

# Can the Participation of Non-state Shareholders in Governance Enhance the Performance of Commercial SOEs?

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## Abstract

The study examines the effects of non-state shareholders' participation in governance on the performance of commercial state-owned listed enterprises (SOEs) and the impact mechanism from the perspectives of shareholding governance and top-level governance, using Chinese commercial SOEs as a research sample from 2008 to 2022. The study's findings indicate that: (1) non-state shareholders' involvement in governance may improve the performance of commercial SOEs; and (2) by drawing more attention from the media, non-state shareholders' involvement in governance may enhance the performance of commercial SOEs. The study adds to the body of knowledge on the impact of non-state shareholders' governance and offers theoretical guidance on how commercial SOEs might fully utilize this position.

## Keywords

Non-state Shareholder Governance; Media Attention; Performance of Commercial State-owned Enterprises.

## 1. Introduction

State-owned businesses (SOEs) play a significant role in China's economic development and are a key component of the material and political basis of socialism with Chinese characteristics. They are also a pillar of the Party's governance and a force to be trusted. Enterprise performance and corporate governance are closely correlated. Enterprise performance may suffer from the division of ownership and operation, particularly in SOEs where the principal-agent problem, insider control, and lack of owners all contribute to poorer performance. Reforming mixed ownership is the best solution to address SOEs' poorer performance. Through consistent encouragement of mixed reform and equity diversification of state-owned enterprises, China's central enterprises are expected to have executed over 4000 mixed reforms overall and introduced over 1.5 trillion yuan of non-state capital by 2020. Additionally, the proportion of central enterprise households engaged in mixed reforms will surpass 70% of all central enterprise households, while local state-owned enterprise households will participate in mixed reforms to the tune of 54% and introduce 700 billion yuan of non-state capital. A total of 700 billion yuan worth of non-state capital has been introduced. The "one share dominance" scenario within SOEs has been broken up by the introduction of non-state capital and non-state shareholders, which has also reduced insider control and principal-agent issues[1]. Low internal governance and an emphasis on mixing rather than reforming are two issues that still exist in the process of adopting mixed reform. The Ministry of Finance's official website has the most recent statistics for 2022. The state-owned enterprises (SOEs) in the country realized a total operating income of 82.6 trillion yuan, an 8.3% year-over-year increase, while the total profit was 4.31 trillion yuan, a 5.1% year-over-year decrease. Over the previous five years, the average value of internal governance water of SOEs has been lower than that of

private enterprises. It is evident that state-owned enterprises' performance has not improved. This is mostly due to the fact that these businesses still have poor internal governance, a lack of clarity on power and duty, and a lack of supervision. For SOEs, the question of how to strengthen internal governance, raise the standard of decision-making, and ultimately improve performance has become important.

The "Guiding Opinions on the Definition and Classification of the Functions of State-owned Enterprises" were released in December 2015 by the State Council SASAC, the Ministry of Finance, and the National Development and Reform Commission. The document specifically suggested that the roles of various state-owned enterprises be precisely defined and that reforms be targeted. In April 2020, the State Council SASAC convened a special promotion meeting on deepening the classification reform of state-owned enterprises, which classified existing state-owned enterprises into the commercial category in accordance with the main business and the scope of their core businesses and public welfare categories, while the commercial category was subdivided into commercial category I and commercial category II. To be specific, the development goal is to enhance the vitality of the state-owned economy, enlarge the function of state-owned capital, and realize the preservation and appreciation of state-owned assets; the development goal is to ensure the people's livelihood, serve the society, and provide public goods and services; and the main business is to be classified as commercial state-owned enterprises. The important industries and key areas whose main business is related to national security and the lifeline of the national economy, and who mainly undertake major special tasks, are divided into commercial Class II state-owned enterprises. It can be seen that for commercial state-owned enterprises, the main goal is to improve profitability. By the end of 2022, there will be 1374 SOEs listed on the Shanghai and Shenzhen A-shares in China, of which 1338 are commercial SOEs, accounting for more than 95% of the total, and commercial SOEs are the main component of SOEs in terms of quantity. It can be seen that in the new stage of mixed reform of SOEs, commercial SOEs are the key reform object, and it is of practical significance to focus on commercial SOEs for research.

