

The Influence of Ownership Structure of State-owned Companies on Efficiency Investment

Dan Liu^{1,a}, Yufang Ding^{1,b,*}, and Fengxin Zhu^{1,c}

¹Northwest Minzu University, Baiyin Street, Lanzhou City, Gansu Province, China
a.395035268@qq.com, b.1050761104@qq.com, c.28604881458@qq.com

*corresponding author

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Abstract: This paper selects panel data of Shenzhen and Shanghai A-share state-owned listed companies from 2013 to 2018 and discusses the impact of ownership structure on investment efficiency based on principal-agent theory. Through multiple regression analysis, the following conclusions are obtained: State-owned listed companies generally have inefficient investment and under-investment is more common than over-investment. Analysis of the relationship between equity structure and investment efficiency reveals that increasing equity balance and the proportion of institutional investors can help improve the investment efficiency of state-owned enterprises.

1. Introduction

Chinese economy has achieved world-renowned achievements in the 40 years of reform and opening up. State-owned enterprises play a vital role in economic system reform and economic development. However, because of the special nature of state-owned property, there are always some problems in corporate governance, such as the separation of government and enterprise, the absence of owners, and the imperfect management mechanism, seriously affecting the development of enterprises. Investment is an important activity of the company's financial management, and investment efficiency is a significant indicator of the company's value evaluation in financial analysis. Economic system with socialist public ownership as the mainstay and the development of multiple ownership economies makes the governance of listed companies unique. At present, the phenomenon of "one share is dominant" in the state-owned capital is widespread and the investment entities are diversified. The state-owned holding position is easy to lead to administrative intervention. The scientific and reasonable governance structure is not perfect, which has affected the investment efficiency of the state-owned enterprises to a certain extent. So it is particularly necessary to study the relationship between investment and equity structure. Many scholars have studied the shareholding structure and investment efficiency by taking the entire listed company as a sample. Because the research objects and research time are inconsistent, the conclusions obtained are also different. Li Xiangmei's [1] research found that equity balance effectively restrained the impact of over-investment and private gains of control rights on over-investment, but the mitigation effect on under-investment of enterprises was not obvious. Similarly, Xu Weibin and Zhou Jian [2]

found that increasing the equity balance of mixed entities has a significant positive effect on mitigating over-investment by state-owned enterprises. However, different types of mixed ownership methods have different effects on over-investment. Further research found that, relative to the effect of government intervention, managers have relatively more effective explanations for the inefficient investment of state-owned enterprises. Shi Dalin [3] studied the dynamic endogenous issue between the equity structure and the company's investment efficiency, using the dynamic panel estimation method, considering the effects of heterogeneous endogenous, inter-period dynamic endogenous and simultaneous endogenous, the results showed that the equity structure has a long-term impact on the investment efficiency. Tsui-Jung Lin [4] believes that single-ownership companies tend to adopt a diversified ownership-holding model in the development and operation process, which is a direct means of improving investment efficiency. Wei He and NyoNyo A. Kyaw[5]examined the relationship between the ownership structure of state-owned enterprises and excessive investment decisions. The research results show that there is a negative effect of state ownership, and that managers holding part of the equity of listed companies will subtly affect investment and this influence is beneficial. Tian Guoshuang and Li Tong [6]took China's A-share listed companies as samples and used regression analysis to compare the impact of different ownership structure on investment efficiency.

2. Theoretical Analysis and Research Hypothesis

Taking the principal-agent theory as the theoretical basis, managers have motives that violate the maximization of corporate value to make decisions, that is, the first type of agency problems under the principal-agent theory. In fact, there is also a second type of agency problem between large shareholders and small and medium shareholders: in the case of "one share", the large shareholder has become the agent of the small and medium shareholder. The large shareholder is very likely to infringe the legal rights of the small and medium shareholder through their control rights, and transfer benefits with other companies under their control. This behavior will seriously affect the choice of corporate investment behavior, which will trigger inefficient investment.

