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Reverse mixed ownership reform and financial risks in private enterprise

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Abstract. The mixed ownership reform is an important part of the economic restructuring in our country. In addition to the participation of non-state-owned capital in soes, it is also more and more common for state-owned capital to participate in the reverse mixed ownership reform of private enterprises. As an important force in China's economic development, the national economy has entered a new normal in recent years, and due to the impact of COVID-19, the Sino-US trade war and other events, many private enterprises have fallen into financial crisis and entered a "wave of closure." Based on this background, this paper empirically studies the impact of state-owned capital shareholding on the financial risk of private enterprises by using the sample of A-share listed enterprises in Shanghai and Shenzhen Stock exchanges from 2007 to 2021. In addition, this paper also discusses the influencing mechanism from two aspects of resource acquisition and governance supervision, and further analyzes that the effect of reverse mixed ownership reform of private enterprises on reducing financial risk mainly comes from the shareholding of state-owned non-financial institutions. This paper enriches the research on the economic consequences of reverse mixed ownership reform and the influencing factors of financial risks, and provides new ideas for improving the ability of private enterprises to prevent financial risks and promoting the healthy and stable development of private enterprises.

Keywords: Private enterprise; Reverse mixed reform; Financial risk.

1. Introduction

Private enterprises are an important main force in China's economic development, according to the report of the National Development and Reform Commission and the General Administration of Customs, the contribution of private economy in 2022 accounted for more than 50%, and the proportion of import and export scale exceeded half to 50.9% for the first time. In 2022, private enterprises will also account for more than 80% of China's top 500 new economy enterprises. However, due to the late start of private enterprises, and with the continuous development of market economy, the competition of private enterprises is becoming more and more fierce, many well-known private enterprises have gone bankrupt, and small and medium-sized private enterprises are surviving in the cracks. The average life of private groups in China is less than 10 years, while in Europe and the United States it is 40 years, and less than 2% of small and medium-sized private enterprises can survive more than 10 years. For a long time, financing difficulties and expensive financing have been the main problems plaguing the development of private enterprises, and the economic vitality of private enterprises cannot be released well. In terms of taxation and other resources, compared with state-owned enterprises, private enterprises cannot enjoy the preferential tax and resources, and sometimes have to bear additional costs. Excessive financialization of private enterprises is an important reason for their greater financial risks. The industry entry threshold of private enterprises is high, so there are few investment opportunities for those industries with high returns but competitiveness, and financialization investment is a better choice, which may lead to inefficient investment and increase financial risks. In recent years, due to the impact of the Sino-US trade war and the COVID-19 epidemic, the survival and development of private enterprises have been more difficult and entered the "tide of closure".

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Since the reform and opening up, China's economy has achieved rapid development. However, after rapid development, it also faces many problems that need to be solved urgently, and comprehensively deepening reform is the trend of the situation. The focus of comprehensively deepening reform is to carry out the reform of economic system, and the reform of mixed ownership is also an important part of the country's economic system reform. The mixed ownership reform was a plan put forward in the 1990s, which was further adjusted and improved at the Third Plenary Session of the 16th CPC Central Committee in 2003. It was clearly proposed to "vigorously develop the mixed ownership economy with state-owned capital, collective capital and non-public capital," and the reform of state-owned enterprises entered a new stage. In the Decision of the Central Committee of the Communist Party of China on Some Major Issues Concerning Comprehensively Deepening Reform adopted at the Third Plenary Session of the 18th CPC Central Committee in 2013, it is specifically proposed that the reform of mixed ownership is an important form of realization of the basic economic system, which raises the reform of mixed ownership to a new height. With the continuous promotion of mixed ownership reform, in 2015, according to the Guiding Opinions on Deepening State-owned Reform proposed by The State Council, the National Development and Reform Commission encouraged the realization of mixed ownership not only in the form of non-state-owned capital participating in the reform of state-owned enterprises, but also in the form of state-owned capital investing in non-state-owned enterprises in various ways, which is reverse mixed reform. Two-way mixed ownership reform is conducive to all kinds of economies to learn from each other, promote each other and develop together, especially the other main line -- reverse mixed ownership reform. The "political attribute" of state-owned capital can alleviate the problems that have been plaguing private enterprises, and it is more convenient to obtain the support of banks and other financing institutions, and it is easier to obtain the support of the government in the event of financial crisis. The entry of heterogeneous shareholders can also urge them to improve their internal management mode, thus promoting the development, transformation and upgrading of private enterprises.

For the first time, the 20th National Congress clearly put forward "promoting the development and expansion of private economy", and pointed out that in the construction of a high-level socialist market economy system, we must adhere to the "two unswervingly", and the development of mixed ownership economy is an important part of the "two unswervingly". In this context, the phenomenon of reverse mixed ownership reform, namely state-owned capital's shareholding in private enterprises, is becoming more and more common, but there are few studies on it. At the same time, as the national economy enters the new normal, the risks faced by private enterprises, especially small and medium-sized private enterprises, are increasing, which has caused serious obstacles to their development. Solving the financing difficulties and high financing costs of private enterprises is an important measure to promote supply-side structural reform and achieve high-quality development. Therefore, studying the impact of state-owned capital entering private enterprises in reverse mixed reform on their financial risks is of certain significance to the development of mixed ownership economy and the promotion of healthy development of private enterprises.