As a result, the focus of this paper is on commercial state-owned enterprises (SOEs). It begins with an overview of the history of mixed reform and categorized governance in state-owned enterprises (SOEs), then moves on to discuss the effects of non-state shareholder governance on the equity and top-level governance of non-state shareholder governance in commercial SOEs, and finally, it delves into the role of the media in the transmission mechanism between non-state shareholder governance and the performance of commercial SOEs. In contrast to previous research, this paper's primary contribution is that it is the first to examine commercial state-owned enterprises (SOEs) in order to investigate the effects of non-state shareholder governance on the operations of these companies as well as the role that media attention plays in the transmission mechanism. This provides a theoretical and practical foundation for the governance of commercial SOEs, both in terms of mixing and categorization.

## 2. Methods

### 2.1. Theoretical Analysis and Research Hypothesis

#### 2.1.1. The Impact of Non-state Shareholders' Participation in Governance on the Performance of Commercial SOEs

Leading the way in economic development, the state-owned economy controls the vital sectors and industries that drive the country's economy. However, the development of State-owned enterprises still suffers from the limitations of high quantity and low quality. On the one hand, due to the separation of the enterprise's operating right and ownership, and the high degree of equity concentration, there is a general phenomenon of "one share alone", "insider control", so the state-owned enterprises there is a large principal-agent problem [2] and information

asymmetry problem, the existence of these problems makes the management make decisions against the shareholders' value. The existence of these problems makes it more convenient for the management to make investment behaviors that are contrary to the maximization of shareholders' value, and at the same time, the lack of internal market mechanism leads to the lack of management's business motivation, enhances the motivation to obtain private profit [3], and the behavior of on-the-job consumption, which results in the phenomenon of misappropriation of corporate resources, making the performance of the enterprise is low. On the other hand, the soft budget constraint makes SOEs unable to balance between social responsibility and the pursuit of maximum economic benefits [4], while the government also influences the internal decision-making of the enterprise, and the enterprise will make the behavior of catering to the needs of the government, thus making the decision against the interests of the enterprise, resulting in the lower performance of SOEs.

The issues of internal controller, principal-agent, and information asymmetry are significantly resolved by the mixed reform of state-owned businesses. The following factors primarily show how the entry of non-state shareholders affected state-owned businesses. In order to mitigate the negative effects of principal-agent problems, non-state shareholders can, first and foremost, diversify the shareholding structure of state-owned enterprises. This can reduce enterprise risk and generate checks and balances on major shareholders, supervise major shareholders and management, and prevent major shareholders from harming the interests of small and medium-sized shareholders. Additionally, non-state shareholders can invest in the financial and human capital of state-owned enterprises, complementing, promoting, and developing alongside state-owned capital, creating resource synergies. Complementary, mutual promotion, common development, the formation of resource synergy and scale effect. At the same time, the diversified shareholding structure puts forward higher requirements for enterprise efficiency, when the performance level of state-owned enterprises does not meet the expected goals, the liquidity of the private capital may sell the stock, to the outside world to send negative signals, further affecting the performance of the enterprise. Secondly, non-state shareholders can participate in enterprise decision-making through the appointment of directors and supervisors, and obtain more adequate information about the enterprise as well as the right to speak [7]. On the one hand, the profit-seeking motive of non-state shareholders breaks the rigid operation and governance mechanism of state-owned enterprises, establishes flexible and efficient operation mechanism, improves capital operation efficiency, forces state-owned shareholders to reduce the policy burden appropriately, improves the budgetary constraints of state-owned enterprises due to the excessive intervention of the government [8], positively supervises the top management of state-owned enterprises and the major shareholders [9], alleviates the proxy and information asymmetry problems, makes them disclose accounting information truthfully, and prevents them from disclosing accounting information to the public, and prevents them from disclosing accounting information to the public. On the other hand, non-state shareholders have a keen insight into the market and advanced management concepts. By participating in the decision-making of state-owned enterprises, they can not only reduce the possibility of concealment of information by the majority shareholders and the management for their own interests, but also reduce the moral hazard and improve the "moral hazard" within the state-owned enterprises. The phenomenon known as "dominance of one share" and "insider control" are prevalent in state-owned enterprises. These factors not only enhance the quality of decision-making within these enterprises, but also improve internal governance, incentive, and constraint mechanisms [10]. These factors also optimize business decision-making and boost employee and senior management motivation, which in turn improves management quality and staff enthusiasm, ultimately improving enterprise performance.

