ACCOUNTING INFORMATION COMPARABILITY AND DEBT CAPITAL COST EMPIRICAL EVIDENCE FROM CHINESE LISTED COMPANIES

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ABSTRACT

The annual samples of 9370 companies from China's Shanghai and Shenzhen A-share market which during the period 2004 to 2013 were used as the object of study for this paper. According to De Franco et al. (2011) comparability models were used to measure accounting information comparability for companies. The accounting information comparability was proved and impacted on the relationship between the quality of accounting information and the cost of creditor's capital. From the findings of the research, under the controlled of other factors, the comparability of accounting information had a significant negative effects on the debt capital cost.

1. INTRODUCTION

As one of the most important qualitative characteristics of accounting information, accounting information comparability not only dependent on one company's accounting data, but also relied on the same kind of company's accounting data. Compared to other quality characteristics, accounting information comparability can play more effective decision-making relevance to protect the interests of creditors and shareholders. However, there has no research found that accounting information comparability can really reduce the risk of creditors and lower the standards of interest rate requirements and the costs of debt capital for debtors. De Franco et al. (2011) construct the accounting information comparability measurement model which provided a chance for us to study the effect of accounting information quality on the debt capital costs from another perspective. This paper intends to introduce the accounting information comparability model of De Franco et al. (2011) to measure the comparability of accounting information of Chinese listed companies, and to examine whether accounting information comparability can reduce the degree of information asymmetry and debt capital cost between listed companies and creditors.

2. LITERATURE REVIEW AND HYPOTHESIS PROPOSED

2.1. Measurement of Accounting Information Comparability

To date, the majority of the measurement of accounting information comparability has focused on the harmonization of accounting standards, the coordination and convergence of accounting methods, and the measurement of comparability for the companies (Yang and Qu, 2008). Such as Van der Tas (1988) constructs index H, index I and index C. Wang (2014) adopts the way of setting two dummy variables and a percentage variable to measure the accounting information comparability. These methods are suitable for the measurement of accounting information comparability at the national level. There are no records express the measurement for individual enterprises that contribute the whole enterprise. Therefore, those methods do not apply to the accounting information comparability at the measurement level.

It is the first time to make effective measurement of accounting information comparability for companies by De Franco et al. (2011). Subsequently, the accounting model of accounting information constructed by De Franco et al. (2011) and the measurement model of earnings information content and book value by Ohlson (1995) to measure the accounting information comparability through the correlation between the abnormal income and the correlation between the other company's stock price fluctuations. Furthermore, Ohlson (1995) measured the comparability of accounting information using the mean adjusted price-to-earnings ratio. Moreover, Caban used the model to measure the accounting information comparability which adjusted by Barth et al. (2012) and Brochet et al. (2013) measured the accounting information comparability by setting the dummy variable. When the UK listed companies adopt IFRS, the company's financial report is considered to be highly comparable. Meanwhile, they use the DeFond et al. (2011) model, De Franco et al. (2011) model to measure accounting information comparability.

In addition, Kim et al. (2013) introduces the Vector Space Model (SVM) in the field of computer science, and uses cosine distance to calculate the similarity between vector spaces to measure the comparability of accounting information. But the method cannot effectively distinguish between synonyms, so the measurement of accounting information comparability may be errors. Kim et al. (2013) constructed the accounting information comparability model using Moody's adjusted accounting indicators.

2.2. The Relationship between Accounting Information Quality and Capital Cost

The research on the correlation between the quality of accounting information and the cost of debt capital is more focused on the correlation between accounting conservatism and the cost of debt capital. Most of these studies show that accounting conservatism can make a significant negative impact on debt capital. Ahmed et al. (2002) found that listed companies with severe dividend policy conflicts were more willing to adopt sound accounting policies to easing agency conflicts between shareholders and bondholders due to dividend policies, thereby reducing the number of listed companies' debt capital cost. Zhang (2008) examines the ex-ante benefits and ex post benefits of accounting conservativeness, and their findings on ex ante benefits show that creditors will reduce their demand of the necessary rate of return to debtors who provides sound accounting information which leads to the debtor could borrow at a lower cost of debt. Wittenberg-Moerman (2008) results show that robust accounting reports reduce the asymmetry of information between creditors and debtors, increasing the efficiency of the secondary lending market and reducing the transaction price differential in the secondary lending market. Mao (2009) shows that the improvement of accounting information can reduce the ex-ante cost of debts and the ex post cost of debt capital of listed companies. Zhu (2010) takes the listed companies in Shanghai and Shenzhen from 2004 to 2009 as the research object, and examines the relationship between the accounting conservancy of Chinese listed companies and the bank's credit quota and loan costs for listed companies. The empirical results show that the accounting conservatism of listed companies has a significant positive impact on the loan quota, which has a significant negative impact on the loan cost. Hao and Zhang (2011) examines the impact of accounting conservatism on the cost of debt capital by the A-share non-financial listed companies in Shanghai during the period 2004-2008. They

