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Study on the Impact of Private Enterprises' Participation in the Mixed Reform of State-owned Enterprises on the Value Preservation and Appreciation of State-owned Assets

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Abstract:

The research sample was chosen from the commercial category of state-owned listed enterprises in Shanghai and Shenzhen A-shares from 2013 to 2020. Data on private shareholders within the top 10 shareholders' shareholding and delegated behavior are used. We empirically evaluate the effects of private businesses' involvement in the mixed reform of state-owned businesses on the maintenance and growth of the value of assets at the equity level and the management right level using a fixed-effects model. The study demonstrates how successfully private companies may contribute to the preservation and value enhancement of assets, both at the management level and the equity level, by participating in the reform of state-owned enterprises (SOEs). The level of internal control at SOEs, meanwhile, significantly modifies the connection between mixed reform engagement by private enterprises and the increased value of SOE assets. Private firms' participation can effectively offset the negative effects of a lack of market development on the value-added of SOEs' assets.

Keywords : Mixed reform of state-owned businesses; Preservation and value enhancement of state-owned assets; internal control; Market-oriented development level

Introduction

State-owned businesses are important to support economic development and guarantee to maintain our people's happiness, financial independence, and national security. The country has given reform a lot of attention recently, as seen by the 19th National Congress' proposal to deepen reform and the recommendations adopted by the 19th Central Committee's Fifth Plenary Session ^[1]. With the deepening of reform, how to protect the value of assets in the fierce market competition of state-owned enterprises (hereinafter referred to as SOEs) has become a top priority, which is also the fundamental purpose of promoting reform of SOEs (hereinafter referred to as mixed reform of SOEs) in China.

Therefore, it is critical to research the main elements influencing an asset's worth and learn how to preserve and grow its value. Due to the special characteristics of SOEs, the focus of

SOE hybrid reform is to effectively the participation of private capital and private enterprises can stimulate the vitality of SOEs, change the phenomenon of multiple principal-agents within SOEs. Based on this, the panel data of state-owned listed firms in Shanghai and Shenzhen A-shares in China from 2013 to 2020 is used in this study as a research sample to examine the effects of private enterprises' involvement in the reform of SOEs on the preservation and appreciation of SOEs' value, hoping to provide a new basis for deepening the reform of sta.

The main aspects of this study are: first, most scholars in the past have studied the impact of non-state shareholders' participation in the reform of SOEs, while private shareholders occupy a significant weight, and the focus of the latest phase of SOE reform is now on the involvement of private shareholders in governance^[2]. At the same time, most previous studies had measured the participation of non-state shareholders in SOEs' mixed reform by relevant indicators at the equity level^[3]. Therefore, this study investigates the effects of private company involvement in two aspects: equity and management rights. Secondly, in terms of data utilization, scholars tend to ignore the collection and utilization of indirect data because of the relative ease of access to public data based on databases, in this way, the important role of implicit data is often overlooked, and in real management decisions, implicit data is often more important than explicit data, and the mechanism of the role reflected by invisible data should not be ignored. Therefore, this study has obtained a large sample of data by manually

collating annual report data and related information, and the empirical findings provide new reliable and valuable real-world evidence on the impact mechanism of assets preservation and appreciation.

1. Literature Review

2.1 A research on the preservation and value enhancement of state-owned assets

2.1.1 Factors that constrain the preservation and value enhancement of state-owned assets

According to Tian et al., the biggest barrier to the preservation and value enhancement of assets is the loss of those assets^[4, 5]. Additionally, studies have shown that the lack of owners is the main factor in the loss of assets^[6, 7], so preventing and stopping that loss is the way to maintain the value of those assets. The problem of owner absence has existed within SOEs for a long time^[8], which has led to multiple principal-agent problems and ambiguous agency subjects in the SOE management system^[9]. SOEs have to go through very different nature of principal-agent relationships, from the ultimate owner of state-owned assets to the business operator, and from political to administrative to economic relationships. The nature of the political system and the lengthy agency chain can lead to inefficient agency in SOEs^[10]. At the same time, the lack of incentives and constraints, especially the weak supervision of enterprise operators, leads to supervisory failure^[11]. Meanwhile, insider control^[12], one share dominance^[13, 14], and soft budget constraints^[15, 16] also constrain the value of assets to

some extent.