In conclusion, it is clear that non-state shareholders can fulfill their roles of oversight and incentive through equity diversification, equity checks and balances, and involvement in corporate governance. These actions can also help to improve the quality of decision-making, the degree of internal governance of state-owned enterprises, and the reshaping of flexible and efficient business mechanisms. Ultimately, these actions can alleviate the problems of principal-agent, information asymmetry, and budgetary soft constraints that exist within state-owned enterprises. Thus, the key claim of this work is put forth here in light of the analysis above:

Hypothesis H1: Participation of non-state shareholders in governance improves the performance of business-type SOEs.

Hypothesis H1a: The proportion of non-state shareholders' ownership is positively related to the performance of commercial SOEs.

Hypothesis H1b: The proportion of directors appointed by non-state shareholders is positively related to the performance of business-type SOEs.

### **2.1.2. Transmission of Media Attention Mechanisms**

The reason state-owned enterprises exist is because of unclear rights and responsibilities regarding the management of state-owned assets, the issue of multiple management, and the managers' ability to damage state-owned assets through internal and external collusion in the name of implementing a mixed reform of internal and external collusion. This leads to the phenomenon of state-owned asset loss and negatively impacts the performance of state-owned enterprises. One practical solution to the issue of state-owned asset loss is the involvement of non-state shareholders in the governance of state-owned firms. Non-state shareholders can address the issue of poorly managed or unmanaged state-owned asset management while preventing the phenomenon of state-owned asset loss by designating directors to take part in the day-to-day operations and management of state-owned enterprises (SOEs). At the same time, China requires SOEs involved in mixed reform to improve the information disclosure system and give full play to the role of media supervision, which provides a convenient way for the media to collect relevant information about SOEs and then supervise them, and when more media pay attention to SOEs, the scope of information dissemination will be expanded, effectively reducing the number of SOEs in the market and reducing the number of people in the market. When more media focus on "mixed reform" SOEs, the scope of information dissemination will be expanded, which effectively reduces the degree of information asymmetry, reduces the occurrence of surplus manipulation [11], connected transactions [12], and irregularities [13], and can better unify the objective function of different stakeholders. Therefore, most stakeholders are more willing to use this mechanism to monitor internal corporate governance issues [14]. At the same time, it is also convenient for the media to collect, disclose and diffuse relevant information to realize the supervision [15]. When "mixed" SOEs receive more media attention, the short-sighted behavior of state-owned shareholders or management in hunting state-owned assets, such as connected transactions and transfer of benefits, is magnified in front of the public, and is more likely to cause the intervention of the relevant regulatory authorities. Based on reputational cost considerations, "mixed" SOEs tend to strengthen themselves to maintain their social image and thus improve their corporate performance.

Therefore, state-owned enterprises through the introduction of non-state shareholders to carry out mixed reform, mixed reform after the need for timely disclosure of enterprise-related accounting or other useful information for stakeholders, and then be able to attract more media attention, as an external governance mechanism, the higher the media's attention to state-owned enterprises, can effectively alleviate the degree of asymmetry of information, to inhibit the emergence of enterprises in the related transactions, interests of transport and other violations, to prevent the loss of state-owned assets, but also use the enterprise reports to make

the state-owned enterprises in order to maintain their good reputation to strengthen the level of internal governance, and then improve corporate performance. Prevent the loss of state-owned assets, but also use the coverage of the enterprise, so that state-owned enterprises in order to maintain their good reputation, strengthen the level of internal governance, and thus improve corporate performance. To summarize, the second hypothesis of this paper is proposed:

Hypothesis H2: Non-state shareholder governance contributes to the performance of business-type SOEs by enhancing media attention and thereby.

