

# The Impact of Fund Holdings on the Real Activities Earnings Management

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**Abstract.** After 20 years of development, the impact of Fund holdings in corporate governance has also received more and more attention. This paper analyzes the governance effect of fund holdings from the perspective of real activities earnings management, and considers the nature of the firm and the impact of the fund industry reform in 2012. This paper took the data of a-share listed companies from 2006 to 2017 as the sample, referred to the model Roychowdhury used to measure the level of real activity earnings management, and used multiple linear regression method for empirical analysis. The findings are as follows: fund holdings have a significant inhibitory effect on real earnings management; when considering the nature of enterprises, the inhibiting effect is more significant in non-state-owned enterprises, but not in state-owned enterprises; when considering the fund industry changes in 2012, this inhibition is more pronounced after the change. The above results show that the fund can exert its earnings management governance effect by supervising the management and restricting the major shareholders. The state-owned enterprise nature will limit its governance effect, and the fund industry standard development and active guidance will strengthen its governance effect.

## 1 Introduction

Fund holding is an important part of institutional investors' holding. China's securities investment fund started late but developed rapidly. Compared with the mature fund industry in the United States and the United Kingdom, China's securities investment funds participate in corporate governance attitude is relatively negative. However, we can also see that China's funds are more and more inclined to actively participate in corporate governance, shareholder activism gradually wakes up.

The year 2012 is a year of great changes in the fund industry. In this year, Asset Management Association of China (AMAC) was formally established. This paper regards 2012 as a year of change in the development of the fund. Since then, improving our country's public funds, private equity fund is been healthy and rapid development of the whole industry, the industry gradually on track to build a fund long-term ecological guide, for the fund to participate in the governance of listed companies has brought new opportunities, increasing the enthusiasm of participation in governance.

This paper mainly studies the effect of fund holding on real earnings management.

First of all, based on the influence of fund shareholding on corporate governance in terms of checks and balances on major shareholders and supervision of managers, this paper analyzes the inhibiting effect of fund shareholding on real earnings management.

Secondly, by adding the nature of the enterprise as the

moderator variable, this paper conducts a sample empirical analysis of state-owned and non-state-owned enterprises, studies their effects on real earnings management respectively, and compares the results with the full sample to discuss whether the moderating variable of the nature of the enterprise significantly affects the governance of fund shareholding.

Thirdly, the virtual variables before and after policy implementation are added, and 2012 is taken as the implementation year of fund industry reform. The cross multiplication of virtual variables and fund shareholding ratio is set for empirical analysis to discuss whether a series of fund reform measures in 2012 can better promote fund shareholding to play its role in earnings management.

## 2 Literature Review

### 2.1 Fund Holdings

Fund holding mainly refers to the stock investment conducted by securities investment fund as an independent buyer force in the capital market. Since the 1980s, funds have established a symbiotic relationship with the capital market, and their impact on the stock market has been widely concerned by scholars [1]. Securities investment fund is an important part of institutional investors. Since the 21st century, Chinese scholars have conducted a large number of studies on institutional investors. Although they have paid some attention to the performance and role of fund holdings in the stock market, they are relatively thin

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compared with the studies on institutional investors. Lou Wei and other scholars used empirical methods to verify the positive effect of fund shareholding on the performance of listed companies [2]. Zeng Zhiyuan, Cai Dongling and Wu Xiaokai emphatically analyzed the influence mechanism of fund shareholding on the value of listed companies, and believed that fund shareholding mainly exerted its positive influence by constraining major shareholders [3]. From the existing literature, there are few studies on the relationship between fund and stock market, and the content is not comprehensive enough. Moreover, there are few studies on the relationship between fund holding and earnings management.

## 2.2 Fund Holdings and Earnings Management

Fund shareholding is an important part of institutional investors' shareholding. There are few existing studies that directly focus on the relationship between fund shareholding and earnings management, but we can get some inspirations from many literatures that study the impact of institutional investors on earnings management.

