

Research on the Influence of Local Government Debt on Enterprise Debt Financing

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Abstract: In recent years, China's local government debt and corporate debt issues have attracted the attention of academia and the government. At present, the financing difficulties of SMEs have become a problem in the industry. Although the existing literature has studied the impact of local government debt on the debt financing of micro enterprises, the academic circles still hold disputes on the "crowding out effect" and "crowding in effect" of local government debt on micro enterprise behavior. This paper selects the panel data of provincial local government debt and A-share listed companies from 2012 to 2020 to explore the impact of local government debt on corporate debt financing from the scale and structure of corporate debt financing. According to the empirical results, the expansion of local government debt will lead to a decline in the debt financing level of local enterprises. From the perspective of different debt sources, the impact of local government debt expansion is significantly different. Local government debt expansion has a strong and significant crowding out effect on corporate financial liabilities, while this effect on corporate operating liabilities is weak. Accordingly, this paper puts forward corresponding suggestions: local governments should reasonably control their own debt scale, implement differentiated deleveraging policies according to local conditions, strengthen the cooperation between financing platforms and private capital, vigorously develop the direct financing market, and create good conditions for enterprise financing.

Keywords: Local government debt, Corporate debt financing, Debt financing structure.

1. Introduction

Local government debt has always been the focus of academic attention. This is mainly because the local government debt has a wider impact, whether on the macro economy or micro enterprises. Since 2012, with the continuous expansion of local government debt, the transparency of local government debt in China has been decreasing and the debt risk has been increasing. At present, due to the impact of the epidemic situation, the conflict between Russia and Ukraine and other external factors, most Chinese enterprises are facing difficulties in financing. With the further implementation of the policy of stable growth, the burden of local finance has become heavier and heavier. Local governments and micro enterprises are inextricably linked, and the development of enterprises cannot be separated from the development of macro economy. Therefore, it is of great value to investigate the impact of local government debt on corporate debt financing, and further explain the current difficulty of corporate debt financing, which will help alleviate the current problem of corporate debt financing.

2. Literature Review

Whether local government debt is squeezed out of corporate debt financing or included in corporate debt financing has been controversial in the academic community.

Most scholars believe that the expansion of local government debt will affect the portfolio and pricing of investors, and then affect the leverage ratio of enterprises, that is, government debt is negatively correlated with enterprise debt (Graham&M. T, 2014; Krishnamurthy&Jorgensen, 2015)[1][2]. The increase of local government debt has pushed up the cost of corporate debt and thus affected the level of corporate debt (Wang Jinxiang et al., 2020; Wu Junpei et al., 2021) [3][4]. Considering the crowding in effect of

infrastructure construction and the crowding out effect of credit, the impact of local government debt expansion on enterprise financing has regional heterogeneity, which shows that local government debt expansion will increase the scale of enterprise financing in the eastern region but have no impact on enterprise financing in the western region (Hu Yumei, 2019)[5]. Further research shows that the negative effect of local government debt on corporate debt financing is more significant in regions with large scale, strong profitability and developed equity financing markets (Irem Demirci, 2019) [6], and the crowding out effect exists in the heterogeneity of regions and enterprise types (Liang Y, 2017; Liu Qizhi and Baiyun, 2020)[7][8].

A few scholars believe that the impact of local government debt on corporate debt is not negative. The increase of government debt will squeeze out junk debt and squeeze into the safety debt of enterprises (Chemla&Hennessy, 2016) [9]. Sun Gang and Zhu Kai (2017) used data from 247 prefecture level cities to test the impact of local debt governance on corporate debt financing, and found that the worse the local debt governance, the higher the corporate leverage [10]. Qu Qingchun and Zhuang Xin (2021) studied the threshold effect of the degree of financial marketization on the impact of local government debt on the scale of corporate debt financing [11].

3. Theoretical Analysis and Research Hypothesis

3.1. Local government debt and enterprise debt financing

Based on the theory of "portfolio effect", the impact of local government debt expansion on micro enterprise debt financing is reflected in price competition mechanism and demand competition mechanism. According to the demand competition mechanism, on the one hand, because the government can carry out administrative intervention on

banks to a certain extent, based on the needs of safe operation and credit rationing, banks will first meet the capital needs of the government departments, and the credit resources of the whole society will decrease, leading to the reduction of credit funds available to the enterprise departments, which will further reduce the scale of debt financing. On the other hand, the local government owns land and other resources, which has become a kind of implicit financial guarantee, prompting the local government to obtain loans at a lower interest rate when borrowing, thus occupying high-quality resources. The explanation of price competition mechanism is that when local governments issue a large number of bonds, the price of government bonds will decline and the yield will rise. On the one hand, the valuation of bonds will decline, and investors will reduce the purchase of such bonds; On the other hand, when considering their own asset portfolio, financial institutions either invest more funds in government bonds or require enterprises to increase bond yields. Either way will increase the cost of debt financing for enterprises, leading to a reduction in the scale of debt financing for enterprises.