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found that in order to coordinate the conflict between shareholders and creditors due to dividend policy, listed companies are more likely to release a more robust financial report. Compared to the listed company who release of lower sound financial reporting, issuing a higher sound financial reporting is more likely to borrow at lower interest rates. However, some studies have found the opposite evidence of empirical research. Such as used the data of A-share listed companies of Shenzhen and Shanghai from 2004 to 2008, going through the perspective of debt financing to analysis the relationship between the accounting conservatism and debt capital costs. The study found that the debtor who was limited by the degree of demand and recognition of the firm's creditor's demand for sound accounting information and the provision of more robust accounting information did not receive compensation for the cost of debt capital, but instead significantly increased the cost of debt capital. And there is a significant difference between the empirical results in the West.

There are some literatures that examine the relationship between the quality of information disclosure and the cost of debt capital. The empirical results of Sengupta (1998) show that creditors and underwriters believe that listed companies have lower likelihood of concealing bad news when the quality of information previously disclosed by listed companies is high, and therefore does not require higher risk compensation. Yu and Zhang (2007) studied the relationship between the quality of accounting information and the capital cost of listed companies in China's Shenzhen A-share listed companies. They found there is a significant negative correlation between the annual disclosure level of the sample companies and the cost of debt capital, indicating that the annual report more fully disclosed, the higher the quality of disclosure, and then the sample company's debt capital costs lower. Studied the impact of the annual disclosure level of China's listed companies of Shenzhen A-share on the cost of debt capital from the perspective of monetary policy from 2002 to 2010. They found that under the tight monetary policy, the high quality of annual disclosure of listed companies have more satisfied with the demand of financing through bank loans to meet the financing needs. Moreover, the bank borrowing interest rates are lower under the tight monetary policy which indicating that there shows a significant negative correlation between the listed company's annual disclosure and debt capital costs.

There are fewer studies have examined the impact of accounting information comparability on debt capital costs. Fang *et al.* (2013) used the data of US listed companies from 1982 to 2009 to examine the correlation between accounting information comparability and debt capital cost. The study found that higher accounting information comparability facilitates creditors to process information, thereby they can reduces the cost of debt capital significantly. Kim *et al.* (2013) constructed the accounting information comparability model using Moody's adjusted accounting indicators and examined the impact of accounting information comparability on credit risk in the bond market. Their empirical results show that the improvement of accounting information comparability can reduce the transaction cost of negotiable bonds, which indicates that the comparability of accounting information can reduce the degree of information asymmetry in the bond market and the uncertainty of credit risk pricing of bond market participants, and thus reducing the cost of debt capital.

The above literatures show that the existing research on the relationship between accounting information quality and capital cost has the following characteristics:

(1) The relationship between accounting information quality and debt capital cost may be uncertain;

(2) The quality of accounting information is mostly based on accounting conservatism and the quality of accounting information disclosure as a proxy variable. Only a small number of literatures are use the accounting information comparability as accounting variables for the quality of accounting information;

(3) Only few literature contributed the research for the relationship between accounting information quality and earnings management of listed companies in China. The research on the impact of accounting information quality on capital cost has not been found from the perspective of accounting information comparability.

This paper attempts to study the impact of accounting information quality on the cost of debt capital from the perspective of accounting information comparability in order to enrich the research literature on the relationship

between accounting information quality and capital cost and provide theoretical basis for improving the accounting information quality of listed companies and reducing the financing cost, empirical evidence and policy recommendations.

3. THEORETICAL ANALYSIS AND ASSUMPTIONS

The results of the existing literature show that the ultimate goal of financial reporting is to provide useful information to investors and creditors, etc., which helps investors and creditors to assess the amount, time and uncertainty of future cash flows. The intercompany information between companies allows investors and creditors to identify and understand the similarities and differences between projects and thus be more likely to meet the ultimate goal of providing financial decisions for investors and creditors to provide useful information on decision making. In terms of comparability, the core meaning is that similar things should look similar, and different things should look different. If a company's disclosure of accounting information is highly comparable, the investors, creditors, securities analysts, regulators, etc., could be more accurate assess the company's future cash flow prospects by comparing the company with similar companies. Thereby reducing the marginal cost of access to real information by information users (De Franco *et al.*, 2011). So the listed companies are more likely to publish earnings forecast information to reduce the degree of information asymmetry between investors and listed companies. The result may indicate that when information between companies is not comparable, if the company failure to publish earnings forecast information will not be beneficial to investors and creditors and other information users to understand and correctly assess the future cash flow, and thus cannot make the right economic decision-making for companies. It can be seen that the improvement of the comparability of accounting information can help to improve the information environment of the company, and can help the creditors and other information users to compare the company going through the industries and other similar comparable companies to understand and accurately assess the company's real business conditions and future development prospects. Thus, to reduce the creditor's credit risk and the risk of default and the required rate of return. Therefore, based on the above analysis, we propose the following research hypothesis:

Under unchanged of other conditions, the higher accounting information comparability of listed companies can reduce the cost of debt capital.

