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Literature Review on the Influencing Factors of Bond Financing Cost

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Abstract: *This paper reviews the relevant literature on the cost of bond financing, and finds that scholars at home and abroad have done a lot of research on the influencing factors of the cost of bond financing mainly from the macro level and micro level, among which the micro level is from the perspective of the characteristics of bonds and the issuers. In addition, there are also a few scholars who consider the social and executive influences. However, with the vigorous development of the bond market and the increasing competition in the product market, the future research can turn to the influencing factors of the medium level such as the product market.*

Keywords: *cost of bond financing, macro level, micro level*

1. Introduction

In the process of production and operation, an enterprise cannot do without human, material and financial resources, which are financial resources in the final analysis. When an enterprise develops to a certain scale, its own capital is not enough to support its expansion and reproduction, then financing is needed. In China, the current financing methods of enterprises mainly include equity financing and debt financing, while the dominant one in the debt financing market is bank lending. However, in order to prevent risks, banks often have higher lending thresholds, higher requirements on the reputation, scale, profitability and development ability of enterprises, and often need collateral, which brings certain difficulties to the financing of enterprises. In order to provide more financing channels for enterprises, the government has introduced a series of policies to promote and guide the development of the bond market. In recent years, with the gradual expansion of the scale of bonds in China, how to reduce the financing cost of corporate bonds has become a widespread concern of entrepreneurs and scholars. Domestic and foreign scholars have also begun to carry out a series of studies on the factors affecting the financing cost of bonds.

2. Bond Financing Cost Factors

2.1 Macro Level

As for the research on macro factors, the current research mainly focuses on the aspects of national debt yield, monetary policy and GDP level.

In terms of national debt yield, Longstaff and Schwartz(1995)[1] studied the relevant data of five-year national debt yield as samples, and concluded that national debt yield had a significant negative impact on bond credit spread. Zhang Maojun (2015) [2] analyzed the theoretical mechanism of corporate bond financing cost with the help of Merton's structured model, and selected risk-free interest rate and other factors as explanatory variables to build a multiple regression model and test the relationship between risk-free interest rate and bond financing cost. The research found that risk-free interest rate was significantly negatively correlated with corporate bond financing cost. Wang Anxing (2015)[3] studied the interest rate spread between corporate bonds and national bonds and the influencing factors of interest rate spread variation through regression analysis, and also concluded that the financing cost of corporate bonds changed in the opposite direction from the risk-free level, which was consistent with the conclusion drawn by foreign scholars.

With the advance of interest rate marketization, scholars began to study the impact of monetary policy on the bond market. Bernanke and Blinder (1988) and Bernanke and Gertler(1995) analyzed the credit transmission channels of monetary policy and concluded that tight monetary policy would lead to

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the expansion of credit spreads. Cook and Hanh(1989) studied the impact of monetary policy on bond credit spreads by taking data from different periods as samples, and found that the conclusions reached in different periods were inconsistent.Zhang Xueying (2012)[4] used the event study method to draw the conclusion that the deposit reserve regulation had no significant impact on the credit spread. However, Wang Boying (2018) [5] used the event study method and panel data analysis to explore the impact of monetary policy on credit spreads and found that monetary policy operations had a more significant impact on credit spreads of low-grade corporate bonds. Moreover, further research showed that monetary policy had asymmetric effects on credit spreads at different stages of the economic cycle.

On the level of GDP, there is no consensus. Altman (1990) found a positive correlation between economic growth and bond credit spreads through research, and Wilson further verified this conclusion. However, Tang (2010) found that when GDP increased, the average credit spread declined. Leland (2006), taking the data from the United States as a sample, also drew a similar conclusion, that is, economic growth would reduce credit spread. Dai Guoqiang (2011) [6], based on the structured model of Merton(1974) and the panel data from 2000 to 2010, conducted an empirical study on the influencing factors of corporate bond credit spreads in Shanghai and Shenzhen stock markets. The results showed that GDP index was positively correlated with corporate bond spreads.