Development of foreign institutional investors, early in the 1980s, the way of institutional investors participating in corporate governance is fundamental changes have occurred, some scholars called this transformation "shareholder activism" [4], some scholars call it from "vote with their feet" to "vote by hand", or from "indirect governance" to "governance" directly [5]. In a word, the attitude of institutional investors to participate in corporate governance has changed positively, which has aroused the discussion among scholars about the effect of earnings management governance, but there are differences.

China's fund and other institutional investors started late, compared with foreign countries, the development is not mature, but its development trend is very rapid, and the shareholder rights consciousness gradually wake up. After entering the 21st century, Chinese scholars have also conducted more studies on the relationship between institutional investors' shareholding and earnings management, and reached several different views. Some scholars have affirmed the inhibitory effect of institutional investor shareholding on earnings management, such as Cheng Shuqiang [6], Gao Lei and Zhang Jie [7]. Yang Haiyan, Wei Dehong, Sun Jian argue that institutional investors' shareholding contributes to earnings management [8].

## 2.3 Literature Review and Innovation of This Paper

Based on the existing literature, there are many studies on the impact of institutional investors on earnings management, with different conclusions. Four reasons are summarized above: no distinction is made between real accrued earnings management; The specific types of institutional investors are not distinguished; The nature of the enterprise is not distinguished; The sample needs to be updated as the capital market environment changes. This paper attempts to take the sample data of listed companies updated to 2017 and the sample interval of a long time span

from 2006 to 2017 to study the impact of fund shareholding on real earnings management, and add the nature of enterprises as the adjustment.

At present, few scholars focus earnings management on real earnings management and institutional investors on fund holdings. Real earnings management is a more preferred earnings management mode in the situation of tighter standards and policies. Scholars pay more attention to it because of its stronger concealment and longer-term damage. Among institutional investors, securities investment fund is the most representative type of capital source and has the strongest motivation to participate in corporate governance. It has gradually become the leading force for institutional investors to participate in corporate governance. Several related studies have shown that the same factors can vary widely between real and accrual earnings management, and that the results for differentiating institutional investor heterogeneity from general discussion can vary greatly under the same sample. Therefore, it is necessary to study the governance effect of fund holding on earnings management of institutional investors.

## 3 Research Hypothesis

According to the existing research, the influence of fund shareholding on corporate governance has two ways.

The supervision function corresponds to the first type of agency problem, that is, the contradiction between shareholders and management. Due to the nature of profit-seeking, the fund will strengthen the supervision over the management and restrain its real earnings management behavior because it will benefit more from participating in governance than from "voting with its feet".

The checks and balances correspond to the second kind of agency problem, namely the contradiction between large shareholders and small shareholders. As the agent of minority shareholders, fund shareholding can act as the independent buyer power and have the right to speak, effectively check and balance the major shareholders, and restrain the earnings management and manipulation behaviors of major shareholders infringing the interests of minority shareholders. In addition, securities investment funds are considered to be more professional and rational investors.

Therefore, the following hypotheses are proposed:

**H1:** Fund ownership can constrain the real earnings management of listed companies.

The state shareholder status of state-owned enterprises is often represented by the State-owned Assets Supervision and Administration Commission and other government departments, which leads to the absence of owners and the phenomenon of insider control, which makes the internal supervision of state-owned enterprise shareholders on the management of real earnings weaker. Plus the state-owned enterprises management tend to have multiple objectives, in addition to the enterprise value, managers also need to consider the political influence of enterprise and social functions, managers position changes and compensation change also affected by the political, social, performance of multiple criteria, so don't worry too much about the real

earnings management to the enterprise long-term performance. The above factors lead to a higher level of real earnings management in state-owned enterprises and limit the inhibiting effect of fund shareholding on real earnings management.

Therefore, the following hypotheses are proposed:

**H2:** Compared with state-owned enterprises, fund shareholding has a more obvious inhibitory effect on the real earnings management of non-state-owned enterprises.

After 2012, effective industry supervision promoted the standardized development of funds, enhanced the capital market and investors' attention to funds, and China's fund volume rapidly expanded. The increasingly powerful securities investment fund will have a greater say in corporate governance, its supervision effect on the management level and its checks and balances on major shareholders will be significantly enhanced, and its ability to participate in governance will be further enhanced.