4. RESEARCH DESIGN

4.1. Sample Selection and Data Sources

As the listed financial and insurance companies have more obvious characteristics of the industry, we remove the financial and insurance companies listed after the 1323 Shanghai and Shenzhen A-share listed companies as the basis for the sample. Taking into the difficulty of measurement and the characteristics of the required data, this article also removed the delisting of the 71 and the new listing of 176 listed companies during the period of 2004 to 2013. Remaining a total of 1076 companies during the consecutive years 2004 to 2013 of listed companies. Furthermore, we also removed 139 listed companies for the incomplete data from the year 2003 to 2012, finally remaining 937 companies to do the data sources and sample selection. Table 1 lists the industry profiles for sample data. The data of turnover rate and the nature of human control used in this paper are derived from the return on stock price databases from CCER's China economic and financial database. Moreover, the operating profit, earnings per share, investment income, fair value gains and losses, profitability and capital gains, the end of the year closing price, dividend per share, the total number of shares, net profit, operating profit, net cash flow from operating activities, financial expenses, total liabilities, total assets, average interest and other financial data from Shenzhen Guotai Information Technology Limited database (CSMAR). And all incomplete data gained and collected through access to the annual report of listed companies and information network. The data processing of this paper adopts EXCEL, SPSS19.0, Stata and other statistical analysis software.

In this paper, continuous variables up and down 1% of the winsorize processing to remove the possible impact of abnormal values.

Table-1. Listed Companies and Sample Companies Industrial Distribution

Name of Industry	All remained companies		Sample Companies	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Agricultural, Forestry, Animal Product, Fishery Industry	22	1.17	11	2.04
Extractive Industry	37	3.20	30	3.44
Manufacturing Industry	502	53.26	499	46.65
Electricity, Gas and Water Production and Supply Industry	52	5.44	51	4.83
Construction Industry	39	1.60	15	3.62
Transportation, Warehousing Industry	43	4.16	39	4.00
IT Industry	62	4.48	42	5.76
Wholesale and Retail Industry	121	10.99	103	11.25
Real Estate	114	11.10	104	10.59
Social Service	34	2.45	23	3.16
Media Industry	13	0.00	0	1.21
Comprehensive Industry	37	2.13	20	3.44
SUM	1076	100.0	937	100.0

Source: Chinese Stock exchange

4.2. Variable Design and Model Setting

(1) Explained Variables: Debt Capital Costs

In the existing empirical research literature, the estimation of the cost of debt capital mainly includes three categories. One is the credit rating of the company's debt, the higher the credit rating, the lower required rate of return for creditors. Thereby, the lower the cost of debt capital. The Ahmed and other foreign accounting scholars generally use the United States Standard & Poor's credit rating of listed companies to determine the credit rating and the different rating factor, and then measure the level of corporate debt capital costs. However, China does not exist more authoritative credit rating agencies, so we cannot use the debt credit rating method to measure the cost of debt costs. The second is to use the current corporate interest rate accounted for the proportion of the company's average of liability with interest to measure the debt capital cost. Li and Liu (2009) calculate the cost of debt capital using interest expense / (average long-term debt + average short-term liabilities), Li and Liu (2009) use (interest expense + capitalized interest) / total debt to measure debt capital costs. The third is to use the financial accounting indicators. For the reason that the interest expense is only part of the cost of debt capital and the cost of calculating the cost of debt capital should also consider the cost of fees, issuance cost and other expenses. So the use of financial costs / corporate current debt to measure debt capital costs.

First of all, since China's accounting standards require disclosure of borrowing costs of capitalization information, so this paper draws on Li and Liu (2009) calculation method to measure the company's debt costs:

$$(1)\ COST_{it} = (INT_{it} + CINT_{it})/LIA_{it}$$

Among them, $COST_{it}$ stands for the cost of debt capital, INT_{it} stands for the interest expense, $CINT_{it}$ stands for the capitalization of interest and LIA_{it} stands for the average interest rate debt.

In addition, based on the method of measuring the cost of debt capital by Li and Liu (2009) the following two kinds of debt costs are also used as an alternative measure to enhance the reliability of the conclusions of this paper.

$$(2)\ COST1_{it} = Finex_{it}/Liability_{it}$$

$$(3)\ COST2_{it} = Finex_{it}/LIA_{it}$$

Among them, $COST1_{it}$ stands for the cost of debt capital, $Finex_{it}$ stands for the financial costs and $Liability_{it}$ stands for total amount of liabilities.