Equity checks and balances can effectively solve the principal-agent problem existing between large and small shareholders. The purpose of Balance Mechanism of Shareholding is to restrict the behavior of major shareholders through reasonable equity settings, so that no major shareholder can control the decision-making and promote fair group decision-making and suppress the predatory behavior of large shareholders. Secondly, the active introduction of institutional investors is an important way to promote equity diversification. Institutional investors have a relatively large shareholding ratio and are generally long-term investors. For the purpose of obtaining capital gains, they will participate more actively in corporate governance and strive to establish a mechanism of mutual restraint between the shareholders' meeting, the board of directors and the company's management. Finally, there is a conflict of interest between shareholders and managers in the principal-agent relationship, making them inconsistent in their goals. Management shareholding can make the goals of shareholders and managers more consistent, and it is a long-term incentive mechanism that helps reduce agency conflicts. Granting managers a certain amount of equity allows them to share the company's remaining claim rights, and to manage the company more proactively, which will reduce and eliminate short-term behaviors when making investment decisions, and make investment decisions in accordance with the principle of maximizing shareholder wealth. Therefore, this article proposes the following assumptions:

Hypothesis 1: State-owned listed companies have inefficient investment behaviors, which include over-investment and under-investment.

Hypothesis 2: Equity checks and balances, the ratio of institutional investors and managers are positively related to the investment efficiency of state-owned enterprises.

3. Research Design

3.1. Sample Selection

This article selects Shanghai and Shenzhen A-share State-owned listed companies from the CSMAR database as the initial research sample. Because the model has lagging items, the investment efficiency model uses 2013-2018 data, the shareholding structure selects 2013-2017 data., and used Excel to process the sample as follows: (1)Excluded ST, *ST, PT companies; (2)Excluded financial industry listed companies;(3)Excluded company sample points with missing required data for each year. After screening, 3324 unbalanced panel data were obtained. This paper draws on the Richardson (2006) model to construct a regression model of expected investment and uses the difference between the actual investment expenditure value and the expected value obtained by the regression equation to measure the inefficient investment level. A positive residual indicates that the company is over-invested (OVERINV), a negative residual indicates that the company is under-invested (UNDERINV), and the larger the absolute value of the residual, the lower the investment efficiency. The specific model is as follows.

$$Inv_{it} = \beta_0 + \beta_1 Grow_{it-1} + \beta_2 Cash_{it-1} + \beta_3 Lev_{it-1} + \beta_4 Age_{it-1} + \beta_5 AR_{it-1} + \beta_6 Inv_{it-1} + \Sigma Year + \varepsilon_{it} \quad (1)$$

Referring to the existing literature, the variables designed in this paper are shown in Table 1.

Table 1: Variable Definition.

Variable type	Variable	Symbol	Calculation method
Explained variable	Investment efficiency	INV	Absolute residual value from Richardson model regression
Explanatory variables	Equity balance	BAL	The sum of the second to fifth largest shareholder's shareholding ratio / the first largest shareholder's shareholding ratio
	Institutional investor shareholding ratio	IHOLD	Number of shares held by institutional investors at the end of the year / total number of shares of the company at the end of the year
	Management shareholding ratio	MSR	Number of shares held by management at the end of the year / total number of shares of the company at the end of the year
Control variables	Turnover of total assets	TO	Operating income / average total assets
	Free cash flow	FCF	Net cash flow from operating activities / total assets at the beginning of the period
	Company size	SIZE	Ln (Final assets)
	Executive compensation	SALARY	Ln (Total salary of the top three executives)
	Free cash flow	CASH	Activities Net operating cash flow / total assets of the company in early

	Asset-liability ratio	LEV	Total liabilities at the end of the year / total assets
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3.2. Methodology

Based on the previous analysis, this paper constructs a model of the impact of Shareholding structure on investment efficiency to test the proposed hypothesis.

$$INV_{it} = \alpha_0 + \alpha_1 BAL_{it-1} + \alpha_2 IHOLD_{it-1} + \alpha_3 MSR_{it-1} + \alpha_4 FCF_{it-1} + \alpha_5 TURNOVER_{it-1} + \alpha_6 SALARY_{it-1} + \alpha_7 AGE_{it-1} + \alpha_8 LEV_{it-1} + \alpha_9 CASH_{it-1} + \varepsilon_{it} \quad (2)$$

4. Empirical Results and Analysis

Descriptive analysis is the static description analysis of the data. This paper uses the software Stata13.1 to descriptively analyze inefficient investment from the four indicators: minimum value, maximum value, means value and standard deviation. The results are shown in Table 2:

Table 2: Descriptive Statistics of Variables.

