a significant inhibitory role in inefficient investment. As a result, hypothesis H3 is confirmed.

4.2 Robustness Test

4.2.1 Parallel-Trend Test

The parallel trend test was used in this study five years before and five years after party organizations participated in corporate governance, and the results are shown in Figure 1. The development trend between the experimental group and the control group is basically the same before the participation of party organizations in corporate governance of SOEs, and there is no significant difference, so it satisfies the parallel trend test. However, after the participation of party organizations in corporate governance of SOEs, there is a significant difference between the control group and the experimental

Table 2: The estimation results in the time-varying DID model.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
post_party	-0.005***	-0.003***	-0.002	-0.003**	-0.002	-0.004***
	(-4.39)	(-2.71)	(-0.47)	(-2.50)	(-1.08)	(-2.58)
Constant	0.041***	0.087***	0.081**	0.086***	0.087***	0.087***
	(39.84)	(7.92)	(2.29)	(7.35)	(4.33)	(6.02)
Controls	NO	YES	YES	YES	YES	YES
Year	YES	YES	YES	YES	YES	YES
Industry	YES	YES	YES	YES	YES	YES
Observations	9,757	9,757	1,470	8,287	3,269	6,488
R-squared	0.116	0.163	0.134	0.181	0.239	0.162
r2_a	0.109	0.149	0.0717	0.166	0.204	0.141
F	19.23	7.178	1.378	7.062	4.576	4.718

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

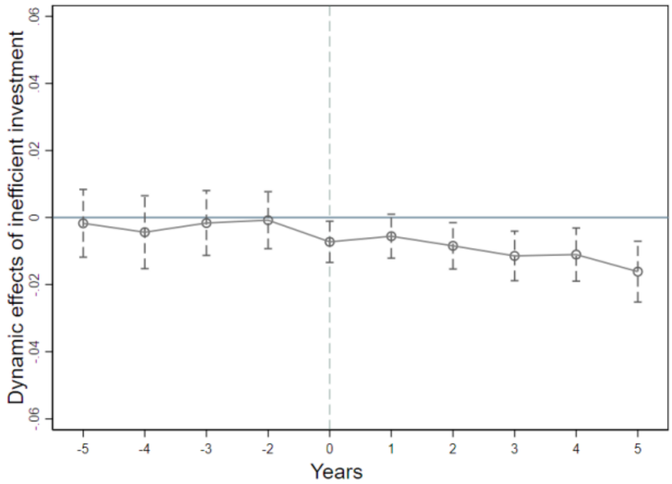

Figure 1: The results of parallel-trend test.

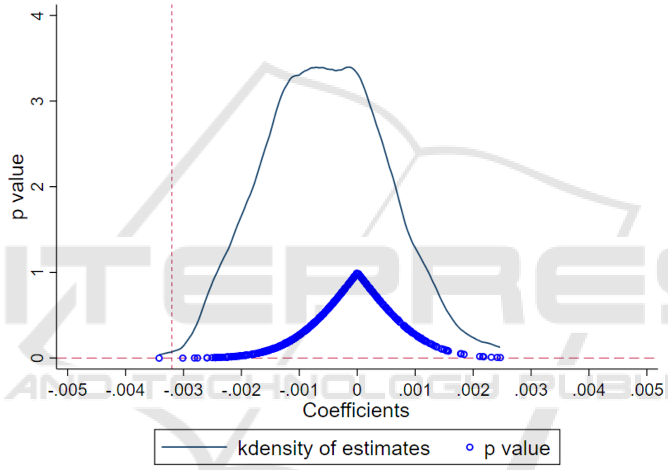

Figure 2: The results of placebo test.

group, and the coefficient of inefficient investment is significantly higher. As a result, the parallel trend test was passed by the time-varying DID model built in this paper.