2.1.2 Factors that promote the preservation and value enhancement of state-owned assets

From the existing studies, the existing literature on the elements influencing the worth of assets mainly focused on studying the regulatory system of assets, enterprise risk management, and governance of non-state directors, audit function, and internal control. For example, Guo et al.^[17,18] founded that the SASAC's move to shift the center of supervision to managing capital from 2015 significantly enhanced the positive contribution of state audit target coverage to the value of assets, and a study by Wang et al.^[19] reached similar conclusions. A study by Guo et al.^[20] concluded that high-quality social audits are good for ensuring the retention of assets, while social audits play a substitution effect with state audits in promoting the retention of assets, and Qin^[21] concluded that government audits, asset securitization, and the value retention of assets are significantly and positively related. Guo Mengnan and Guo Jinhua^[22] pointed out that the value of assets is promoted by reducing the level of government intervention. Li and Guo^[23] found through empirical research that maintaining the first major shareholder's shareholding ratio within a specific range can aid in the growth of the value of assets. Wu and Du^[24] argued that the improvement of non-state directors' governance motivation can effectively contribute to the value maintenance and growth of SOE assets. Guo and Ni^[25] studied that internal control can advance the

preservation and value enhancement of assets, and the greater the number of deficiencies in the internal control of SOEs, the more detrimental to the value sustainability and improvement of assets, and Wang's^[26] study also concluded that strengthening enterprise risk management and improving enterprise internal control can effectively prevent the loss of assets^[27]. Some scholars had studied that the depth of mixed reform, equity diversity, equity checks and balances, and the control owned by non-state capital all have different degrees of positive effects on the value-added of state-owned assets^[28, 29].

2.2 Research on private companies' involvement in state-owned companies' mixed reform

The majority of academic research on the involvement of private firms in the reform of SOEs concentrates on examining the nature of reform, reform effects, realistic dilemmas, and countermeasure suggestions^[30, 31], such as Yu et al.'s^[32] argument, private businesses' involvement in the reform of SOEs aids in the development of their market mechanisms and is more conducive to testing the level of market-oriented development^[33], market mechanism in the area where SOEs are located. It helps SOEs form a perfect market mechanism system, absorb more social capital, get rid of a series of policy burdens, and promote better integration of industrial chain, supply chain and capital chain^[34]. Some academics brought out the challenges that private businesses experienced during the mixed SOE transition. For instance, private and state-owned enterprises have multiple conflicts in

culture and management philosophy, and the integration of the two cannot be achieved overnight^[35]. In addition, at present, there are still some problems that cause private enterprises to be unmotivated to participate in the reform, such as the limitations of property rights protection, profit distribution, power allocation, exit mechanism and other institutional construction. Due to the challenges faced by private businesses during the mixed reform of SOEs, scholars proposed solutions such as improving the equity financing mechanism, reconstructing the governance mechanism, establishing a pricing mechanism, and creating a sharing platform^[35].

2. Theoretical analysis and research hypothesis

3.1 Involvement of private businesses in the hybrid reform of state-owned companies and the value maintenance and growth of state-owned assets

The introduction of private capital of private enterprises has accelerated the pace of SOE reform, freeing SOEs from a series of policy burdens, solving the problem of owner deficiency within SOEs, and better integration and development of SOEs. Private shareholders' involvement helps SOEs' governance structure to keep improving, increases the vitality of SOEs, modernizes the governance mechanism, and participates in the mixed reform by holding shares or appointing executives, which first addresses the issue of one-sided dominance within SOEs. Secondly, it produces certain constraints on the internal executives of the

company in the management power structure, improves the problem of lengthy agency within SOEs, reduces agency costs^[36], reduces the burden caused by information asymmetry, enables SOEs to really dominate the market and no longer rely on funding from the government and banks, solves the problem of owner absence within SOEs, avoids the loss of assets, and helps preserve and increase the value of assets. Meanwhile, the key to the reform of SOEs is to "mix" to promote "reform" and encourage the participation of private capital, and private enterprises should seek equal corporate status with SOEs, not simply through the mixing of equity, but should go deeper into the governance level^[37]. Since the governance behavior of private enterprises in SOEs' hybrid reform depends not only on the equity stake held by private enterprises but also more on the size of management rights held by private enterprises^[38]. As a result, this study proposes the following two hypotheses.

Hypothesis H1: The degree of value retention and appreciation of state-owned assets is positively connected with the involvement of private businesses in the reform of SOEs at the equity level.

Hypothesis H2: The degree of value retention and appreciation of state-owned assets is positively correlated with private enterprise engagement in the reform of SOEs at the level of management rights.