(2) Explain Variables: Accounting Information Comparability

This paper draws on the accounting information comparability model constructed by De Franco *et al.* (2011) using four consecutive years of data to measure. The model is:

$$(4)\ Comp_{ijt} = -\frac{1}{4} \times \sum\nolimits_{t-3}^{t} \left| E(Earnings_{iit}) - E(Earning_{ijt}) \right|$$

Among them, $Comp_{ijt}$ stand for accounting information comparability, $E(Earnings_{iit})$ stands for the expected operating profit for the firm i which calculated by the model (5) and $E(Earnings_{ijt})$ stands for the expected operating profit of the company j which calculated by the model (6). As the new accounting standards announced at 1st January 2007, the calculation of operating profit has changed. So the operating profit has been adjusted before and after 2007. The operating profit reported during the period from 2004 to 2006 is calculated based on the increase in operating profit and investment income. The operating profit reported during the period 2007 - 2013 is deducted from the changes of variable profit and loss of fair value. The model (5) and the model (6) are:

$$(5)\ E(Earnings_{iit}) = \hat{\alpha}_i + \hat{\beta}_i * \text{Re}turn_{it}$$

$$(6)\ E(Earnings_{ijt}) = \hat{\alpha}_j + \hat{\beta}_j * \text{Re}turn_{it}$$

Where, $\text{Re}turn_{it}$ stands for the company i's stock returns, $\hat{\alpha}_i$ & $\hat{\beta}_i$ are stand for the OLS estimates of four annual data for company i by the regression model that using the period during t-3 to t and $\hat{\alpha}_j$ & $\hat{\beta}_j$ are stand for OLS estimates of four annual data for the company j by the regression model that using the period during t-3 to t.

In order to calculate the comparability of the accounting information for companies, firstly, we calculate the accounting information comparability of all the companies i and the company j with the same industry, and then use the company i as the basis to sorting all matching companies, finally, setting two accounting information comparability variables Comp4 and Compa, where Comp4 is the average of the first four combinations of accounting information, Compa is the mean of all the combined accounting information. The greater the value of these two variables, the greater the comparability of the accounting information of listed companies.

(3) Control Variables

. Li and Liu (2009) found that the company's operating income growth rate (Grow) and asset turnover (Turn) has a significant impact on the cost of debt capital. The higher operating income growth rate, the faster the asset turnover, the lower the company's debt capital costs. Through empirical research found that the largest shareholder can effectively reduce the agency conflict between the company managers and creditors, that is, the higher the largest shareholder of the proportion of shares (First) the lower the company's debt capital costs. It is also found that the cost of state-owned company's debt capital is lower than that of non-state holding company debt. Li and Liu (2009) also found the effects of the actual control of the listed company on the cost of debt capital. Due to the creditor's credit discrimination, non-state-owned enterprises debt capital costs are significantly lower than the cost of state-owned enterprise debt capital. Thus, we introduce the size of the company (Size), financial risk (DEBT), short-term solvency (CR), company growth (Growth), reflect the company's operating capacity of the total assets

turnover efficiency (Turn), the company's actual controller (State), the largest shareholder holding ratio (First), profitability (ROA) and other symbols to control variables. Specific variables are defined and described in Table 2:

Table-2. Variable Definition and Calculation Illustration

Types of Variables	Variable Symbol	Variable Name	Variable Calculation Method
Explained Variable	Cost	Liability Capital Cost	(Interest Expense + Capitalized Interest)/Average Interest Liabilities
	Cost1	Liability Capital Cost 1	Financial Expense/Total Liabilities
	Cost2	Liability Capital Cost 2	Financial Expense/Average Interest-bearing Liabilities
Explanatory Variable	Comp4	Accounting information Comparability1	The comparability mean of the top 4 combinations in the industry
	Compa	Accounting information Comparability2	The comparability mean of all the combinations in the industry
	First	Share ratio of the largest shareholder	
	CR	Current Ratio	Current assets/Current Liabilities
	Turn	Assets Turnover	Operating Revenues/Total Assets
	State	The nature of human control	The actual control is 1 when it is State-Owned, otherwise it is 0
	Grow	Growth	(Present Operating Income-Past Operating Income)/Past Operating Income
	ROA	Return on Assets	Net Income/Average Total Assets
	Debt	Debt-to-assets ratio	Total Debt/Total Assets
	Size	Asset Size	Total Assets at the end of the year

Source: organized by this Study

(4) Model Setting

In order to examine the relationship between accounting information comparability and debt capital cost of listed companies in China, this paper constructs multiple regression model (7) which show as follows:

$$(7)\ Cost_{it} = \beta_0 + \beta_1 Comp_{it} + \beta_2 First_{it} + \beta_3 CR_{it} + \beta_4 Turn_{it}$$

$$+ \beta_5 State_{it} + \beta_6 Grow_{it} + \beta_7 ROA_{it} + \beta_8 Debt_{it} + \varepsilon_{it}$$

Among them, $Cost_{it}$ stands for the cost of debt capital, Cost, Cost1 and Cost2 as the three methods for calculate the cost of debt costs; other variables are defined in Table 2.