4.2.2 Placebo Test

To further eliminate the endogeneity effect, the following steps were taken in this study: To begin, the same number of firms (1000) as in the previous experimental group was chosen at random from the sample to create a pseudo-experimental group. Second, a pseudo-policy time dummy variable is created by randomly selecting one year between 2010 and 2020. Finally, interaction terms for regression were created, and the above test procedure was repeated 500 times. The placebo test results are shown in Figure 2. As shown in Figure 2, the regression coefficients obtained from 500 repeated round-robin tests are concentrated around 0, and the majority of p-values are greater than 0.1. The placebo test results show that the reduction in the degree of inefficient investment in SOEs is due to the party organization governance effect, not time trends or other random factors, demonstrating the validity of the time-varying DID model established in this research.

5 INFLUENCE MECHANISM

The following model is developed in this paper using the three-step method of mediating effects to further test whether there is a mediating effect of agency costs on the effect between the participation of party organizations in corporate governance of SOEs and inefficient investment.

$$Ttc_{i,t} = b_0 + b_1 post\_party_{i,t} + \gamma Controls + \varepsilon_{i,t} \tag{3}$$

$$Inefficient_{i,t} = c_0 + c_1 post\_party_{i,t} + c_2 Ttc_{i,t} + \gamma Controls + \varepsilon_{i,t} \tag{4}$$

The total asset turnover ratio is used to measure the firm's agency cost in this paper, drawing on Luo (2014). Because asset turnover ratios are less volatile and difficult to manipulate. A higher asset turnover ratio indicates that the firm's agency cost is lower. The *post_party* regression coefficient in column (1) of Table 3 is 0.046 and significant at the 1% level, indicating that party organization participation in SOEs corporate governance significantly increases the total asset turnover rate. In column (2), the regression coefficient of *Ttc* is -0.009 and significant at the 1% level, indicating that party organization participation in SOEs corporate governance can suppress inefficient investment by increasing total asset turnover to reduce agency costs, confirming the mediating effect of total asset turnover.

Table 3: The results for the influence mechanisms.

Variables	(1)	(2)
	Ttc	Inefficient
post_party	0.046***	-0.003**
	(4.06)	(-2.36)
Ttc		-0.009***
		(-8.59)
Constant	-0.232**	0.085***
	(-2.25)	(7.75)
Controls	YES	YES
Year	YES	YES
Industry	YES	YES
Observations	9,757	9,757
R-squared	0.427	0.170
Year	YES	YES
Industry	YES	YES
r2_a	0.418	0.156
F	12.00	8.076

6 CONCLUSION

This paper investigates the relationship between party organization participation in SOEs corporate governance and inefficient investment by developing a time-varying DID model with A-share listed SOEs as the research sample from 2010 to 2020, and the empirical results show that party organization participation in SOEs corporate governance significantly inhibits inefficient investment behavior. Based on the heterogeneity of SOEs, it is discovered that the inhibitory effect of party organization participation in corporate governance on inefficient investment exists in commercial SOEs and local SOEs than in public welfare SOEs and central SOEs. In terms of its influence mechanism, participation in corporate governance by party organizations reduces agency costs by increasing total asset turnover, thereby inhibiting inefficient investment.

This paper provides important policy implications for China to further promote the participation of party organizations in the corporate governance of SOEs as follows: First, a large part of the inefficient investment phenomenon in SOEs is due to executives' self-interest motives. As a result, the Party should fully exercise the role of supervision and checks and balances, as well as the role of "direction" in SOE investment decisions and other major decisions to maintain the integrity of state-owned assets. Second, the state should fully understand the positive role of party organizations, improve the path and methods of party organizations' participation in SOEs corporate governance, bring the superiority of the modern SOE system with Chinese characteristics into play, and accelerate SOEs digitalization, to improve the development of the national digital economy and stabilize the high-quality development of the national economy.

Furthermore, because whether or not party organizations are involved in corporate governance is not required information for state-owned listed companies to disclose, the involvement of party organizations in corporate governance of state-owned enterprises derived from the CSMAR database of individual characteristics documents of directors, supervisors, and executives in this paper may differ from the actual situation. As a result, under the modern SOE system with Chinese characteristics, the relevant authorities should make it mandatory for listed SOEs to disclose their participation in corporate governance by party organizations. Future research should develop a model that accurately measures party organization participation in governance based on the disclosed data in order to empirically test the effectiveness of party organization governance and analyze the economic phenomena associated with it using econometric models.

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