In addition, the newly revised fund law significantly relaxes industry regulation, which is reflected in various aspects such as operating rules, entry thresholds and investment restrictions. These amendments are conducive to promoting the establishment of the fund value investment concept, improve the fund "voting with their feet" retail nature, and build the long-term ecology of the fund participating in governance. The limitation of fund participation in corporate governance is reduced, the channels are expanded, the benefits brought by supervision and governance are increased, and the enthusiasm of fund participation in governance is also increased.

To sum up, guided by strengthening regulation and relaxing regulation, AMAC and the newly revised Fund

Law should enable securities investment funds to better play their role in earnings management and governance.

Therefore, the following hypotheses are proposed:

**H3:** With the establishment of AMAC in 2012 and the amendment of the Fund Law as the boundary, the restrictive effect of fund shareholding on the real earnings management behavior of listed companies is strengthened.

## 4 Research Design

Because this paper needs to verify the difference of inhibiting effect of fund holding on the real earnings management level of listed companies before and after the fund industry reform in 2012, the sample data of six years before and after 2012 are selected, namely the panel data of A-share listed companies in Shanghai and Shenzhen stock Exchanges in A total of 12 years from 2006 to 2017. After excluding financial listed companies, ST companies and listed companies with partial data missing or unavailable, the final sample size was 21,151 "enterprise-annual" sample observations of 2,742 listed companies.

This paper refers to the Roychowdhury [9] model to measure the real earnings management level.

$$\frac{CFO_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \frac{S_t}{A_{t-1}} + \alpha_3 \frac{\Delta S_t}{A_{t-1}} + \varepsilon_t \quad (4.1)$$

$$\frac{PROD_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \frac{S_t}{A_{t-1}} + \alpha_3 \frac{\Delta S_t}{A_{t-1}} + \alpha_4 \frac{\Delta S_{t-1}}{A_{t-1}} + \varepsilon_t \quad (4.2)$$

$$\frac{DISX_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \frac{S_{t-1}}{A_{t-1}} + \varepsilon_t \quad (4.3)$$

$$RM_t = |AbPROD_t + (-1)AbCFO + (-1)AbDISX_t| \quad (4.4)$$

The main variable names and explanations involved in this paper are shown in Table 1.

Table.1 Main variables definition

	variable	variable name	Interpretation	
<b>Explained variable</b>	<i>RM</i>	Real earnings management level	$RM =  AbPROD + (-1)AbCFO + (-1)AbDISX $ , absolute value of the sum of abnormal operating cash flow, abnormal production cost and abnormal expenses	
<b>Explanatory variable</b>	<i>Fundhold</i>	Fund shareholding Ratio	Number of shares held/total shares held by the fund	
		<i>SOE</i>	Dummy variables of enterprise nature	The value of state-owned enterprises is 1, and that of non-state-owned enterprises is 0
		<i>POST</i>	Dummy variables before and after a time node	The value in 2011 and before is 0, and the value in 2012 and after is 1
<b>Control variable</b>	<i>Instituhold</i>	The proportion of institutional investors holding shares	Number of institutional holdings/total number of shares	
		<i>SIZE</i>	Company size	$\ln A$ , natural log of total assets
	<i>Leverage</i>	Asset-liability ratio	Total liabilities/total assets	
	<i>ROA</i>	Net interest rate on assets	Net profit/total assets	
	<i>LnAge</i>	Length of time to market	The natural log of the number of years on the market	
	<i>Q</i>	Future investment opportunities for enterprises	Tobin's Q coefficient, company market value/asset replacement cost	
	<i>LOSS</i>	Dummy variable of profit and loss	The value is 0 when the company is profitable and 1 when the company is losing money	
	<i>shrcr10</i>	Ownership concentration	The shareholding ratio of the top 10 shareholders	
	<i>Cheifceo</i>	Whether the CEO and chairman are part-time	The value is 0 when the two jobs are separated, and 1 when the two jobs are concurrently	
	<i>YearD</i>	Annual fixed effect		
<i>IndustryD</i>	Industry fixed effect			

