

The Impact of Accounting Information Quality on Cost of Debt Capital

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Abstract: In the face of the COVID-19 epidemic, enterprises are more or less short of cash in operation. Debt financing is a major source of funds for enterprises at present, so the cost of debt capital has become the focus of enterprises. This paper mainly studies whether the improvement of accounting information quality can effectively reduce the cost of enterprise debt capital. This paper selects the data of 4033 domestic A-share listed companies from 2010 to 2019 to construct multiple linear regression analysis. The empirical analysis shows that the quality of accounting information has a significant negative correlation with the cost of debt and capital. Therefore, this paper suggests that enterprises should improve corporate governance and internal and external control mechanism, strengthen the communication mechanism with stakeholders to improve the quality of accounting information, so as to achieve the goal of reducing the cost of debt capital. Especially in the context of the impact of the epidemic, this study has certain practical significance and it can provide some guidance for the subsequent development of enterprises.

1. Research Background

Since 2020, in the face of the sudden impact of COVID-19 epidemic and the complex domestic and international situation, not only small and medium-sized enterprises are suffering from a cash flow shortage, but also some listed companies are facing a funding gap. In order to solve the funding gap, enterprises are bound to raise funds. In the current economic environment, internal financing can provide very limited funds, so enterprises need to strive for external financing. External financing is divided into equity financing and debt financing. The sustainable development of an enterprise needs large number of funds, and enterprises need to bear the cost of capital of raising funds.

Generally speaking, capital providers, including shareholders and creditors, will judge the operating conditions of the company through the disclosed accounting information and then make the decision of whether to provide funds for it. High quality accounting information can help investors or creditors better know the enterprises and make effective investment decisions. Especially for enterprises with good operating conditions, transparent accounting information with high accuracy can reflect their future development potential and help to attract more healthy investment. If the accounting information lacks authenticity, timeliness and integrity, it will lead to the information asymmetry between the capital provider and the enterprises. In order to protect their interests, creditors may demand higher returns on investment to make up for the possible investment risks. Accordingly, enterprises bear a higher cost of capital. Moreover, the lack of strict control by external institutions, such as auditing institutions or China Securities Regulatory Commission (CSRC), will also seriously affect the accounting information quality, reduce creditors' trust for enterprises. As a result, the enterprise's cost of debt capital raise again. This paper mainly studies the relationship between the accounting information quality and the cost of debt capital, so as to improve internal and external communication and governance and reduce the cost of debt capital. Especially in the context of the impact of the epidemic, this study has certain practical significance and can provide some guidance for the subsequent development of enterprises.

2. The Theoretical Basis

2.1 Principal-agent theory

The principal-agent theory is generally manifested as the separation of management and ownership. In a principal-agent relationship, the agent acts on behalf of the principal and should not have a conflict of interest in carrying out the act. If there is, this creates a principal-agent problem. The agent is most often an individual capable of understanding and ultimately carrying out the task assigned by the principal. In the context of enterprises, shareholders expect managers to maximize their wealth and grant managers certain decision-making rights. The executive compensation is closely related to business performance.

The existence of this contradiction requires shareholders to supervise the behavior of managers to ensure the healthy development of the company. Both the supervision mechanism and personal rewards and punishments need timely and accurate accounting information for reference. Therefore, highly transparent accounting information can help owners better understand the company's financial situation, provide effective incentives to the management, and effectively reduce agency costs.

2.2 Information asymmetry

Information asymmetry exists in the information owners and users, or between the information users. For example, although the company's internal managers have a lot of information, they often disclose part of the information based on their own interests. In addition, the information asymmetry between banks and enterprises will also cause credit mismatch in the credit market. In order to ensure full recovery of the loan, the bank as the lender needs to know the true use of the loan by the lending enterprise. Information symmetry plays a fundamental role in bank credit decision making. Other things being equal, the more transparent the information between the bank and the enterprise is, the more likely the enterprise is to obtain bank loans and enjoy lower borrowing rates and higher loan lines. Similarly, when banks face many enterprises with the same financing needs, they are more inclined to provide more loans at lower interest rates to enterprises with high information transparency, while enterprises with low information quality need to bear higher financing costs to obtain loans.

