

An Empirical Study on the Performance of Heterogeneous Institutional Investors and A-share Enterprises

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Abstract. Taking China's A-share listed companies from 2008 to 2020 as the research object, this paper studies the impact of institutional investors' shareholding ratio on corporate performance. The results show that the shareholding of institutional investors can significantly increase the performance of enterprises; Considering the different nature of institutional investors, they can be divided into stable institutional investors, transactional institutional investors, pressure resistant institutional investors and pressure sensitive institutional investors. It is found that stable institutional investors and pressure resistant institutional investors have more significant effects on corporate performance than their control groups. Taking into account the difference in supervision of enterprises between pressure-resistant institutional investors and pressure-sensitive institutional investors, combined with the nature of the ultimate controller of enterprises, the study finds that only pressure-resistant institutional investors have a significant impact on the performance of state-owned enterprises.

Keywords: heterogeneity; Institutional investors; Corporate performance.

1. Introduction

Institutional investors in the capital market of western developed countries have become important participants in the capital market. As an emerging economy in transition, the emergence of institutional investors in China was later than that of Western developed countries. The mutual fund that appeared in the early 1990s marked the emergence of Chinese institutional investors (Li Zhengguang et al., 2014). In 2004, "Several Opinions of The State Council on Promoting the Reform, opening up and Stable Development of the Capital Market" pointed out that it is hoped that through the intervention of institutional investors, the investment structure of China's stock market can be improved and the further development of listed companies can be promoted by market forces. Since then, professional institutional investors have developed rapidly, the institutionalization process has accelerated, and the market value of tradable shares held by professional institutional investors has further increased, rising from 18% at the beginning of 2019 to 24.6% at the end of 2021.

The role of institutional investors in corporate governance has been the focus of academic attention. Compared with minority shareholders, institutional investors have advantages in terms of industry expertise and information collection, etc. However, no consensus has been reached on the function of institutional investors in improving corporate governance level and enhancing corporate performance. In China's stock market, this issue is still to be studied. Different from the development process of western institutional investors, the development of institutional investors in our country is a top-down process. Besides, the ineffective control market of our capital market, the particularity of stock ownership structure of listed companies and the serious defect of corporate governance structure will affect the role of institutional investors indirectly. In addition, as an emerging economy, the legal system, capital market system and institutional environment are often in the process of reform (Long Zhenhai 2010). In such an environment, how institutional investors, different types of institutional shareholders and the companies themselves affect corporate performance is the focus of this paper.

2. Literature review and hypothesis

Previous studies on institutional investors' shareholding mainly focus on two aspects: one is the governance effect of institutional investors; The second is the classification of institutional investors.

Institutional investors mainly refer to securities investment funds, social security funds, enterprise annuities, trust companies, insurance companies, finance companies, brokerages and QFII.

As for the effect of institutional shareholding behavior on corporate governance, scholars have different views. One view is that institutional shareholding significantly improves corporate performance: Woidtke (2002) found that the performance appraisal and incentive mechanism of private pensions promoted them to form alliances with other shareholders, thus making the supervision of holding companies more effective. The increase of institutional shareholding will significantly improve the performance of holding companies. At the same time, there is a positive correlation between the shareholding ratio of private pension funds and the Tobin Q value of companies. The author holds that the managers of private pension funds are motivated and their remuneration is linked to the performance basis, so they have the motivation to supervise the company's behavior and promote the improvement of the company's value. Cornett et al. (2007) have shown that stress-insensitive institutional shareholding can significantly improve corporate performance. Qian Lu and Xiao Xing et al. found that securities investment funds played a role in promoting the improvement of corporate performance when selecting companies with good investment performance and corporate governance for investment. Institutions are not speculative traders. The salary system and high elimination rate of fund managers encourage them to pay more attention to the long-term performance of the company's performance, and they vote with their hands while voting with their feet. Shi Meijuan and Tong Weihua (2009) empirically analyzed the relationship between the shareholding ratio of institutional investors and corporate value in the post-reform period by collecting the data of listed companies that have completed the stock reform. Zhang Dixin (2018) et al. found that the increase of institutional shareholding ratio and shareholding stability significantly improved corporate performance and reduced its risk. Both stable institutional shareholding significantly reduced corporate performance risk. Chen Shuqiang (2006) found that the higher the proportion of institutional shareholding, the more effectively the earnings management behavior of manipulating accrual profits can be inhibited and the authenticity of earnings information can be enhanced, indicating that the participation of institutional shareholding in corporate governance can improve the corporate governance structure and make the operation of listed companies more standardized and effective.

Another view is that institutional shareholding has no effect on improving corporate performance. According to Bhidé's research, institutions will choose companies with good performance in the current period to hold shares, but when the company's performance declines, institutions are more inclined to sell the company's stock to maintain good liquidity, and institutional shareholding can not improve the company's performance. According to Pound (1998), in addition to the above effective supervision hypothesis, there may also be two theories on the impact of institutional investors on corporate value. One is the conflict of interest hypothesis, that is, institutional investors themselves also have principal-agent problems and may support the plans of corporate executives for their own interests, which will lead to the damage of supervision function and the decline of corporate value. The second is the strategic cooperation hypothesis, in which institutional investors and senior executives find that cooperation is more beneficial to their own interests, and such cooperation reduces the effect of supervision on senior executives, thus damaging the interests of other investors. Both of these hypotheses hold that institutional investors harm the interests of external investors, which will lead to the decline of corporate value. Long Zhenhai (2010) tested the relationship between institutional investors and corporate value, and found that due to the significant differences between China's institutional background and that of western developed countries, institutional investors have not fully played an active role in governance in China, and cannot significantly improve the value of holding companies.