To test **H1**, we designed the model as follows:

$$RM_{it} = \beta_0 + \beta_1 Fundhold_{it} + \beta_2 SOE_{it} + \beta_3 Institutuhold_{it} + \beta_4 SIZE_{it} + \beta_5 Leverage_{it} + \beta_6 ROA_{it} + \beta_7 LnAge_{it} + \beta_8 Q_{it} + \beta_9 LOSS_{it} + \beta_{10} shrchr10_{it} + \beta_{11} Chiefceo_{it} + \beta_{12} YearD_{it} + \beta_{13} IndustryD_{it} + \varepsilon_{it} \quad (4.5)$$

To verify hypothesis 1, this paper analyses based on the full sample from 2006 to 2017. At this point, the enterprise property (SOE) is also used as a control variable in the model of Hypothesis 1. We expect  $\beta_1$  to be significantly negative.

For the test of **H2**, we used a model (4.5) in SOE=1 and SOE=0 samples, respectively, and compared  $\beta_1$  differed between the two groups. At this point, the enterprise nature is used as a regulatory explanatory variable in the model of Hypothesis 2. If the inhibiting effect of fund ownership on real earnings management is influenced by the nature of the enterprise, we expect the absolute value of  $\beta_1$  in the non-state-owned enterprise group to be greater than that in the state-owned enterprise group, and more significant.

To test **H3**, the model is designed as follows:

$$RM_{it} = \beta_0 + \beta_1 Fundhold_{it} + \beta_2 POST_{it} + \beta_3 Post \times Fundhold_{it} + \beta_4 SOE_{it} + \beta_5 Institutuhold_{it} + \beta_6 SIZE_{it} + \beta_7 Leverage_{it} + \beta_8 ROA_{it} + \beta_9 LnAge_{it} + \beta_{10} Q_{it} + \beta_{11} LOSS_{it} + \beta_{12} shrchr10_{it} + \beta_{13} Chiefceo_{it} + \beta_{14} YearD_{it} + \beta_{15} IndustryD_{it} + \varepsilon_{it} \quad (4.6)$$

Based on model (4.5), Post variable representing the year before and after the fund reform is added, and the cross multiplier of Post variable and fund shareholding ratio is set.  $\beta_3$  represents the influence of the fund industry reform in 2012 on the suppression of earnings management strength of fund shareholding, which is a key variable to be paid attention to when testing hypothesis 3.

To facilitate the robustness test, we used the model (4.6) in the two groups of samples in 2011 and before (POST=0) and 2012 and after (POST=1), respectively, and compared whether there were differences in  $\beta_3$  between the two groups.

## 5 Empirical Result

Table 2 and Table 3 list the regression results of model (4.5) and model (4.6).

The regression results in Table 2 correspond to hypothesis 1 and hypothesis 2:

**Table.2 Regression of fund holdings, corporate nature and earnings management**

Variable	Model (4.5)	Model (4.5)	Model (4.5)
	Total Sample (1)	State-owned (2)	Non-state (3)
fundhold	<b>-0.0033***</b> (0.0007)	<b>0.0003</b> (0.0010)	<b>-0.0057***</b> (0.0010)
soe	<b>-0.0247***</b> (0.0035)		
lnage	<b>0.0255***</b> (0.0031)	<b>0.0169***</b> (0.0048)	<b>0.0308***</b> (0.0043)
institutuhold	<b>0.0017***</b> (0.0005)	<b>0.0000</b> (0.0007)	<b>0.0028***</b> (0.0007)
chiefceo	<b>0.0136***</b> (0.0039)	<b>0.0063</b> (0.0071)	<b>0.0167***</b> (0.0048)
shrchr10	<b>0.0017***</b> (0.0001)	<b>0.0015***</b> (0.0002)	<b>0.0018***</b> (0.0002)
loss	<b>0.0790***</b> (0.0067)	<b>0.0418***</b> (0.0088)	<b>0.1070***</b> (0.0100)
roa	<b>1.2554***</b> (0.0436)	<b>0.9044***</b> (0.0626)	<b>1.5087***</b> (0.0607)
leverage	<b>0.1108***</b> (0.0096)	<b>0.1122***</b> (0.0133)	<b>0.1056***</b> (0.0137)
size	<b>-0.0135***</b> (0.0016)	<b>-0.0087***</b> (0.0022)	<b>-0.0177***</b> (0.0025)
q	<b>0.0036***</b> (0.0004)	<b>0.0074***</b> (0.0015)	<b>0.0030***</b> (0.0005)
Year Fixed Effect	YES	YES	YES
Industry Fixed Effect	YES	YES	YES
No. of executives	21151	9457	11694
Adj R2	77.48	32.79	48.10

a.\*\*\*, \*\* and \* respectively mean that the test is significant at the level of 1%, 5% and 10%.