2. Literature review and hypothesis derivation

2.1. Literature review

2.1.1. Reverse mixed reform of private enterprises.

As the Third Plenary Session of the 18th CPC Central Committee further emphasized the "active development of mixed ownership economy", mixed ownership reform entered a new stage. From the perspective of the form of mixed ownership, it includes not only the positive mixed ownership reform in which non-state-owned capital enters state-owned enterprises, but also the reverse mixed ownership reform in which state-owned capital enters private enterprises.

The existing research on the reverse mixed ownership reform of private enterprises with state-owned capital mainly focuses on the motivation and economic consequences. In terms of motivation, the

protection of private property rights by relevant national laws and policies needs to be improved, and there is still great uncertainty in the development of private enterprises, which may seek institutional protection by building a good relationship with the government [1]. Li and Yu believed that private enterprises seeking such protection to introduce state-owned capital have both "active nationalization" and "passive nationalization."[2] Yao Meijie regarded the introduction of state-owned capital by private enterprises as an alternative system to cope with the negative externalities of imperfect formal systems [3]. Based on the evidence of downward adjustment, Sun and Liu found that seeking property rights protection rather than obtaining resources was the main motivation for mixed ownership reform of Chinese private enterprises [4]. In terms of economic consequences, scholars mainly study them from the perspectives of resource acquisition and supervisory governance. From the perspective of resource acquisition, state-owned capital shares in private enterprises, on the one hand, this political connection can directly reduce tax burden and increase government subsidies; On the other hand, with the support of the reputation of state-owned assets, it can reduce the financing constraints from banks and other credit institutions, improve the performance level of the company, promote enterprise innovation, reduce the degree of social security fee evasion, and improve the performance of social responsibilities [5, 6, 7]. From the perspective of supervision and governance, state-owned shareholders of private enterprises can supervise and constrain the behavior of non-state-owned shareholders, reduce agency costs, and thus improve the cash holding level of enterprises, restrain the financialization level of enterprises, and reduce audit pricing [8, 9, 10]. Most of the literature believes that state-owned capital's shareholding in private enterprises brings positive economic consequences, but some scholars find that the introduction of state-owned capital will increase the risk of zombification and reduce factor production efficiency [11, 12].

2.1.2. Financial risk.

The financial risk of an enterprise is the probability that the financial situation is uncertain due to the uncertainty of all internal and external factors, which ultimately leads to the deviation of the result from the expected target. With the continuous accumulation of financial risks, the default rate of the company increases, the capital chain breaks and even the possibility of bankruptcy. The existing research mainly discusses the influencing factors of financial risk from the perspective of internal factors and external environment.

Internal factors mainly include internal control, agency cost, etc. Yuan Xiaobo verified the impact on financial risks from the five elements of internal control, among which good internal environment, control activities and internal supervision all have a significant inhibitory effect on financial risks [13]. Yu et al. found that the internal mechanism for corporate financialization to increase financial risks lies in the rise of agency costs [14]. In addition, the shareholding level and gender ratio of the board of directors will also have an important impact on the financial risk of enterprises [15]. From the perspective of external factors, enterprise financial risk is affected by macroeconomic policies, government intervention, local legal environment and so on. Enterprises that are more sensitive to changes in industrial added value and real interest rate have greater financial risk and greater probability of financial crisis [16]. Tight monetary policy and large open foreign exchange risk will increase the financial risk of enterprises [17, 18]. In addition, the degree of government intervention is significantly negatively correlated with corporate financial risks [19], and the government's economic regulation has a stronger effect than social regulation [20]. The more perfect the regional legal environment is, the more conducive it is to reduce financial risks [21].

2.2. hypothesis derivation

Reverse mixed ownership reform has a significant impact on the financial risk of private enterprises. On the one hand, it can rely on the natural "political attribute" of state-owned capital to solve the problem of "difficult and expensive financing", reduce the limitation of capital sources, and release the vitality of private economy. On the other hand, the introduction of heterogeneous shareholders can better play the role of supervision and governance, alleviate agency problems, and improve the

financial management system. Specifically, it is mainly from the aspects of resource acquisition effect and supervision and governance effect.

First of all, from the perspective of resource acquisition effect, state-owned capital equity participation can alleviate the financing constraints of private enterprises, reduce the phenomenon of capital chain rupture, and thus reduce financial risks. The actual controller of soes is the state or government, so they have a better reputation in the market than private enterprises. The capital of state-owned enterprises investing in private enterprises is equivalent to establishing a political connection, which can make it easier for private enterprises to obtain public debt financing [22], so that private enterprises can obtain more cash flow, be more able to cope with changes in the external macro environment, enhance innovation ability [23], reduce the break of the fund chain and the gap with the expected target. The mixed property rights mode formed by state-owned capital's shareholding in private enterprises is more like a symbiotic relationship, which is more direct in political connection than private entrepreneurs' participation in politics, more recognized by the society, and more social resources [24], which can effectively reduce financial risks.

