A Study of Institutional Investors' Shareholding and Corporate Risk-Taking

Pengchong Li*, #, Zixuan Chen#, Xiang Li#

School of Economics and Management, Beijing Jiaotong University, Beijing, China

*Corresponding author: 20725013@bjtu.edu.cn

#These authors contributed equally.

Abstract. This paper analyzes the relationship and impact of stress-resistant institutional investors and stress-sensitive institutional investors on institutional investors' shareholding on corporate risk-taking, using a sample of A-share listed companies in Shanghai and Shenzhen from 2011 to 2020. It was found that (1) the shareholding ratio of stress-resistant institutional investors was negatively related to the level of corporate risk-taking; (2) while the shareholding ratio of stress-sensitive institutional investors was not significantly related to the level of corporate risk-taking. Studying the impact of institutional investor shareholding on corporate risk-taking, and implementing effective measures to improve the level of corporate risk-taking will help corporates to develop healthily and the economy to grow steadily.

Keywords: Institutional Investors, Corporate Risk-taking, Prosperous Development.

1. Introduction

Since the Securities Commission of the State Council issued the Interim Measures for the Administration of Securities Investment Funds in 1997, the CSRC has actively promoted the development of institutional investors, standardized the market structure, and vigorously supported institutional investors such as securities and funds to invest in the market in a variety of ways. Up to now, China's institutional investors have made steady progress, played a role in supporting and stabilizing the market, and promoted the healthy, sustainable and stable development of the securities market. Compared with individual investors, institutional investors have the characteristics of large size, strong professionalism and fast collection and analysis of information, which can better supervise corporate governance. However, scholars at home and abroad have found that different institutional investors have different attitudes towards corporate governance and play different roles due to their different environments, industries and preferences, which have different impacts on the level of corporate risk-taking. The existing research on risk-taking believes that the level of corporate risk-taking reflects the risk that corporates are willing to bear when facing high profit and high return projects in business activities. At the earliest, some scholars believed that improving the risk-taking level of corporates can promote the increase of innovation enthusiasm, better adapt to the fierce corporate competition in the modern capital market, and promote the development of corporates. Some scholars believe that corporate risk-taking, as an important part of corporate governance, is affected by many factors. Such as the ratio of expected earnings to actual earnings, investor protection measures, etc. In general, improving the level of corporate risk-taking is conducive to the sound development of corporates and steady economic growth. From a macro perspective, the corporate risk-taking capacity is a powerful contribution to the orderly and stable development of the economy and society and promotes the all-around progress of social technology. These all support the positive significance of risk-taking, but the mechanism and impact of institutional investor shareholding on corporate risk-taking are still controversial in academic circles.

Taking the data of Chinese A-share listed companies from 2011 to 2020 as a sample reference, this paper analyzes the factors that institutional investors' shareholding affects corporate governance and corporate performance by sorting out the existing studies on institutional investors' shareholding and corporate risk-taking, and studies the role of institutional investors' shareholding in corporate risk-taking by classifying their heterogeneity.