5. EMPIRICAL ANALYSIS

5.1. Descriptive Statistics

Table 3 reports the descriptive statistical results of the main variables of the debt capital cost in the accounting information comparability regression model. It can be seen that the mean of Cost, Cost1 and Cost2 is 0.0650, 0.0265 and 0.0624 respectively. From the degree of dispersion of the capital cost calculated by three methods, the standard deviation of Cost, Cost1 and Cost2 is 0.0450, 0.0162 and 0.0519 respectively. The degree of dispersion of debt capital cost is relatively large, which indicates that there has certain difference between different sample companies' debt capital cost.

In terms of control variables, the solvency index CR is 1.5111, the maximum value is 9.7617, minimum value is 0.1531 and the mean of CR is close to the minimum value, indicating that the sample company's flow ratio is

relatively low and short-term solvency is not very high. CR standard deviation of 1.3701, indicating that there has a big difference between different sample companies in terms of solvency. The Debt mean of the long-term solvency and risk of the sample company is 0.5440, the maximum value is 1.6060, the minimum value is 0.0840 and the standard deviation is 0.2274, indicating that the sample companies have different levels of external funding and there are some differences of liabilities between the sample companies. Some companies have a lower debt level while some companies have a higher level of debt. The turnover ratio (Turn) is 0.7226, the maximum value is 3.0772, the minimum value is 0.0249 and the standard deviation is 0.5591 which indicates that the operating capacity of the sample company is still have to be improved.

Table-3. Major Variable Descriptive Statistics

Variable	Mean	SD	Min	P50	Max
Cost	0.065	0.045	0.0029	0.0584	0.3507
Cost 1	0.0265	0.0162	0.0000	0.0252	0.0762
Cost 2	0.0624	0.0519	0.002	0.0548	0.4029
Compa	–0.1370	0.1452	–0.9358	–0.0831	–0.0238
Comp4	–0.0160	0.0503	–0.4150	–0.0036	–0.0004
First	0.3653	0.1596	0.0852	0.3367	0.7498
CR	1.5111	1.3701	0.1531	1.1720	9.7617
TURN	0.7226	0.5591	0.0249	0.5851	3.0772
GROW	0.7732	3.2600	–0.9840	0.1069	26.7842
State	0.7011	0.4578	0.0000	1.0000	1.0000
ROA	0.0245	0.0725	–0.3387	0.0260	0.2236
DEBT	0.5440	0.2274	0.0840	0.5420	1.6060
SIZE	21.7412	1.2264	18.84	21.6682	25.1391

Source: Organized by this study

5.2. Correlation Analysis

Table 4 shows the results of the correlation analysis of the principal variables in the accounting information comparability on cost return model. The upper triangular stands for the Spearman correlation coefficient and the lower triangular stands for Pearson correlation coefficient. The results of correlation analysis show that there is a significant positive correlation between the three types of debt capital cost, which indicates that the cost of debt capital can describe some common attributes of debt capital cost. According to the analysis, the Pearson correlation coefficient between Cost and Cost2 is 0.773 and the Spearman correlation coefficient is 0.749, which indicates that the cost of debt capital in these two methods is strongly consistent, while the Pearson correlation coefficient between Cost and Cost1 is 0.239 and the Spearman correlation coefficient is 0.416, which indicates that Cost and Cost1 describe the different costs of capital attributes respectively. Comp4 and Compa are negatively correlated with debt capital cost of Cost, Cost1 and Cost2, and statistically significant at 1% level. Comp4 and Cost, Cost1 and Cost2 are –0.062, –0.090 and –0.078 respectively. Compa, Cost, Cost1 and Cost2 are –0.060, –0.116 and –0.083 respectively, which indicates that the higher the accounting information comparability, the lower the cost of the company's debt capital. It is verified the assumption 1-b that under the other conditions remain unchanged of the case, the higher accounting information of listed company can reduce the cost of debt capital. Moreover, there is a significant positive correlation between debt capital cost and asset liability ratio (DEBT), which indicates that the higher the asset-liability ratio, the higher the cost of debt capital. It is conformed to the economic expectation theory. However, there is a significant negative correlation between debt capital cost and liquidity ratio (CR) at 1% level, indicating that the higher the liquidity ratio, the higher the solvency of the company and the lower the cost of debt capital. Debt capital costs are negatively correlated with the growth of the firm, indicating that the better the firm's growth and the lower the cost of corporate debt. Furthermore, debt capital Cost1 is positively correlated with asset turnover, which is in line with traditional economic theory. However, debt capital Cost, Cost2 and asset turnover are negatively correlated at 1% level, which is not in line with traditional economic theory. In addition, the

research found that the company has the state-owned nature (State), indicating that the largest shareholder who has the larger shareholding (First) and the stronger profitability of the company (ROA), the lower the cost of debt capital.