In recent years, some scholars have studied bond financing costs from the perspective of capital market. Tang Yizhou, Wang Jingwen and Wang Shujing (2019) [7] studied the impact of capital market opening on corporate bond financing costs, and found that Shanghai-Shenzhen-Hong Kong Stock Connect significantly reduced bond financing costs of target enterprises.The influence mechanism of Shanghai-Shenzhen-Hong Kong Stock Connect was to reduce the financing cost of corporate bonds by improving the information efficiency of the underlying companies' stock prices. Guo Fei, Li Qinghua and Liu Kunpeng (2020) [8] found that effective hedging in accordance with the Accounting for Hedge (CAS24) could significantly reduce the credit spread of corporate bonds, while the general use of derivatives or the use claimed for the purpose of risk hedging does not affect the credit spread.

2.2 Micro Level

2.2.1 The Characteristics of Bonds

Existing studies have shown that whether there is a bond guarantee, bond credit rating, bond size and issuing period will affect the financing cost of bonds.

As for the relationship between bond guarantee and bond financing cost, there are two main viewpoints in the academic circle at present. Some scholars believe that bond guarantee will reduce bond financing cost. Stiglitz and Weiss (1981) pointed out that guarantee, as a measure of credit enhancement, would alleviate the information asymmetry between investors and issuers and send a positive signal to the market, thus reducing the cost of bond financing. Another group of scholars hold completely opposite views. For example, Zhang Xueying and Jiao Jian (2017) [9], the higher the risk of a bond issuer, the more likely it was to adopt guarantee. When controlling for other factors, covered bonds had a higher issue spread than unsecured bonds with the same credit rating.

In terms of credit rating, Jerome S. Fons et al. (1991) found through empirical research that credit rating would reduce the default rate of enterprises and thus reduce the credit spread of bonds. Agarwal and Hauwald (2012) found that credit rating machines could convey information about corporate credit risks to the market and investors, and effectively reduce information asymmetry in the capital market. If the message was positive for the company, it would lower the cost of issuing debt. Li Xin (2016) [10] took the corporate bonds discovered in China from 2007 to 2014 as samples to discuss the relationship between bond credit rating and financing cost, and found that there was a significant negative correlation between the two, especially in the companies with good corporate governance. Zhang Ting (2015) [11] believed that credit rating, on the one hand, reflected the risk information of an enterprise; on the other hand, it could also convey certain information to investors, so as to guide investors' decisions. Through empirical research, it found that credit rating had a significant explanatory power on bond financing cost, and bond financing cost decreases with the rise of credit rating.

In terms of issuing size, Xu Qiang (2007) [12] took short-term financing bonds as samples to study the influence of issuing size and other major factors on issuing spread, and concluded that with the increase of issuing size, credit spread would decrease. Campbell and Taksler(2003)[13] believed that the credit spread of corporate bonds would decrease with the increase of bond size. This was because in the opinion of investors, with the gradual increase of bond size, more bond holders would share the risk, thus individual investors would reduce the bond risk premium.

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The study of Helwege,Turner (1999) [14] showed that the longer the maturity, especially the remaining maturity, of corporate bonds, the larger the credit spread of bonds would be. This was because the longer the maturity was, the more uncertainty the bond would face and the more risk the investors would bear. Therefore, the investors would demand a higher risk premium, which would increase the financing cost of the bond. Zhou Hong (2012) [15] and Han Pengfei (2015) [16] pointed out that the farther the bond was from the maturity date, the smaller the bond spread would be. This may be due to the existence of the "upside down" phenomenon of corporate bond spread. The current interest rate policy limited the adjustment space of corporate bond interest rate, so the difference between corporate bonds with different maturity structures could not be well reflected.

2.2.2 The Bond Issuer

The existing research results show that property right nature, enterprise scale, debt paying ability, profitability and so on are the factors that affect the bond financing cost.

For the property right nature, domestic and foreign scholars mostly draw the same conclusion, that is, the bond financing cost of state-owned enterprises is lower. Lin Yifu (2004) [17] believed that the economic activities of state-owned enterprises were not purely for the purpose of profit, but were more dominated by the government to promote the development of national economy and undertake social and public functions. Therefore, when the cash flow generated by the business activities was insufficient to bear the more debt, the government would often intervene to provide financial support. Allen (2005) [18] believed that state-owned enterprises often had the government's hidden cover, which enablesd state-owned enterprises to obtain more government resources and policy support. In the capital market, it was conducive to gain the favor of investors, so as to obtain financing at a lower cost. Chen Maoni (2018) [19] selected the data of corporate bonds issued in the Shanghai and Shenzhen Stock Exchanges from 2008 to 2015, and found that compared with non-state-owned enterprises, state-owned enterprises enjoyed the "implicit guarantee" from the government, and investors charged a relatively lower credit spread on them, thus obtaining a lower bond financing cost. Through empirical analysis, Fang Hongxing (2013) [20] concluded that after controlling other factors that may affect corporate bond pricing, state-owned property rights could reduce the default risk faced by investors due to government support and credit endorsement, so as to obtain a lower bond financing cost compared with private enterprises.