2. Literature Review

Hartzell (2014) [1] divided into active institutional investors and passive institutional investors according to the regulatory level of different institutional investors on corporate operations. Institutional investors play a decisive role in providing funds for companies, so they will have a great impact on managers' decisions. The active institutional investors will actively supervise the operation of the corporate and reduce the diversification of decision-making in the operation of the corporate. The inactive institutional investors pay less attention to the decision-making of the corporate, and the corporate can make decisions freely, with higher diversification. Elyasiani&Jia (2018) [2] Institutional investors are divided into regulatory institutional investors and transactional institutional investors according to their different investment holding time and objectives. Regulatory institutional investors generally make long-term investments that incorporate through long-term value of corporates and dividend income of shareholders. However, transactional institutional investors, because of their preference for short-term shareholding and their pursuit of obtaining dividends in the short-term rise of stock prices, have no strong motivation to monitor corporates, and may even collude with the management in pursuit of information trading. Corporate risk-taking is a problem that corporates must face in order to obtain economic benefits in the business process. Its level is reflected in the ability to make decisions in the face of various possible threats and losses in the production and operation activities of corporates. For example, in the business activities of corporates, it is reflected in the willingness to take risks and the desire to obtain projects in the face of high profit and high return projects, and in the investment decision-making behavior, it is reflected in the probability of actively choosing high return projects. The principle of risk income matching (Cheng Yan, 2020) [3] also reflects the importance of measuring corporate risk level, which is related to the core interests of corporates. As an important part of corporate governance, the level of corporate risk-taking is affected by various factors at the macro and micro levels, such as the integrity and stability of national economic policies, cultural differences, the promulgation of laws and regulations, the relevance between corporates and government agencies, the decision-making of corporates and shareholders, and the ownership structure of corporates. A good level of risk-taking also provides a basic guarantee for the stable growth of corporate value. The study found that an appropriate level of risk-taking is conducive to improving corporate value. The existing research believes that the main factors affecting corporate risk-taking are: ownership structure, board supervision and employee incentive mechanism.

In recent years, Chinese institutional investors have developed rapidly. As an important part of the capital market, they actively participate in the operation and management of corporates. With the increase of market share, the role of institutional investors' shareholding ratio in the development of corporates has gradually attracted the attention of scholars at home and abroad. Based on the research of ownership structure on corporate risk-taking, we find that ownership concentration will make the risk-taking present a positive and negative U-shaped relationship. If the level of corporate risk-taking is measured by the rate of return, the more centralized the ownership, the lower the level of corporate risk-taking (Pan Hongbo et al., 2014) [4]. If the shareholding ratio of a single shareholder increases, the corporate's risk-taking capacity will also increase accordingly (Chen Wenting, 2008) [5]. However, due to the different composition of shareholders in different corporates and the different nature of the company, the conclusion drawn from this study alone remains to be confirmed. Due to different institutional investors' investment philosophy, risk acceptance ability, and expected rate of return, they will play different roles in corporate governance, thus affecting the level of corporate risk-taking. In addition, different institutional investors have different willingness and methods to supervise corporates, leading to effective or ineffective supervision of corporates (Wang Yao and Guo Zeguang, 2021) [6], which affects the decision-making of the management and leads to different levels of corporate risk-taking.

3. Research hypothesis

This paper distinguishes the types of institutional investors by referring to Brickley et al (1988) [7] on whether there is a business relationship or potential business relationship between institutional investors and the company, and divides institutional investors into stress-resistant institutional investors and stress-sensitive institutional investors. In order to maintain the business relationship with the corporate, stress-sensitive institutional investors often choose to keep a good relationship with the corporate management, so that the management can choose projects "unrestricted". The stress-resistant institutional investors take the fund as an example. The investment threshold is low, and individual investors are the main audience, lacking relevant professional knowledge. Once there is wrong public opinion guidance around, it is likely to have a herd effect, resulting in a large amount of purchase and redemption, forcing fund managers to change their investment strategies, leading to reduced profits. It can be seen from the above analysis that stress-sensitive institutional investors choose not to act on corporate risk aversion, while pressure-suppressed institutional investors pay more attention to corporate risk aversion. Therefore, the following assumptions are made:

H1a: The shareholding ratio of pressure-suppressed institutional investors is negatively related to the level of corporate risk-taking.

H1b: The shareholding ratio of stress-sensitive institutional investors has no significant relationship with the level of corporate risk-taking.

4. Research design

4.1. Sample selection and data source

This paper takes Shanghai and Shenzhen A-share listed companies from 2011 to 2020 as the research sample. Eliminate companies with insufficient information disclosure; Companies excluding st and * st; Excluding listed companies in the financial industry; The data shall be shrunk by 1%; Remove samples with missing data. Finally, 17487 observation samples were obtained for research. The data are from the CSMAR database.