3.2 The moderating role of internal controls and the level of market-oriented

development

The hybrid reform of state-owned businesses is crucial given the expanding SOE reform and the swiftly growing national economy. However, due to the nature of the reform itself and the conflict between private businesses and SOEs in terms of culture and business philosophy, they are prone to the loss of assets and corruption^[39]. While issues like ambiguous property rights might arise as a result of the improper integration of state- and privately-owned businesses as well as ambiguous linked systems^[35]. The most basic function of internal control, as a means of prevention and supervision in the activities of SOEs, is restraint, control and supervision. A higher standard of internal control helps SOEs create a positive monitoring and checking system that avoids the issue of one share domination within SOEs, maintaining the harmony between private and SOEs, protecting the inherent property rights of SOEs, safeguarding the interests of SOEs, thus alleviating the problem of loss of assets and unclear property rights, and achieving the purpose of safeguarding the effectiveness of SOEs and preserving the value of assets^[40]. Thus, this study proposes the following one hypothesis.

Hypothesis H3: Between the involvement of private businesses in the reform of SOEs and the maintenance and growth of state-owned assets, internal control plays a substantial beneficial moderating function.

The participation of private enterprises in the reform of SOEs is actually an effective integration of

state-owned equity (from the resource advantages given by the government) and private equity (from the market-related resource advantages) to achieve the effect of $1 + 1 > 2$. Therefore, in addition to the effects of internal governance, consideration should also be given to the impact of the external governance environment on the involvement of private businesses in the reform of SOEs as well as the preservation and growth of assets. The effectiveness of the capital market is increased by a favorable external governance environment and a higher level of marketization, making market competition fairer and more intense, bringing operational pressure on state-owned listed companies while making them more independent, stimulating their vitality, improving their internal mechanisms, and reducing their dependence on the government^[41]. Meanwhile, in areas where there is a greater degree of marketization, non-state shareholders are more motivated to participate in the internal governance of SOEs^[42] and pay more attention to the social responsibility information released by SOEs^[43], which reduces the financing constraints and information asymmetry of SOEs and resolves problems such as poor resource allocation and overcapacity within SOEs^[44]. However, in environments with lower levels of marketization, non-state shareholders' participation in SOE governance through hybrid reform has a greater impact on the executive compensation in SOEs that is performance-sensitive^[37], while the effect of hybrid reform on asset preservation and appreciation is higher in regions with lower levels of

marketization, and hybrid reform compensates to some extent for the impact of insufficient marketization on asset preservation and appreciation [27]. In light of this, the following hypothesis is put out in this research.

Hypothesis H4: Between the involvement of private businesses in the reform of SOEs and the value-added of state-owned assets, the degree of market-oriented development has a negative moderating effect.

3. Data sources and study design

4.1 Data sources and sample selection

In light of the extensive deepening reform carried out by the Communist Party of China's Central Committee in 2013, this study takes the panel data of commercial state-owned listed companies in Shanghai and Shenzhen A-shares from 2013 to 2020 as the research sample^[28] and screens the sample as follows: (1) Leaving out listed businesses with ST *ST during the study period; (2) Leaving out listed businesses in the financial industry to which the industry classification belongs; (3) Some data missing or (4) At the 1% level, winsorize the continuous variables, and after the above screening, a total of 6059 observations are obtained. The data collected and collated in this study were obtained from the Cathay United database (CSMAR) and collated manually by reviewing annual reports, and the data were processed and analyzed using Stata 16.0 and Excel software.

4.2 Variable Definition

4.2.1 Preservation and appreciation of state-owned assets

Drawing on Wu and Guo^[18], this study selects economic value added (EVA) to calculate the value added of state-owned assets, and this study measures the value added of state-owned assets through the ratio of economic value added to total assets.

4.2.2 Private companies take part in the mixed reform of state-owned businesses

Referring to previous studies that mostly measured SOEs' mixed reform from the perspective of equity, the way of private companies' participation in SOEs' mixed reform is more substantial in terms of the depth of private companies' participation in SOEs' mixed reform by appointing directors and supervisors in SOEs for supervising governance in addition to equity participation. Therefore, this study measures the private sector's involvement in SOE reform at the level of equity and management rights^[45].

4.2.3 Internal Control

The internal control of businesses is measured in this study using the "Diebold-Internal Control Index of Chinese Listed Companies" and its logarithm^[40].

4.2.4 Marketization Process - Marketization Development Level

The marketability index of listed companies in the latest version of the China Marketability Index Report by Provinces published by Wang Xiaolu and Fan Gang was used for measurement. Since the data for 2020

are not yet released, the data for 2020 are determined according to the previous year's data $\times (1 + \text{average growth rate of the previous three years})$ ^[27].

