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Effect of Issuing Convertible Bonds from the Perspective of Ownership Structure: Evidence from Listed Companies in Shanghai and Shenzhen

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Abstract: Due to the rapid expansion of enterprise scale, traditional financing methods can no longer meet the needs of enterprises. As a financing method with both equity and debt, convertible bonds, with its flexibility, is favored by enterprises. Especially in 2017, China's supervision on the financing method of private placement of shares has become stricter, and some companies have chosen convertible bonds for financing. This paper takes the ownership structure as the starting point and the listed companies in Shanghai and Shenzhen as the research subjects, as well as uses regression analysis to determine the relationship between convertible bonds, ownership structure, and enterprise performance. It is found that convertible bonds reduce the performance of enterprises, while ownership concentration strengthens the negative relationship.

Keywords: Ownership structure; Convertible bonds; Financial performance

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1. Introduction

As a hybrid equity financing tool with creditor's rights and built-in equity, convertible bonds can significantly adjust companies' capital structure, and the State-owned Assets Supervision and Administration Commission (SASAC) of the State Council claimed that it would continue to "stabilize leverage" in the three-year "leverage reduction" effort [1]. The use of convertible bonds by listed companies helps in averting the profit-making behavior of original enterprise shareholders caused by equity financing and in deciding whether to convert shares in an agreed-upon manner, thus grasping a certain initiative and improving the debt structure of the companies.

However, there are some problems in China's current listed companies. The excessive concentration of equity may cause the imbalance of enterprise equity structure, and major shareholders tend to use their rights to make profits for themselves. The majority of existing literatures have studied the impact of issuing convertible bonds on the performance of enterprises, but there are not many literatures that studied the background of equity concentration. Considering the rapid development of convertible bonds in recent years, many listed companies have issued convertible bonds as a means to obtain financing and reduce the lever ratio [1]. However, different companies have different ownership structures and benefits after issuing convertible bonds. In order to effectively study the advantages and disadvantages of convertible bonds for enterprises as well as explore the role of ownership structure in the effect of convertible bonds, this paper discusses the relationship between convertible bonds and enterprise performance of Shanghai and Shenzhen listed companies. The possible contributions are as follows: explaining the influence of ownership structure on the financing effect of listed companies issuing convertible bonds; enriching relevant research in the field of corporate management and corporate financing; discussing the impact of equity concentration on convertible bonds for financing [2].

2. Theoretical analysis and hypothesis

2.1. Convertible bonds and corporate performance

Before conversion, convertible bonds can help lower agency costs and save money on taxes, which bring positive impacts on the company. The conversion of convertible bonds into equity can optimize a company's capital structure and reduce the asset liability ratio [3], so as to achieve the purpose of "reducing leverage," but it will increase the enterprise's cost of debt. In addition, many scholars have studied the companies that use convertible bonds for financing and found that before issuing convertible bonds, enterprises may whitewash their performance and change their face after financing.

According to the above analysis and existing research, Hypothesis 1 is put forward: after a company issues convertible bonds, the financial performance of the enterprise will decline.

2.2. Role of convertible bonds in financial performance

As a built-in equity product, the impact of convertible bonds after issuing bonds may not be withdrawn within one year. At the same time, due to the change of asset structure and the different level of management efficiency, convertible bonds are greatly affected by the equity structure and the high degree of equity concentration, which may affect the degree of financial constraints after enterprise financing. In addition, based on the tunneling theory, excessive concentration of equity will encourage major shareholders to pursue private interests through capital occupation, loan guarantee, and other behaviors, illegally transfer corporate resources, harm the interests of minority shareholders and the company, as well as put the enterprise in danger.

Therefore, Hypothesis 2 is proposed: equity concentration will strengthen the negative relationship between convertible bond issuance and financial performance.