Secondly, from the perspective of supervision and governance effect, the introduction of state-owned capital in private enterprises actually introduces heterogeneous shareholders, which is conducive to reducing managers' behaviors that are not conducive to the development of enterprises, such as opportunism and adverse selection, strengthening internal governance, avoiding short-term blind investment in business behavior, and thus reducing financial risks. On the one hand, the construction of China's internal control system relies more on the promotion of government departments, and the nature of state-owned capital determines that it is more conscious in complying with the regulations of the state and government, so it will establish a more effective organizational management mode and internal control system [25], thus reducing the financial risks of private enterprises. On the other hand, state-owned enterprises have to undertake the important task of maintaining and increasing the value of state-owned assets, and there are many differences in goals and decisions between state-owned enterprises and other shareholders of private enterprises, so they are more motivated to actively supervise the behavior of managers [6], enhance the governance level of private enterprises, and thus reduce financial risks.

Therefore, based on the above analysis, this paper puts forward hypothesis 1:

H_1: The reverse mixed ownership reform of private enterprises will reduce financial risks.

3. Research design

3.1. Data source and sample selection

New accounting standards were implemented in China in 2007, so in order to ensure the comparability and consistency of data, this paper selects the research objects of A-share private listed companies in Shanghai and Shenzhen from 2007 to 2021. Based on the existing practice, the research samples are processed as follows: (1) only the samples whose controlling shareholders are private enterprises at the time of listing are retained; (2) Excluding samples from the financial industry; (3) Eliminate abnormal enterprises such as ST and ST* during the sample period; (4) Enterprises with missing relevant variables and asset-liability ratio greater than 1 are excluded. In addition, in order to eliminate the influence of outliers, all continuous variables are winsorized at the 1% and 99% levels. All data come from the CSMAR database.

3.2. Variable definition

3.2.1. Dependent variable.

Financial risk (*Z*). Referring to the practice of Li and Han [26], this paper uses Altman's [27] Z-Score model to measure corporate financial risk. The larger the z-value, the smaller the financial risk. The specific calculation method is as follows:

$$Z=1.2X_1+1.4X_2+3.3X_3+0.6X_4+0.999X_5 \quad (1)$$

Where X_1 is working capital/total assets, X_2 is retained earnings/total assets, X_3 is EBIT/total assets, X_4 is total stock market value/liabilities, and X_5 is sales revenue/total assets.

3.2.2. Independent variable.

Reverse mixed reform of private enterprises (*State*). This paper selects the shareholders whose shareholder nature is "state-owned legal person shares" and "state shares" from the top ten shareholder documents of CSMAR, and defines them as state-owned shareholders. With reference to existing research [8, 28], and finally take the existence of state-owned shareholders (*State1*) and the shareholding ratio of state-owned shareholders (*State2*) as the proxy variables of state-owned capital participation. Where *State1* is a dummy variable, which takes the value of 1 if there are state-owned shareholders among the top ten shareholders, and 0 otherwise; *State2* is a continuous variable, which means the total shareholding ratio of the top ten shareholders of private enterprises in China.

3.2.3. Control variable.

Drawing on the research of Huang et al. [29], Zhang and Sun [30], this paper controls other factors that may affect financial risks. It includes enterprise Size (*Size*), enterprise financial leverage (*Lev*), enterprise profitability (*ROA*), enterprise Growth (*Growth*), ownership concentration (*First*), proportion of independent directors (*IndepDir*), Joint (*Joint*) and enterprise Age (*Age*). Specific variable definitions are shown in Table 1.

Table 1. Variable definition table

Type of variable	Variable name	Symbol	Definition
Dependent variable	Financial risk	*Z*	Altman (1968) Z-Score Financial risk index
Independent variable	Whether there are state-owned shareholders	*State1*	If there are state-owned shareholders in the top ten shareholders, it is 1, otherwise it is 0
	Shareholding ratio of state-owned shareholders	*State2*	Sum of the proportion of state-owned shareholders among the top ten shareholders
Control variable	Size of enterprise	*Size*	Natural logarithm of total assets
	Financial leverage	*Lev*	Total liabilities/total assets
	Profitability	*ROA*	Net profit /total assets
	Ability to grow	*Growth*	Increased operating income/main business income of the previous period
	Concentration of ownership	*First*	Shareholding ratio of the largest shareholder
	Proportion of independent directors	*IndepDir*	Number of independent directors/number of board of directors
	Two in one	*Joint*	The value is 1 if the roles of chairman and general manager are combined, and 0 otherwise
	Age of enterprise	*Age*	The natural logarithm of the current year minus the year of establishment plus one