## 2.2. Sample Selection

Due to the completion of the reform of non-state-owned shareholders in 2007, it is easier for non-state-owned shareholders to enter state-owned enterprises. Therefore, this paper takes all the commercial state-owned enterprises listed on Shanghai and Shenzhen A-shares in the Guotai 'an database during 2008-2022 as the research object, and selects them according to the actual controller is state-owned enterprise, administrative organ and public institution. According to the Guiding Opinions on the Reform of Function Definition and Classification of State-owned Enterprises and the practice of Wei Minghai (2017) [16], the fields of public facilities, sports and education are excluded. Delete \*ST, ST and delisted enterprises, enterprises in finance, insurance and other industries, enterprises listed for less than one year, samples with frequent changes in the nature of the actual controller during the sample period and samples with missing data of major variables. Meanwhile, in order to avoid the impact of abnormal values, all continuous variable data are curtailed at the level of 1%-99%. Most of the data on governance of non-state shareholders for the explanatory variables in this paper are collected manually: the data on shareholding are obtained through the information on shareholders in the database of Cathay Pacific (CSMAR), combining with the annual report of the enterprise and the eye of the sky to determine the nature of shareholders, and calculations are made; the data on appointed directors and supervisors are obtained through the information on concurrent appointments of directors and supervisors in the database of Cathay Pacific (CSMAR), combining with the annual report of the enterprise to determine the concurrent appointments of the unit to be collected manually. The media attention data is obtained from the CNRDS database, and the remaining other relevant data is obtained from the Cathay Pacific (CSMAR) database. The paper finally obtains 11,895 unbalanced panel data. Data processing is done by Stata 16.0.

## 2.3. Variable Definition

### 2.3.1. Corporate Performance (ROA)

In this paper, return on total assets (Roa) is selected to measure the magnitude of corporate performance. At present, there are many indicators that can reflect the performance of enterprises, such as Tobin's Q value, economic value added method, return on total assets, return on net assets, earnings per share, etc. Among them, the return on total assets can not only reflect the financial performance of enterprises in an all-round way, but also reduce the possibility of manipulation by managers, thus reflecting the more real profitability of listed enterprises.

### 2.3.2. Non-state Shareholder Governance (Mix)

In this paper, the proportion of non-state shareholders' shareholding among the top ten shareholders (Nsoe\_r) is selected to measure the equity governance in the governance of non-state shareholders, which is obtained by determining the nature of shareholders through the shareholders' information in the database of Cathay Pacific (CSMAR), combined with the annual report of the enterprise and the eye of the sky to determine the nature of the shareholders, and the calculation is carried out. At the level of top-level governance, the existing literature mainly

measures it through the number of non-state shareholders appointed directors or appointed directors and supervisors or the proportion of the total number of the board of directors, and in this paper, we select the proportion of non-state shareholders appointed directors (Dnsoe\_r) to measure it, which is done by referring to Cai Guilong et al. (2018) [10] and He Ying et al. (2023) [17], and if the non-state shareholders are natural persons, the natural person will be position of director and supervisor of the enterprise is regarded as appointed by the non-state shareholder, and if the non-state shareholder is a legal person, the director and supervisor in the unit of the legal person who is also the director and supervisor of the enterprise is regarded as appointed by the non-state shareholder.

### 2.3.3. Media Attention (Mg)

Currently, the main media tools are traditional media (newspapers, magazines) and online media, and the reports of traditional media and online media can comprehensively measure the media's attention to the enterprise, so this paper uses the sum and logarithm of the annual number of newspaper financial news and the annual number of online news in the China Listed Companies' Financial News Database of China's Research Data Service Platform (CNRDS) to measure the media's attention (Mg), the larger the value, the higher the degree of media attention to the enterprise, the greater the supervisory effect on the enterprise.

