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Research on the Impact of Heterogeneity of Institutional Investors on the Cost of Equity Capital

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***Abstract*—This paper divides institutional investors into independent investors and non-independent investors according to their independence, and studies whether they can reduce the cost of capital in the process of equity financing, so as to explore whether institutional investors can play an active role in shareholder governance. Empirical research finds that institutional investors can reduce the cost of equity capital of the company. According to the further research, the author finds that independent institutional investors can significantly reduce the cost of equity capital, while non-independent institutional investors can also reduce the cost of equity capital, but the effect is not significantly.**

Keywords—institutional investors; governance of a company; cost of equity capital

I. INTRODUCTION

In recent years, with the continuous development and improvement of China's market economy, Chinese government has gradually put forward the strategy of developing institutional investors, and vigorously issues a variety of policies and documents, hoping that institutional investors can participate in corporate governance, improve the efficiency and standardization of corporate governance, and promote the development of enterprise economy. With the support of relevant policies, institutional investors have been growing steadily in China. They have made unprecedented progress in both quantity and types. Unlike individual investor, institutional investors have a wide range of sources of funds, more channels, professional technicians, a wide range of information collection, and more professional analysis ability. At the same time, institutional investors are also shareholders of the company. Whether they can really participate in corporate governance and alleviate the principal-agent problem that exists in the company is of great significance to both themselves and investors. Although institutional investors invest in the company, there are also some differences in independence. Whether the difference in independence will affect institutional investors to play an objective and positive role in corporate governance and reducing the cost of the capital of a company in equity financing will be the main issue addressed in this paper.

II. LITERATURE REVIEW AND RESEARCH HYPOTHESIS

Foreign scholars Chidamberan and John (2000) believe that institutional investors can not only promote the spread of information, but also transmit useful information to the outside world. Rajgopal's (2003) research shows that institutional investors' shareholding is positively correlated with the stock price information content of their company. Within a certain range, it can improve the real earnings behavior of managers. Chen Xiaoli (2009) finds that institutional investors play a positive role in improving information transparency through empirical research. Ding Fangfei (2008), a Chinese scholar, believes that earnings information of companies can be detected by institutional investors very early. Therefore, institutional investors can reduce information asymmetry, improve the quality of information disclosure, enhance the real value response of information to stock prices, play a role in making better decisions for investors, and reduce the cost of equity capital by virtue of their unique information advantages.

From another point of view, institutional investors hold a relatively high proportion of shares. It will greatly increase the cost of selling stocks even if they sell stocks in large quantities for short-term interests. This is disadvantageous. As important external shareholders, it is better to consider from the perspective of long-term strategy, give full play to shareholder activism, recommend candidates for directors, put forward decisions on production and operation, put forward suggestions on investment and financing decisions, regulate the irregularities of listed companies, make the governance of listed companies more transparent, and promote the economic development of companies. Therefore, institutional investors can exert the influence of shareholder activism, supervise the misappropriation of interests by management and controlling shareholders, provide information disclosure treatment, protect the interests of small and medium-sized investors, establish investors' confidence in the company, alleviate the principal-agent problem, reduce the principal-agent cost, and reduce the necessary rate of return required by investors. On the basis of theoretical analysis, this paper infers that:

- H1: The overall shareholding ratio of institutional investors is negatively correlated with the cost of equity capital.

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When Brickley (1988) studied the relationship between institutional investment and R&D income, institutional investors were divided into two types: pressure-resistant (independent) and pressure-sensitive (non-independent) according to the business relationship between institutional investors and invested units. Many Chinese scholars (Li Qingyuan, Ding Fangfei, Yizhihong, etc.) have successively used this method to explore the heterogeneity of institutional investors and analyzed its mechanism.

Usually, pressure-resistant institutional investors have strong independence and will not be affected by managers. They have no business relationship with shareholding companies. They adhere to their investment ideas, pay attention to the long-term capital growth value of enterprises, pay attention to the growth value of enterprises, dare to question and oppose the investment ideas of managers. Pressure-sensitive institutional investors have certain business contacts with the invested enterprises. The top managers of the enterprises can make full use of the relationship between them to exert some pressure on the institutional investors who disagree with them. Generally speaking, starting from their own fundamental interests, some pressure-sensitive institutional investors will choose to remain neutral to a certain extent, even sometimes they may have inclined attitudes. Specifically, if institutional investors make a tendency to agree with some of the views of senior managers, it will affect their enthusiasm to participate in corporate governance to a certain extent, so that it is difficult to have an effective impact on the long-term development and decision-making of the company.