3.3. Model design

Drawing on the research of Huang et al. [29], this paper constructs the following multiple linear regression model. Among them, *Z* is the financial risk of the explained variable; *State1* and *State2* represent the degree of reverse mixing of private enterprises; *Controls* is a series of control variables and controls the fixed effects of the year and industry.

$$Z=\alpha_0+\alpha_1\ State1/State2+Controls+\varepsilon \quad (2)$$

4. Empirical result

4.1. Descriptive analysis

Table 2 lists the descriptive statistical results of the main variables. It can be seen from the table that the minimum value of enterprise financial risk (*Z*) is 0.2740, the mean value is 5.7270, and the standard deviation is 6.1820, indicating that there are large differences in the financial risk of different enterprises. The mean values of the existence of state-owned shareholders (*State1*) and the shareholding ratio of state-owned shareholders (*State2*) are 0.3950 and 0.0229, indicating that the degree of reverse mixed ownership reform in private enterprises is low.

Table 2. Results of the descriptive analysis

Variable	N	Mean	SD	Min	p50	Max
Z	19000	5.7270	6.1820	0.2740	3.7630	39.4400
State1	19000	0.3950	0.4890	0.0000	0.0000	1.0000
State2	19000	0.0229	0.0589	0.0000	0.0000	0.3650
Size	19000	21.7100	1.0050	19.7100	21.5900	24.7500
Lev	19000	0.3580	0.1890	0.0440	0.3390	0.8280
ROA	19000	0.0524	0.0682	-0.2490	0.0526	0.2470
Growth	19000	0.1980	0.3510	-0.5030	0.1470	1.9350
First	19000	32.2700	13.5200	8.4800	30.3400	70.2900
IndepDir	19000	0.3780	0.0519	0.3330	0.3640	0.5710
Joint	19000	0.5930	0.4910	0.0000	1.0000	1.0000
Age	19000	17.0800	5.7290	5.0000	17.0000	32.0000

4.2. Empirical analysis

Table 3 shows the empirical results of private enterprises' reverse mixed ownership reform on financial risks. Among them, Column (1) takes the existence of state-owned shareholders (*State1*) as the explanatory variable, and Column (2) takes the shareholding ratio of state-owned shareholders (*State2*) as the explanatory variable. The results show that no matter *State1* or *State2* is adopted, the reverse mixed ownership reform of private enterprises is significantly positively correlated with the financial risk at the level of 1%, indicating that the reverse mixed ownership reform of private enterprises can significantly reduce the financial risk, and H_1 is established.

Table 3. Private enterprise reverses mixed ownership reform and financial risk

Variable	*Z*	
	(1)	(2)
State1	0.8226***	
	(10.9725)	
State2		3.0588***
		(4.9074)
Size	-0.4907***	-0.4117***
	(-10.8676)	(-9.2420)
Lev	-16.7909***	-16.8451***
	(-66.5830)	(-66.6311)
ROA	9.7058***	9.7485***
	(15.7198)	(15.7431)
Growth	0.0343	0.0153
	(0.3146)	(0.1401)
First	-0.0184***	-0.0187***
	(-6.7505)	(-6.8446)
IndepDir	1.6731**	1.6710**
	(2.4244)	(2.4120)
Joint	0.0380	0.0312
	(0.5173)	(0.4233)
Age	0.0441***	0.0440***
	(6.0962)	(6.0385)
Constant	20.5928***	19.2673***
	(19.7592)	(18.5971)
Year FE	Yes	Yes
Industry FE	Yes	Yes
N	19000.0000	19000.0000
Adj.R2	0.3849	0.3818

t statistics in parentheses

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

4.3. Robustness analysis

4.3.1. Replace the independent variable.

In addition to measuring the reverse mixed ownership reform of private enterprises in the main regression, referring to the research of He et al. [31] and Xiao et al. [11], we use the threshold of 5% and 10% shareholding to identify the major state-owned shareholders (*State3* and *State4)* to measure the degree of reverse mixed ownership reform of private enterprises. The regression results in Table 4 show that the coefficients of *State3* and *State4* are significantly positive at the level of 1%, and the research conclusion is still valid.

Table 4. Replace the independent variable

Variable	*Z*	
	(1)	(2)
State3	0.3788***	
	(2.9710)	
State4		0.5285***
		(3.2933)
Size	-0.3954***	-0.3969***
	(-8.9095)	(-8.9423)
Lev	-16.8396***	-16.8415***
	(-66.5822)	(-66.5925)
ROA	9.7311***	9.7282***
	(15.7042)	(15.7031)
Growth	0.0125	0.0144
	(0.1144)	(0.1317)
First	-0.0187***	-0.0190***
	(-6.8174)	(-6.9512)
IndepDir	1.6260**	1.5987**
	(2.3437)	(2.3073)
Joint	0.0381	0.0383
	(0.5175)	(0.5202)
Age	0.0460***	0.0458***
	(6.3137)	(6.2844)
Constant	18.9829***	19.0503***
	(18.3451)	(18.4070)
Year FE	Yes	Yes
Industry FE	Yes	Yes
N	19000	19000
Adj.R2	0.3813	0.3814

t statistics in parentheses

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

4.3.2. Change the sample year.

The Third Plenary Session of the 18th Central Committee of the Communist Party of China in 2013 marked that the mixed ownership reform had entered a new stage. Research under the same system can more effectively avoid the influence, so the sample period is changed from 2014 to 2021. The regression results in Table 5 show that the coefficients of *State1* and *State2* are significantly positive at the level of 1%, and the research conclusion is still valid.