4.2. Definition and description of key variables

4.2.1 Corporate risk-taking level

Learn from Yu Minggui and other research indicators to measure the level of risk-taking. It is measured by the volatility of the corporate's profitability, that is, the standard deviation (EBITDA/total assets at the end of the period) adjusted by the industry average value from year t-1 to year t+1 is calculated on a rolling basis.

4.2.2 Shares held by institutional investors

Referring to the existing relevant research on institutional investors, in order to highlight the differences in the independence of institutional investors and make data easy to obtain, this paper focuses on the Brickley approach. The proportion of shares held by stress-resistant institutional investors (SEN) is equal to the sum of shares held by three types of institutional investors among the top ten shareholders. The shareholding ratio of stress-sensitive institutional investors (RES) is equal to the sum of the shareholding ratios of five types of institutional investors among the top ten shareholders.

4.2.3 Control variables

With reference to previous research on this subject by Wang Yuting and Liu Yu (2019) [8], Ji Marie and Du Xiaorong (2017) [9], Li Hanqiao (2016) [10] and Fu Wei (2017) [11], control variables as shown in Table 1 are selected.

Table 1. Variable Definition

Variable type	Variable name	Variable Symbolic	Variable Description
dependent vari able	corporate risk-taking level	RISK	Measure the level of corporate risk-taking based on the volatility of annual profits within the three-year observation period
independent variables	heterogeneity of institutional investors	RES	The sum of the shares held by the fund, QFII (Qualified Foreign Institutional Investor) and social security fund among the top ten shareholders
		SEN	The sum of shareholding proportions of five categories of institutional investors among the top ten shareholders: securities companies, insurance companies, trust companies, financial companies and banks
control variables	heterogeneity variable of institutional investors	SIZE	corporate scale, measured by the natural logarithm of the total assets of the corporate in the current year
		LEV	Asset-liability ratio, measured by the ratio of total liabilities to total assets of the corporate in the current year
		CFO	free cash flow, the ratio of total cash flow to total assets of the corporate in the current year
		PPE	fixed assets, the ratio of fixed assets to total assets of the corporate in the current year
		TOBINQ	Tobin Q, the ratio of listed market value to total assets
		ROA	Return on total assets, the ratio of quarterly net income to total assets
		DUAL	Two positions are held concurrently, including the general manager and the chairman of the board. The value is 1 for part-time jobs and 0 for a non-part-time job
		TOP1	The shareholding ratio of the largest shareholder, and the proportion of the largest shareholder in the total shares of the corporate
		INPAY	The remuneration of senior managers is measured by the natural logarithm of the top three
		CHOLD	Management shareholding ratio, the sum of management shareholding ratio
		SOE	Property right nature: when the property right nature of the corporate is state-owned corporate, the value is 1; when the property right nature of the corporate is private corporate, the value is 0
		AGE	Number of years listed
		YEAR	control year factors
		INDUSTRY	control industry factors

4.3. Model design

Establish model (1) to test hypothesis H1a.

$$Risk = \beta_0 + \beta_1 RES_{i,t} + \beta' Control_{i,t} + \sum Industy + \sum Year + \varepsilon_{i,t} \quad (1)$$

According to the assumption, β_1 is significant and positive.
Establish model (2) to test hypothesis H1b.

$$Risk = \beta_0 + \beta_1 SEN_{i,t} + \beta' Control_{i,t} + \sum Industy + \sum Year + \varepsilon_{i,t} \quad (2)$$

According to the assumption, β_1 is not significant.

5. Empirical analysis

5.1. Descriptive statistics

Descriptive statistics were conducted for the selected main variables, and the analysis results are shown in Table 2. $Risk$ in Table 2 is the level of corporate risk-taking, with the average value of 0.0405. The value of the volatility index representing the corporate's earnings is 0.0425, the standard deviation is 0.102, the minimum value is 0.000182, and the maximum value is 6.095. This indicates that the overall difference in incorporated risk-taking level under the earnings volatility index is very large. RES refers to the proportion of stress-resistant institutional investors in the corporate. The average is 5.21%, the standard deviation is 0.0834, the minimum value is 0, and the maximum value is 87.0%; SEN is the proportion of stress-sensitive institutional investors in the corporate, with an average of 0.82%, a standard deviation of 0.0249, a minimum of 0, and a maximum of 58.8%. This shows that, on the whole, the shareholding ratio of stress-sensitive institutional investors and stress-sensitive institutional investors is low, and the latter is smaller than the former. According to the analysis of the classification standard of institutional investors, public offering and social security funds are classified as stress-resistant, and their shareholding ratio is usually high.