4.2.5 Control variables

Referring to the studies of Guo Mengnan et al ^[18] and Liao Zhichao et al ^[28], this study selected firm size (Size), Table 1.

firm growth (Growth), cash flow (CFO), nature of controlling shareholders (Sha), shareholding ratio of the first largest shareholder (Shr1), share of intangible assets (La), whether the firm is losing money (Loss), and board size (Board) as The dummy variables of Year and Industry are also set. The specific description of each variable is shown in

Table 1 Variable Definition

Variable Type	Variable Name		Variable Symbols	Variable definition and calculation
Explained variables	Preservation and appreciation of state-owned assets		Zeva1	EVA/ Total Assets
Explanatory variables	Private enterprises participate in the mixed reform of state-owned enterprises	Equity Level	Owner1	The sum of the shareholding ratio of private shareholders among the top ten shareholders
			Owner2	Proportion of private shareholders among the top ten shareholders/proportion of shares held by the largest state-owned shareholder
		Management Rights Level	Man1	Number of directors and supervisors appointed by private shareholders among the top ten shareholders / Total number of directors and supervisors
			Man2	Dummy variable, private shareholders appointed chairman or general manager

Variable Type	Variable Name		Variable Symbols	Variable definition and calculation
				to take the value of 1, otherwise take the value of 0
Adjustment variables	Internal Control		IC	Natural logarithm of the internal control index
	Marketization process		Mar	Marketability Index
Control variables	Company Size		Size	Natural logarithm of the company's total assets
	Company Growth		Growth	Company's operating income growth rate
	Gearing ratio		Lev	Total company liabilities / total assets
	Cash Flow		CFO	Net cash flow from operations/total assets
	Nature of controlling shareholders		Sha	Dummy variable, value 1 if the nature of the first largest shareholder is state-owned, otherwise value 0
	Shareholding ratio of the first largest shareholder		Shr1	Shareholding ratio of the first largest shareholder
	Intangible assets as a percentage		La	Intangible assets/total assets
	Company Profit and Loss		Loss	Dummy variable, net profit less than zero takes the value of 1, otherwise it takes the value of 0
	Board Size		Board	Number of Board of Directors
Industry Variables		Ind	Industry dummy variables	

Variable Type	Variable Name	Variable Symbols	Variable definition and calculation
	Year Variable	Year	Annual dummy variables

4.3 Model Design

First, Models (1) and (2) are developed to test the impact of private firms' participation in SOE reform at the equity level and management rights levels.

$$Zeva1 = \beta_0 + \beta_1 Owner + \beta_2 Size + \beta_3 Growth + \beta_4 Lev + \beta_5 CFO + \beta_6 Sha + \beta_7 Shr1 + \beta_8 La + \beta_9 Loss + \beta_{10} Board + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (1)$$

$$Zeva1 = \beta_0 + \beta_1 Man + \beta_2 Size + \beta_3 Growth + \beta_4 Lev + \beta_5 CFO + \beta_6 Sha + \beta_7 Shr1 + \beta_8 La + \beta_9 Loss + \beta_{10} Board + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (2)$$

Second, Models (3) and (4) were developed to test the moderating role of internal control and the level of market-based development between the two.

$$Zeva1 = \beta_0 + \beta_1 Owner + \beta_2 IC + \beta_3 Owner \times IC + \beta_4 Size + \beta_5 Growth + \beta_6 Lev + \beta_7 CFO + \beta_8 Sha + \beta_9 Shr1 + \beta_{10} La + \beta_{11} Loss + \beta_{12} Board + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (3)$$

$$Zeva1 = \beta_0 + \beta_1 Man + \beta_2 IC + \beta_3 Man \times IC + \beta_4 Size + \beta_5 Growth + \beta_6 Lev + \beta_7 CFO + \beta_8 Sha + \beta_9 Shr1 + \beta_{10} La + \beta_{11} Loss + \beta_{12} Board + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (4)$$

4. Analysis of empirical results

5.1 Descriptive Statistics

(Zeva1) in

The value-added of state-owned assets

Table 2 has a mean value of -0.0008, a maximum value of 0.1313, and a minimum value of -0.1748, indicating that the level of value-added of state-owned assets in commercial state-listed businesses in China is not very high. In the equity level right

(Owner) mean value of 7.3948 and 0.6888, respectively, the management level (Man) mean value of 0.0261 and 0.1046, respectively, indicating that China's private businesses to participate in the mixed reform of SOEs is not deep enough, and the reform is only reflected in the equity level, and there is still a need to further deepen the reform.