In fact, capital providers cannot grasp complete information, which leads to information asymmetry. The lack of information brings higher investment risk to shareholders or creditors. When faced with high risk, creditors will appropriately demand high returns, making the cost of debt capital rise. In addition, when the information between capital providers is asymmetric, they will face different degree of transaction risk, which will also cause impact and disruption to the capital market. Therefore, if higher quality accounting information can be provided to information users, it can help solve the problem of information asymmetry in market activities, improve market order, enhance capital liquidity, and further reduce the cost of debt capital.

3. Literature Review

Domestic scholars have pointed out that the quality of accounting information is closely related to the cost of debt capital. S.N. Zhang (2019) took the accounting information quality and cost of debt capital of all A-share listed companies from 2011 to 2017 as research objects and concluded that they were significantly negatively correlated [1]. High quality accounting information can transfer good internal financial results to external investors, so as to obtain the lowest cost of debt capital for the company. Y.M. Yin (2019) proposed that highly transparent accounting information can improve banks' favorable impression and trust on an enterprise [2]. For example, real financial data can show that a company is capable of repayment, which can pave the way for the company's future financing and development. X. F. Zhang, F. L. Liu, E. G. Hu (2015) took A-share listed companies in Shanghai and Shenzhen Stock Exchange from 2009 to 2012 as research objects and concluded that for large companies, the effect of increasing accounting information transparency

was not prominent. For smaller companies, increasing the transparency of accounting information significantly reduces the cost of debt and capital, maintains market order and optimizes market resource allocation [3]. Z. H. Li (2015) and Chen, Z., Pan, J., Wang, L., Shen, X (2016) also used different alternative variables of accounting information quality to verify the relationship between them through empirical research [4, 5].

The information risk brought by information asymmetry to different information users is also an important factor affecting the cost of debt capital. Foreign scholars point out that information asymmetry will increase the cost of debt capital of enterprises, which is mainly because external investors can only protect their own interests by raising the cost of debt capital when they cannot obtain complete information. Khoufi (2020) selected 50 companies listed on the Tunis Stock Exchange from 2012 to 2016 to conduct an empirical study on the relationship between the quality of accounting information and investment decisions, and concluded that accounting information is significantly negatively correlated with investment efficiency [6]. Francis et al.(2004) studied American companies and found that there was a negative correlation between low quality earnings and high debt cost [7]. Specifically speaking, when the quality of enterprise's earnings decreases, the quality of enterprise's accounting information will also decline. The decline of the quality of accounting information will bring many negative effects to enterprises, including the increase of the cost of debt and capital. Francis (2003) used empirical research to show that there is a significant positive correlation between debt capital cost and information risk [8].

Therefore, to sum up, we can see that the quality of accounting information is significantly related to the cost of debt capital. The high quality accounting information of enterprises conveys the information of good management, which is conducive to expanding financing channels. It also helps investors to reduce the risk of information asymmetry, reduce adverse selection and solve the problem of moral hazard. The higher the quality of accounting information, the higher the transparency of enterprises, and the lower the uncertainty risk faced by information users. On the contrary, low-quality accounting information cannot give investors a sense of security, and investors often directly raise the borrowing rate of enterprises to protect their own interests. Therefore, the research hypotheses of this paper are proposed as follows.

H1: The improvement of accounting information quality can reduce the cost of debt capital of enterprises.