The correlation results show that the maximum value of correlation coefficient is 0.773, which is less than 0.8 of previous studies, that is indicating that there is no serious multiple collinearity in the explanatory variables.

Table-4. Debt Capital Cost Regression Variable Correlation Analysis

	Cost	Cost1	Cost2	Compa	Comp4	First	CR	TURN	GROW	State	ROA	DEBT	SIZE
Cost	1	0.416***	0.749***	-0.069***	-0.055***	-0.149***	-0.141**	0.109***	-0.045**	-0.051**	-0.130**	0.031**	-0.163**
Cost1	0.239***	1	0.609***	-0.135***	-0.118***	-0.085***	-0.317**	-0.088***	-0.145**	-0.049**	-0.201**	-0.048**	-0.134**
Cost2	0.773***	0.338***	1	-0.113***	-0.071***	-0.136***	-0.224**	0.150***	-0.075**	-0.067**	-0.137**	0.036**	-0.261**
Compa	-0.060***	-0.116***	-0.083***	1	0.369***	-0.072***	0.163**	-0.030**	0.105**	-0.048**	0.071**	-0.123**	0.053**
Comp4	-0.062***	-0.090***	-0.078***	0.592***	1	0.001	0.146**	0.120**	0.053**	-0.006	0.030**	-0.084**	0.042**
First	-0.116***	-0.099***	-0.109***	-0.022**	0.025**	1	0.035**	0.126**	-0.003	0.290**	0.127**	-0.026**	0.208**
CR	-0.047***	-0.161***	-0.073***	0.118**	0.095**	-0.001	1	-0.021**	0.099**	-0.061**	0.271**	-0.557**	-0.034**
TURN	0.090**	-0.136**	0.127**	-0.013	0.072**	0.104**	-0.044**	1	-0.135**	0.163**	0.228**	0.045**	0.125**
GROW	0.005	-0.072**	-0.017	0.018*	-0.027**	0.004	0.043**	-0.110**	1	-0.031**	0.013	0.054**	-0.045**
State	-0.040**	-0.061**	-0.052**	-0.010	0.031**	0.281**	-0.068**	0.133**	-0.080**	1	-0.004	0.008	0.203**
ROA	-0.118***	-0.179**	-0.119**	0.167**	0.209**	0.116**	0.199**	0.194**	0.025**	0.0150	1	-0.319**	0.203**
DEBT	0.070**	0.057**	0.074**	-0.252**	-0.358**	-0.050**	-0.494**	0.021**	0.050**	-0.030**	-0.377**	1	0.204**
SIZE	-0.160**	-0.157**	-0.229**	0.069**	0.124**	0.235**	-0.068**	0.128**	-0.053**	0.216**	0.224**	0.073**	1

Illustration: (1) Annual ample capacity chosen from 9370 companies during 2004 to 2013 9370;(2) The upper triangular stands for the Spearman correlation, the lower triangular stands for correlation of Pearson; (3) Variables are defined earlier; (4) *** stands for statistically significant at 1% level, ** stands for statistically significant at 5% and * stands for statistically significant at 10%.

5.3. Multiple Regression Analysis

Table 5 reports the multivariate regression analysis of the impact of accounting information comparability on debt capital costs. In order to avoid the possible impact of heteroscedasticity, the results of the analysis have been processed by Robust. The table shows that the coefficients of comparisons of accounting information Compa on the debt capital Cost, Cost1 and Cost2 are -0.0113, -0.0075 and -0.0197 respectively. And it is shows the significant correlated at 1% level. Accounting information comparability Comp4 on Cost, Cost1 and Cost2 coefficients are -0.0182, -0.0068 and -0.0259 respectively, there is no significant sign on statistics. However, the symbol is still shows negative. It can be seen that in the six regression models, the different measurement indexes of accounting information comparability have obviously negative impact on different debt capital costs, indicating that the higher the accounting information comparability, the lower the cost of the company's debt capital, which validated the hypothesis of this paper.

In terms of control variables, the variable flow ratio (CR) reflects the solvency of the company, is negatively correlated at 1% level on Cost1 and Cost2 models, indicating that the higher the company's solvency, the lower the cost of debt capital, which in line with expected economic theory. The cost of debt capital and the nature of human control (State) of listed companies are not express significant negative correlation in model (3) - (6). Although they are positive in models (1) and (2), there are statistically insignificant which indicates state-owned nature of listed companies may have lower debt capital costs. As we know that enterprises of China can be divided into both state-owned and non-state two types. The state-owned enterprises descriptive statistical results also show that 70% of the sample companies have a state-owned nature while most of China's the banks are state-owned banks. The turnover rate (Turn) and Growth (Grow) are significantly negatively correlated in the Cost1 model, which is consistent with previous study and reflects the economic theory. However, it shows the positive correlation in the Cost and Cost2 model, which is not reflects the expected traditional economic theory. Furthermore, the relationship between the cost of debt capital and the shareholding ratio (First) and profitability (ROA) of the largest shareholder is also consistent with the existing theoretical expectations.