Table 2 Descriptive Statistics

Variables	Observations	Average value	Median	Standard deviation	Minimum value	Maximum value
Zeva1	6059	-0.0008	0.0001	0.0461	-0.1748	0.1313
Owner1	6059	7.3948	3.3700	9.7954	0.1900	50.5000
Owner2	6059	0.6888	0.0907	2.9801	0.0034	25.1190
Man1	6059	0.0261	0.0000	0.0660	0.0000	0.3810
Man2	6059	0.1046	0.0000	0.3061	0.0000	1.0000
IC	5684	6.4724	6.4976	0.1451	5.7179	6.7112
Mar	6059	8.2139	8.2300	1.9593	3.4500	11.3100
Size	6059	22.7917	22.6556	1.3091	20.1879	26.4351
Growth	6059	0.1165	0.0627	0.4039	-0.5635	2.7324
Lev	6059	0.5019	0.5068	0.2032	0.0891	0.9411
CFO	6059	0.0450	0.0454	0.0648	-0.1499	0.2206
Sha	6059	0.2827	0.0000	0.4504	0.0000	1.0000
Shr1	6059	38.5817	37.1500	15.0370	11.3500	76.1300
La	6059	0.0520	0.0334	0.0679	0.0000	0.4497
Loss	6059	0.1155	0.0000	0.3197	0.0000	1.0000
Board	6059	9.0812	9.0000	1.7505	5.0000	15.0000

5.2 Correlation Analysis

Table 3's correlation analysis findings reveal that, at the 1% level, all variables are significantly positive associated, and the preliminary verification of the construction of H1 and H2. The absolute values of correlation coefficients between all variables are not close to 1.

Meanwhile, as shown by the VIF test, the maximum value of VIF of each variable is 2.25, and the average value 1.41, the result is much less than 10, once again proving that the variables studied in this paper do not have the problem of multicollinearity.

Table 3 Correlation Analysis

Variables	Zeva1	Owner1	Owner2	Man1	Man2	IC	Mar	VIF
Zeva1	1.000							
Owner1	0.019	1.000						2.16
Owner2	0.040***	0.613***	1.000					1.72
Man1	0.069***	0.515***	0.356***	1.000				2.25
Man2	0.068***	0.420***	0.283***	0.708***	1.000			2.03
IC	0.238***	-0.058***	-0.011	-0.006	0.008	1.000		1.13
Mar	0.110***	0.047***	0.010	0.063***	0.104***	0.086***	1.000	1.07

5.3 Analysis of regression results

5.3.1 The connection between state-owned asset preservation and growth and private company involvement in mixed reform of state-owned businesses

The empirical findings on the influence of private businesses engagement in the reform on the value retention and growth of SOEs are presented in Table 4. As shown in columns 2 and 3 of Table 4, the

coefficients at the equity level are 0.0003 (t=4.61) and 0.0004 (t=2.34), which are positively correlated at the 1% and 5% levels, supporting hypothesis H1. As shown in columns 4 and 5 of Table 4, the coefficients at the management rights level are 0.0488 (t=6.54) and 0.0091 (t=5.42), respectively, both of which are positively correlated at the 1% level, supporting hypothesis H2.

Table 4 Regression results1

(1)	Owner		Man	
	Zeval (2)	Zeval (3)	Zeval (4)	Zeval (5)
Owner1	0.0003*** (4.61)			
Owner2		0.0004** (2.34)		
Man1			0.0488*** (6.54)	
Man2				0.0091*** (5.42)
Size	0.0061*** (12.79)	0.0060*** (12.59)	0.0061*** (12.88)	0.0060*** (12.69)
Growth	0.0082*** (6.47)	0.0084*** (6.61)	0.0083*** (6.51)	0.0084*** (6.60)
Lev	-0.0218*** (-7.01)	-0.0222*** (-7.12)	-0.0208*** (-6.66)	-0.0212*** (-6.82)
CFO	0.1737*** (19.09)	0.1736*** (19.06)	0.1722*** (18.94)	0.1728*** (19.04)
Sha	-0.0003 (-0.34)	0.0002 (0.24)	-0.0002 (-0.25)	-0.0000 (-0.00)
Shr1	0.0002*** (4.80)	0.0001*** (3.76)	0.0002*** (4.82)	0.0001*** (4.54)
La	-0.0198***	-0.0188***	-0.0164**	-0.0169**