3. Research design

3.1. Sample selection and data source

Since the peak period of issuance of convertible bonds is 2017, in order to ensure the stability and accuracy of the data, the sample data taken ranged from January 1, 2016, to December 31, 2018. The screening and elimination of enterprises were carried out as follows: (1) enterprises with ST and st* during the sample study period were eliminated; (2) companies with missing data during the study period were excluded; (3) due to the particularity of the profit model and income level of finance, insurance, and capital market service industries, such companies were excluded. After screening, 36 samples were obtained. The research data were derived from Guo Tai An Database, RESSET Database, and enterprises' annual reports. The data were sorted out by using Excel and finally processed by using SPSS 22.0.

3.2. Variable design and model construction

3.2.1. Explained variable

How an enterprise uses financing funds in the process of enterprise operation, so as to improve the development status of the company? The main indicators investigated in this paper are those that can reflect the profitability of the listed companies [5]. Through literature search, return on equity (ROE) is used as an index to measure the financial performance of enterprises.

3.2.2. Explanatory variable

In order to explore the performance of companies under different ownership structures before and after the issuance of convertible bonds, this paper sets up a virtual variable, which is recorded as 1 for the issuance of convertible bonds and 0 for the non-issuance of convertible bonds. A company with high concentration ownership structure is recorded as 1, whereas a company with low concentration ownership structure is recorded as 0. At the same time, the interaction term between convertible bond issuance and equity concentration is introduced. This research focuses on the coefficient and significance of the interaction term.

3.2.3. Adjustment variable

Ownership structure refers to the proportion of different shares in the total share capital of the company and their relationship. Different ownership structures determine different organizational forms. In existing research, scholars generally choose the shareholding ratio of the largest shareholder, including that of the top three and top five shareholders as indicators to measure the ownership concentration of enterprises [6]. Compared with foreign countries, the ownership structure of listed companies in China is mainly based on the relative concentration of ownership; therefore, this paper selects the shareholding ratio of the top three shareholders to reflect the degree of equity concentration.

3.2.4. Control variable

Based on existing research results, the year-on-year growth of operating revenue, asset liability ratio, operating net interest rate, capital intensity, cash recovery rate of all assets, company size, and year are taken as the control variables, which are explained in **Table 1**.

Table 1. Variable definition

Variable	Symbol	Variable definition	Computing method
Explained variable	ROE	Return on equity	Net profit/net assets
Explanatory variable	ISSUE	Whether to issue convertible bonds	1 in the year of issuance and after; 0 in the rest
Adjustment variable	SHR	Ownership concentration	Shareholding ratio of the top three shareholders
	SHR*ISSUE	Interactive item	
Control variable	ORI	Year-on-year growth of operating revenue	(Increase in operating revenue/total operating revenue of the previous year)*100%
	LEV	Asset liability ratio	Total liabilities/total assets
	Nopit	Net interest rate of operating income	Net profit/operating income
	CAP	Capital intensity	Total assets/operating income
	CRR	Cash recovery rate of all assets	Net cash flow from operating activities/ total assets
	Size	Enterprise scale	Natural logarithm of total assets

In this paper, the issuance status was set as a virtual variable, the year and the following year of issuance of perpetual bonds was set as 1, and that before issuance was set as 0. It is important for enterprises to increase their financial investment and create more business value year-on-year. The scale of an enterprise implies different business capabilities. If the enterprise is large, it will generally have more financing channels, and the benefits will be different from those of smaller enterprises. Therefore, we need to control the impact of different sizes of enterprises on their performances.

(1) Hypothesis 1: After a company issues convertible bonds, the financial performance of the enterprise will decline.

For Hypothesis 1, in order to test the relationship between convertible bond issuance and enterprise financial performance, Model (1) is constructed as follows:

$$\text{ROE} = \beta_0 + \beta_1 ISSUE_{it} + \beta_2 ORI_{it} + \beta_3 LEV_{it} + \beta_4 Nopit_{it} + \beta_5 CAP_{it} + \beta_6 CRR_{it} + \beta_7 Size_{it} + \varepsilon$$

(2) Hypothesis 2: Equity concentration will strengthen the negative relationship between convertible bond issuance and financial performance.

