Local government debt and corporate tax burden

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ABSTRACT. After the implementation of the new budget law in 2015, China's local government bond market was officially established and gradually developed, and the scale of bonds was gradually expanded, especially the scale of special bonds: from 100 billion in 2015 to 2150 billion in 2019, the issuance scale of new special bonds increased rapidly in five years. Under the background of the continuous expansion of bond scale, the research object of local government debt gradually changes from urban investment bonds to government bonds. This paper aims to study the path between the size of local government bonds and corporate tax burden.

KEYWORDS: general government bonds, special government bonds, corporate tax burden

1. Research motivation and research problems

Since the reform of the tax distribution system in 1994, the financial system features that "the focus of financial power moves up and the focus of administrative power moves down", which leads to the mismatch between local financial power and administrative power, and makes local financial expenditure generally higher than financial revenue. In order to maintain the rapid growth of GDP and get the opportunity of political promotion, local government officials borrowed money to invest in projects, resulting in the rapid expansion of local government debt. Relevant data show that at the end of 2017, the balance of domestic government debt was 29.95 trillion yuan, and the balance of local government debt was 16.47 trillion yuan. For regional economic development, scholars generally believe that the negative relationship between government debt and economic growth is supported (Baumetal.,2013; Kumar&woo, 2010)

The existing research on local debt and debt risk focuses on the impact of macroeconomic level, ignoring the impact on the micro enterprise level. Predecessors have done sufficient research on the causes, consequences and debt risk prevention of local debts. Most of the research starts from the institutional structure, such as financial system, transfer payment, etc., to explore the causes of local debts and debt risk and the impact of macro-economy. It is obvious that the
previous researches on the behavior of micro enterprises are based on the theory of "predatory hand". The research on the influence of the scale of local government debt on the tax burden of enterprises does not consider the characteristics of government bonds, such as general government bonds and special government bonds, public issuance bonds and directional underwriting bonds And the maturity of the bonds. However, careful consideration of the impact of local government bond characteristics on corporate tax burden will help us to clarify the mechanism of local government debt on corporate tax burden, fill in the literature loopholes, and also help us to better prevent local debt risks. This study, from a micro perspective, not only verifies the impact of local debt scale on corporate tax burden, but also deeply studies the different local debts The specific research ideas are as follows:

![Figure. 1 Research Roadmap](image)

2. Research objective

The purpose of this study is to empirically test the impact of the macro factor of local debt on the micro behavior of corporate tax burden, explore the relationship between local debt and corporate tax burden, and further clarify the economic consequences of local debt from the micro level, so as to assess the economic impact of local debt and its risk.

3. Innovation point

The innovation of this study is as follows: first, the existing research on local bonds focuses on the impact on the macro-economy. Based on the micro enterprise behavior, this study studies the impact of local bonds on corporate tax burden, which helps to evaluate the economic impact of local bonds in all aspects; second, this study further considers many characteristics of government bonds, and distinguishes general government bonds from special government bonds Third, the research of
this paper develops a path for the research of macro factors on micro enterprise behavior.

4. Literature review

Scholars' research on local debt runs through the whole event from the whole logic, from the causes and influencing factors of local debt, to the control of local debt risk, to the results of local debt. Scholars both at home and abroad are involved in this field, but most of the studies tend to focus on the causes of local debts and the factors affecting the scale of local debts, emphasizing the role of various factors, including local competition and political promotion, the unequal distribution of fiscal revenue and expenditure, financial decentralization, shadow banking, local finance, macro policies, soft budget constraints, household registration control, transfer payment (Fan Jianyong and Mo Jiawei, 2014; Guo Yuqing et al., 2016).

Based on the research of financial system factors, including fiscal decentralization and imbalance of fiscal revenue and expenditure, scholars generally agree that the higher the degree of decentralization of fiscal expenditure, the greater the scale and risk of local government debt (Qiu Hua and Fu Runmin, 2015; Ma Yuanchi, 2018). The relevant researches of foreign scholars mainly focus on the analysis of the influencing factors of the scale of local government debt and the influence of fiscal decentralization on the scale of local government debt (Aka and Sato, 2011; Bai et Al, 2017). They believe that there is a positive promotion or negative inhibition relationship between them. Baskaran (2010) used panel data of 17 OECD countries from 1975 to 2001 to study the impact of fiscal decentralization on local government debt. The study found that fiscal decentralization significantly reduced public debt, while tax decentralization and vertical fiscal imbalance had no significant impact on public debt. Similarly, Aldasoro and Seiferling (2014) used unbalanced panel data from 47 countries in 1995-2011 to find that fiscal imbalance can lead to the accumulation of government debt.