Table-5. Accounting Information Comparability Effects on Debt Capital Cost's Multiple Regression Analysis

	Model1	Model2	Model3	Model4	Model5	Model6
	Cost	Cost	Cost1	Cost1	Cost2	Cost2
Cons	0.186***	0.185***	0.0634***	0.0629***	0.267***	0.265***
	(15.38)	(15.23)	(17.46)	(17.26)	(19.55)	(19.22)
Compa	-0.0113*		-0.0075***		-0.0197***	
	(-2.53)		(-5.24)		(-4.19)	
Comp4		-0.0182		-0.0068		-0.0259
		(-1.05)		(-1.53)		(-1.44)
First	-0.0164***	-0.0163***	-0.0039***	-0.0038***	-0.0107**	-0.0104**
	(-5.31)	(-5.28)	(-3.58)	(-3.49)	(-3.15)	(-3.08)
CR	-0.0011	-0.0011	-0.0023***	-0.0023***	-0.0026**	-0.0027**
	(-1.41)	(-1.43)	(-6.89)	(-6.84)	(-2.90)	(-2.96)
TURN	0.0099***	0.0101***	-0.0039***	-0.0038***	0.0146***	0.0149***
	(7.88)	(7.96)	(-10.20)	(-9.96)	(8.69)	(8.78)
GROW	0.0002	0.0002	-0.0002*	-0.0002*	0.0001	0.0001
	(1.09)	(1.09)	(-2.32)	(-2.30)	(0.33)	(0.34)
State	0.0013	0.0014	-0.0018***	-0.0018***	-0.0003	-0.0003
	(1.21)	(1.23)	(-4.48)	(-4.42)	(-0.25)	(-0.23)
ROA	-0.0469***	-0.0476***	-0.0261***	-0.0269***	-0.0491***	-0.0509***
	(-3.83)	(-3.91)	(-7.49)	(-7.73)	(-3.51)	(-3.65)
DEBT	0.0050	0.0052	-0.0025*	-0.0018	0.0038	0.0047
	(1.08)	(0.98)	(-1.97)	(-1.35)	(0.74)	(0.81)
SIZE	-0.0067***	-0.0066***	-0.0015***	-0.0015***	-0.0110***	-0.0109***
	(-11.47)	(-11.19)	(-9.02)	(-8.82)	(-16.78)	(-16.22)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Annual	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
N	7877	7877	8002	8002	7922	7922
F-value	23.61	23.65	57.83	57.17	36.58	36.5
R-Squa	0.0949	0.0942	0.1768	0.1736	0.1365	0.1345

Illustration: (1) The variable defined in the table; (2) ***、**、* express significant correlated at 1%、5% and 10% respectively; (3) the value t shows in parentheses

5.4. Robustness Test

In order to enhance the reliability of the conclusions, this paper uses the model of De Franco *et al.* (2011) to measure the comparability of accounting information. The model constructs the measurement refer to De Franco *et al.* (2011) accounting information comparability as basis, using accrual model for accounting information comparability of the re-measurement, the model can be expressed as:

$$(8) \quad \mathbf{COMP_{ijt}} = -\frac{1}{4} * \sum\nolimits_{t-3}^{t} \left| E(\mathbf{ACC}_{iit}) - E(\mathbf{ACC}_{ijt}) \right|$$

Among them, $\mathbf{COMP}_{ijt}$ stands for the accounting information comparability; ACC stands for the accrual items, which amount is equal to the operating profit minus the net cash flow of operating activities; $E(\mathbf{ACC}_{iit})$ stands for i company's expected accruals that calculated by the model (9); $E(\mathbf{ACC}_{ijt})$ stands for j company's expectations

accrual items that calculated by model (10). As a result of the implementation of the new accounting standards on 1st January of 2007, the calculation of operating profit has changed. Thus we have also adjusted the operating profit before and after 2007. The operating profit reported during the period from 2004 to 2006 is calculated based on the increase in operating profit and investment income. The operating profit reported during the period 2007 - 2013 is deducted from the changes in the fair value of the fair value. The model (9) and the model (10) are:

$$(9) \quad \mathbf{E} （\mathbf{ACC}_{iit}） = \hat{\alpha}_i + \hat{\beta}_i * \mathbf{CFO}_{it}$$

$$(10) \quad \mathbf{E} （\mathbf{ACC}_{ijt}） = \hat{\alpha}_j + \hat{\beta}_j * \mathbf{CFO}_{jt}$$

Where, $\mathbf{CFO}_{it}$ stands for the company i's net cash flow of operating activities. ACC and CFO are offset by the balance of the initial asset. $\hat{\alpha}_i$ & $\hat{\beta}_i$ stands for annual data of OLS estimates for company i through the regression model using the t-3 to t during period for four years. $\hat{\alpha}_j$ & $\hat{\beta}_j$ stands for annual data of OLS estimates for company j through the regression model using t-3 to t during the period for four years.