As for the classification of institutional investment, scholars have different directions. Brickley et al. can classify institutional investors as "pressure-sensitive" and "pressure-resistant" according to whether they have business relations and interest conflicts with listed companies. This is also the method adopted by many scholars later and has achieved good results. Among them, pressure-sensitive refers to the institutional investors who have business relations and conflicts of interest with the investee enterprises and are concerned about interfering in the actions of the enterprises. Banks and insurance companies belong to this type of institutional investors. "Pressure resistant" institutional investors, such as public pension funds

and endowment funds, have no business connection with the investee and will intervene or reject the behavior of the company management that damages the interests of the company.

Based on Brickley's classification of institutional investors and Wang Xinhong's research (2018), securities investment funds, social security funds and QFII are classified as pressure-resistant institutional investors, while securities firms, insurance companies, trust companies, finance companies and enterprise annuity are classified as pressure-sensitive institutional investors. Among them, pressure-sensitive institutional investors have certain business connections with their enterprises, which determines that they pay more attention to their own immediate interests rather than governance issues related to the long-term development of enterprises. Therefore, the enthusiasm of such institutions to participate in operation, management and decision-making is limited. However, since there is no commercial (or potential) relationship between pressure-resistant institutional investors and the enterprises they hold, they do not have to worry about being pressured by the management. They are more inclined to play a role in corporate governance with a "long-term vision", pay more attention to the long-term development of enterprises, and play a positive impact on reducing information asymmetry and agency costs, so as to improve the financing predicament of enterprises.

Niu Jianbo (2013), a domestic scholar, divided institutional investors into stable institutional investors and transactional institutional investors by constructing the relative stability index of institutional investors in the industry based on the annual industry median. Moreover, when institutional investors are stable with concentrated equity, state-owned holding companies try to improve the degree of voluntary information disclosure, and the role of different types of institutional investors is affected by the power structure of shareholders. Major shareholders and state-owned controlling shareholders seem to be more willing to improve the degree of voluntary information disclosure, so as to cooperate with the governance activities of stable institutional investors. And curb the short-term behavior of transactional institutional investors. Li Zhengguang et al. (2014) believe that stable institutional investors are more likely to supervise and influence the management of the company; While transactional institutional investors are more inclined to earn spreads through frequent trading and do not pay attention to the supervision of company management. Compared with transactional institutional investors, stable institutional investors have a more significant impact on corporate performance. Different types of institutional investors have different effects on corporate governance. If institutional investors are not differentiated in the study of corporate governance effects of institutional investors, and only the corporate governance effects of institutional investors are studied from the perspective of institutional investors as a whole, the conclusion may be biased. Therefore, from the perspective of heterogeneity of institutional investors, this paper examines the impact of institutional investors as a whole and different types of institutional investors on corporate performance, so as to deepen the research in the field of corporate governance effect of institutional investors. Based on this, we propose to add hypotheses H1, H2a, H2b

H1: The shareholding ratio of institutional investors is positively correlated with the performance of enterprises

H2a: Compared with transactional institutional investors, stable institutional investors' shareholding has a more significant impact on corporate performance.

H2b: Compared with pressure-sensitive institutional investors, the shareholding of pressure-resistant institutional investors has a more significant impact on corporate performance.

At the same time, few scholars also consider the effect of the nature of the company itself on the efficiency of institutional investors' shareholding. Previous studies have shown that listed companies with different property rights have great differences in corporate governance models, development goals and other aspects. Compared with non-state-owned enterprises, state-owned enterprises generally have the problem of lack of owners, which leads to low efficiency. At the same time, state-owned enterprises bear social responsibility as well as economic benefit. Managers of state-owned enterprises are also more inclined to invest in projects with less risk. When institutional investors hold shares in soes, it is difficult to fully demonstrate their supervisory and governance role, and their impact on soes is much lower than that of non-state-owned enterprises. In contrast, non-state-owned enterprises have clear property rights, less government intervention, and higher marketization degree. At the same time, managers often have high target

assessment requirements for corporate performance, with the goal of maximizing corporate value, and institutional investors are more motivated to participate in corporate internal governance. Therefore, it is easier for institutional investors to play the role of governance and enhance corporate value by supervising managers' risk taking behaviors.

Stress-resistant institutional investors do not have business contacts with the companies they hold, and they tend to play an active role in corporate governance with a "long-term vision". They participate in corporate governance in the form of "three meetings" within the company, urging enterprises to proactively disclose relevant information, strengthen the construction of corporate financial transparency, improve information transparency and reduce agency costs. However, pressure-sensitive institutional investors lack the motivation to supervise, so their influence in state-owned enterprises with difficult supervision is limited.