Table 5. Change the sample year

Variable	*Z*	
	(1)	(2)
State1	0.9670***	
	(11.1221)	
State2		3.1389***
		(4.2738)
Size	-0.5013***	-0.3941***
	(-9.8347)	(-7.8688)
Lev	-17.9612***	-18.0891***
	(-60.9199)	(-61.1714)
ROA	7.5605***	7.5525***
	(11.1029)	(11.0450)
Growth	0.1631	0.1389
	(1.3150)	(1.1160)
First	-0.0153***	-0.0156***
	(-4.7471)	(-4.8076)
IndepDir	2.2926***	2.3082***
	(2.8768)	(2.8805)
Joint	0.0480	0.0526
	(0.5659)	(0.6169)
Age	0.0336***	0.0332***
	(4.0484)	(3.9776)
Constant	21.7464***	19.8371***
	(18.1375)	(16.6864)
Year FE	Yes	Yes
Industry FE	Yes	Yes
N	14479	14479
Adj.R2	0.3913	0.3869

t statistics in parentheses

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

4.3.3. The independent variables are lagged one period.

In order to avoid the endogeneity problem of mutual causality between reverse mixed ownership reform and financial risk, the independent variables are lagged by one period for regression. The regression results in Table 6 show that the coefficients of lagged explanatory variables (*LState1* and *LState2*) are significantly positive at the level of 1%, and the research conclusion is still valid.

Table 6. The independent variables are lagged one period

Variable	*Z*	
	(1)	(2)
LState1	0.7095***	
	(8.8339)	
LState2		2.7235***
		(4.0142)
Size	-0.6235***	-0.5519***
	(-12.9303)	(-11.6328)
Lev	-17.0682***	-17.1406***
	(-63.7896)	(-63.9591)
ROA	12.3633***	12.3323***
	(18.8990)	(18.8153)
Growth	-0.1947*	-0.2232*
	(-1.7063)	(-1.9530)
First	-0.0131***	-0.0135***
	(-4.4498)	(-4.5812)
IndepDir	1.1693	1.0980
	(1.5949)	(1.4936)
Joint	-0.0767	-0.0841
	(-0.9725)	(-1.0647)
Age	0.0343***	0.0342***
	(4.3840)	(4.3455)
Constant	22.4078***	21.2313***
	(20.2488)	(19.3263)
Year FE	Yes	Yes
Industry FE	Yes	Yes
N	16594	16594
Adj.R2	0.4042	0.4019

t statistics in parentheses

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

5. Mechanism test and heterogeneity test

5.1. Mechanism test

The previous hypothesis derivation shows that the effect of reverse mixed ownership reform of private enterprises on reducing financial risks may be through the resource acquisition effect and the supervision and governance effect. Therefore, this paper tests these two paths respectively.

5.1.1. Resource acquisition effect.

State-owned enterprises have great convenience in obtaining loans from banks and other financial institutions, and the addition of state-owned capital will alleviate the problem of "difficult and expensive financing" for private enterprises. In order to verify the mechanism of resource acquisition effect, this paper draws on the research of Chen et al. [32] and uses FC index as the proxy variable of financial constraints. Table 7 lists the mechanism test results of financial constraints. In columns (1) and (3), the coefficients of the reverse mixed ownership reform of private enterprises (*State1* and *State2*) are significantly negative at the level of 1%, indicating that the entry of state-owned capital can effectively alleviate the financial constraints of private enterprises. The coefficient of FC index

(*FC*) in columns (2) and (4) is significantly negative, indicating that the entry of state-owned capital reduces the financial risk of private enterprises by reducing the financing constraints.

