Research on the Influence of Internal Control Quality on Corporate Financing Constraints

Faquan Zhang[a], Zhiyu An[b]

School of Economic & Management, Nanjing University of Science and Technology, Nanjing 210094, China

[a]faquann_zhang@163.com, [b]zhiyu_ann@163.com

Abstract: This article uses the data of China's A-share listed companies from 2010 to 2017 to study the impact of internal control quality on corporate financing constraints, and explores the heterogeneity of this effect under the concentration of equity. As a result, it was found that the quality of internal control of the company would have an inhibitory effect on the financing constraints faced by the company. At the same time, the higher the concentration of equity, the greater the inhibition of internal control quality on financing constraints. The research results of this paper supplement the research on the internal control and financing constraints of the enterprise. It is conducive to the enterprise to formulate a reasonable development strategy according to its own situation, and it also provides support for China's government departments to devote themselves to the construction of internal control.

1. Introduction

Investment is an important part of an enterprise's production and operation, and successful financing is a prerequisite for investment. MODIGLIANI et al. [1] believes that under perfect conditions, the cost of external financing and the cost of internal financing are the same, and there is no constraint on the financing of the enterprise. However, in the actual capital market, due to the asymmetric information between the supply and demand of funds and the common agency problems, companies often cannot obtain the required funds smoothly. It is inevitable to face financing constraints. First of all, when providing financial support to enterprises, investors often set many conditions for their own benefit. Only when the enterprise meets the corresponding conditions, the enterprise can obtain funds, but for some enterprises, these conditions may not be met. In addition, for certain companies or projects, investors will require higher capital returns to balance their own risks. Higher capital costs will affect corporate decision-making, which also restricts corporate financing to a certain extent. Higher-quality internal control can significantly alleviate the information asymmetry between the enterprise and investors, and reduce the pressure for the enterprise to carry out external financing. When the concentration of equity is high, it can increase the strength and effectiveness of the enterprise's controlling person's supervision of the company's internal affairs, thereby affecting the effect of internal control quality on financing constraints. Based on this, this research is based on the data of China's A-share listed companies, and examines the impact of internal control quality on corporate financing constraints and the regulatory role of equity concentration in it, to promote research on these issues.

2. Literature review and research hypothesis

2.1 Internal control and corporate financing constraints

Generally, the information possessed by an enterprise is superior to investors. That is, there is information asymmetry between the enterprise and the investor. The investor will be more conservative when investing in the enterprise, which increases the financing constraints of the

enterprise. At the same time, because investors are in a disadvantageous position relative to the enterprise, when investing, they often add binding clauses to the investment contract to protect their own interests.It will also increase the financing cost of the enterprise. DOYLE etal. [2] Conducted theoretical analysis and empirical testing from multiple angles, and believed that high internal control quality is a guarantee of information quality, which can reduce the information disadvantage of investors relative to the enterprise, thereby reducing the financing pressure of the enterprise. Xu Hong et al. (2016) [3] believes that internal control, as an important governance mechanism of the company, can play a role in information transmission. If the internal control quality of the company is high, the credibility of the information disclosed by the company is also high. Li Xiaohui and Yang Zixuan (2013) [4] found through empirical evidence that investors tend to provide more loose contract constraints to companies with higher internal control quality. Xu Qiao (2017) [5] found through research that the greater the internal control defects of an enterprise, the greater the capital cost to be paid for financing and the greater the difficulty of obtaining funds.Based on the above analysis, this article proposes the following assumptions:

Hypothesis 1: The improvement of internal control quality will restrain the financing constraints faced by enterprises.

2.2 Adjustment of equity concentration

The concentration of equity allows investors to have more control over the company, and investors can better protect their own interests. Whether it is in a large enterprise or a small and medium-sized enterprise, if a company's shareholding concentration is high, large shareholders tend to view the interests of the company as their own interests and tend to take measures to improve the company. The renewal or reform of the internal control system of enterprises is often carried out with the support and encouragement of large shareholders, so the concentration of equity is conducive to the better functioning of the internal control system. At the same time, when the company's equity is relatively concentrated, the decision-making layer of the company can often respond to the changing capital market more quickly, so that it can choose a more appropriate financing plan for the enterprise and reduce the financing constraints faced by the enterprise.Hoitash (2009) [6] studied the relationship between the quality of the board and the effectiveness of internal control, and found that the higher the quality of the board, the more effective the role of internal control. L.L.Eng, Y.T.Mak (2003) [7] conducted an investigation and found that corporate governance structures such as the shareholding structure and the share of executives have a significant effect on the internal control of the enterprise. Li Zhibin and Lu Chuang (2013) [8] believe that the concentration of equity can effectively promote the role of internal control. Yu Xiaohong and Wang Yujie (2019) [9] believe that internal control can affect the investment problems of enterprises. Internal control is conducive to the improvement of investment efficiency of enterprises, and the concentration of equity can make its role play better. Based on the above analysis, this article proposes the following assumptions:

Hypothesis 2: Compared with companies with low equity concentration, the internal control quality of companies with high equity concentration has a greater inhibitory effect on financing constraints.