Wang Xinhong (2018) believes that state-owned enterprises tend to be more administrative, and there are many problems in the allocation of property rights and internal governance. From the perspective of enterprise risk control, non-state-owned enterprises have stronger risk awareness. Xu Guoyi (2017), Liu Yunguo et al. (2016) pointed out that compared with state-owned enterprises, non-state-owned enterprises tend to be more proactive in establishing a relatively complete internal control system, and the participation of non-state-owned shareholders in high-level governance is conducive to improving the quality of internal control of state-owned enterprises. At the same time, Lu Wenhua (2016) also pointed out that active institutional investors promote the reform of state-owned enterprises, and the higher the level of independent institutional investors' shareholding, the more effective the governance of state-owned enterprises will be, and the improvement and effective operation of the internal control system of state-owned enterprises will be promoted. Ji Marie (2017) demonstrated that compared with state-owned enterprises, the shareholding of institutional investors in non-state-owned enterprises is more conducive to promoting institutional investors to improve the level of enterprise risk taking. Xia Ning (2018), referring to the studies of Xu Shoufu et al. (2013) and Deng Deqiang et al. (2014), regarded securities investment funds, social security funds and QFII as independent institutional investors. (i.e., the pressure-resistant institutional investors mentioned above) and the others were regarded as non-independent institutional investors and found that independent institutional investors played a more important and prominent role in the governance of state-owned enterprises. Shanghangbiao (2022) found that when institutional investors hold state-owned enterprises, their supervisory and governance functions cannot be fully demonstrated, and their impact on state-owned enterprises is much lower than that of non-state-owned enterprises.

Therefore, based on the above literature, the following hypothesis is proposed:

H3: Considering the nature of enterprise controller, compared with non-state-owned enterprises, pressure-resistant institutional investors in state-owned enterprises have a more significant impact on enterprise performance than pressure-sensitive institutional investors.

3. Research Design

3.1. Sample selection and data

The research samples in this paper are all A-share listed companies listed in China from 2008 to 2020, and the relevant financial data in this paper are from the CSMAR database. The data of institutional investors' shareholding ratio are from RESST database. The sample selection process of this paper is as follows: (1) the observed value of financial industry is excluded; (2) the observations that the nature of the ultimate controller of the enterprise cannot be judged and are missing are excluded; (3) the missing observations of other control variables are eliminated; (4) the observation value missing the data of the shareholding ratio of institutional investors is excluded; (5) The abnormal observations were excluded, and the data were processed at 1% (99%) level.

3.2. Selection of variables

3.2.1. Measurement of enterprise performance

Based on Li Zhengguang's research, ROA and EPS are used to measure corporate performance. ROA earnings per share EPS can reflect the use efficiency of the total assets of the enterprise and the profitability of shareholders, which measures the performance of the enterprise from the level of accounting performance.

Tobin Q is not used here to measure corporate performance. As China's stock market is too speculative, greatly affected by external speculation, and its effectiveness is not high, the company's stock price often fluctuates violently up and down, which is seriously divorced from the company's performance, and the market value of listed companies cannot accurately reflect their future cash flows. Using the value that reflects the market value may cause bias to the research results.

3.2.2. Classification of heterogeneous institutional investors

We refer to the division method of institutional investors proposed by Niu Jianbo and Li Zhengguang to define stable institutional investors and transactional institutional investors. The specific calculation formula is as follows:

$$\begin{cases} SD_{i,t} = \frac{INVH_{i,t}}{STD(INVH_{i,t-3}, INVH_{i,t-2}, INVH_{i,t-1})} \\ INVW_{i,t} = \begin{cases} 1, SD \geq MEDIAN_{i,t}(SD_{i,t}) \\ 0, \text{Other} \end{cases} \end{cases} \quad (1)$$

Where $INVH_{i,t}$ represents the proportion of shares held by institutional investors in company i in year t ; $STD(INVH_{i,t-3}, INVH_{i,t-2}, INVH_{i,t-1})$ represents the standard deviation of institutional investor shareholding of company i in the previous three years; $SD_{i,t}$ represents the ratio of company i 's institutional investor shareholding in year t to its standard deviation of institutional investor shareholding in the previous three years; $MEDIAN_{i,t}(SD_{i,t})$ represents the median of j in the SD industry in year t ; $INVW_{i,t}$ dummy variable is the identifier of the stability of institutional investors. When $SD_{i,t} \geq MEDIAN_{i,t}(SD_{i,t})$, the value is 1, indicating that the institutional investors of company i in year t are stable institutional investors; otherwise, the value is 0, indicating that the institutional investors of company i in year t are transactional institutional investors.

As for the division of the shareholding of pressure-sensitive and pressure-resistant institutional investors, we calculate the shareholding ratio of two kinds of institutional investors according to the division standard. When the shareholding ratio of pressure-resistant institutional investors is greater than or equal to the shareholding ratio of pressure-sensitive institutional investors, $PR=1$ is set as the dummy variable, and the rest is 0.

3.3. Other relevant control variables

Based on previous studies, the following variables are controlled in this paper: asset-liability ratio LEV , enterprise $SIZE$, price-to-book ratio MB , ultimate controller nature SOE ; In order to control the impact of year and industry on firm performance, we also added year and industry dummy variables to the regression model.

3.4. Establishment of the model

Model (2) is adopted to test the impact of institutional investors' shareholding on corporate performance

$$Perf = \beta_0 + \beta_1 INVH_{i,t} + \beta_2 LEV_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 MB_{i,t} + \beta_5 SOE_{i,t} + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (2)$$

Where, $Perf$ is enterprise performance, measured by ROA and EPS respectively; $INVH$ is the shareholding ratio of institutional investors; LEV is corporate asset-liability ratio; $SIZE$ is the enterprise size;

MB is enterprise price-to-book ratio; *SOE* is the virtual variable of ultimate controlling human nature; $\sum Year$ is the annual dummy variable; $\sum Industry$ is the industry dummy variable; $\varepsilon_{i,t}$ is the error term.