4. Empirical Research Design

4.1 Samples and Data Sources

In order to explore the impact of accounting information quality on the cost of debt capital, this paper takes domestic A-share listed companies as the research object, and selects relevant data from 2010 to 2019 as the sample for analysis. On the premise of ensuring the research accuracy and data comparability, this paper made the following adjustments based on the original data. Firstly, the data of finance and insurance industry were excluded, because these two industries do not belong to the real economy and are not in the research scope. Secondly, ST shares were removed, because there were large risks and large volatility of data samples, which was not conducive to analysis. Lastly, a large number of samples with missing data were removed to reduce the workload of analysis. The data used in this paper are mostly from CSMAR database. Some data were collected and calculated manually or calculated by Excel. A sample size of 4033 was covered. Excel and Stata 14.0 software were used for data collation and econometric analysis.

4.2 Variable measurement

4.2.1 Explained variables

This paper studies the impact of accounting information quality on the cost of debt capital, so the cost of debt capital is the explained variable. The cost of debt capital mainly comes from the debt financing of the enterprise. The debtor conducts operating activities or reinvestment with the funds

from the creditor to pursue higher enterprise value, while the creditor obtains corresponding interest income. However, the creditor also has to bear some risks, such as the default risk of the debtor's failure to repay the interest when due or the risk of interest rate changes. These risk factors will be reflected in the return required by creditors, that is, the risk premium. Through literature review, foreign scholars generally use debt rating and average yield to maturity to calculate the cost of debt capital. However, there is no authoritative credit rating agency in China that can provide interest on different types of debt of bank deposits, bonds, notes receivable or other loans from non-bank institutions, so this method is not applicable to China. Therefore, this paper adopts the calculation method of J. Zheng (2017), that is, the cost of debt capital of an enterprise is equal to the interest expense divided by the total borrowing, including long-term borrowing and short-term borrowing of an enterprise [9]. Among them, the short-term loan of the enterprise includes the long-term loan due within one year. This method can reflect the cost of debt capital in the enterprise as a whole.

4.2.2 Explanatory variables

This paper studies the impact of accounting information quality on the cost of debt capital, but there is no direct data to measure the quality of accounting information. In the previous empirical studies, scholars often choose earnings management data to measure the quality of accounting information. It is generally believed that within the scope permitted by legal and accounting standards, managers can actively use earnings management to adjust relevant accounting profit data, so as to show the good operating conditions of enterprises. And it also bring positive help to the development of the capital market. Therefore, on the basis of the mature calculation model of earnings management, this paper selects the revised Jones model to calculate earnings management data to measure the quality of accounting information. The manipulable accrued profit data were collected from the corresponding data sectors in the CSMAR database. The higher the value is, the worse the quality of accounting information is. In order to facilitate calculation and analysis and refer to the researches of other scholars, this paper takes the absolute value of manipulable accruals and turn it into negative value to measure the quality of accounting information (AQ).

4.2.3 Control variables

Based on the existing domestic and foreign studies, the following variables are selected as the control variables.

a) Company Size (Size)

Generally speaking, compared with small and medium-sized enterprises, large companies have more perfect internal control, more abundant funds, and higher reputation, so they have stronger ability to repay loans. Creditors demand lower interest rates on loans for large companies, while for small companies, they often demand higher interest rates to compensate for investment risks. At the same time, large companies need to raise more funds, bringing with them an increase in the cost of debt capital.

b) Asset-liability ratio (DEBT)

Asset-liability ratio is also one of the factors considered by creditors. A high asset-liability ratio means that the solvency of enterprises is weak. Creditors may be reluctant to lend if their interests are not adequately protected. When the creditor examines the asset-liability ratio, it also needs to consider whether the asset-liability ratio is reasonable for the invested company based on the characteristics of the industry, operation conditions, market environment and policies.

c) Return on equity (ROE)

The higher the return on equity, the higher the profit level of the enterprise. Most of the borrowing needs of enterprises are brought by short-term turnover, so enterprises are not always in a state of shortage of funds. It also means that with less pressure to repay debt, creditors will have more confidence in the business and will demand lower interest rates.

In addition to the above three variables, other factors affecting corporate earnings and capital structure were also taken into account, including Interest Coverage Ratio, Book-Market-Ratio and Ratio of net cash flow from operations to total assets, as shown in table 1.