### 2.3.4. Control Variable (Controls)

**Table 1.** Core variable definitions and descriptions

Typology	Variable symbol	Variable name	Description of variables
Explanatory variable	Roa	Corporate Performance	Net profit/Average total assets
Explanatory variable	Mix	Nsoe_r	Shareholding governance Proportion of shares held by non-state shareholders among the top ten shareholders
		Dnsor_r	High-level governance Number of directors appointed by non-state shareholders/Total number of board members
Intermediary variable	Mg	Media attention	The natural logarithm of the sum of the number of newspaper financial news stories and the number of online news stories
Control variable	Size	Enterprise size	Total assets taken as a natural logarithm
	Lev	Gearing ratio	Total liabilities/Total assets at the end of the year
	Growth	Growth-oriented	Using the indicator of the growth rate of business income, the formula is: (The amount of business income in the current year - The amount of business income in the previous year) / (The amount of business income in the previous year)
	Cash	Cash ratio	Balance of cash and cash equivalents at end of period/Total assets at end of period
	Ac	Agency cost	(Administrative Expenses + Selling Expenses)/Operating Income
	Bala	Shareholding concentration	Shareholding ratio of the largest shareholder
	Bsize	Board size	Natural logarithm of the total number of directors
	Age	Years established	Observation year (current accounting period) - Natural logarithm of the year of establishment of the enterprise
	Year	Yearly	Year dummy variable
	Industry	Sector	Industry dummy variable, based on the criteria of the Guidelines on Industry Classification of Listed Companies issued by the SEC in 2001

Control variables include variables that may have an impact on the explained variables. Based on prior research in this area, the control variables chosen for this paper are: firm size (Size), gearing ratio (Lev), firm growth (Growth), cash ratio (Cash), agency cost (Ac), shareholding concentration (Bala), board of directors size (Bsize), number of years since the firm was established (Age), and so on. These choices are intended to limit the impact of other potential factors on the performance of SOEs. Furthermore, the year (Year) and industry (Industry) fixed effects are controlled for in this paper. For a description of each variable, see Table 1. For a description of each particular variable, see Table 1.

## 2.4. Model Building

In order to reasonably verify the relationship between the governance of non-state shareholders and the performance of commercial SOEs i.e., hypothesis H1 of this paper, Hausman test was conducted, and the results show that the chi-square value is 298.3, the P-value is less than 0.01, rejecting the original hypothesis, and the fixed effect model should be selected, this paper refers to the practice of Wang Yao et al. (2023) [18], Ren Guangqian (2020) [19] and so on, and constructs the following model, and control the year and industry, as shown in model (1).

$$Roa_{i,t} = \alpha_0 + \alpha_1 Mix_{i,t} + Controls_{i,t} + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (1)$$

Furthermore, based on regression model (1), which is displayed in (2) and (3), this paper creates the following mediating effect regression model in order to investigate the mediating effect of media attention, or hypothesis H2.

$$Mg_{i,t} = \theta_0 + \theta_1 Mix_{i,t} + Controls_{i,t} + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (2)$$

$$Roa_{i,t} = \mu_0 + \mu_1 Mix_{i,t} + \mu_2 Mg_{i,t} + Controls_{i,t} + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (3)$$

## 3. Analysis of Regression Results

### 3.1. Descriptive Statistics

The outcomes of the descriptive statistics for the main variables are shown in Table 2. The data shown in Table 2 demonstrate that there is a significant variation in the performance of commercial SOEs, with the maximum value of Roa being 0.238, the minimum value being -0.212, and the median value being 0.031. The data indicates that there is a notable variation in the shareholding structure amongst different commercial class SOEs and a significant gap in the proportion of non-state shareholders in the commercial class SOEs. The mean value of the proportion of shares held by non-state shareholders (Nsoe\_r) is 0.127, the maximum value is 0.677, and the minimum value is 0.007. There is a noticeable difference in the percentage of directors appointed by non-state shareholders in different business class SOEs, as shown by the mean value of the proportion of directors appointed by non-state shareholders (Dnsor\_r), which is 0.036, the maximum value of 0.444, and the minimum value of 0. It is evident that the governance of non-state shareholders requires our close attention. The media attention of business class SOEs varies significantly in terms of mediating variables; the maximum value of media attention (Mg) is 8.946, the minimum value is 2.565, and the standard deviation is 1.081.