Model (3) and model (4) were used to examine the impact of institutional investor heterogeneity on firm performance

$$Perf = \beta_0 + \beta_1 INVW_{i,t} + \beta_2 LEV_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 MB_{i,t} + \beta_5 SOE_{i,t} + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (3)$$

Where, *INVW* is the virtual variable of the stability of enterprise institutional investors, and other variables are defined as above. If β_1 is significantly positive, it indicates that stable institutional investors have a more significant impact on firm performance than transactional institutional investors

$$Perf = \beta_0 + \beta_1 PR_{i,t} + \beta_2 LEV_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 MB_{i,t} + \beta_5 SOE_{i,t} + \sum Year + \sum Industry + \varepsilon_{i,t} \quad (4)$$

Where, *PR* is the dummy variable of pressure sensitivity of institutional investors. 1 is taken when institutional investors are pressure resistant, and 0 is taken otherwise. Other variables are defined as above. If β_1 is significantly positive, it indicates that, compared with pressure-sensitive institutional investors, pressure-resistant institutional investors have a more significant impact on corporate performance.

The specific variables mentioned above are defined in Table 1

Table 1 Table of variable definitions

Variable Names	Variable code	Variable definition
Return on assets	<i>ROA</i>	Net profit/average total assets
Earnings per share	<i>EPS</i>	Net profit/number of common shares
Proportion of shares held by institutional investors	<i>INVH</i>	Number of shares held by institutional investors/total shares
The dumb variable of institutional investor stability	<i>INVW</i>	The value is 1 when the institutional investor stability indicator SD is greater than or equal to the median of its industry and the same year
The proportion of shareholding of stress-resistant institutions	<i>PRJG</i>	Number of shares held by stress-resistant institutional investors/total shares
Proportion of shares held by stress-sensitive institutions	<i>PSJG</i>	Number of shares held by pressure-sensitive institutional investors/total shares
Dummy variable of stress resistance of institutional shareholders	<i>PR</i>	When enterprise $PRJG \geq PSJG$, the value is 1
Asset-liability ratio	<i>LEV</i>	Total liabilities/total assets
Business size	<i>SIZE</i>	The natural logarithm of the total assets of the business
Price-to-book ratio	<i>MB</i>	Equity market value/equity book value
Ultimate controlling character	<i>SOE</i>	Ultimate controlling person character dummy variable, if the ultimate controlling shareholder of the enterprise is a state-owned enterprise, the value is 1, otherwise it is 0

4. Analysis of empirical results

4.1. Descriptive Statistics

4.1.1. Descriptive statistical analysis of the whole sample

In order to avoid the adverse impact of sample outliers on the empirical results of this paper, we conducted tailing treatment at 1%(99%) level for major continuous variables. The results of specific descriptive statistics of major variables are shown in Panel A in Table 2. Panel A in Table 3 reports the descriptive statistics results of the whole sample, with 25,228 samples after processing. The mean (median) of EPS and ROA were 0.322(0.238) and 0.034(0.033), respectively. The mean (median) shareholding ratio of institutional investors was 35.7%(36%), indicating that the shareholding ratio of institutional investors in listed companies in China reached 35.7%. The proportion of enterprises in the sample was 43.4%, the proportion of stable institutional investors was 50.7%, and the proportion of stress-resistant institutions accounted for 14.1% of the total institutional shareholders.

4.1.2. Descriptive statistics of heterogeneous institutional investors

It can be seen from Panel B that stable institutional investors have significant differences in EPS, ROA, shareholding ratio and mean (median) of company controllers and are larger than those of transactional institutional investors, which fully indicates that there are significant differences in the performance of companies held by institutional investors of different types.

It can be seen from Panel C that the mean (median) EPS and ROA of pressure-resistant investors are significantly higher than those of pressure-sensitive institutional investors, and the proportion of pressure-resistant institutional investors in state-owned enterprises is higher than that of pressure-sensitive investors (0.218/0.45>0.469/0.312). The internal structure of state-owned enterprises is complicated, the supervision is more difficult, the nature of institutional investors they attract is different, and their performance on state-owned enterprises is also different. Therefore, the relationship between the performance of pressure resistant and sensitive investors on state-owned enterprises is more worthy of discussion.

Table 2 Descriptive statistics of the sample

Panel A: Full sample descriptive statistics

Variables	N	mean	sd	min	median	max
EPS	25228	0.322	0.584	2.594	0.238	3.573
ROA	25228	0.034	0.070	0.507	0.033	0.258
INVH	25228	0.357	0.225	0.000	0.360	0.861
LEV	25228	0.460	0.204	0.052	0.459	0.934
SIZE	25228	22.304	1.289	19.317	22.143	26.516
MB	25228	0.619	0.258	0.056	0.615	1.265
SOE	25228	0.434	-	-	-	-
INVW	25228	0.507	-	-	-	-
PRJG	25228	0.045	0.063	0.000	0.019	0.444
PSJG	25228	0.312	0.220	0.000	0.312	0.817
PR	25228	0.141	-	-	-	-