Table 7. Mechanism test of financing constraints

Variable	(1)	(2)	(3)	(4)
	FC	*Z*	*FC*	*Z*
State1	-0.0139***	0.6124***		
	(-7.4715)	(7.9210)		
State2			-0.0658***	2.2920***
			(-4.3878)	(3.6765)
FC		-11.6899***		-11.7999***
		(-35.8273)		(-36.1504)
Size	-0.2039***	-3.0988***	-0.2051***	-3.0650***
	(-182.1033)	(-38.1619)	(-185.7277)	(-37.7550)
Lev	-0.1916***	-19.2390***	-0.1905***	-19.3024***
	(-30.8212)	(-72.3979)	(-30.6212)	(-72.5548)
ROA	0.2469***	15.7967***	0.2435***	15.9594***
	(16.1886)	(24.7256)	(15.9452)	(24.9448)
Growth	0.0039	-0.2128*	0.0045*	-0.2360**
	(1.4878)	(-1.9302)	(1.6860)	(-2.1384)
First	-0.0001**	-0.0146***	-0.0001*	-0.0149***
	(-1.9798)	(-5.1197)	(-1.9241)	(-5.2109)
IndepDir	-0.0031	0.8449	-0.0038	0.8383
	(-0.1806)	(1.1869)	(-0.2233)	(1.1744)
Joint	0.0017	-0.0425	0.0020	-0.0522
	(0.9291)	(-0.5529)	(1.0823)	(-0.6779)
Age	-0.0012***	0.0175**	-0.0011***	0.0166**
	(-6.4578)	(2.2934)	(-6.2220)	(2.1625)
Constant	4.9991***	84.5785***	5.0183***	84.2208***
	(190.9880)	(43.1398)	(192.8791)	(42.9050)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	16267	16267	16267	16267
Adj.R2	0.7951	0.4529	0.7946	0.4513

t statistics in parentheses

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

5.1.2. Supervision and governance effect.

The entry of state-owned capital introduces heterogeneous shareholders, which can effectively alleviate the adverse selection and other behaviors caused by the principle-agent problem of private enterprises, such as short-term operation behavior and blind investment, while both over-investment and under-investment will increase the financial risks of enterprises [33]. In order to verify the mechanism of supervisory governance effect, this paper refers to the model of Chen et al. [34] and uses the absolute value of the estimated residual error (*Ineff*) as the proxy variable of investment efficiency. Table 8 lists the mechanism test results of investment efficiency. In columns (1) and (3), the coefficients of the reverse mixed ownership reform of private enterprises (*State1* and *State2*) are significantly negative at the level of 1%, indicating that the entry of state-owned capital can effectively improve the investment efficiency of private enterprises. The coefficient of the absolute value of the residual (*Ineff*) in columns (2) and (4) is significantly negative, indicating that the entry

of state-owned capital reduces the financial risk by improving the investment efficiency of private enterprises.

Table 8. Mechanism test of investment efficiency

Variable	(1)	(2)	(3)	(4)
	Ineff	*Z*	*Ineff*	*Z*
State1	-0.0051***	0.8130***		
	(-5.3992)	(9.9678)		
State2			-0.0211***	3.1798***
			(-2.7767)	(4.8227)
Ineff		-1.1986*		-1.4204**
		(-1.7393)		(-2.0575)
Size	-0.0008	-0.6533***	-0.0013**	-0.5763***
	(-1.4680)	(-13.2930)	(-2.3414)	(-11.8915)
Lev	0.0182***	-16.9202***	0.0187***	-16.9893***
	(5.7107)	(-61.3323)	(5.8533)	(-61.4379)
ROA	0.0209***	13.3091***	0.0200**	13.4564***
	(2.6589)	(19.6004)	(2.5388)	(19.7651)
Growth	0.0353***	-0.1561	0.0355***	-0.1855
	(25.5733)	(-1.2816)	(25.7386)	(-1.5197)
First	0.0000	-0.0145***	0.0000	-0.0149***
	(1.1101)	(-4.8676)	(1.1792)	(-4.9936)
IndepDir	0.0155*	0.8643	0.0154*	0.8600
	(1.7822)	(1.1526)	(1.7747)	(1.1424)
Joint	-0.0041***	-0.1007	-0.0040***	-0.1127
	(-4.3537)	(-1.2452)	(-4.2667)	(-1.3904)
Age	-0.0004***	0.0290***	-0.0004***	0.0279***
	(-3.8855)	(3.6031)	(-3.7803)	(3.4432)
Constant	0.0884***	24.8163***	0.0959***	23.6194***
	(6.6355)	(21.5298)	(7.2484)	(20.5851)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	15768	15768	15768	15768
Adj.R2	0.0813	0.4079	0.0800	0.4050

t statistics in parentheses

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

5.2. Heterogeneity test

State-owned assets can be divided into two categories: state-owned financial institutions including securities, banks, insurance, funds and trusts, and state-owned non-financial institutions including government agencies/public institutions and other institutions [35]. The former are generally financial investors, mainly pursuing short-term economic performance to obtain investment returns; The latter are strategic investors, with stronger official color, and will pay more attention to the long-term development of enterprises [36]. Based on the above analysis, this paper expects that the financial risk reduction effect of the reverse mixed ownership reform of private enterprises mainly comes from the shareholding of state-owned non-financial institutions. The impact of shareholding ratio of state-owned non-financial institutions (*NonFin*) and shareholding ratio of state-owned financial institutions (*Fin*) on financial risk is tested respectively. Table 9 shows the impact of different state-owned entities on the financial risk of enterprises, and the results show that only when the shareholding

subject is a state-owned non-financial institution (*NonFin*) can the reverse mixed ownership reform of private enterprises reduce the financial risk.