Based on the research of transfer payment factors, domestic scholars believe that transfer payment has a significant threshold effect on local debt due to financial pressure (Hong Yuan et al., 2018). Through the empirical analysis of local government debt data, foreign scholars found that Sola and Palomba (2016) used the local government bond data of the United States, Canada, Australia and Germany, and found that the more dependent regions are on central transfer payment, the more difficult it is for the market pricing mechanism to take effect; Koppl Turyna and Pitlik (2017) focused on the population weighted central and local governments in Australia Tax transfer rules, and take the population size as the breakpoint design, the study found that the higher the dependence on transfer payment of municipal government, the higher the scale of debt.

Based on the study of regional economic development, scholars at home and abroad generally believe that the development of regional economy will increase the debt burden of local governments (Fu Xiaowen et al., 2018; Bird et al., 2001). Benito
et al. (2015) analyzed the impact of the real estate bubble on municipal debt by using relevant data from 332 major cities in Spain during the 2003-2011 years. It is believed that during the boom period, debt will be replaced by income from urban development, but this substitution effect will disappear immediately after the boom. Jia et al. (2014) used the data of China's county governments from 1997 to 2006 to find that fiscal imbalance will aggravate the economic expenditure bias of local governments.

Based on the research of market factors, Minasian and Craig (1997) summed up four constraint modes of local government debt, namely, market constraint, government negotiation, rule control and administrative control. Zhu Ying and Wang Jian (2018) took the "spontaneous self repayment" pilot of local government bonds in 2014 as a quasi natural experiment, and used the double difference method to test the impact of market constraints on local government debt risk. It is found that the market constraints generated by the "spontaneous self repayment" pilot can significantly reduce the risk premium of urban investment bonds. Further tests show that local governments' fiscal opacity and fiscal imbalance will inhibit the market constraint effect, specifically, the effect of "spontaneous self repayment" pilot to reduce the risk premium of urban investment bonds is more significant in areas with high fiscal transparency and fiscal balance, but not in areas with low fiscal transparency and fiscal balance. Purnanandam and Weagley (2016) used the natural experiment of introducing weather derivatives contracts into the Chicago Mercantile Exchange (CME) to identify the market constraint effect, and found that additional supervision from investors in the financial market can improve the administrative performance of the government.

In addition to the above factors, scholars also consider the regional financial pressure, the pursuit of officials' political achievements, and the impact of Land Finance on local debts. Hong Yuan et al. (2018) financial pressure is an important motivation for local governments to borrow large-scale debt, which has a significant positive impact on local government debt risk. Zhang Zenglian and Wang Yanbing (2016) showed that the more land transfer fees, the larger the scale of local government debt; the greater the incentive for officials to pursue promotion, the larger the scale of local government debt.

Various forms of local government debt is an important cause of local government credit risk, especially some implicit contingent debts, which pose a potential threat to the local financial security (Brixi, 1998). Therefore, local debt risk control is particularly important in practice, and then become the focus of scholars' research. Scholars believe that the greater the degree of fiscal decentralization, the greater the risk of local debt. Increasing audit investment in high-risk areas and increasing audit accountability in low-risk areas are more conducive to reducing the risk of local government debt (Yu Yingmin et al., 2018). In addition, audit supervision is conducive to restricting and supervising public power (Li Jiangtao, 2011) and curbing local government corruption (Liu Anli, 2012), which has a positive impact on the growth of local government investment and financing platform debt (Pu Danlin, Wang Shanping, 2014). In order to control risk, scholars think that we can start from policy making and risk assessment system. The
formulation of the policy provides guidance for the management of local government debt risk in China, but to solve the problem of local government debt, we should also "control the stock, open the front door, close the back door, repair the fence" (Jia Kang, 2009), and establish the examination and approval, supervision, repayment, early warning, punishment and other mechanisms matching the policy as soon as possible (Jia Dongchao, Zhou Qiaohong, 2015). Hackbart et al. (1990) and Hu Sheng et al. (2017) pointed out that an important reason for the large amount of local government debt is the lack of strict local government debt borrowing approval, use supervision and repayment management systems, as well as sensitive and effective constraint mechanism to reflect and control debt risk. Some scholars also put forward the establishment of local government debt risk assessment system (he Xuefeng et al., 2015; Diao Weitao, 2016) and the early warning indicators and models of local government debt (Xu Jia, 2008; Li Chunling, Guo Jingran, 2016). At the same time, they gave specific measures and suggestions to prevent local government debt risk (MA Haitao et al., 2011; pan Zhibin, 2014).