Panel B: Subsample Descriptive Statistics 1

Variables	Stable institutional investors			Transactional institutional investors			Differentiation
	mean	p50	sd	mean	p50	sd	testing mean
EPS	0.358	0.253	0.594	0.284	0.224	0.572	10.035***
ROA	0.036	0.034	0.065	0.031	0.033	0.074	6.030***
INVH	0.430	0.439	0.199	0.281	0.234	0.225	55.776***
LEV	0.469	0.471	0.202	0.450	0.446	0.204	7.316***
SIZE	22.416	22.263	1.338	22.190	22.027	1.226	14.010***
MB	0.617	0.609	0.266	0.621	0.621	0.250	1.198
SOE	0.517	-	-	0.348	-	-	27.514***
Observed values	12794			12434			

Panel C: Subsample Descriptive Statistics 2

Variables	Stress resistant institutional investors			Stress sensitive institutional investors			Difference test
	mean	p50	sd	mean	p50	sd	mean
EPS	0.451	0.354	0.561	0.300	0.222	0.586	14.376 * * *
ROA	0.058	0.055	0.069	0.030	0.030	0.069	22.849 * * *
INVH	0.137	0.096	0.140	0.393	0.405	0.215	68.622 * * *
LEV	0.399	0.386	0.192	0.470	0.471	0.204	19.471 * * *
SIZE	21.999	21.887	1.018	22.355	22.196	1.322	15.306 * * *
MB	0.542	0.528	0.226	0.632	0.631	0.261	19.341 * * *
SOE	0.218	-	-	0.469	-	-	28.499 * * *
Observed value	3562			21666			

Note: The mean difference between the two independent subsamples of stable institutional investors and trading institutional investors was measured using the T-test (Wilcoxon bilateral test); "****", "***" and "*" indicate significant at the 1%, 5% and 10% levels, respectively.

4.2. Correlation coefficient

Table 3 below reports the correlation analysis among the relevant variables. It is found that the correlation coefficients between the dependent variable (ROA, EPS) and the explanatory variable are both less than 0.5, indicating that there is no serious multicollinearity problem. INVH, INVW and PR are significantly positively correlated with EPS and ROA, indicating that the higher the shareholding ratio of institutional investors, the better the corporate performance. Meanwhile, stable institutional investors and pressure-resistant investors have a more significant impact on corporate performance.

Table 3 pearson correlation coefficient

	EPS	ROA	INVH	INVW	YL	LEV	SIZE	MB	SOE
EPS	1	0.847***	0.202***	0.049***	0.121***	0.083	0.325***	0.030***	0.034***
ROA	0.762***	1	0.084***	0.018***	0.176***	0.369	0.037***	0.245	0.095
INVH	0.193***	0.112***	1	0.338***	0.404	0.122***	0.296***	0.006	0.300***
INVW	0.063***	0.038***	0.331***	1	0.167	0.047***	0.088***	0.010	0.171***
PR	0.090***	0.142***	0.397	0.167	1	0.121	0.092	0.120	0.177
LEV	0.100	0.308	0.119***	0.046***	0.122	1	0.433***	0.409***	0.243***
SIZE	0.298***	0.077***	0.306***	0.088***	0.096	0.428***	1	0.590***	0.262***
MB	0.007	0.161	0.001	0.008	0.121	0.393***	0.598***	1	0.252***
SOE	0.052***	0.025	0.297***	0.171***	0.177	0.242***	0.272***	0.255***	1

***, **, and * indicate significant at 1%, 5%, and 10% levels, respectively

4.3. Regression Results

4.3.1. Basic regression

Table 4 Sample based regression

Variables	Institutional investors and firm performance		Institutional investor heterogeneity and firm performance			
	(1) EPS	(2) ROA	(3) EPS	(4) ROA	(5) EPS	(6) ROA
INVH	0.110*** (3.990)	0.009*** (3.088)				
INVW			0.018** (2.335)	0.002** (2.308)		
PR					0.137*** (10.655)	0.019*** (12.491)
LEV	0.845 (23.758)	0.150 (35.158)	0.845 (23.685)	0.150 (35.082)	0.823 (22.964)	0.147 (34.361)
SIZE	0.287*** (29.183)	0.026*** (34.942)	0.295*** (30.929)	0.026*** (36.518)	0.293*** (30.735)	0.026*** (36.145)
MB	0.730 (17.778)	0.083 (22.247)	0.763 (19.389)	0.086 (23.933)	0.758 (19.400)	0.085 (23.935)
SOE	0.006 (0.398)	0.004 (2.734)	0.004 (0.243)	0.003 (2.258)	0.025 (1.642)	0.000 (0.158)
_cons	5.118 (27.171)	0.403 (26.846)	5.240 (28.451)	0.413 (27.693)	5.260 (28.643)	0.415 (27.925)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
N	25228	25228	25228	25228	25228	25228
adj. R ²	0.262	0.254	0.261	0.253	0.267	0.262

Table 4 below performs base regression for the full sample, controlling for industry and annual effects. Columns (1) and (2) of the table examine the relationship between institutional investor ownership and firm performance. The coefficient between INVH, EPS and ROA is significantly positive, indicating that the higher the proportion of institutional investors' shareholding, the better the corporate performance. The coefficient of LEV is significantly negative, indicating that the higher the asset-liability ratio, the worse the corporate performance. The coefficient of SIZE is significantly positive, indicating that the larger the size of

the general enterprise, the better the performance. The coefficient of *MB* is significantly negative, indicating that company performance is negatively correlated with company growth. The coefficient of *SOE* is significantly negative, indicating that the performance of state-owned enterprises is not as good as that of non-state-owned enterprises. This regression result validates hypothesis H1.