Table 2. Descriptive Statistics of Main Variables

Variable	N	Mean	SD	Min	Max
Risk	17487	0.0405	0.102	0.000182	6.095
RES	17487	0.0521	0.0834	0	0.870
SEN	17487	0.00820	0.0249	0	0.588
LIQ	17487	-0.0550	0.106	-6.169	-0.000487
Size	17487	22.37	1.317	19.72	26.27
Lev	17487	0.452	0.211	0.0518	0.913
Cfo	17487	-0.00938	0.0993	-0.326	0.264
Ppe	17487	0.223	0.170	0.00162	0.719
Tobinq	17487	2.026	1.372	0.855	9.022
Roa	17487	0.0519	0.0634	-0.207	0.246
Dual	17487	0.232	0.422	0	1
Top1	17487	0.340	0.149	0.0841	0.743
Lnpay	17487	14.36	0.725	12.63	16.39
Chold	17487	0.0858	0.161	0	0.636
Soe	17487	0.442	0.497	0	1
Age	17487	2.821	0.375	0	3.761

5.2. Relationship between institutional investor shareholding and corporate risk-taking level

The mixed panel analysis model is selected in this paper. To verify the relationship between the stress-resistant institutional investors and the stress-sensitive institutional investors and the level of corporate risk-taking, we have established models (1) and (2). The regression analysis results are shown in the (1) and (2) columns of Table 3.

It can be observed from the (1) column in Table 3 that the regression coefficient between the stress-resistant institutional investors (RES) and the corporate risk level ($Risk$) is -0.0323, which is significant at the level of 1%. Because the control variables of corporate finance and corporate governance are added at the same time, it shows that the shareholding ratio of stress-resistant institutional investors is negatively related to the level of corporate risk-taking, supporting hypothesis H1a: stress-resistant institutional investors inhibit the level of corporate risk-taking. Looking back at column (2), it can be observed that the regression coefficient between the stress-sensitive institutional investors (SEN) and the corporate risk-taking level is 0.0299, which is not significant, indicating that the stress-sensitive institutional investors have no significant impact on the corporate risk-taking level, supporting the hypothesis H1b. In order to ensure the robustness of the results, we analyze the two types of institutional investors as explanatory variables at the same time, and the results are consistent

with the above. Therefore, it can be shown that considering the shareholding of heterogeneous institutional investors at the same time will not lead to changes in the results. The regression coefficient between corporate size and risk is negative and significant at the 1% level, indicating that the larger the corporate size is, the weaker the risk-taking level is. This may be related to the low volatility of corporate profits of large-scale companies.

On the whole, this paper believes that the stress-resistant institutional investors (RES) and the corporate risk-taking level ($Risk$) are significantly negatively correlated, while the stress-sensitive institutional investors (SEN) have no significant relationship with the corporate risk-taking level. The stress-resistant institutional investors have their special and strong independence, and are easy to play their governance role in corporate governance and risk management and control, thus enhancing the risk-taking capacity of corporates; However, stress-sensitive institutional investors, because of their commercial interest relationship with the corporate, have no significant impact on the level of corporate risk-taking without strong independence.