**Table 2.** Statistical characteristics of core variables

Variable name	Observed value	Average value	Standard deviation	Minimum value	Upper quartile	Maximum values
Roa	11895	0.035	0.049	-0.212	0.031	0.238
Nsoe_r	11895	0.127	0.127	0.007	0.079	0.677
Dnsoe_r	11895	0.036	0.086	0	0	0.444
Mg	11895	5.647	1.081	2.565	5.583	8.946
Size	11895	22.800	1.414	19.920	22.640	27.330
Lev	11895	0.503	0.196	0.074	0.513	0.940
Growth	11895	0.140	0.366	-0.706	0.089	3.701
Cash	11895	0.149	0.109	0.008	0.121	0.599
Ac	11895	0.125	0.099	0.008	0.099	0.668
Bala	11895	0.389	0.152	0.104	0.376	0.789
Bsize	11895	2.201	0.192	1.609	2.197	2.708
Age	11895	2.948	0.326	1.386	2.996	3.664

### 3.2. Regression Analysis of Non-state Shareholder Governance and Performance of Commercial SOEs

Table 3 presents the regression findings of hypothesis H1, which illustrates the impact of non-state shareholder control on the performance of commercial-type SOEs. The results of testing the effect of non-state shareholders' governance on the performance of commercial SOEs are displayed in Column 2, where the coefficient of the proportion of non-state shareholders' shareholding in the top ten shareholders (Nsoe\_r) is 0.023 and passes the significance level test. This is consistent with the expectation, which states that the performance of commercial SOEs increases by 0.023 percentage points for every percentage point increase in the total proportion of non-state shareholders' shareholding in the top ten shareholders. 0.023 percentage points, that is, non-state shareholders can promote the performance of commercial SOEs. This result suggests that the introduction of non-state shareholders can improve the level of corporate governance by expressing opinions in the general meeting of shareholders, which in turn improves the performance of commercial SOEs, supporting hypothesis H1a. The effect of non-state-owned shareholders' governance on the performance of commercial state-owned enterprises is tested from the high-level governance level. The results are shown in Column 3. The coefficient of the proportion of appointed directors of non-state-owned shareholders (Dnsoe\_r) is 0.053 and has passed the significance level test, which is consistent with the expectation, indicating that the proportion of appointed directors of non-state-owned shareholders increases by 1 percentage point. The performance of state-owned enterprises will increase by 0.053 percentage points, that is, the appointment of directors by non-state-owned shareholders can promote the improvement of the performance of commercial state-owned enterprises, indicating that the higher the proportion of directors appointed by non-state-owned shareholders, the higher the impact on the major operational decisions of enterprises, the more internal information of enterprises can be obtained, the quality of corporate decisions can be improved, and the performance of commercial state-owned enterprises can be promoted. Supports hypothesis H1b. On the whole, non-state shareholders have the ability to influence the enterprise's governance by selecting directors and owning shares, which enhances the performance of business-type SOEs and supports Hypothesis H1. Appointed directors have a greater voice in the internal day-to-day operations of State-Owned Enterprises (SOEs) than do simple non-state shareholders. This gives them access to more effective information about the enterprise and increases their influence in shareholder meetings and major business decision-making. It also raises the enterprise's level of internal governance, which boosts the performance of business-type SOEs.

**Table 3.** Non-State Shareholder Governance's Effect on Commercial SOE Performance

Variable name	Roa	Roa
Nsoe_r	0.023***	
	(7.28)	
Dnsoe_r		0.053***
		(11.61)
Size	0.008***	0.008***
	(21.62)	(23.65)
Lev	-0.115***	-0.114***
	(-46.39)	(-46.03)
Growth	0.027***	0.027***
	(24.80)	(24.86)
Cash	0.081***	0.082***
	(20.42)	(20.61)
Ac	-0.052***	-0.052***
	(-11.12)	(-11.19)
Bala	0.021***	0.021***
	(7.26)	(7.54)
Bsize	0.007***	0.006***
	(3.17)	(2.91)
Age	0.006***	0.008***
	(4.09)	(4.92)
Constant	-0.140***	-0.155***
	(-14.89)	(-16.48)
Observations	11,895	11,895
R-squared	0.305	0.310
Industry FE	Yes	Yes
Year FE	Yes	Yes

Note: Significant at the 10%, 5%, and 1% levels are indicated by the symbols \*, \*\*, and \*\*\*.