Columns (3) and (4) of the table study the influence of stable institutional investors on firm performance. *INVW* is significantly positive for *EPS* and *ROA* coefficients, indicating that stable institutional investors have a more significant impact on corporate performance than transactional institutional investors. The results of the other control variables are basically unchanged.

Columns (5) and (6) of the table study the impact of stress-resistant institutional investors on firm performance. *PR* is significantly positive for *EPS* and *ROA* coefficients, indicating that stress-resistant institutional investors have a more significant impact on corporate performance than pressure-sensitive institutional investors. These results confirm the hypotheses H2a and H2b.

4.3.2. Consider the return of ultimate corporate control over human nature

Table 5 below reflects the regression results when considering the nature of the ultimate controlling person of the firm. Referring to the research of Xia Ning (2018), the dependent variables are *ROA* and *EPS*, and the explanatory variables are regression based on the shareholding ratio of pressure-resistant institutional investors *PRJG* and its interaction with the ultimate controller *SOE* of the enterprise. In contrast, the explanatory variable adopts the regression of the shareholding ratio *PRJG* of pressure-sensitive institutional investors and its interaction term with the ultimate controller *SOE* of the enterprise, and the remaining control variables remain unchanged. It can be seen that the interaction coefficients of *PRJG* and *SOE* are significant, but the regression results for *EPS* and *ROA* are inconsistent. Here, we can conclude that the shareholding of pressure-resistant institutional investors significantly changes the performance of state-owned enterprises. Correspondingly, the interaction term of *PSJG* and *SOE* is positive but the coefficient is not significant, indicating that when the controller of the enterprise is state-owned enterprise, the influence of pressure-sensitive institutional investors on its performance is not significant.

The above results indicate that the nature of the ultimate controller changes the impact of pressure-resistant institutional investors on the performance of enterprises, while the impact of pressure-sensitive institutional investors is not significant. These results confirm hypothesis H3.

Table 5 considers the regression results under the nature of the ultimate controller

Variables	Stress resistant and stress sensitive institutional investor performance			
	(1) EPS	(2) EPS	(3) ROA	(4) ROA
<i>PRJG</i>	1.746*** (15.134)		0.221*** (18.060)	
<i>PRJG*SOE</i>	0.313* (1.683)		-0.080*** (-4.951)	
<i>PSJG</i>		-0.067** (-2.044)		-0.006 (-1.501)
<i>PSJG*SOE</i>		0.065 (1.149)		-0.000 (-0.014)
<i>SOE</i>	0.005 (0.339)	-0.010 (-0.417)	0.002 (1.354)	-0.002 (-0.805)
<i>LEV</i>	-0.808*** (-23.405)	-0.842*** (-23.547)	-0.147*** (-35.201)	-0.150*** (-34.819)
<i>SIZE</i>	0.245*** (24.383)	0.297*** (30.835)	0.021*** (29.387)	0.027*** (36.615)
<i>MB</i>	-0.518*** (-12.645)	-0.778*** (-19.388)	-0.061*** (-16.353)	-0.088*** (-23.965)
_cons	-4.495*** (-23.802)	-5.270*** (-28.445)	-0.340*** (-23.307)	-0.418*** (-27.870)
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
<i>N</i>	25228	25228	25228	25228
adj. <i>R</i> ²	0.292	0.261	0.275	0.254

5. Test for robustness

5.1. Use Tobin Q as a proxy variable for corporate financial performance

Tobin's Q is the ratio of a firm's market value to its replacement cost of capital, and is usually used to represent a variable of the firm's value. Generally, a larger Tobin Q indicates that the market believes that the firm is capable of creating value. Here, we use the sum of the market value of equity capital and the market value of the company's debt capital to represent the company's market value, and use the total assets at the end of the year to replace the replacement cost of the company. The regression results are as follows: the coefficients of *INVH* and *INVW* are significantly positive, consistent with the above, but the regression results of *PR* are contrary to the above. The reason may be that China's stock market is immature, and the market value of listed companies is not accurate to the enterprise value, or it may be related to the irrational Chinese investors.

Table 6 Use Tobin Q as a proxy variable for corporate financial performance

Variables	Institutional investors and corporate performance	Institutional investor heterogeneity and firm performance	
	(1) TobinQ	(2) TobinQ	(3) TobinQ
<i>INVH</i>	0.292*** (5.515)		
<i>INVW</i>		0.077*** (5.054)	
<i>PR</i>			-0.092*** (-3.791)
<i>LEV</i>	0.209** (2.124)	0.207** (2.114)	0.195** (1.980)
<i>SIZE</i>	-0.039** (-2.181)	-0.021 (-1.228)	-0.015 (-0.885)
<i>MB</i>	-4.687*** (-54.423)	-4.766*** (-56.073)	-4.795*** (-55.553)
<i>SOE</i>	0.022 (0.869)	0.042* (1.736)	0.045* (1.872)
<i>_cons</i>	5.476*** (15.307)	5.169*** (14.612)	5.130*** (14.579)
<i>Industry</i>	Yes	Yes	Yes
<i>Year</i>	Yes	Yes	Yes
<i>N</i>	25228	25228	25228
<i>adj. R²</i>	0.604	0.603	0.603