Therefore, hypothesis 1 is put forward: the expansion of local government debt will cause the decline of enterprise debt financing scale.

3.2. Local government debt, enterprise financial debt and operating debt

In order to explore the relationship between government debt and different sources of corporate debt, corporate debt is divided into financial debt and operating debt according to sources. It can be seen from the demand competition mechanism that local government debt is mainly used to squeeze out the debts of enterprises through the channels of credit resources, while the operational liabilities of enterprises are derived from daily business activities. Therefore, from this perspective, the expansion of local government debt is mainly used to squeeze out financial liabilities rather than operational liabilities of enterprises through credit channels. Secondly, as far as the cost of debt is concerned, commercial credit has not yet implemented an interest bearing system, and the related operational liabilities are low-cost or even cost free; However, the high interest rate system implemented by bank credit and related financial liabilities are high costs. In addition, as far as financing of Chinese enterprises is concerned, operational liabilities always take priority over financial liabilities. Enterprises will first consider adopting operational liabilities with low costs and risks (Li Xinhe et al., 2014) [12]. According to the explanation of the price

competition mechanism, the expansion of local government debt mainly increases the cost of enterprise debt financing. Compared with operational debt, the cost of financial debt is much higher than the cost of operational debt, which leads to the fact that during the period of local government debt expansion, enterprises will reduce the scale of financial debt more compared with operational debt.

Therefore, hypothesis 2 is put forward: the expansion of local government debt has squeezed out more corporate financial liabilities than operational liabilities.

4. Research Design

4.1. Data source

There are three sources of variable data selected in this paper: (1) enterprise level data, mainly from CSMAR Guotai'an database; (2) The statistical data at the provincial and municipal level are mainly from the China Statistical Yearbook of each year; (3) The debt data at the government level are publicly available through the budget and final accounts of provincial finance departments. This paper selects all listed non-financial enterprises in the A-share market from 2012 to 2020 as samples. Due to the availability of data, it proposes Taiwan Province, Hong Kong Special Administrative Region, Macao Special Administrative Region and Tibet Autonomous Region, and finally uses panel data from 30 provinces in China. In order to ensure the integrity and validity of the data, enterprises with abnormal financial data and serious data missing were eliminated. The unbalanced panel was treated as a balanced panel, and the continuous variables were shrunk. Finally, the nine year effective data of 1424 sample enterprises, including 12816 observations, were obtained.

4.2. Variable selection

4.2.1. Explanatory variables

The explanatory variable of this paper is the level of local government debt, measured by the local government debt ratio (gdebt), which is the ratio of the debt balance that the local government is responsible for repaying to the GDP of the region.

4.2.2. Interpreted variable

The main explanatory variable of this paper is enterprise debt financing, which is measured by the enterprise's asset liability ratio (Cdebt), that is, total enterprise debt divided by total assets. The other explanatory variables are shown in Table 1.

Table 1. Variable Description

Classification	Variable Name	Indicator Description
Explanatory variable	Local government debt level	Local government debt ratio (%)
	debt financing asset	Enterprise asset liability ratio (%)
	Financial liabilities	Interest bearing liabilities/total assets (%)
Explained variable	Operating liabilities	interest free liabilities/total assets (%)
	growth rate	GDP growth rate (%)
	Inflation	CPI
	Enterprise growth	(amount of operating revenue in the current period - amount of operating revenue in the same period of last year)/amount of operating revenue in the same period of last year
Control variable	Cash holding level	Monetary capital/total assets
	Enterprise scale	Logarithm of total assets(yuan)
	Return on assets	After tax net profit/total assets

4.2.3. Control variables

With reference to the practice of Fan Xiaoyun, Zhu Chenhe, etc.[13][14], control variables at the national macro level and the enterprise micro level are selected, as shown in Table 1.