### 3.3. A Test of the Mediating Effect of Media Attention

Based on the research hypothesis in the previous section, this paper analyzes the mechanism transmission role played by media attention in the process of the influence of non-state shareholders' governance on the performance of business-like SOEs from the perspective of external monitoring mechanism. Table 4 displays the results of a regression analysis comparing non-state shareholders' governance to the performance of commercial SOEs. The coefficient of non-state shareholders' governance on the performance of commercial SOEs is significantly positive at the 1% statistical level; the coefficients are 0.023 and 0.053, respectively. The regression analysis of non-state shareholders' governance on media attention is shown in columns (1) and (3) of Table 4. The analysis indicates that both the top level of governance and equity governance of non-state shareholders are significantly positive at the 1% level. are highly positively connected; their respective coefficients are 0.467 and 0.691, showing that non-state shareholder control can increase media coverage of commercial SOEs. According to Table 4's regression results, which display media attention as a mediating variable in Columns (2) and (4), there is a mediating effect between media attention to commercial SOEs and their performance. The coefficient between media attention and SOE performance is 0.006, significant at the 1% level. In addition, the non-state shareholder governance regression coefficients are 0.019, 0.05, which are significant and less than the non-state shareholder governance regression coefficients in Table 4. This suggests that media attention plays a

significant role in the mediating effect of non-state shareholder governance on the performance of commercial class SOEs, thereby verifying the hypothesis H2.

**Table 4.** Mediation effects test: media attention

	(1)	(2)	(3)	(4)
Variable name	Mg	Roa	Mg	Roa
Nsoe_r	0.691***	0.019***		
	(11.52)	(6.01)		
Dnsoe_r			0.467***	0.050***
			(5.27)	(11.08)
Mg		0.006***		0.006***
		(12.10)		(12.30)
Size	0.474***	0.005***	0.488***	0.006***
	(68.40)	(11.98)	(71.04)	(13.21)
Lev	-0.057	-0.115***	-0.064	-0.114***
	(-1.18)	(-46.54)	(-1.32)	(-46.17)
Growth	0.068***	0.026***	0.073***	0.026***
	(3.30)	(24.58)	(3.51)	(24.61)
Cash	0.459***	0.079***	0.462***	0.079***
	(5.98)	(19.85)	(5.99)	(20.03)
Ac	1.386***	-0.059***	1.433***	-0.060***
	(15.54)	(-12.79)	(16.02)	(-12.93)
Bala	-0.167***	0.022***	-0.251***	0.023***
	(-3.05)	(7.64)	(-4.61)	(8.10)
Bsize	0.091**	0.006***	0.101**	0.005***
	(2.27)	(2.94)	(2.49)	(2.65)
Age	0.020	0.006***	0.019	0.008***
	(0.67)	(4.04)	(0.61)	(4.89)
Constant	-5.951***	-0.106***	-6.194***	-0.119***
	(-32.77)	(-10.86)	(-33.93)	(-12.17)
Observations	11,895	11,895	11,895	11,895
R-squared	0.462	0.314	0.457	0.319
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Note: Significant at the 10%, 5%, and 1% levels are indicated by the symbols \*, \*\*, and \*\*\*.

### 3.4. Robustness Check

#### 3.4.1. Substitution of Explanatory Variables

Using different measures to represent the degree of governance of the explanatory variable non-state shareholders may lead to different conclusions. We retest the effect of non-state shareholder governance on the performance of business-type SOEs in this paper by replacing the indicators at the equity governance level with the proportion of shares held by the largest non-state shareholder among the non-state shareholders (Nsoeth1\_r) and the top governance level with the proportion of directors and supervisors appointed by the non-state shareholders (Djsoe\_r). The results are displayed in Table 5. The regression coefficients of Djsoe\_r and Roa are considerably positive at the 1% level, and the regression coefficients of Nsoeth1\_r and Roa are significantly positive at the 10% level, as can be seen from the data in Table 5. It is in line with the earlier deduction.