5.2. Consider the impact of corporate governance on business performance

Further control the variables reflecting the corporate governance structure, such as the proportion of independent directors (DDBL), whether the chairman and general manager concurrently serve (JIANREN), the proportion of the largest shareholder (TOP), the proportion of the largest shareholder (TOPSQ), among which the control variable *TOP* (*TOPSQ*) represents the proportion of the largest shareholder (square). The empirical results are shown in Table 9 on the following page. The coefficients of *INVH*, *INVW* and *YL* are significantly positive and have no change with the previous conclusions, indicating that the previous results are robust. Contrary to *TOPSQ* coefficient, (Bai Chong-en et al., 2005) confirmed that the shareholding ratio of the largest shareholder has a significant impact on company value, and this impact is not linear, but U-shaped. The results of this paper are consistent with Bai Chong-en's study

Table 7 considers the influence of corporate intelligence on corporate performance

Variables	Institutional investors and corporate performance		Institutional investor heterogeneity and firm performance			
	(1) EPS	(2) ROA	(4) EPS	(5) ROA	(7) EPS	(8) ROA
<i>INVH</i>	0.198*** (4.257)	0.018*** (3.859)				
<i>INVW</i>			0.017** (2.251)	0.002** (2.407)		
<i>PR</i>					0.168*** (11.756)	0.023*** (13.276)
<i>LEV</i>	-0.840*** (-23.536)	-0.149*** (-34.754)	-0.841*** (-23.529)	-0.149*** (-34.717)	-0.821*** (-22.979)	-0.147*** (-34.372)
<i>SIZE</i>	0.286*** (28.871)	0.026*** (34.563)	0.294*** (30.639)	0.026*** (36.368)	0.288*** (29.860)	0.025*** (35.384)
<i>MB</i>	-0.728*** (-17.692)	-0.084*** (-22.341)	-0.761*** (-19.169)	-0.087*** (-23.514)	-0.728*** (-18.356)	-0.082*** (-22.412)
<i>SOE</i>	0.001 (0.076)	-0.003** (-2.508)	0.004 (0.245)	-0.003** (-2.380)	0.012 (0.810)	-0.002 (-1.571)
<i>DDBL</i>	-0.283*** (-2.982)	-0.039*** (-3.637)	-0.315*** (-3.301)	-0.042*** (-3.878)	-0.340*** (-3.610)	-0.045*** (-4.259)
<i>JIANREN</i>	0.025** (2.070)	0.000 (0.327)	0.022* (1.790)	0.000 (0.143)	0.016 (1.341)	-0.001 (-0.398)
<i>TOP</i>	-0.379*** (-2.758)	-0.045*** (-3.380)	-0.123 (-1.009)	-0.023* (-1.928)	0.295** (2.302)	0.033*** (2.580)
<i>TOPSQ</i>	0.395* (1.859)	0.051*** (2.700)	0.264 (1.248)	0.041** (2.158)	-0.202 (-0.936)	-0.022 (-1.131)
<i>_cons</i>	-4.989*** (-26.061)	-0.383*** (-24.758)	-5.113*** (-27.276)	-0.394*** (-25.770)	-5.080*** (-27.161)	-0.390*** (-25.703)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	24793	24793	24793	24793	24793	24793
<i>adj. R²</i>	0.266	0.257	0.264	0.256	0.272	0.266

***, ** and * indicate significant at 1%, 5% and 10% levels, respectively

5.3. Consider endogeneity issues

In this paper, dummy variables such as investor shareholding ratio, institutional investor stability and pressure sensitivity with a one-stage lag are used to test their impact on firm performance. The regression results are shown in Table 8. In the regression results in Table 8, the shareholding ratio of institutional investors, the coefficients of stable institutional investors and pressure-resistant institutional investors are significantly positive, which is consistent with the conclusions drawn in Table 5.

Table 8 Regression results of explanatory variables with a lag of one period

	(1) EPS	(2) ROA	(4) EPS	(5) ROA	(7) EPS	(8) ROA
<i>LAGINVH</i>	0.155*** (5.436)	0.016*** (5.183)				
<i>LAGINVW</i>			0.024*** (2.984)	0.003*** (3.577)		
<i>LAGPR</i>					0.097*** (7.131)	0.013*** (7.587)
<i>LEV</i>	-0.878*** (-22.158)	-0.153*** (-32.390)	-0.880*** (-22.114)	-0.153*** (-32.313)	-0.865*** (-21.619)	-0.151*** (-31.710)
<i>SIZE</i>	0.296*** (28.308)	0.026*** (33.430)	0.305*** (29.493)	0.027*** (34.712)	0.304*** (29.324)	0.027*** (34.437)
<i>MB</i>	-0.731*** (-16.659)	-0.080*** (-20.511)	-0.768*** (-17.695)	-0.084*** (-21.686)	-0.768*** (-17.729)	-0.084*** (-21.783)
<i>SOE</i>	0.016 (1.012)	-0.002* (-1.692)	0.030* (1.834)	-0.001 (-0.886)	0.046*** (2.871)	0.001 (0.671)
<i>_cons</i>	-5.445*** (-26.089)	-0.420*** (-26.504)	-5.614*** (-27.030)	-0.437*** (-27.481)	-5.628*** (-27.120)	-0.438*** (-27.602)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	21196	21196	21196	21196	21196	21196
<i>adj. R²</i>	0.280	0.262	0.278	0.260	0.280	0.263

***, ** and * indicate significant at the 1%, 5% and 10% levels, respectively

6. Conclusions

This paper selects A-share listed companies from 2001 to 2012 as research samples, examines the impact of institutional investors on corporate performance from the perspective of influencing factors, and starts from the nature of institutional investors. The influence of stable institutional investors and transactional institutional investors (pressure-resistant institutional investors and pressure-sensitive institutional investors) on corporate performance is investigated. The findings of this paper are as follows: (1) There is a significant positive correlation between the shareholding ratio of institutional investors and corporate performance; (2) Compared with transactional institutional investors, stable institutional investors have a more significant impact on corporate performance; Compared with pressure-sensitive institutional investors, pressure-resistant institutional investors have a more significant impact on corporate performance; (3) Considering the nature of corporate controller, the impact of pressure-resistant institutional investors in state-owned enterprises on corporate performance is more significant than that of pressure-sensitive institutional investors in non-state-owned enterprises.