Variables	N	Minimum value	Maximum value	Mean value	Standard deviation
overinv	1227	.0000	.9753	.046107	.0838037
underinv	2097	.0000	.2892	.028326	.0283337
inv	3324	.0000	.9753	.034889	.0563128

Based on the residual symbol of model (1), this paper makes a statistic on the investment efficiency of the sample companies. From Table 2, we can see that in all samples, there are 1227 over-investments, accounting for 36.91% of the total number of sample companies. ; There are 2097 under-invested companies, accounting for 63.09% of the total number of sample companies. The result shows that most state-owned listed companies have inefficient investment. Hypothesis 1 in this paper has been verified. From the descriptive statistical results of over-investment and under-investment, although the sample size indicates that the number of under-investment samples is greater than that of over-investment, the mean and standard deviation of the degree of over-investment are greater than that of under-investment. In terms of investment, the degree of over-investment and volatility are greater than under-investment.

Table 3: Pearson Correlation Coefficient Table of Variables.

	inv	bal	ihold	msr	turnover	fcf	salary	size	lev	cash
inv	1									
bal	.089**	1								
ihold	.049**	.140**	1							
msr	-0.026	0.039	-0.029	1						
turnover	-.048**	-.117**	.013		1					
fcf	.047**	.034	.045**	-0.532	.031	1				
salary	-.041*	.143**	.167**	0.094	.128**	.100**	1			

size	-.121**	.003	.100**	-0.014	.016	.090**	.398**	1		
lev	-.116**	-.027	.005	0.012	.138**	-.164**	.040*	.405**	1	
cash	.260**	.057**	.059**	0.043	-.012	-.008	-.016	-.024	-.080**	1

To determine whether there is severe multidisciplinary in the variables by examining the correlation between the variables, the results of Pearson correlation analysis for each variable are shown in Table 3: It can be seen that the coefficient of equity balance and investment efficiency is 0.089, the ratio of institutional investors' shareholding ratio and investment efficiency is 0.049, there is a significant correlation, and the sign is in line with expectations, We can judge that the increase in equity checks and balances and institutional investors' shareholding ratio has a certain effect on improving investment efficiency. The managerial shareholding ratio coefficient is not significant. This article will further analyze in the regression results. Some independent variables are significantly correlated at the 5% level, but the number of related variables is small, so there is no large col linearity among the variables in the model.

Table 4: Regression Results.

	B	Std. Error	t	sig
(constant)	.141	.022	6.368	.000
bal	.007	.002	3.723	.000
ihold	.005	.000	2.133	.003
msr	.002	.001	.613	.540
Turnover	-.003	.002	-1.729	.084
fcf	.032	.011	2.885	.004
salary	-.001	.002	-.482	.630
size	-.004	.001	-5.134	.000
lev	-.010	.006	-1.820	.069
cash	.019	.001	14.936	.000
year	control			
R2	0.221			
Adj-R2	0.214			
F	38.225***			
N	3324			

From the regression results in Table 4, we can see that the Adj-R² is 0.214, and the value is within the acceptable range. The explanatory variables in the regression model can explain the explained variables. It also shows that there are other influencing factors for the explained variables. The equity balance coefficient is 0.007, which passes the 1% level of significance test. The shareholders check and balance each other and can play a supervisory role, thereby inhibiting inefficient investment behavior. The regression results show that the equity checks and balances of my country's state-owned listed companies can help improve the company's investment efficiency. This is because when there are checks and balances in the shareholding structure, major actions within the company need to be decided by several large shareholders. The decisions and actions of the shareholders will be mutually restricted and supervised, and other shareholders can restrict the capture of the largest shareholder through internal containment. The proportion of institutional investors' shareholding is positively correlated with investment efficiency, and it is significant at the

level of 1%, indicating that the greater the proportion of institutional investors' shareholdings, the more conducive to the improvement of the investment efficiency of state-owned enterprises. Institutional investors have a good governance role in curbing non-efficient. Thus, institutional investors should be actively introduced to improve the investment efficiency of state-owned enterprises. The proportion of management's shareholding is positively related to investment efficiency, but it is not significant, suggesting that the increase in management's shareholding has not effectively improved the investment efficiency. The reason may be that there are insufficient equity incentives in china, and the number of shares held by management is relatively small, resulting in insignificant results.

5. Conclusion

This paper selects the 2013-2018 Shanghai and Shenzhen A-share State-owned listed company data to study the impact of shareholding structure on investment efficiency, and mainly draws the following research conclusions: In the sample, 2097 companies showed under-investment, and 1227 showed over-investment. Under-invested companies accounted for about 63%, indicating that there are generally inefficient investments in state-owned listed companies and under-investment is more common than over-investment. Based on the principal-agent theory, this paper builds a regression model to examine the relationship between equity structure and investment efficiency. It is found that increasing equity balances and the proportion of institutional investors can help improve the investment efficiency of state-owned enterprises.

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