Table 1 Variable measurement

Variable attributes	Variables	Definitions	Symbol
Explained variable	Cost of Debt Capital	interest expense /(long-term borrowing +short-term borrowing)	COD
Explanatory variables	Accounting Information Quality	takes the absolute value of manipulable accruals and turn it into negative value	AQ
Control variables	SIZE	Logarithm of total assets at year end	SIZE
	DEBT	Total liabilities/total assets	DEBT
	ROE	Net Income/Average Equity	ROE
	Equity Multiplier	Total Assets/Total Equity	LEV
	Fixed Assets Ratio	Fixed Assets/Total Assets	FIXRA
	Interest Coverage Ratio	Net Income+Interest Expense)/Interest Expense	INTCOW
	Book-Market-Ratio	Total Assets/Total Market Value	BM
	Ratio of net cash flow from operations to total assets	Net cash flow from operations /Total assets	TA

4.2.4 Model construction

The purpose of this paper is to explore the impact of accounting information quality on the cost of debt capital. Therefore, taking the cost of debt capital as the dependent variable, the following model can be obtained:

$$COD = \alpha_0 + \alpha_1 AQ + \beta_i Controls_i + \varepsilon \quad (1)$$

5. Empirical Results and Analysis

5.1 Descriptive analysis of samples

Table 2 Descriptive statistical analysis

Variable	Obs	Mean	Std.Dev.	Min	Max
AQ	4033	-0.0747	0.1169	-6.2236	0.0000
COD	4033	0.0219	0.0168	0.0000	0.2102
SIZE	4033	21.6239	1.0749	18.6415	24.9186
DEBT	4033	0.5097	0.1861	0.0068	0.9895
ROE	4033	0.0795	1.1376	-43.8867	18.3216
FIXRA	4033	0.2852	0.1841	0.0002	0.9879
LEV	4033	2.9487	13.5150	1.0005	681.7864
INTCOW	4033	20.8973	193.7643	-1476.8996	8743.6473
BM	4033	0.4303	0.3002	0.0005	2.6002
TA	4033	0.0518	0.8394	-0.5345	0.8898

As can be seen from table 2, in the selected samples, the accounting information quality (AQ) has a maximum value of 0, a minimum value of -6.2236, and a standard deviation of 0.1169, which indicates that various types of enterprises have great differences in accounting information quality control. In addition, the maximum COD is 0.2102, the minimum COD is 0, the mean value is 0.0219, and the standard deviation is 0.0168, which also indicates that the cost of debt capital is relatively different among enterprises. From the data of control variables, it can be seen that the standard deviation of company SIZE is 1.0749, showing no significant difference. In this case, the average debt-to-capital ratio reaches 0.5, accounting for more than half of the total, indicating that debt financing is a major source of funding.

5.2 Multiple regression analysis

In order to further verify the impact of accounting information quality (AQ) on the cost of debt capital (COD), this paper conducts a regression analysis on the sample data from 2010 to 2019 and explains the regression results. The results are shown in table 3. The quality of accounting information (AQ) and the cost of debt capital (COD) present a significant negative correlation at the level of 0.01, which can be concluded that our research hypothesis is valid, that is, the improvement of accounting information quality can reduce the cost of debt capital.

Table 3 Regression analysis results

	COD
AQ	-0.0051*** (-2.69)
SIZE	-0.0018*** (-8.33)
DEBT	0.0201*** (15.73)
ROE	0.0005*** (2.74)
FIXRA	0.0250*** (20.68)
LEV	0.0000** (2.34)
INTCOW	-0.0000*** (-4.78)
BM	0.0073*** (9.67)
TA	-0.0081*** (-2.92)
N	4033
F	105.12***
R ²	0.152

Note: *** represents significant at the level of 0.01, ** represents significant at the level of 0.05 and * represents significant at the level of 0.1