For hypothesis 2, in order to test the regulatory effect of equity concentration on convertible bond issuance and financial performance, Model (2) is constructed as follows:

$$\text{ROE} = \beta_0 + \beta_1 ISSUE_{it} + \beta_2 ISSUE_{it} \times SHR_{it} + \beta_3 SHR_{it} + \beta_4 ORI_{it} + \beta_5 LEV_{it} + \beta_6 Nopit_{it} + \beta_7 CAP_{it} + \beta_8 CRR_{it} + \beta_9 Size_{it} + \varepsilon$$

β_i represents the correlation coefficient; *i* represents the enterprise and year respectively; ε represents random error. Model (2) introduces the intersection of convertible bond issuance and equity concentration on the basis of Model (1).

4. Empirical analysis and results

4.1. Correlation analysis

Due to the existence of multiple variables in the model, Pearson test was conducted for each variable. From **Table 2**, the correlation of each index can be analyzed. It can be seen that the correlation between variables is relatively large, indicating that the correlation of each component is good.

Table 2. Pearson correlation coefficient

	ROE	**ORI**	**LEV**	**Nopit**	**CAP**	**CRR**	**Size**
ROE	1						
ORI	-0.348*	1					
LEV	-0.101*	-0.41*	1				
Nopit	0.611**	0.251*	-0.111	1			
CAP	0.55**	0. 67**	-0. 742**	0.773**	1		
CRR	0.38*	0.46*	-0.12	0.475*	0.375*	1	
Size	0.306*	0.496*	0.44*	0.267*	0.144*	0.307*	1

Note: * and ** indicate significant at the 10% and 5% significance levels, respectively

4.2. Regression analysis

Table 3 shows the regression results of convertible bond issuance on enterprise performance and then introduces the adjustment effect equity structure to study the adjustment effect of financing constraints between variables as well as the interaction results of adjustment effect and financing constraints to judge the impact on variables. Consistent with theoretical expectations, the results show that the regression coefficient between the issuance of convertible bonds and the ownership structure is significantly negative, indicating that the issuance of convertible bonds has a negative impact on the performance of enterprises. At the same time, the ownership structure of the company will aggravate the performance of the enterprise.

Table 3. Convertible bond issuance, equity concentration, and enterprise performance

Variable	(1) ROE	(2) ROE	(3) ROE
Issuance of convertible bonds	-0.218	-0.235	-0.294
Equity concentration		0.254	-0.341
Issuance of convertible bonds*concentration of equity			-0.599
Year-on-year growth of operating revenue	-0.618	-0.628	-0.633
Asset liability ratio	-0.301	-0.287	-0.193
Net interest rate of operating income	0.438	0.425	0.454
Capital intensity	-0.093	-0.093	-0.094
Cash recovery rate of all assets	0.395	0.407	0.441
Enterprise scale	0.068	0.067	0.068
R-squared	0.603	0.720	0.784

It can be seen from **Table 3** that the regression coefficient value of feasible convertible bonds is -0.218, showing a significant negative correlation. This means that the issuance of convertible bonds will have a negative impact on the return on equity of the enterprise. The regression coefficient value of equity structure is 0.254, indicating that the concentration of equity has a negative regulatory effect on the model.

5. Conclusion

From the above analysis, several conclusions can be drawn.

(1) The issuance of convertible bonds has a negative relationship with the company's performance, which will increase the enterprise cost and reduce its own solvency.

(2) The higher the equity concentration, the stronger the negative relationship between perpetual debt and corporate performance.

However, after issuing bonds, the company's asset scale can be improved to a certain extent, which helps the enterprise obtain better return on equity. If the company chooses not to convert shares in the later stage, its equity will not be diluted, which brings a financing "cooling-off period" [5].

Therefore, when issuing convertible bonds, the company needs to consider several factors.

(1) Planning the debt structure and maximizing the role of financial leverage

Enterprises should carefully assess how to approach sustainable debt based on their own internal structure [4], understand how to "promote their strengths" and "avoid their weaknesses," as well as minimize their risks.

(2) Making profits as the core purpose of the company

Enterprises should improve their core competitiveness by increasing their operating income and net profit, as well as their efficiency level.

Disclosure statement

The author declares no conflict of interest.

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