Column (1) of Table 2 is the regression of model (4.5) based on the full sample. The results show that the regression coefficient of fund holdings on real earnings management is -0.0033, which is significantly negative at the 1% level. This result is consistent with the expectation of Hypothesis 1. In general, fund holding has a certain inhibitory effect on the real earnings management

activities of listed companies.

In Table 2, the adjusted R<sup>2</sup> is 77.48%, 32.79% and 48.10% respectively, the model has certain explanatory power.

The regression results in Table 3 correspond to hypothesis 3:

**Table.3 Regression of fund holdings, fund industry reform and earnings management**

Variable	Model (4.6)	Model (4.6)	Model (4.6)
	Total Sample (1)	Before 2012 (2)	After 2012 (3)
fundhold	-0.0023*** (0.0008)	<b>-0.0007</b> (0.0015)	<b>-0.0055***</b> (0.0008)
post	-0.0119 (0.0090)		
post×fundhold	<b>-0.0022**</b> (0.0010)		
soe	-0.0247*** (0.0035)	-0.0228*** (0.0064)	-0.0270*** (0.0041)
lnage	0.0252*** (0.0031)	0.0236*** (0.0065)	0.0270*** (0.0033)
institutehold	0.0017*** (0.0005)	0.0001 (0.0012)	0.0022*** (0.0005)
chiefceo	0.0136*** (0.0039)	0.0216** (0.0085)	0.0104** (0.0040)
shrcr10	0.0017*** (0.0001)	0.0024*** (0.0002)	0.0012*** (0.0001)
loss	0.0785*** (0.0067)	0.0623*** (0.0134)	0.0818*** (0.0073)
roa	1.2504*** (0.0437)	1.0132*** (0.0845)	1.3354*** (0.0486)
leverage	0.1108*** (0.0096)	0.1164*** (0.0185)	0.1197*** (0.0106)
size	-0.0137*** (0.0016)	-0.0090*** (0.0033)	-0.0142*** (0.0018)
q	0.0036*** (0.0004)	0.0102*** (0.0021)	0.0030*** (0.0004)
Year Fixed Effect	YES	YES	YES
Industry Fixed Effect	YES	YES	YES
No. of executives	21151	7716	13435
Adj R <sup>2</sup>	75.85	40.05	59.59

a.\*\*\*, \*\* and \* respectively mean that the test is significant at the level of 1%, 5% and 10%.

The (1) column of Table 3 is the regression of the model (4.6) based on the full sample. The results show that the regression coefficient of the cross multiplier of the time dummy variable and the fund shareholding ratio is -0.0022, which is significantly negative at the 5% level. The adjustment R<sup>2</sup> of the regression results is 75.85%, which has a good explanatory power for the model. This

result is consistent with the expectation of Hypothesis 3. Compared with that before 2012, with the standardization of China's fund industry after 2012, the restrictive effect of fund shareholding on the real earnings management behavior of listed companies is strengthened.

In order to test the robustness of hypothesis 3 regression results, this part regresses the model (4.6) based

on samples in 2011 and before and in 2012 and after. The regression results are incorporated into Table 3. The results show that the regression coefficient of fund shareholding on earnings management is negative in the sample in 2011 and before, but the degree of influence is not significant. In the 2012 and subsequent samples, the regression coefficient of fund holdings on earnings management was -0.0055, and significant at the 1% level. The result is consistent with the result of setting cross-product term.