As can be seen from the results between the control variable and the explained variable, the company size (SIZE) and COD present a significant negative correlation. For large-scale enterprises, the rules and regulations and internal control will be relatively perfect, so as to better reduce the cost of debt capital. While the asset-liability ratio (DEBT) and COD are positively correlated, indicating that the higher the asset-liability ratio of an enterprise is, the greater the debt cost pressure it needs to bear. The interest coverage ratio (INTCOW) is negatively correlated with COD, indicating that the larger the interest coverage ratio is, the stronger the enterprise's profitability and debt paying ability will be. However, there is a significant positive correlation between the fixed assets ratio (FIXRA) and COD, indicating that the larger the fixed assets ratio of an enterprise is, the weaker the liquidity of the enterprise will be, and the higher the debt cost will be. Furthermore, table 3 shows that the net cash flow (TA) in business activities is negatively correlated with COD at the level of 0.01. A large net cash flow generated in the operation often indicates a good operating situation, and the cost of debt capital of the enterprise is at a lower level. In general, other variables are significantly correlated with COD at the level of 0.01, except the equity multiplier (LEV), which has a positive correlation with COD at the level of 0.05.

Therefore, we can get the result that the improvement of the quality of accounting information can help reduce the cost of debt capital. At the same time, the factors of control variables also have

different influences on the cost of debt capital. As can be seen from the regression analysis results, with the change of these variables, the cost of debt capital will also present positive or negative changes. Therefore, we can put forward targeted suggestions to enterprises based on empirical results.

6. Conclusions and Suggestions

The quality of accounting information is negatively correlated with the cost of debt capital at the level of 0.01. It shows that the improvement of accounting information quality can effectively reduce the cost of debt capital. As can be seen from the above descriptive statistical analysis, debt financing is still the main financing channel for Chinese enterprises. As the financial institutions such as banks in China have strict conditions for granting loans to enterprises, the quality of accounting information becomes particularly important. For investors, high quality and transparent accounting information is helpful for investors or creditors to have a deep understanding of the operating results and development prospects of enterprises, and accordingly reduce the required rate of return. For the company, it is necessary to improve the corporate governance and the communication mechanism with stakeholders to help improve the quality of accounting information and business efficiency, so as to achieve the goal of reducing the cost of debt capital.

6.1 Improve corporate governance and internal and external controls

As the subject of accounting information disclosure, enterprises provide financial reports to investors. Therefore, it is very important to do a good job in corporate governance and internal and external control to ensure the quality of accounting information. On the one hand, enterprises need to establish an effective internal supervision mechanism to encourage the management team to actively fulfill their responsibilities and act in good faith. On the other hand, the CSRC and other regulatory agencies need to strengthen external supervision. On the basis of ensuring the reasonable rights and interests of listed companies and investors, various management methods should be used comprehensively to control illegal acts and ensure the authenticity and accuracy of information. On the whole, financial departments, certified public accountants and enterprises can be taken as the core of national supervision, social supervision and internal supervision respectively, which is conducive to ensuring the high quality of accounting information.

6.2 Improve the communication mechanism with stakeholders

Perfect communication mechanism with stakeholders is helpful to solve the problem of information asymmetry and improve the quality and credibility of accounting information of enterprises. Enterprises can take the initiative to explore the needs of creditors and disclose accounting information in an all-round way, so as to improve public confidence in the future development of enterprises. At the same time, the board of directors should also actively communicate with investors and improve the relevant mechanisms for investors to participate in corporate governance, so as to alleviate the problem of information asymmetry. Once the accounting information gets enough attention, it will put forward higher requirements for the quality of accounting information. Managers will also be more diligent in managing business to achieve the goal of creating maximum value for the company, and the cost of debt capital of the enterprise will be reduced accordingly.

Generally speaking, enterprises improve their own business model, perfect internal and external supervision mechanism and improve the economic benefits of enterprises are conducive to reduce their cost of debt capital.

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