**Table 5.** Replacement of explanatory variables test Robustness test results

Variable name	Roa	Roa
Nsoeth1_r	0.008*	
	(1.88)	
Djsoe_r		0.070***
		(11.77)
Size	0.008***	0.008***
	(22.33)	(23.84)
Lev	-0.116***	-0.114***
	(-46.57)	(-46.03)
Growth	0.027***	0.026***
	(24.98)	(24.83)
Cash	0.082***	0.082***
	(20.39)	(20.61)
Ac	-0.050***	-0.051***
	(-10.73)	(-11.05)
Bala	0.017***	0.021***
	(6.05)	(7.59)
Bsize	0.007***	0.006***
	(3.41)	(2.88)
Age	0.006***	0.008***
	(3.76)	(5.25)
Constant	-0.143***	-0.158***
	(-15.09)	(-16.75)
Observations	11,895	11,895
R-squared	0.302	0.310
Industry FE	Yes	Yes
Year FE	Yes	Yes

Note: Significant at the 10%, 5%, and 1% levels are indicated by the symbols \*, \*\*, and \*\*\*.

### 3.4.2. Reduced Sample Size

As per the mixed ownership reform development history, the Third Plenary Session of the 18th CPC Central Committee decided in 2013 to propose that China's mixed ownership reform enter the deep-water zone and begin full implementation. It also allowed the mixed ownership economy to implement enterprise employee shareholding. In order to reexamine the relationship between the governance of non-state shareholders and the performance of business-type SOEs, this paper keeps the sample data from 2013 to 2022. The results are displayed in Table 6, where the regression coefficients of Nsoe\_r, Dnsoe\_r, and Roa are all significantly positive at the 1% level, in line with the earlier findings.

**Table 6.** Robustness test results with reduced sample size

Variable name	Roa	Roa
Nsoe_r	0.014***	
	(4.11)	
Dnsoe_r		0.052***
		(9.95)
Size	0.008***	0.009***
	(20.43)	(21.80)
Lev	-0.119***	-0.117***
	(-41.69)	(-41.25)
Growth	0.027***	0.026***
	(20.20)	(20.20)
Cash	0.078***	0.079***
	(16.66)	(16.94)
Ac	-0.067***	-0.067***
	(-13.13)	(-13.38)
Bala	0.021***	0.023***
	(6.28)	(7.06)
Bsize	0.006**	0.005**
	(2.50)	(2.20)
Age	0.007***	0.009***
	(3.91)	(4.71)
Constant	-0.149***	-0.162***
	(-13.41)	(-14.62)
Observations	8,444	8,444
R-squared	0.314	0.321
Industry FE	Yes	Yes
Year FE	Yes	Yes

Note: Significant at the 10%, 5%, and 1% levels are indicated by the symbols \*, \*\*, and \*\*\*.

#### 4. Conclusion

China's economic development is largely dependent on its commercial state-owned companies (SOEs), which constitute the majority of state-owned enterprises (SOEs). Non-state shareholders' involvement in business management has the potential to raise decision-making standards and encourage long-term, sustainable business growth. The proper growth of commercial SOEs depends on how non-state shareholders may be fully included in their governance role. This study examines the fundamental mechanism of the effect of media attention on the interaction between the two, with a focus on the relationship between corporate performance in commercial state-owned listed firms and the engagement of non-state shareholders in governance. The study's findings are summed up as follows: (1) non-state shareholders' participation in governance and the performance of commercial SOEs are positively correlated, suggesting that non-state shareholders' participation in equity and the appointment of directors in governance can enhance commercial SOE performance; (2) non-state shareholders' participation in governance can enhance commercial SOE performance by drawing more media attention to them; that is, there is an intermediary transmission role of media attention in the relationship between non-state shareholders' participation in governance and the performance of commercial SOEs. In other words, the success of

commercial SOEs and the involvement of non-state shareholders in governance are mediated by media attention.

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