Local debt is a double-edged sword with advantages and disadvantages. Some scholars believe that local government debt is conducive to promoting public infrastructure construction (David, 1970), maintaining fiscal expenditure and making up for budget shortfalls (Christine and deep, 1972). However, more scholars believe that local debt has no advantages or disadvantages for economic development. Reinhart & Rogoff (2010) found that when the ratio of central government debt to central government debt exceeds, the relationship between government debt and economic growth is significantly negative. This means that excessive government debt is often accompanied by economic downturn. Local governments borrow to reduce capital stock and economic output (Paul A. Samuelson, 1972), which is not conducive to increasing supply and promoting economic growth (Martin S. Feldstein, 1974). Given that the government expenditure remains unchanged, the increase of government debt will increase long-term interest rate, promote short-term consumption, squeeze out long-term private investment, and ultimately is not conducive to economic growth (diamond, 1965; reinhartet al. 2012). In addition, local debts may increase the tax burden of enterprises, and the "plunder hand" of the government is widespread. The government model of "plunder hand" was first proposed by shleiferand Vishny (1998) based on the study of the transition practice of Eastern European countries and Russia, using economic tools. Subsequently, scholars at home and abroad have confirmed that the government "plunder hand" is widespread. Acemoglu (2003) found that when faced with greater economic growth and financial pressure, the government will take advantage of its powerful Plunder ability to transfer the pressure to the enterprises in the jurisdiction, resulting in the increase of corporate tax burden. Ma Guangrong and Li Lixing (2012) used China's county-level financial data and industrial enterprise data from 1998 to 2005, and found that the county-level government would impose financial pressure on enterprises after its scale expansion, thus improving the tax burden level faced by enterprises. Yang Hualing and song Chang (2015) studied the data of A-share 2012-2013 in Shanghai and Shenzhen, and found that the larger the local government debt, the heavier the total tax burden and net tax burden paid by the listed companies in the jurisdiction, and
the heavier the tax burden when the listed companies are non-state-owned enterprises and foreign-funded enterprises.

The existing literature mainly relies on three theories to study the local debt and debt risk: the information asymmetry theory, the government's "plunder hand" theory and the transaction cost theory. According to the theory of information asymmetry, first, as a signal release of local government's financial pressure, local debt reduces the degree of information asymmetry between local government and enterprises, which is conducive to promoting enterprises to extend "help" to local government; second, the information asymmetry between central and local governments will aggravate local financial imbalance, increase local financial pressure, and increase local government's debt. Third, the non transparency of local government finance increases the degree of information asymmetry and inhibits the effect of market constraints on reducing the risk premium of urban investment bonds. According to the government's "plunder hand" theory, "plunder hand" is universal. Under the goal of maximizing the government's interests, the government has the "plunder" motive, that is, the government may use all resources to deal with the competition from potential rulers and other countries. There are various ways of government plunder, including direct plunder in the name of the government and indirect plunder with the help of state-owned enterprises. According to the transaction cost theory, the amount of local government bonds is mainly used for local infrastructure construction, which is conducive to promoting information exchange and trade exchange between enterprises, reducing the transaction cost of enterprises, so that the opportunity cost faced by enterprises to evade taxes will be higher, because being a law-abiding person can better enjoy the public services provided by the government.

The existing research on local debt and debt risk focuses on the impact of macroeconomic level, ignoring the impact on the micro enterprise level. Predecessors have done sufficient research on the causes, consequences and debt risk prevention of local debts. Most of the research starts from the institutional structure, such as financial system, transfer payment, etc., to explore the causes of local debts and debt risk and the impact of macro-economy. There is a lot of literature about the influence of local debt on the behavior of micro enterprises. Previous studies on the behavior of micro enterprises are mostly based on the theory of "predatory hand". The research on the influence of the scale of local government debt on the tax burden of enterprises does not consider the characteristics of government bonds (such as general government bonds and special government bonds, public issuance bonds and directional underwriting bonds) And the maturity of bonds, etc.), government level factors (such as local financial pressure, local credit rating, central land relationship, etc.), enterprise level factors (such as government enterprise relationship, nature of enterprise property rights, etc.). However, careful consideration of the impact of local government bond characteristics, government level factors and enterprise level factors on corporate tax burden will help us to clarify the six functional mechanisms of local government debt on corporate tax burden, fill in the literature loopholes, and at the same time help us to better prevent the risk of local debt. Therefore, on the basis of studying
the impact of local government debt on corporate tax burden, we should. It is an important and urgent problem to consider the characteristics of local government bonds, government level factors and corporate level factors.