(1)	Owner		Man	
	Zeval (2)	Zeval (3)	Zeval (4)	Zeval (5)
	(-2.88)	(-2.72)	(-2.40)	(-2.46)
Loss	-0.0656***	-0.0655***	-0.0656***	-0.0655***
	(-34.53)	(-34.54)	(-34.50)	(-34.42)
Board	0.0003	0.0003	0.0002	0.0003
	(1.02)	(1.24)	(0.90)	(1.06)
_cons	-0.1423***	-0.1379***	-0.1433***	-0.1400***
	(-13.27)	(-12.94)	(-13.47)	(-13.20)
N	6059	6059	6059	6059
Adj-R ²	0.4762	0.4746	0.4782	0.4770
Ind	YES	YES	YES	YES
Year	YES	YES	YES	YES

Note: Robust standard error regression is used, t-values in parentheses; ***, **, * in the full table indicate significant at the 1%, 5%, and 10% levels, respectively

5.3.2 The reconciliation role of internal control

Table 5 shows the empirical results for testing hypothesis H3. The coefficients of the interaction terms at the equity level are 0.0015 (t=3.92) and 0.0018

Table 5's columns 2 and 3. The coefficients of the interaction terms at the level of management rights are 0.2526 (t=3.81) and 0.0671 (t=4.33), respectively, as shown in columns 4 and 5 of Table 5, and both of these values are highly positively associated at the 1% level, supporting hypothesis H3. Higher internal control of SOEs results in improved supervision and restraint

(t=1.82), respectively, and they are highly positively associated at the 1% and 10% levels, according to

mechanisms, which may fully utilize the ability to supervise and coordinate efforts, so that private enterprises and SOEs can integrate quickly and operate benignly, avoid the situation of unclear property rights, and also change the problem of one share dominance within SOEs, prevent corruption, increase the revenue of SOEs.

Table 5 Regression results1

(1)	Owner		Man	
	Zeval (2)	Zeval (3)	Zeval (4)	Zeval (5)
Owner1	-0.0091*** (-3.81)			
Owner1 × IC	0.0015*** (3.92)			
Owner2		-0.0110* (-1.74)		
Owner2 × IC		0.0018*		

(1)	Owner		Man	
	Zeval (2)	Zeval (3)	Zeval (4)	Zeval (5)
		(1.82)		
Man1			-1.5934*** (-3.70)	
Man1 × IC			0.2526*** (3.81)	
Man2				-0.4263*** (-4.24)
Man2 × IC				0.0671*** (4.33)
IC	0.0138*** (3.11)	0.0231*** (6.10)	0.0184*** (4.77)	0.0190*** (5.01)
Size	0.0056*** (11.54)	0.0054*** (11.10)	0.0056*** (11.50)	0.0054*** (11.28)
Growth	0.0070*** (5.10)	0.0072*** (5.29)	0.0071*** (5.18)	0.0071*** (5.23)
Lev	-0.0183*** (-5.72)	-0.0182*** (-5.67)	-0.0174*** (-5.40)	-0.0176*** (-5.52)
CFO	0.1751*** (19.25)	0.1759*** (19.26)	0.1738*** (19.08)	0.1738*** (19.13)
Sha	-0.0013 (-1.37)	-0.0008 (-0.83)	-0.0012 (-1.20)	-0.0011 (-1.14)
Shr1	0.0001*** (4.17)	0.0001*** (3.04)	0.0001*** (3.97)	0.0001*** (3.93)
La	-0.0158** (-2.32)	-0.0164** (-2.40)	-0.0140** (-2.07)	-0.0144** (-2.12)
Loss	-0.0594*** (-29.59)	-0.0595*** (-29.49)	-0.0594*** (-29.58)	-0.0593*** (-29.59)
Board	0.0002 (0.94)	0.0003 (1.26)	0.0003 (0.97)	0.0003 (1.11)
_cons	-0.2223*** (-7.66)	-0.2763*** (-11.07)	-0.2517*** (-9.85)	-0.2523*** (-10.05)
N	5684	5684	5684	5684
Adj-R ²	0.4601	0.4565	0.4609	0.4612
Ind	YES	YES	YES	YES
Year	YES	YES	YES	YES

Note: Robust standard error regression is used, t-values in parentheses

5.3.3 The regulatory role of the level of market-based development

Table 6 shows the empirical results for testing hypothesis H4. The coefficients of the interaction terms at the equity level in Table 6's columns 2

and 3 are -0.0001 (t = -2.28) and -0.0003 (t = -2.22), respectively, and they are significantly inversely associated at the 5% level. The coefficients of the interaction terms at the level of management rights are -0.0103 (t=-2.37) and -0.0028 (t=-2.79), as shown in columns 4 and 5 of Table 6, and they are significantly negatively associated at the 5% and 1% levels, respectively, supporting hypothesis H4. The high or

low level of marketization development of SOEs has an effect on the internal governance of SOEs. In regions with high marketization level, SOEs have better internal governance mechanisms, pay more attention to social responsibility information, and have less constraint on investment and financing, while regions with low marketization level have more constraints instead.