This paper divides institutional investors into different types in detail, confirms the relationship between institutional investors' shareholding and corporate performance, and also examines the impact of different types of institutional shareholders on corporate performance. At the same time, this paper also studies the relationship between the nature of the company's own controller, which has received less attention from domestic scholars, and the improvement of corporate performance by institutional shareholding.

References

- [1] Woidtke T. Agents watching agents?: evidence from pension fund ownership and firm value. *Journal of Financial Economics*, 2002, 63(1): 99-131.
- [2] Cornett M M, Marcus A J, Saunders A, et al. The impact of institutional ownership on corporate operating performance [J]. *Journal of Banking & Finance*, 2007, 31 (6): 1771-1794
- [3] John Pound, Proxy contests and the efficiency of shareholder oversight, [J]. *Journal of Financial Economics*, 20,1988, 237-265.
- [4] James A. Brickley, Ronald C. Lease, Clifford W. Smith, Ownership structure and voting on antitakeover amendments, [J]. *Journal of Financial Economics*, 1988, 20 (1-3): 267-291,
- [5] Shang Hangbiao, Song Xuerui, Wang Zhilin. Supervision and Rescue! Research on the relationship between institutional investor shareholding and enterprise investment efficiency [J]. *Journal of Technical Economics*,202,41(03): 128-138.
- [6] Xia Ning, Yang Shuo. [J]. *Audit Research*,2018, (02): 72-79.]
- [7] Zhang Dixin, Qu Yongzhe. Research on the Impact of Institutional investors' shareholding Persistence on the Performance and Risk of Listed Companies in China [J]. *Systems Engineering Theory and Practice*, 2018, 38(02):273-286. (In Chinese)
- [8] Wang Xinhong, Liu Lijun, Wang Qian. Research on the impact of heterogeneous institutional investors' shareholding on financing constraints. *Journal of Nanjing Audit University*, 2018,15(01): 69-78.]
- [9] Xu Guoyi. Control Rights of Controlling Shareholders, Property rights and Auditor Selection [J]. *Journal of Zhengzhou Institute of Aeronautical Industry Management*, 2017,35(03): 55-69.
- [10] Ji Marie, Du Xiaorong. [J]. *Journal of Enterprise Economics*, 2017,36(03): 117-123.]
- [11] Liu Yunguo, Zheng Qiao, CAI Guilong. [11] Do non-state-owned shareholders improve the quality of internal control in state-owned enterprises? -- Empirical evidence from state-owned listed companies! *Accounting Research*, 2016, (11): 61-68+96.]
- [12] Deng Deqiang, Wen Subin, Pan Linna, LIU Haotian. [J]. Quality of internal control, Heterogeneity of institutional investors and Shareholding Decision: An empirical study based on Self-selection model. *Management Review*, 2014, 26(10): 76-89.
- [13] Li Zhengguang, Zhao Xibu, Cao Feng, Lu Xiaoxuan. Institutional investor heterogeneity and firm performance: Empirical Evidence from Chinese listed companies [J]. *Audit & Economics Research*, 2014, 29(05): 77-87.

- [14] [Xu Shoufu, Li Zhijun.] Institutional investor heterogeneity and corporate governance: a cash dividend policy perspective [J]. Investment Research, 2013, 32(09): 98-111.
- [15] Niu Jianbo, Wu Chao, Li Shengnan. [15] Types, equity Characteristics and Voluntary Information Disclosure of institutional investors [J]. Management Review, 2013, 25(03): 48-59.
- [16] Long Zhenhai. A study on the relationship between Institutional investors and Corporate Value: Evidence from Listed companies' tender offers [J]. Nankai Management Review, 2010,13(04): 35-43.
- [17] Qian Lu. Research on the relationship between institutional investors' shareholding and corporate Performance-- Based on the evidence of China's A-share Listed companies [J]. Economics Trends, 2010, (01): 60-63.]
- [18] [Shi Meijuan, Tong Weihua.] [18] Do institutional investors enhance company value? -- Empirical evidence from the post-stock reform period [J]. Financial Research, 2009, (10): 150-161.
- [19] Zhao Hongjiang, Xia Hui. An empirical study on the relationship between institutional investor shareholding and innovation behavior of listed companies. China Soft Science, 2009, (05): 33-39+54.]
- [20] Cheng Shuqiang. Empirical research on the relationship between institutional investors' shareholding and accounting earnings information of listed companies [J]. Management World, 2006, (09): 129-136.]
- [21] Xiao Xing, Wang Kun. Securities Investment Fund: Investor or Speculator? [J]. World Economy, 2005, (08): 75- 81.
- [22] Bai Chong-En, Liu Qiao, Lu Zhou, Song Min, Zhang Junxi. An empirical study on governance structure of Chinese listed companies [J]. Economic Research Journal, 2005, (02): 81-91.]