5. Research hypothesis

The local government of our country compiles the budget according to the law, and the local government bond, as a revenue and expenditure of the local government, is included in the budget. On the one hand, by issuing bonds, local governments have increased the pressure of financial repayment to a certain extent, increased their dependence on the financial budget revenue mainly from tax revenue, and strengthened the tax supervision of tax authorities on enterprises. On the other hand, the issuance of bonds by local governments is to some extent a signal release of their financial pressure. In order to establish a good relationship with the local government, enterprises are more willing to provide help when the government's financial situation is relatively poor. The most likely performance is to reduce tax avoidance. At the same time, according to the provisions of the budget law, local governments have to The amount of Fang government bonds is mainly used for local infrastructure construction, which is conducive to promoting information exchange and trade exchange between enterprises and reducing transaction costs of enterprises. Therefore, enterprises are willing to reduce tax avoidance at the expense of establishing a good image in the hearts of the government. Based on this, the following assumptions are proposed:

H 1: the larger the amount of local government bonds, the greater the tax burden of enterprises.

The amount of local government bonds can be divided into different categories, which have different effects on the tax burden of enterprises according to their different attributes. This paper focuses on the use of funds, issuing objects and term of local government bonds.

Local government bonds can be divided into general liability bonds (general bonds) and special bonds (income bonds) according to the purpose of the funds and the source of repayment funds, in which general bonds are repaid with general fund budget revenue and special bonds are repaid with government fund budget revenue or special revenue. The general fund budget revenue is mainly tax revenue, which means that there is a direct relationship between the amount of general government bonds and corporate tax burden, and the impact on corporate tax burden is greater than that of special government bonds. Based on this, the following assumptions are proposed:

H 2: there is a difference in the impact of general government bonds and special government bonds on corporate tax burden. The larger the amount of general government bonds, the greater the corporate tax burden.

Local government bonds can be divided into public issuance and directional underwriting according to different issuing objects. Among them, the directional
underwriting part is directly purchased by the Underwriters who have negotiated in advance, and the public offering part is traded on the exchange, which means that the creditors of the public offering part are more scattered, and if they default, they will receive more attention, and at the same time, they will receive more supervision in the open market, which undoubtedly increases the pressure of local governments. Based on this, the following assumptions are proposed:

H 3: there are differences in the impact of public issuance and directional underwriting on corporate tax burden. The larger the amount of public issuance, the greater the corporate tax burden.

The closer the maturity of local government bonds is, the greater the repayment pressure the government faces. The government is more likely to raise repayment funds by tightening the tax collection, and the enterprises are more likely to extend a "helping hand" at this time to reduce tax avoidance. Based on this, the following assumptions are proposed:

H 4: there are differences in the impact of the length of bond maturity on corporate tax burden. The shorter the bond maturity, the greater the corporate tax burden.

6. Research method

6.1 Samples and data sources

Taking 2014-2018 Shanghai and Shenzhen A-share non-financial listed companies as the research objects, the annual audit data provided by provincial (city) audit offices, provincial statistical yearbooks and financial data of listed companies provided by wind database are used to empirically test the impact of local debt on the actual tax burden of enterprises.

6.2 Variables design

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<th>Variable type</th>
<th>Variable symbol</th>
<th>Variable name</th>
<th>Variable definition</th>
</tr>
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<tr>
<td>Independent</td>
<td>DEBT</td>
<td>Local government bond amount</td>
<td>Natural logarithm of local debt balance</td>
</tr>
<tr>
<td></td>
<td>GS</td>
<td>General government bonds /special</td>
<td>G/S = 0 general government bond; G/S = 1 special</td>
</tr>
<tr>
<td></td>
<td></td>
<td>government bonds</td>
<td>government bond</td>
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<tr>
<td></td>
<td>PO</td>
<td>Public issuance/ directional</td>
<td>P/O = 0 directional underwriting bond; P/O = 1 public</td>
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<tr>
<td></td>
<td></td>
<td>directional underwriting</td>
<td>issuance bond</td>
</tr>
<tr>
<td></td>
<td>DATE</td>
<td>Maturity of bonds</td>
<td>The number of days from the maturity date of the bond to</td>
</tr>
<tr>
<td></td>
<td>ETR</td>
<td>Corporate income</td>
<td>the current date</td>
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income tax expense -
<table>
<thead>
<tr>
<th>variable</th>
<th>tax</th>
<th>deferred income tax expense) / profit before tax</th>
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</thead>
<tbody>
<tr>
<td>CETR</td>
<td>Total corporate tax</td>
<td>(taxes paid - tax returns received) / gross operating income</td>
</tr>
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</table>