Table 6 Regression results¹³

(1)	Owner		Man	
	Zeva1 (2)	Zeva1 (3)	Zeva1 (4)	Zeva1 (5)
Owner1	0.0008*** (3.32)			
Owner1 × Mar	-0.0001** (-2.28)			
Owner2		0.0030** (2.55)		
Owner2 × Mar		-0.0003** (-2.22)		
Man1			0.1368*** (3.61)	
Man1 × Mar			-0.0103** (-2.37)	
Man2				0.0340*** (3.75)
Man2 × Mar				-0.0028*** (-2.79)
Mar	0.0003 (1.07)	0.0001 (0.31)	0.0001 (0.24)	0.0000 (0.10)
Size	0.0061*** (12.51)	0.0060*** (12.47)	0.0061*** (12.70)	0.0060*** (12.52)
Growth	0.0082*** (6.45)	0.0083*** (6.53)	0.0083*** (6.46)	0.0083*** (6.52)
Lev	-0.0217*** (-6.90)	-0.0222*** (-7.04)	-0.0206*** (-6.51)	-0.0208*** (-6.62)
CFO	0.1748*** (19.28)	0.1741*** (19.19)	0.1732*** (19.06)	0.1743*** (19.21)
Sha	-0.0004	0.0002	-0.0003	-0.0000

(1)	Owner		Man	
	Zeva1 (2)	Zeva1 (3)	Zeva1 (4)	Zeva1 (5)
Shr1	(-0.37) 0.0002***	(0.23) 0.0001***	(-0.31) 0.0002***	(-0.03) 0.0001***
La	(4.78) -0.0197***	(3.75) -0.0175**	(4.82) -0.0162**	(4.47) -0.0170**
Loss	(-2.87) -0.0656***	(-2.53) -0.0655***	(-2.36) -0.0656***	(-2.49) -0.0654***
Board	(-34.62) 0.0003	(-34.54) 0.0003	(-34.53) 0.0002	(-34.41) 0.0003
_cons	(1.04) -0.1443***	(1.28) -0.1389***	(0.91) -0.1446***	(1.04) -0.1406***
	(-13.43)	(-13.02)	(-13.54)	(-13.25)
N	6059	6059	6059	6059
Adj-R ²	0.4767	0.4752	0.4786	0.4778
Ind	YES	YES	YES	YES
Year	YES	YES	YES	YES

Note: Robust standard error regression is used, t-values in parentheses

5. Robustness and endogeneity tests

This study runs the following tests on the model to check for potential robustness and endogeneity issues: (1) To ensure the robustness and reliability of the above test results, this study substituted the explanatory variables

Table 7 and are consistent with the above study. (2) One-period lag. Empirical tests were conducted on the one-period lag of the data measuring private enterprises' participation in SOEs' hybrid reform, and the main findings are shown in Table 8, which are consistent with the above study. (3) Two-stage least squares method. In accordance with Du and Wu[29], this study uses a two-stage least squares

with the value-added rate of state-owned assets, denoted by Zeva2, and used it as a measure of asset preservation and value-added for empirical testing. The main findings are presented in

method to choose data measuring private enterprises' involvement in SOEs' mixed reform and then conducts an empirical regression with three lags as the instrumental variable to test for potential endogeneity issues like reverse causality in the aforementioned benchmark regressions. The outcomes of the two-stage regression are displayed in Table 9.

Table 7 Substitution of dependent variable

	Owner		Man	
	Zeva2	Zeva2	Zeva2	Zeva2
Owner1	0.0022***			
	(5.32)			

Owner2		0.0018*		
		(1.68)		
Man1			0.1725***	
			(2.91)	
Man2				0.0368***
				(3.06)
_cons	0.9400***	0.9792***	0.9604***	0.9707***
	(12.42)	(12.97)	(12.74)	(12.87)
N	6059	6059	6059	6059
Adj-R ²	0.1852	0.1798	0.1811	0.1811
Ind	YES	YES	YES	YES
Year	YES	YES	YES	YES