Referring to the practice of Brickley and many domestic scholars, this paper classifies funds, social security funds and QFII as independent institutional investors, and classifies securities firms, insurance companies, trust companies, financial companies and enterprise annuities as non-independent institutional investors. Accordingly, this paper infers that:

- H2a: Independent institutional investors are negatively correlated with the cost of equity capital.
- H2b: There is no significant relationship between non-independent institutional investors and the cost of equity capital.

III. RESEARCH DESIGN

A. Data Source

In this paper, the author selects all A-share listed companies from 2013 to 2017. Excluding A-share and B-share listed companies, ST, ST* and PT companies in the financial industry, this paper selects the companies that EPS2< EPS1, and gets 1668 samples. In order to avoid the endogenous problem of institutional investors, the author adopts a lag period of processing to explain and control variables.

B. Variable Setting

In this paper, the explanatory variables are estimated by PEG model. The calculation formulas are as follows:

$$R = \sqrt{\frac{EPS_2 - EPS_1}{P_0}}$$

The explanatory variables are institutional investors' shareholding (R), independent institutional investors (IO-res), and non-independent institutional investors (IO-sen). The control variables are company size (SIZE), asset-liability ratio (DEBT), return on net assets (ROE), book-to-market ratio (B/M), company growth (GROW), asset turnover rate (TURN), year factor (YEAR), industry factor (INDUSTRY).

C. Model Design

Model 1: $R_t = \alpha+\beta_1 IO\ t\text{-}1 + \beta_2 SIZE\ t\text{-}1 + \beta_3 DEBT\ t\text{-}1 + \beta_4 GROW\ t\text{-}1 + \beta_5 TURN\ t\text{-}1 + \beta_6 ROE\ t\text{-}1 + \beta_7 B/M\ t\text{-}1+\Sigma YEAR+\Sigma INDUSTRY+\mu$

Model 2: $R_t = \alpha+\beta_1 IO\text{-}sen_{t-1} + \beta_2 SIZE_{t-1} +\beta_3 DEBT_{t-1} +\beta_4 GROW\ t\text{-}1+\beta_5 TURN\ t\text{-}1+\beta_6 ROE\ t\text{-}1+\beta_7 B/M_{t-1}+\Sigma YEAR+\Sigma INDUSTRY+\mu$

Model 1 is used to validate hypothesis 1. On the basis of hypothesis 1, model 2 is used for grouping regression of samples.

IV. EMPIRICAL ANALYSIS

A. Descriptive Statistics

As shown in "Table I", the overall shareholding ratio (R) of institutional investors in China is 21.64%. Compared with developed countries, there is still much room for improvement. From the perspective of standard deviation, independent institutional investors (0.0333) are more stable than non-independent institutional investors (0.0862).

TABLE I. DESCRIPTIVE STATISTICAL ANALYSIS

Variable name	Mean	Median	Standard deviation	Minimum value	Maximum	Observed value
R	0.1142	0.1099	0.0447	0.0104	0.3410	1668
IO	0.2163	0.1627	0.1945	0.0000	0.9561	1668
IO-res	0.0741	0.0432	0.0333	0.0000	0.5534	1668
IO-sen	0.0153	0.0061	0.0862	0.0000	0.6500	1668
DEBT	0.4267	0.4203	0.2095	0.0355	0.9637	1668
SIZE	22.2855	22.0492	1.4231	17.8132	28.5087	1668

Variable name	Mean	Median	Standard deviation	Minimum value	Maximum	Observed value
BTM	0.9052	0.5790	0.9842	0.0099	8.3208	1668
ROE	0.0985	0.0936	0.0848	-0.0715	0.4665	1668
GROW	0.9366	0.1747	7.4966	-0.8105	1.5795	1668
TURN	0.7087	0.5741	0.5368	0.0162	6.2913	1668

B. Regression Analysis

From the regression analysis in "Table II", it can be seen that institutional investors' shareholding is negatively correlated with the cost of equity capital, and significantly negatively correlated at the level of 5%. It verifies hypothesis 1, which shows that institutional investors play an active shareholder role and participate in corporate governance as a whole. Independent institutional investors can significantly reduce the cost of equity capital and play a role in corporate governance. Non-independent institutional investors can reduce the cost of equity capital, but the results are not significant. The degree of participation in corporate governance is relatively small, and it is difficult to play a significant role.