### 6.3 Statistical analysis method

**H 1:** the larger the amount of local government bonds, the greater the tax burden of enterprises.

\[
ETR_{it} = \alpha_0 + \alpha_1\text{DEBT}_t + \alpha_i \sum \text{Controls} + Year + Industry + \varepsilon \quad (1)
\]

\[
CETR_{it} = \alpha_0 + \alpha_1\text{DEBT}_t + \alpha_i \sum \text{Controls} + Year + Industry + \varepsilon \quad (2)
\]

**H 2:** there is a difference in the impact of general government bonds and special government bonds on corporate tax burden. The larger the amount of general government bonds, the greater the corporate tax burden.

\[
ETR = \alpha_0 + \alpha_1\text{DEBT} + \alpha_2\text{GS} + \alpha_3\text{DEBT} \times \text{GS} + \alpha_i \sum \text{Controls} + Year + Industry + \varepsilon \quad (3)
\]

**H 3:** there are differences in the impact of public issuance and directional underwriting on corporate tax burden. The larger the amount of public issuance, the greater the corporate tax burden.

\[
ETR = \alpha_0 + \alpha_1\text{DEBT} + \alpha_2\text{PO} + \alpha_3\text{DEBT} \times \text{PO} + \alpha_i \sum \text{Controls} + Year + Industry + \varepsilon \quad (4)
\]

**H 4:** there are differences in the impact of the length of bond maturity on corporate tax burden. The shorter the bond maturity, the greater the corporate tax burden.

\[
ETR = \alpha_0 + \alpha_1\text{DEBT} + \alpha_2\text{DATE} + \alpha_3\text{DATE} \times \text{DEBT} + \alpha_i \sum \text{Controls} + Year + Industry + \varepsilon \quad (5)
\]

In the above multiple regression models, \(ETR_{it}, CETR_{it}\) represents the actual tax burden of the enterprise; \(\text{DEBT}_t\) represents the balance of local government debt at the end of the year; \(\text{GS} = 0\) indicates that the bond type is general government bond, otherwise it is special government bond; \(\text{PO}=0\) Indicates that the bond type is directional underwriting bond, otherwise it is public issuance bond; \(\text{DATE}\) indicates the maturity of the bond; \(Year\) is the year virtual variable; \(Industry\) is the virtual variable for Industry.

\(\sum \text{Controls}\) are the control variables, It mainly includes: alternative variables of enterprise scale, enterprise resources and political sensitivity. Enterprises with a larger scale are more likely to be concerned. Considering political sensitivity, enterprises with a larger scale have a lower willingness to engage in tax evasion activities; asset liability ratio, tax shield effect of debt should make enterprises with a higher asset liability ratio have a lower tax burden level; total asset net interest rate, profitability The stronger the enterprise is, the more it will benefit from tax evasion, the more it will tend to tax evasion; the higher the density of fixed assets, the more flexible the enterprise will have to choose different depreciation methods of fixed
assets, so this kind of enterprise is more likely to avoid tax; the denseness of intangible assets, due to the partial tax credit effect of R & D expenses, leads to the more intangible assets the more enterprises, the more flexible they are to avoid taxes; the less inventory intensive enterprises are likely to engage in tax evasion; the more attention they receive from enterprises with higher city account ratio, the more difficult they are to take tax avoidance actions; the proportion of land transfer payment to local government's general income, the higher the transfer payment and the provinces with more transfer payment will reduce the government's "grabbing" of enterprises.

7. Expected conclusions

(1) The larger the amount of local government bonds, the greater the corporate tax burden;

(2) There are differences in the impact of general government bonds and special government bonds on corporate tax burden, the greater the amount of general government bonds, the greater the corporate tax burden;

(3) There are differences in the impact of public issuance bonds and directional underwriting bonds on corporate tax burden, the greater the amount of public issuance bonds, the greater the corporate tax burden;

(4) The bond to There are differences in the impact of the length of the period on the corporate tax burden. The shorter the bond maturity, the greater the corporate tax burden.

8. Anticipated difficulties

(1) In terms of data collection, due to the lack of data in the database of Industrial Enterprises above Designated Size investigated by the National Bureau of statistics, some data cannot be obtained directly from the database and need to be collected manually, with a large workload. There are explicit and implicit differences in local government bonds. In the government report, whether the local government discloses debt data is uncertain, and data collection is difficult.

(2) The measurement of variables, the local government debt is a dynamic data, which may issue new government bonds or repay old debts in that year. How to accurately measure the financial pressure brought by the government debt in that year is questionable.

(3) There are many factors that affect the actual tax burden of the enterprise, and there are inevitably omissions in the selection of control variables.
References


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