3. Research design, empirical results and analysis

3.1 Sample selection and data sources

The research object of this article is the 2010-2017 China A-share listed companies, the data comes from the RESSET database and CSMAR database. The data is screened as follows: (1) Taking into account the characteristics of the industry, the study excludes listed companies in the financial industry; (2) Considering the huge impact that outliers may have, this paper has carried out tailing treatment of extreme values and replaced them with 1% and 99% quantile; (3) Exclude the company samples of ST and *ST in the current year, because these companies cannot reflect the

company's status under normal conditions; (4) Exclude listed companies whose data is seriously missing.

3.2 Model building and definition of related variables

In order to test Hypothesis 1, this paper builds the following model:

$$Sa_{i,t} = \beta_0 + \beta_1 Icq_{i,t} + \beta_2 Growth_{i,t} + \beta_3 Size_{i,t} + \beta_4 Debt_{i,t} + \beta_5 ROE_{i,t}$$
$$+ \beta_6 Cash_{i,t} + \beta_7 Inv_{i,t} + \Sigma Ind + \Sigma Year + \varepsilon_{i,t} \tag{1}$$

Among them, the dependent variable is $Sa_{i,t}$, which represents the degree of financing constraints of listed companies. Drawing on the method of Hadlock and Pierce (2010) [10], two variables of company size and company age are used to construct Sa to measure financing constraints.

$$Sa = -0.737Size + 0.043Size^2 - 0.04Age \tag{2}$$

Age represents the age of the company and is equal to the number of years since the company went public. Size represents the size of the company, and its value is the natural logarithm of total assets at the end of the year. The greater the Sa, the smaller the degree of financing constraints faced by listed companies. The independent variable is the internal control quality $Icq_{i,t}$. At present, there is no unified standard for the evaluation of internal control. In order to reduce the impact of objectivity, this article uses the "internal control index" developed by Shenzhen Dibo Company to measure. For the convenience of research, the index is also divided by 100 to obtain the final value $Icq_{i,t}$. The larger the value, the higher the quality of internal control. Other variables are control variables: $Growth_{i,t}$ represents the growth rate of operating income, which is equal to the increase in operating income in year t divided by the operating income in year t-1; $Debt_{i,t}$ represents the asset-liability ratio, which is equal to the company's liabilities divided by the company total assets; $Roe_{i,t}$ represents the company's operating performance, which is equal to net profit divided by average net assets; $Cash_{i,t}$ represents the company's cash flow status, which is equal to the company's net operating cash flow divided by the total assets at the beginning of the period; $Inv_{i,t}$ represents capital expenditure,whice is equal to capital expenditure divided by total assets at the beginning of the period. Ind and Year represent the dummy variable of industry and the dummy variable of year respectively.

To test Hypothesis 2, this paper builds the following model:

$$Sa_{i,t} = \beta_0 + \beta_1 Icq_{i,t} + \beta_2 Top1_{i,t} + \beta_3 Icq_{i,t} \times Top1_{i,t} + \beta_4 Growth_{i,t} + \beta_5 Size_{i,t}$$
$$+ \beta_6 Debt_{i,t} + \beta_7 ROE_{i,t} + \beta_8 Cash_{i,t} + \beta_9 Inv_{i,t} + \Sigma Ind + \Sigma Year + \varepsilon_{i,t} \tag{3}$$

Among them, $Top1_{i,t}$ represents the shareholding ratio of the company's largest shareholder, and other variables are the same as (1). Mainly observe the sign of the crossover item. If it is positive, it means that if the concentration of equity increases, the internal control quality will increase the restraint of listed companies' financing constraints, and vice versa.

3.3 Descriptive statistics and analysis

The descriptive statistics of each variable are shown in Table 1. From Table 1, it can be seen that the mean value of Sa is 4.192, the median is 3.954. The average value is greater than the median, indicating that most companies' financing constraints are below the average level, but there are generally large financing constraints. The minimum value is 1.289, which indicates that some listed companies have enormous financing constraints and great pressure on financing. The average value of Icq is 6.666, the median value is 6.758, and the average value is less than the median value, indicating that the internal control quality of many listed companies is still low. The maximum value is 8.796, and the minimum value is 3.641, indicating that the company's internal control quality is greatly polarized. The average value of Top1 is 0.353, and the median is 0.333, indicating that most

listed companies' equity concentration is still relatively reasonable. There are many listed companies with concentrated equity, and the balance of equity is still checked.