It can be seen from Table 2 that the average asset liability ratio of the sample enterprises from 2012 to 2020 is about 44%, the minimum value is about 1%, and the maximum value is close to 98%, which indicates that the debt levels of different companies or years vary greatly. The financial debt

ratio of the sample enterprises is about 17%, and the operating debt ratio is about 21%. The average local government debt ratio is about 23%, the minimum value is about 5%, the maximum value is close to 142%, and the difference between the maximum and the minimum value is as high as 137%, indicating that the economic scale of different provinces has a large difference in the carrying capacity of local debt, which provides a good data basis for the empirical study in this paper, and can easily capture the impact of local debt expansion on corporate debt financing.

Table 2. Descriptive Statistics of Variables

variable	Number of samples	Mean	50% quantile	standard deviation	minimum	maximum
Local government debt ratio	12816	0.232	0.192	0.137	0.045	1.423
Enterprise asset liability ratio	12816	0.437	0.435	0.202	0.008	0.975
Financial liabilities	12816	0.167	0.143	0.145	0.000	0.760
Operating liabilities	12816	0.212	0.183	0.130	0.007	0.828
Economic growth rate	12816	7.281	7.600	2.409	-5.000	13.800
Inflation	12816	102.208	102.266	0.573	100.567	103.900
Enterprise Growth	12816	0.134	0.085	0.333	-0.518	1.955
Cash holding level	12816	20.579	20.461	1.383	12.107	26.494
Enterprise scale	12816	22.569	22.378	1.346	19.078	28.636
Return on assets	12816	0.042	0.035	0.059	-0.662	0.675

The previous article has analyzed the impact of local government debt expansion on enterprise debt financing from the theoretical level. In order to explore how local

government debt expansion affects the scale of enterprise debt financing, the following model is constructed:

$$Cdebt_{i,t} = \alpha_0 + \beta_1 gdebt_{i,t} + \beta_2 gdp_{i,t} + \beta_3 pi_{i,t} + \beta_4 growth_{i,t} + \beta_5 cash_{i,t} + \beta_6 size_{i,t} + \beta_7 ROA_{i,t} + \mu_i + \varepsilon_{i,t} \quad (1)$$

Considering the different sources of corporate debt financing, in order to more carefully study the impact of local

government debt expansion on corporate debt financing structure, the following model is built:

$$Finlev_{i,t} = \alpha_0 + \beta_1 gdebt_{i,t} + \beta_2 gdp_{i,t} + \beta_3 pi_{i,t} + \beta_4 growth_{i,t} + \beta_5 cash_{i,t} + \beta_6 size_{i,t} + \beta_7 ROA_{i,t} + \mu_i + \varepsilon_{i,t} \quad (2)$$

$$Opelev_{i,t} = \alpha_0 + \beta_1 gdebt_{i,t} + \beta_2 gdp_{i,t} + \beta_3 pi_{i,t} + \beta_4 growth_{i,t} + \beta_5 cash_{i,t} + \beta_6 size_{i,t} + \beta_7 ROA_{i,t} + \mu_i + \varepsilon_{i,t} \quad (3)$$

Among them, Cdebt in model (1) is the explanatory variable, representing the scale of corporate debt financing; Finlev and Opelev in model (2) and (3) represent corporate financial liabilities and corporate operating liabilities respectively; the explanatory variable is local government debt/GDP, which is intercept term, coefficient of variable, individual fixed effect, and random disturbance term. If the empirical results show that it is significantly negative, it means that there is a negative correlation between the two.

government debt and enterprise debt financing. With the increase of control variables, the impact of local government debt expansion on corporate debt financing generally shows a downward trend, and finally tends to be stable, as shown in column (2). After considering the control variables, control years and individual effects, the local government debt ratio and the enterprise asset liability ratio are negatively correlated at the level of 1%, and the correlation coefficient is -0.033, which indicates that the enterprise debt financing scale will decrease 0.033 units for each unit of local government debt increase. Assumption 1 is valid.