As for the size of the company, the larger the size of the company, the stronger the strength of the company, which will significantly improve the company's ability to withstand risks; the lower the possibility of default, the easier it is to obtain external financing (Graham et al., 2007). Lang and Lundholm (1993)[21] believed that the larger the enterprise scale, the more perfect the relevant system, the lower the cost of information disclosure, and the stronger the desire of the enterprise to disclose information, thus reducing the degree of information asymmetry between the enterprise and the outside world, which was conducive to the enterprise to conduct bond financing. Zhu Yanjian (2016) [22] studied the relationship between company size and bond financing cost based on the data of Chinese listed private companies' bond issuance from 2007 to 2013. It was found that there was a significant negative correlation between the size of private companies and the level of bond financing interest rate. The larger the asset scale of an enterprise, or the stronger its development ability and growth, would help it to obtain a lower financing rate in the bond market. Yang Dakai (2014) [23] in study of earnings management behavior of listed companies issued to the company found that there was a significant negative correlation between the asset size of the issuer and the credit spread, This was because companies with different asset sizes had different ability to resist risks. Large-scale companies had stronger ability to cope with risks and were less likely to go bankrupt.

There is no unified conclusion on solvency at present. Baxter and Gragg (1970)[24] concluded that the higher the asset-liability ratio, the greater the uncertainty of the company's return on assets, the higher the probability of default risk and financial crisis, the higher the risk premium demanded by creditors, so the higher the cost of capital the company needed to pay. Wan Difang (2011) and Yan Yanyang (2014) further verified this view. Ross (1977) held the opposite research perspective and conclusion. He believed that a high asset-liability ratio of an enterprise did not necessarily mean a high financial risk. On the contrary, it might mean that the enterprise had a good development prospect and more investment opportunities. If the bond market was balanced and effective, enterprise value was positively correlated with financial leverage. The greater the enterprise value was, the lower the financing cost would be. In the past, empirical studies had found that appropriate financial leverage helped to increase the value of enterprises. Yao Fei (2012) conducted a study on non-financial companies and found that the higher the company's asset-liability ratio, the lower the bond financing cost.

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For profitability, most of the existing research results come to a consistent conclusion, that is, the stronger the company's profitability, the lower the financing cost of bonds. This is because profitability represents the investment potential and development prospect of an enterprise, and one of the main bases for investors to make investment decisions is the profitability of the company. The stronger the profitability is, it will send a positive signal to the outside world, and investors' risk expectation and required risk premium will be relatively low. Major representatives include Bradley and Chen (2011), Nie Cheng and Zhang Maojun (2016), Liu Pengfei and Yan Yanyang (2014), etc.

In addition, there are studies on other influencing factors. Zhou Hong et al. (2016) [25] believed that bond issuing enterprises' commitment to social responsibility could significantly reduce their bond credit spreads. Yu Jing and Xu Xiaoqing (2019) [26] believed that the strengthening of executive power would lead to the increase of corporate bond financing costs. Liu Ying (2020) [27] believed that the monetary compensation level of senior executives was negatively correlated with bond financing cost, while the shareholding ratio of senior executives was positively correlated with bond financing cost.

3. Conclusion

Bond financing cost has always been the focus of many scholars. Through a review of domestic and foreign literature, it is found that scholars' studies on the factors affecting bond financing cost focus on the two levels of macro and micro bond issuers and the characteristics of the bond itself, and there are totally different views on the influence of some factors such as debt paying ability. In addition, some scholars also conducted researches from the perspectives of social responsibility, customer concentration and executive compensation. In addition, there are also some scholars from the perspective of social responsibility, customer concentration and executive compensation. However, with the continuous maturity of China's market economy system and the increasing competition, product market related factors cannot be ignored.

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