Table 1 Descriptive statistics of each variable

variables	N	average value	Standard deviation	Minimum value	median	Maximum
Sa	17193	4.192	1.481	1.289	3.954	9.207
Icq	17193	6.666	0.739	3.641	6.758	8.796
Top1	17193	0.353	0.151	0.088	0.333	0.751
Growth	17193	0.179	0.353	-0.518	0.121	1.997
Size	17193	22.117	1.277	19.633	21.944	26.024
Debt	17193	0.435	0.210	0.050	0.431	0.892
Roe	17193	0.073	0.085	-0.301	0.069	0.322
Cash	17193	0.048	0.088	-0.236	0.047	0.314
Inv	17193	0.062	0.064	0.0002	0.042	0.332

3.4 Correlation analysis

The correlation coefficients of the main variables are shown in Table 2. It can be seen from Table 2: The correlation coefficients of Icq and Sa are positive, so Icq and Sa have a positive correlation. When the quality of internal control of an enterprise is improved, the financing constraints faced by the enterprise will be reduced. That is, high-quality internal control can alleviate the financing constraints of the enterprise, and Hypothesis 1 is initially verified. The correlation coefficient between Top1 and Icq is positive, so Top1 and Icq have a positive correlation. When the concentration of equity in an enterprise increases, the quality of internal control of the enterprise will increase. This may be due to the increase in the concentration of equity, which will make the major shareholders pay more attention to corporate management. And shareholders with a larger proportion of equity often regard their own interests and corporate interests as one, prompting the major shareholders to strengthen the internal control of the company and its role. Hypothesis 2 is preliminarily verified

Table 2 Correlation coefficients of main variables

variables	Sa	Icq	Top1	Growth	Size	Debt	Roe	Cash	Inv
Sa	1								
Icq	0.270 ***	1							
Top1	0.246 ***	0.142 ***	1						
Growth	0.033 ***	0.162 ***	-0.051 **	1					
Size	0.983 ***	0.259 ***	0.231 ***	0.015 **	1				
Debt	0.446 ***	0.002	0.080 ***	0.022 ***	0.502 ***	1			
Roe	0.141 ***	0.418 ***	0.121 ***	0.215 ***	0.130 ***	-0.068 ***	1		
Cash	0.039 ***	0.147 ***	0.075 ***	0.009	0.030 ***	-0.179 ***	0.297 ***	1	
Inv	0.006	0.114 ***	0.007	0.127 ***	-0.027 ***	-0.072 ***	0.103 ***	0.180 ***	1

Note: ***p<0.01, **P<0.05, *p<0.1

3.5 Regression analysis

Table 3 is the model regression results. Column 1 is the name of each variable, column 2 is the regression result of the model (1), mainly to test the impact of internal control quality on financing constraints. Column 3 is the variance inflation factor of each variable during the regression of the model (1), to check whether there is multicollinearity between the variables. Column 4 is the regression result of the model (3), which is based on the regression of Column 1 with the addition of Top1 and the multiplication of Top1 and Icq, to test whether the concentration of equity will adjust the relationship between the quality of internal control and financing constraints. The main observation is whether the coefficient of the multiplication term is significant. If it is significant, there is an adjustment effect, otherwise it does not exist.

Table 3 Model regression results

Independent variables	(1)Sa	(1)VIF	(3)Sa	(3)VIF
Icq	0.026*** (8.925)	1.419	0.024*** (8.472)	1.423
Top1			0.268*** (21.705)	1.115
Icq×Top1			0.081*** (4.923)	1.022
Growth	0.031*** (5.699)	1.134	0.037*** (6.995)	1.138
Size	1.175*** (6.350)	1.748	1.167*** (6.286)	1.812
Debt	-0.261*** (-24.056)	1.623	-0.249*** (-23.273)	1.627
Roe	0.035 (1.416)	1.373	0.003 (0.119)	1.377
Cash	-0.107*** (-4.782)	1.207	-0.127*** (-5.748)	1.209
Inv	0.629*** (21.042)	1.136	0.642*** (21.779)	1.138
Intercept	-21.892*** (-5.667)	-	-21.803*** (-5.696)	-
Ind	Control	-	Control	-
Year	Control	-	Control	-
N	17193	-	17193	-
Adjusted R-Square	0.975	-	0.976	-

Note: ***p<0.01, **P<0.05, *p<0.1

It can be seen from column 2 that the coefficient of internal control quality Icq is 0.026, which is significantly positive at the level of 1%, indicating that the increase in internal control quality can alleviate the financing constraints of the enterprise. Hypothesis 1 is strongly verified. It can be seen from column 4 that the coefficient of Icq × Top1 is 0.081, which is significantly positive at the level of 1%, indicating that equity concentration has a significant adjustment effect on the relationship between internal control quality and financing constraints. Higher share concentration can strengthen the relationship between the two. And Hypothesis 2 is strongly verified. At the same time, in order to prevent the impact of multicollinearity on the regression results, the VIF variance expansion factor is used in the test, and the results are all less than 2, indicating that there is no multicollinearity between variables.

4. Conclusion

This article takes China's A-share listed companies from 2010 to 2017 as a sample, empirically analyzes the impact of listed companies' internal control quality on corporate financing constraints, and discusses the moderating effect of equity concentration on this effect. The conclusions are as follows: The higher the quality of control, the smaller the financing constraints faced by the company. The higher the concentration of the company's equity, the stronger the internal control qualities inhibitory effect on corporate financing constraints. The internal control system of listed companies is the product of the development of modern enterprises. Enterprises should strive to improve the internal control mechanism, improve the quality of internal control, and promote the effective play of the role of internal control. Only in this way can we improve the operational efficiency of the enterprise and promote the steady development of the enterprise.

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