The results of the robustness test in Table 6 are shown that the regression coefficients of Comp4 and credible capital Cost, Cost1 and Cost2 are -0.1994, -0.0065 and -0.1968 respectively. The regression coefficients of accounting capital cost Compa and the credible capital Cost1 and Cost2 are -0.0170, -0.0015 and -0.0312 respectively. And it has the significant correlation at the level of 1% on Cost and Cost 2. It is obvious show that the higher the comparability of accounting information, the lower the cost of debt and capital which verification the hypothesis for this research: under the unchanged conditions, the higher the comparability of accounting information of listed companies the lower the debt capital cost.

Table-6. Robustness Test

	Model1	Model2	Model3	Model4	Model5	Model6
	Cost	Cost	Cost1	Cost1	Cost2	Cost2
Cons	0.1820***	0.1750***	0.0639***	0.0639***	0.2604***	0.2566***
	(15.36)	(14.86)	(17.37)	(17.32)	(19.41)	(18.92)
Compa	-0.0170***		0.0015		-0.0312***	
	(-2.76)		(0.74)		(-4.06)	
Comp4		-0.1994***		0.0065		-0.1968***
		(-5.24)		(0.62)		(-4.45)
First	-0.0159***	-0.0165***	-0.0039***	-0.0038***	-0.0104***	-0.0108***
	(-5.09)	(-5.32)	(-3.49)	(-3.48)	(-3.00)	(-3.13)
CR	-0.0011	-0.0014*	-0.0023***	-0.0023***	-0.0027***	-0.0029***
	(-1.41)	(-1.77)	(-6.57)	(-6.54)	(-2.93)	(-3.15)
TURN	0.0101***	0.0103***	-0.0037***	-0.0037***	0.0150***	0.0150***
	(7.99)	(8.11)	(-9.83)	(-9.84)	(8.85)	(8.82)
GROW	0.0002	0.0002	-0.0002**	-0.0002**	0.0000	0.0000
	(0.92)	(0.85)	(-2.15)	(-2.14)	(0.23)	(0.13)
State	0.0012	0.0013	-0.0019***	-0.0019***	-0.0003	-0.0003
	(1.07)	(1.14)	(-4.75)	(-4.75)	(-0.20)	(-0.21)
ROA	-0.0495***	-0.0497***	-0.0269***	-0.0270***	-0.0551***	-0.0536***
	(-4.04)	(-4.07)	(-7.66)	(-7.69)	(-3.92)	(-3.81)
DEBT	0.0059	0.0026	-0.0008	-0.0008	0.005	0.0025
	(1.33)	(0.59)	(-0.67)	(-0.62)	(1.04)	(0.52)
SIZE	-0.0066***	-0.0063***	-0.0016***	-0.0016***	-0.0108***	-0.0106***
	(-11.36)	(-10.99)	(-9.17)	(-9.15)	(-16.56)	(-16.26)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Annual	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
N	7742	7742	7847	7847	7767	7767
R-squa	0.0945	0.0991	0.174	0.174	0.136	0.138
F-value	22.95***	23.17***	56.10***	56.14***	35.84***	35.96***

Illustration: （1） The variable defined in table above; (2) ***、**、*indicates the significant correlation at the level of 1%、5% and 10% （3）the value t shows in parentheses

6. CONCLUSION AND SUGGESTION

This paper examines the impact of the accounting information comparability for Chinese listed companies on the debt capital cost by taking 9370 companies of annual samples of China's Shenzhen and Shenzhen A-share market during the period of 2004 to 2013. The measurement model of accounting information comparability of listed companies draws on the comparability model of De Franco *et al.* (2011). The study found that, under the control of other factors, accounting information comparability has a significant negative impact on equity capital costs.

China's bond market is less developed and mature than Western countries. So the debt financing of Chinese listed companies mainly through bank borrowing. As a professional organization, the bank can better interpret the financial report for listed companies. Moreover, the bank can also play a good governance role for accounting information quality of listed companies. However, because of most of China's banks have the state-owned nature, there may exist the situation of "soft budget constraint" on the state-owned listed companies which may lead to banks and other financial institutions lack of attention on accounting information. Thus, the banks cannot effective governance functions and may lead to ambiguous effects on debt capital costs. Therefore, for the regulatory authorities, it should further develop the accounting standards, promote the accounting information of listed companies and improve the quality of accounting information to curb the behavior of management opportunistic and internal staff encroach on the interests of external investors. Furthermore, it is better to strengthen training and education for creditors to reaching the goals of protect the interests of creditors and promote the healthy development of capital markets.

This study will contribute future relevant studies which focus on international or domestic accounting information comparability and debt capital cost. It is valuable to policy makers and investors of individual and institutional.

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