Table 9. Heterogeneity test of different state-owned assets subjects

Variable	*Z*	
	(1)	(2)
NonFin	0.0193***	
	(3.1339)	
Fin		-0.0054
		(-0.1252)
Size	-0.3972***	-0.3896***
	(-8.9456)	(-8.7857)
Lev	-16.8475***	-16.8301***
	(-66.6046)	(-66.5313)
ROA	9.7210***	9.6629***
	(15.6920)	(15.6012)
Growth	0.0120	0.0134
	(0.1102)	(0.1222)
First	-0.0198***	-0.0194***
	(-7.2212)	(-7.0881)
IndepDir	1.4942**	1.4746**
	(2.1595)	(2.1307)
Joint	0.0327	0.0422
	(0.4435)	(0.5731)
Age	0.0460***	0.0479***
	(6.3164)	(6.6027)
Constant	19.1255***	18.9770***
	(18.4641)	(18.3351)
Year FE	Yes	Yes
Industry FE	Yes	Yes
N	19000	19000
Adj.R2	0.3814	0.3810

t statistics in parentheses

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

6. Conclusion and suggestions

Based on the sample of Chinese A-share private listed enterprises in Shanghai and Shenzhen Stock exchanges from 2007 to 2021, this paper empirically studies the impact of state-owned capital's shareholding on the financial risk of private enterprises. The study finds that the reverse mixed ownership reform of private enterprises can reduce the financial risk. The mechanism test shows that reverse mixed reform can alleviate financing constraints and improve investment efficiency, then reduce the financial risk of enterprises. The results of heterogeneity test show that the effect of reverse mixed ownership reform of private enterprises on reducing financial risk mainly comes from the shareholding of state-owned non-financial institutions, rather than the shareholding of state-owned financial institutions.

Based on the above results, this paper puts forward the following suggestions: (1) the government should vigorously promote the process of reverse mixed ownership reform of private enterprises, promote the better integration of state-owned capital and non-state-owned capital, and reduce the

financial risks of private enterprises; (2) Reverse mixed ownership reform should not only be the integration of heterogeneous equity, private enterprises should grasp the resource acquisition effect and supervision and governance effect brought by the property of state-owned capital to reduce financial risks by alleviating financing difficulties and solving the problem of inefficient investment; (3) Private enterprises should actively introduce strategic investors such as state-owned non-financial institutions to truly play the role of state-owned shareholders in the long run.

References

[1] Yu Han, Yang Zhonglun, Song Zengji. State ownership, political connection and corporate performance: an empirical study on Chinese private listed companies. Management Review, 2017, 29 (04): 196 - 212.

[2] Li Wengui, Yu Minggui. Property rights protection and the nationalization of private enterprises. China Economic Quarterly, 2017, 16 (04): 1341 - 1366.

[3] Yao Meijie, Song Zengji, Zhang Zongyi. Institutional negative externalities and market players' response: empirical evidence from Chinese private enterprises. Management World, 2019, 35 (11): 158 - 173.

[4] Sun Liang, Liu Chun. Why do private enterprises introduce state-owned shareholders? Evidence from downward adjustment of earnings. Journal of Financial and Economic Research, 2021, 47 (08): 109 - 122.

[5] Hao Yang, Gong Liutang. State-owned and Private equity participation and corporate performance improvement. Economic Research, 2017, 52 (03): 122 - 135.

[6] Wang Shengguo, Gao Ling, Huang Yongying. Can state-owned shareholders' shareholding improve the social security compliance of private enterprises? Journal of Economic Management, 2012, 44 (07): 42 - 58.

[7] Li, B., L. Xu, P. R. Mclver, X. Liu, and A. Pan. Mixed-Ownership Reform and Private firm's Corporate Social Responsibility Practices: Evidence from China. Business &Society, 2022, 61 (02): 389 - 418.

[8] Zeng Min, Li Changqing, Li Yukun. How does state-owned capital's shareholding affect the cash holdings of private enterprises? Based on the dual perspective of cooperative advantage and competitive balance. Economic Management, 2020, 44 (04): 134 - 152.

[9] Qian Aimin, Wu Chunchun, Zhu Dapeng. Can the mixed ownership of private enterprises promote the real economy to "return to reality". Nankai Business Review, 2023, 26 (01): 134 - 147.

[10] Yu Yao, Qi Huaijin, Li Ruolin. State-owned shareholders' shareholding and private enterprise audit pricing. Audit Research, 2022, 230 (06): 105 - 116.

[11] Xiao Zheng, Zhai Shengbao, Zhang Jing. Can the introduction of state-owned capital solve the zombification risk of private enterprises? Empirical evidence from Chinese listed companies. Business Management Journal, 2020, 44 (02): 36 - 56.

[12] Dong Yan, Liu Peizhong. The impact of State-owned capital injection on the performance of private enterprises: based on the research of Chinese industrial enterprises. China Economic Quarterly, 2021, 21 (06): 1925 - 1948.