TABLE II. REGRESSION ANALYSIS

Variable	Overall shareholding		Independent (IO-res) shareholding		Non-independent (IO-res) shareholding	
	Regression coefficient	*T value*	*Regression coefficient*	*T value*	*Regression coefficient*	*T value*
C	0.1487***	（11.8756）	0.1559***	10.2982	0.1291***	6.6173
IO	-0.0061**	（-2.3560）	-0.0081**	-2.1362	-0.0003	0.0772
SIZE	-0.0015***	（-3.0098）	-0.0020**	-2.8827	-0.0007	-0.7997
ROE	-0.0156**	（-2.5309）	-0.1351	-1.4137	-0.0181**	-2.0265
B/M	0.0015*	（1.9387）	0.0017	1.5703	-0.0009	0.7851
GROW	-0.0001*	（-1.6526）	-0.0001	-1.1929	-0.0001	-1.1201
TURN	-0.0001	（-0.1048）	1.7041E-5	0.0077	-0.0004	-0.2273
DEBT	0.0015	（0.4976）	0.0027	0.6479	-0.0002	-0.0428
Year	control		control		control	
industry	control		control		control	
R^2	0.2079		0.2192		0.1775	
F	20.4859***		16.9223***		14.9271***	
DW	1.8842		1.8921		1.9271	
Observed value	1668		718		950	

[a.] Note: ***, ** and * mean that it is significant at 1% level, 5% level and 10% level, respectively.

C. Robustness Test

In order to ensure the reliability of the results, this paper uses CAMP model to calculate the cost of equity capital. Regression analysis is brought into the model. As shown in "Table III", the results are consistent with the previous ones. The conclusion of this paper is valid.

TABLE III. ROBUSTNESS TEST

variable	Overall sample		independent (IO-res) shareholding		non-independent (IO-res) shareholding	
	regression coefficient	*t value*	*regression coefficient*	*t value*	*regression coefficient*	*t value*
C	0.1277***	12.0560	0.1285***	12.2524	0.1308***	12.2786
IO	-0.0008***	-3.6459	-0.0019***	-5.2843	-0.0015	-1.0922
SIZE	-0.0009*	-1.7581	-0.0010*	-1.9933	-0.0011**	-2.2139
ROE	-0.0131**	-2.0078	-0.0058	-0.8675	-0.0165**	-2.5257
B/M	0.0012**	2.2214	0.0011	1.4145	0.0015**	1.9751
GROW	-0.0000	-0.7122	-0.0001	-0.9331	-0.0000	-0.7344
TURN	-0.0020**	-2.1023	-0.0019**	-2.0028	-0.0021**	-2.1046
DEBT	0.0058*	1.9620	0.0064**	2.0692	0.0054	1.7319
Year	control		control		control	
industry	control		control		control	
R^2	0.2497		0.2630		0.2365	
F	16.8451***		19.0112***		15.0169***	
DW	1.6910		1.6621		1.6251	
Observed value	1668		718		950	

[a.] Note: ***, ** and * mean that it is significant at 1% level, 5% level and 10% level, respectively.

V. CONCLUSION AND SUGGESTION

According to empirical research, it finds that institutional investors can reduce the cost of equity capital. And the author makes further research, and finds that independent institutional investors can significantly reduce the cost of equity capital, while non-independent institutional investors can reduce the cost of equity capital, but the results are not significant. According to the conclusion of this study, it is suggested that China should relax the proportion of institutional investors, and adopt different guiding and supervisory management strategies for different types of institutional investors. When introducing foreign financing, the government may consider introducing more independent institutions, such as funds, social security and QFII, and formulate good investment strategies to encourage long-term investment of these institutions, so as to reduce the cost of equity financing of company. It is necessary to encourage and supervise institutional investors with weak independence to play an excellent role as shareholders, regulate corporate governance, and promote the development of market economy in China.

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