## 6 Conclusions

### 6.1 Research Conclusions

Based on the Shanghai and Shenzhen A shares in 2006-2017 panel data of listed companies as samples, this paper establishes regression model empirically the fund shareholding relationship with the level of real earnings management of listed companies, and join the virtual enterprise nature and time node virtual variables, discusses on the space enterprise nature influence on fund earnings management governance, in time to investigate 2012 fund changes impact on fund earnings management governance. Based on the analysis of empirical results, the following conclusions can be drawn:

(1) Fund shareholding can limit the management's real earnings management activities by supervising the management and checking the major shareholders, and effectively play the role of earnings management governance.

(2) Fund holdings and real earnings management level in state-owned sample correlation is not significant, the non-state-owned samples is significantly negative correlation and correlation coefficient absolute value coefficient of the whole sample, shows that state-owned enterprise is because of the high ownership concentration, insider control and management of multiple objectives and weakened the surplus management of fund governance role.

(3) The cross multiplication of the dummy variables before and after the time node is significantly negatively correlated with the real earnings management level. This indicates that the reform of the fund industry, on the one hand, strengthens its healthy and rapid development, expands its strength and improves its governance capacity through strengthening regulation; on the other hand, loosens the regulation to reduce the restrictions on the participation of funds in governance, effectively strengthening the earnings management supervision effect of fund holdings.

### 6.2 Limitations and Research Suggestions

1. In terms of variable setting, this paper only studies the impact of fund shareholding on real earnings management. This paper holds that the governance effect of fund shareholding on earnings management is mainly reflected in its influence on operating activities and business decisions at ordinary times, while its influence on earnings control of accrual items in accounting end statements may

not be obvious. Therefore, real earnings management is taken as the main explanatory variable. In fact, accrual earnings management is more and more restricted by accounting standards and laws and regulations in recent years, but it is still the most traditional and common way of earnings management. In future studies, we can pay attention to the impact of accrued earnings management of fund holdings and compare it with the study in this paper.

2. In theoretical analysis, this paper does not distinguish between the two mechanisms of earnings management benefit of fund holding. In the existing literature in China, most of the researches on fund shareholding participating in corporate governance refer to the theoretical analysis system of foreign fund shareholding researches, and this paper is no exception. This paper does not discuss whether the two mechanisms of supervising management and checking and balancing major shareholders still play a significant role in China's relatively unstable and immature capital market, and which one is the more important influence path. In the future research, we can combine the specific situation of Chinese financial market to further study the impact of these two mechanisms on earnings management.

## References

1. Xiaojun W., "Empirical study on the relationship between securities investment funds and stock market volatility", Beijing, *University of International Business and Economics*, 2018.
2. Wei L., "An Empirical Study on correlation between Fund Holding and Performance of Listed Companies", *Shanghai Economic Review*, 2002(06):58-62.
3. Zhiyuan Z., Dongling C., Xiaokai W., "To 'supervise the management' or 'restrain the major shareholders', fund holdings on the value of Listed companies in China", *Journal of Financial Research*, 2018(12)157-173.
4. Kai H., "On Shareholder Activism: Overseas Experience and Practice in China", Beijing: *Beijing Jiaotong University*, 2018.
5. Dapeng T., Meiqi W., "Can shareholding of social security fund reduce the degree of earnings management", *Financial Statement*, 2018(04)15-26.
6. Shuqiang C., "Empirical Research on the Relationship between institutional Investors' shareholding and accounting Earnings information of listed companies", *Management World*, 2006 (9) :129 - 136.
7. Lei G., Jie Z., "Corporate governance, Institutional investors and earnings management", *Accounting Research*, 2008(09):64-72+96.
8. Haiyan Y., Dehong W., Jian S., "Can institutional investors improve the accounting information quality of listed companies?-- Also on the differences between different types of institutional investors", *Journal of Accounting Research*, 2012,(9):16-23+96.
9. Roychowdhury S., "Earnings Management through Real Activities Manipulation", *Journal of Accounting*

*and Economics*, 2006, 42(3): 335-370.

10. Zang A Y., “Evidence on the Trade-Off between Real Activities Manipulation and Accrual-Based Earnings Management”, *The Accounting Review*, 2012, 87 (2): 675-703.