Table 3. Institutional investors' shareholding and corporate risk-taking level

	(1)	(2)	(3)
VARIABLES	Risk	Risk	Risk
RES	-0.0323***		-0.0327***
	(-3.14)		(-3.17)
SEN		0.0299	0.0334
		(0.97)	(1.09)
Size	-0.0048***	-0.0054***	-0.0049***
	(-5.01)	(-5.67)	(-5.09)
Lev	0.0289***	0.0291***	0.0290***
	(6.10)	(6.13)	(6.12)
Cfo	-0.0039	-0.0036	-0.0039
	(-0.49)	(-0.45)	(-0.48)
Ppe	-0.0104*	-0.0099*	-0.0105*
	(-1.89)	(-1.79)	(-1.90)
Tobinq	0.0094***	0.0089***	0.0094***
	(13.09)	(12.70)	(13.08)
Roa	-0.0938***	-0.1042***	-0.0939***
	(-6.63)	(-7.57)	(-6.64)
Dual	-0.0001	-0.0002	-0.0001
	(-0.07)	(-0.08)	(-0.04)
Top1	-0.0027	-0.0009	-0.0023
	(-0.49)	(-0.16)	(-0.42)
Lnpay	0.0026**	0.0023*	0.0026*
	(1.98)	(1.73)	(1.95)
Chold	0.0017	-0.0010	0.0017
	(0.28)	(-0.17)	(0.29)
Soe	-0.0096***	-0.0097***	-0.0095***
	(-5.16)	(-5.19)	(-5.13)
Age	0.0043*	0.0047*	0.0043*
	(1.70)	(1.87)	(1.68)
Constant	0.1094***	0.1235***	0.1117***
	(4.79)	(5.46)	(4.87)
Observations	17,487	17,487	17,487
R-squared	0.063	0.062	0.063
YEAR	FIXED	FIXED	FIXED
INDUSTRY	FIXED	FIXED	FIXED
F	28.46	28.23	27.81
r2_a	0.0605	0.0600	0.0605

The value in the bracket is t-statistics; "*", "* *" and "* * *" indicate that the correlation coefficient is significant at the significant level of 10%, 5% and 1% respectively (double-tailed).

6. Conclusion

This paper concludes that (1) the shareholding ratio of stress-resistant institutional investors is negatively related to the level of corporate risk-taking; (2) There is no significant relationship between the shareholding ratio of stress-sensitive institutional investors and the level of corporate risk-taking. On the other hand, conclusion (1): the negative correlation between the shareholding ratio of stress-resistant institutional investors and the level of corporate risk-taking, to a certain extent, shows that stress-resistant institutional investors will supervise executives to reduce short-term utilitarian behaviour in order to obtain long-term and stable returns, which may bring about the possibility that the performance level of corporates will decline in a short time, thus leading to a short-term reduction in the level of corporate risk-taking. The analysis conclusion of this paper (2) There is no significant relationship between the shareholding ratio of stress-sensitive institutional investors and the level of corporate risk-taking, which may be due to the following reasons: stress-sensitive institutional investors have business contacts or potential business contacts with corporates and have the advantage of convenient access to information, so stress-sensitive institutional investors maintain an "inaction" attitude towards corporate governance and corporate risk-taking, Therefore, there is no significant relationship between the shareholding ratio of stress-sensitive institutional investors and the level of corporate risk-taking.

Listed companies distinguish between state-owned corporates and private corporates by the nature of property rights (the salaries of senior executives of state-owned corporates are mostly determined by the government, while the salaries of senior executives of private corporates are determined by performance). Senior executives of state-owned corporates will not pursue investment projects with high risks and high returns because of corporate performance, but the stress-resistant institutional investors in this paper still reduce the risk-taking level of the sample research corporates, This shows that China is still in the period of capital market development and the history of Chinese institutional investors is relatively short. It is still necessary to improve the relevant legal systems and norms of institutional investors, reduce the collusion between corporate shareholders and management due to business transactions and strengthen the control of investment project risks.

Encourage stress-sensitive investors to make long-term decisions and reduce opportunism, progressivism and short-term profitability. This will not only maintain the stability and development of China's securities market but also balance the proportion of various institutional investors to seek common development. Improve the internal governance of the company, reduce the "right inaction" of middle and senior executives in state-owned corporates and the "left adventurism" of middle and senior executives in private corporates, so that they can cooperate with the external market to fight a "tough battle" to promote the level of corporate risk-taking.

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