[13] Yuan Xiaobo. Internal Control and Financial risk: Empirical evidence from Shanghai Listed Manufacturing Companies. Economics and Management Research, 2010, 210 (05): 60 - 68.

[14] Yu Jianling, Tong Menghua, Zhu Zejun. The impact of corporate financialization on financial risk: a study on the moderating effect of economic policy uncertainty. Journal of International Finance, 2021, 414 (10): 88 - 96.

[15] Huang J. K., Kisgen D.J. Gender and Corporate Finance: Are Male Executives Overconfident Relative to Female Executives? Journal of Financial Economics, 2013, 108 (03): 822 - 839.

[16] Wang Kemin, Ji Meiguang, Zhao Mo. Research on macroeconomic environment, Corporate Governance and financial distress. Research on Economics and Management, 2006 (09): 18 - 25.

[17] Ji Weiwei, Chen Zhibin, Zhao Yan. Monetary policy and corporate financial risk change. Shanghai Economic Research, 2014, 308 (05): 27 - 37.

[18] Lei Zhen, Gong Guangming, Xu Liping. Foreign exchange risk exposure, ownership concentration and financial risk: an empirical study based on export listed companies. The Theory and Practice of Finance and Economics, 2017, 38 (05): 79 - 85.

[19] Gietzen T. The exposure of microfinance institutions to financial risk. Review of Development Finance, 2017, 7 (02): 120 − 133.

[20] Lyu Xuejing, Chen Zhibin, Li Dongyang et al. Government regulation and corporate financial risk: empirical evidence from Chinese A-share listed companies. Journal of Accounting and Economic Research, 2020, 34 (05): 56 - 67.

[21] Su Kun, Zjang Junrui, Yang Shue. Ultimate Control Rights, Legal environment and Corporate financial risk: evidence from Chinese Private listed companies. Contemporary Economic Science, 2010, 32 (05): 80 - 87+127.

[22] Mao Xinwei, Zhou Xiaowei. Political Connections and Public Debt Financing. Accounting Research, 2015, 332 (06): 26 - 33+96.

[23] Luo Hong, Qin Jidong. The impact of state-owned equity participation on innovation investment of family firms. China Industrial Economics, 2019, (07): 174 - 192.

[24] Song Zengji, Feng Liming, Tan Xingmin. State ownership, private entrepreneurs' participation in politics and corporate financing convenience: empirical evidence from China's private listed companies. Journal of Financial Research,2014, 414 (12): 133 - 147.

[25] Liu Qiliang, Luo Le, Zhang Yaman et al. Senior management centralization, Internal control and accounting information quality. Nankai Business Review, 2013, 16 (01): 15 - 23.

[26] Li Jianjun, Han Xun. Shadow banking and operational risk of non-financial enterprises. Economic Research Journal, 2019 (08): 21 - 35.

[27] Altman E. I. Financial Ratios, Discriminant Analysis, and the Prediction of Corporate Bankruptcy. Journal of Finance, 1968, 23 (04).

[28] Wang Caiping, Huang Jianye, Huang Zhihong et al. State-owned equity participation and financial risk prevention of private enterprises: an empirical study from the perspective of Stock price crash risk. Economic Management Journal, 2012, 44 (08): 60 - 75.

[29] Huang Xian-huan, Wu Qiu-sheng, Wang Yao. Financial asset allocation and corporate financial risk: "Planning for a rainy Day" or "neglecting the past". Journal of Finance and Economics, 2018, 44 (12): 101 - 113+126.

[30] Zhang Xiaoqian, Sun Lujia. Collateral List expansion, excessive leverage and enterprise bankruptcy risk: the "double-edged Sword" effect of chattel mortgage law reform. China Industrial Economics, 2017, 352 (07): 175 - 192.

[31] He Dexu, Zeng Min, Zhang Shuonan. How does state-owned capital share affect private enterprises? Research from the perspective of debt financing. Management World, 2012, 38 (11): 189 - 207.

[32] Chen Haiqiang, Hu Xiaoxue, Li Dongxu. "Going green" in financial assessment and green M&A of polluting enterprises: from the perspective of signal effect. Journal of Financial Research, 2024, (02): 131 - 148.

[33] Ma Yaming, Zhang Lile. The impact of local government debt expansion on the investment efficiency of state-owned enterprises: based on the mediating effect of over-indebtedness of state-owned enterprises. Journal of Accounting and Economic Research, 2012, 36 (01): 27 - 45.

[34] Chen C., Young D., Zhuang Z. Externalities of mandatory IFRS adoption: Evidence from cross-border spillover effects of financial information on investment efficiency. The Accounting Review, 2013, 88 (03): 881 - 914.

[35] Liu Xiaoxia, Li Minghui. "Reverse mixed reform" and private enterprise earnings management. Business Management Journal, 2023, 45 (05): 189 - 208.

[36] Yu Han, Huang Shuang, Song Zengji. The impact of State-owned equity on the digital transformation of private enterprises: empirical evidence based on listed companies. China Soft Science, 2023 (03): 140 - 149.