5. Empirical Results and Analysis

5.1. Regression results

5.1.1. Impact of local government debt expansion on enterprise debt financing scale

Table 3 shows the benchmark regression results of local

Table 3. Benchmark Regression Results of Local Government Debt and Enterprise Debt Financing

	(1) Enterprise Asset liability ratio	(2) Enterprise Asset liability ratio
Local government debt ratio	-0.034*** (-3.23)	-0.033*** (-3.16)
Inflation	0.004* (1.73)	0.005** (2.31)
Economic growth rate	0.000 (0.41)	0.001 (0.74)
Growth	0.001*** (5.99)	0.001*** (7.50)
Cash holding level	-0.045*** (-15.73)	-0.038*** (-13.66)
Enterprise scale	0.134*** (21.67)	0.130*** (21.88)
Return on assets		-0.445*** (-14.22)
Constant term	-2.041*** (-7.45)	-2.210*** (-8.49)
Firm fixed effect	Control	Control
Year fixed effect	Control	Control
Number of samples	12816	12816
R ²	0.200	0.254
F	2158.376	825.677

5.1.2. Local government debt, enterprise financial debt and operating debt

Table 4 shows the regression results of local government debt, corporate financial debt and operating debt. It can be seen that the local government debt ratio is negatively correlated with the financial debt ratio at the level of 5%, and the correlation coefficient is -0.02, which means that the financial debt of enterprises decreases by 0.02 units every time the local government debt increases by 1 unit. At the same time, there is a negative correlation between local

government debt ratio and operating debt ratio, but it is not significant. The correlation coefficient is -0.007, indicating that every increase in local government debt will reduce the operating debt of enterprises by 0.007 units. This shows that the local government debt ratio is significantly negatively correlated with the financial debt ratio, while the correlation with the operating debt ratio is weak and not significant. That is, the expansion of local government debt will significantly squeeze out the financial liabilities of enterprises, while the crowding out effect on operating liabilities is not obvious. Assumption 2 is proved.

Table 4. Regression Results of Local Government Debt and Debt Financing of Enterprises from Different Sources

	Financial liabilities	Operating liabilities
Local government debt ratio	-0.020** (-2.25)	-0.007 (-0.94)
Inflation	0.001* (1.67)	0.000 (0.43)
Economic growth rate	0.001 (0.59)	0.005*** (2.75)
Growth	-0.001*** (-37.98)	0.001*** (49.35)
Cash holding level	-0.021*** (-9.66)	-0.012*** (-6.36)
Enterprise scale	0.081*** (18.77)	0.035*** (8.10)
Return on assets	-0.358*** (-14.28)	-0.055*** (-2.68)
Constant term	-1.326*** (-5.97)	-0.848*** (-3.92)
Firm fixed effect	Control	Control
Year fixed effect	Control	Control
Number of samples	12816	12816
R ²	0.158	0.059
F	14000	7297.301

5.1.3. Robustness test

Referring to the practice of Lu Zhengfei et al (2015) and Zhang Qingjun et al (2019)[15][16], this paper replaces the debt-to-asset ratio with the debt-to-excess ratio (Cdebt) to measure the corporate debt. The results are shown in column

(2) of Table 5, there is a significant negative correlation between the local government debt ratio and the excessive corporate debt ratio. The results of robustness test show that the negative effect of local government debt expansion on corporate debt financing is still robust, so the conclusion of this paper is reliable.

Table 5. Robustness test

	Enterprise Excessive debt ratio
Local government debt ratio	-0.091***
	(-2.60)
Inflation	0.003
	(1.06)
Economic growth rate	0.024***
	(3.20)
Growth	0.001***
	(5.19)
Cash holding level	-0.160***
	(-13.23)
Enterprise scale	1.397***
	(67.15)
Return on assets	-1.027***
	(-10.17)
Constant term	-8.950***
	(-10.48)
Firm fixed effect	Control
Year fixed effect	Control
Number of samples	12816
R^2	0.827
F	813.462

6. Conclusions and Suggestions

In recent years, the economic consequences of the expansion of local debt have become the focus of attention and discussion. At present, the financing difficulty of SMEs has become a problem in the industry. The empirical results of this paper are consistent with the existing views. The empirical results show that the expansion of local government debt will lead to the decline of the debt financing level of local enterprises. From the perspective of different debt sources, the impact of local government debt expansion is significantly different. Local government debt expansion has a strong and significant crowding out effect on corporate financial liabilities, while this effect on corporate operating liabilities is weak. The robustness test results of changing explanatory variables and explained variables show that the above research conclusions are still valid.

Therefore, first, for each region, corresponding debt limit measures should be formulated to limit the scale of local debt and prevent local officials from issuing debt on a large scale to meet promotion requirements. At the same time, national supervision is also essential for local government debt. Provinces and cities that exceed the debt limit should be held accountable and relevant restraint mechanisms should be established. Second, the large-scale issuance of bonds by local governments will seriously squeeze out the credit financing of real enterprises. Therefore, relevant departments should speed up the marketization process, improve the legal environment, and create a good financing environment for real enterprise financing.

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