Note: Robust standard error regressions are used, t-values in parentheses

Table 8 One period behind

	Owner		Man	
	Zeval	Zeval	Zeval	Zeval
L.Owner1	0.0003***			
	(4.77)			
L.Owner2		0.0007***		
		(3.00)		
L.Man1			0.0543***	
			(6.29)	
L.Man2				0.0080***
				(4.27)
_cons	-0.1399***	-0.1360***	-0.1413***	-0.1380***
	(-11.36)	(-11.09)	(-11.51)	(-11.25)
N	4560	4560	4560	4560
Adj-R ²	0.4807	0.4787	0.4829	0.4798
Ind	YES	YES	YES	YES
Year	YES	YES	YES	YES

Note: Robust standard error regressions are used, t-values in parentheses

Table 9 Two-stage least squares

	第I阶段	第II阶段	第I阶段	第II阶段	第I阶段	第II阶段	第I阶段	第II阶段
	Owner1	Zeval	Owner2	Zeval	Man1	Zeval	Man2	Zeval
L3.Owner1	0.6073***							
	(43.38)							
Owner1		0.0006***						
		(5.18)						
L3.Owner2			0.6451***					
			(46.48)					
Owner2				0.0008**				

	第I阶段 Owner1	第II阶段 Zeva1	第I阶段 Owner2	第II阶段 Zeva1	第I阶段 Man1	第II阶段 Zeva1	第I阶段 Man2	第II阶段 Zeva1
				(2.09)				
L3.Man1					0.5684*** (46.54)			
Man1						0.0939*** (5.82)		
L3.Man2							0.6667*** (50.46)	
Man2								0.0161*** (5.02)
_cons	2.8047 (1.00)	-0.1609*** (-11.46)	-0.5499 (-0.66)	-0.1556*** (-11.09)	-0.0146 (-0.78)	-0.1602*** (-11.46)	-0.1391 (-1.61)	-0.1563*** (-11.17)
N	2933	2933	2933	2933	2933	2933	2933	2933
F	1882.25		2160.27		2166.17		2546.43	
Adj-R ²	0.4995	0.4869	0.4979	0.4880	0.4837	0.4911	0.5261	0.4895
Ind	YES	YES	YES	YES	YES	YES	YES	YES
Year	YES	YES	YES	YES	YES	YES	YES	YES

Note: t-values in parentheses

6. Conclusion and Insights

This study found that: in the process of SOEs' mixed reform, private companies' participation in SOEs' mixed reform at both the equity and management right levels may significantly enhance the preservation and value enhancement of assets, and the effectiveness of SOEs' internal control has a positive moderating effect on the link between the two. The market's stage of development negatively moderates the link between the two.

Through the above study, following research insights are provided: First, the ratio of private and state-owned enterprises' equity is fully coordinated. In the course of intensifying SOE reform, the state has proposed that the deepening of SOEs' mixed reform should be carried out in a hierarchical and categorical manner, and the degree of equity

openness should be determined according to the characteristics of SOEs, not to be generalized, and not only to SOEs in order to retain their dominance and control. Second, give full play to the governance advantages of private shareholders; balance the rights of private businesses and state-owned enterprises. In the course of intensifying the mixed ownership reform, pay attention to the way private businesses participate in the reform of SOEs, not only at the equity level, but also at the management level, which is the core and anchor point of the mixed reform. Private enterprises participate in the governance of SOEs by appointing directors and supervisors to SOEs, combining the flexibility of market mechanisms possessed by private enterprises and the capital advantages possessed by SOEs, so as to overcome the problem of different rights of the

same share in SOEs. This will overcome the limitations of SOEs due to the different shareholdings and political relations, give full play to the governance benefits of private shareholders, effectively participate in the daily business decisions of SOEs, and protect the efficiency of SOEs; conserving and growing the value of state-owned assets is thus accomplished. Third, boost the effectiveness of SOEs' internal controls, fully utilize their oversight and checks and balances, pay attention to the extent of external market-oriented development, and increase private industry engagement. Enhance the standard of internal SOE control, coordinate the rights distribution between SOEs and private enterprises during the mixed SOE reform process, encourage the full integration and coordinated growth of private enterprises and SOEs, and prevent issues like the theft of assets and internal corruption. The internal governance of SOEs will be impacted by the level of marketization development in which they are located as each region's marketization level rises. In areas with a high level of marketization, greater internal governance mechanisms, greater attention to social responsibility data, and fewer restrictions on investment and financing are all characteristics of regions with high levels of marketization compared to those with low levels, which are unfavorable to the preservation and growth of assets. However, the involvement of private businesses in SOEs' mixed reform can offset the negative effects of low marketization levels on SOEs' asset preservation and growth, draw in private shareholders to the governance of SOEs'

reform, and fully exploit the beneficial governance role of private businesses' involvement in SOEs' mixed reform in low marketization regions.

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