

Threshold Effect of Debt of Local Government and Regional Business Environment in the Context of "Tension"

——Empirical Evidence From 2010-2018

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Abstract: The local governments of China are in the vertical and horizontal "tension". The vertical tension stems from fiscal decentralization of the central governments, and the mismatch between fiscal and administrative power makes local government debt difficult to be sustainable. Under the horizontal tension, local governments borrow money in order to gain advantages in inter-governmental competition. In addition to the two-way tension faced by local governments, local governments also have to take into account their own financial balance, so borrowing has become a "technical activity" for local governments. This paper selects 30 provinces of China and discusses the relationship between local government debt and business environment through threshold model. The results show that the relationship between government debt and business environment is endowed with "U-shaped" and inverted "U-shaped" characteristics. "Welfare" and "resistance" coexist in the relationship between debt and business environment. There are differences in debt relations in the eastern -middle -and western regions.

1. Introduction

Except for the exogenous pressure of government debt, our government is in the effect of tension. The vertical tension comes from the relationship between central and local governments under fiscal decentralization. The mismatch between administrative and fiscal power makes government debt unsustainable [1-2]. Horizontal tension derives from the competition between governments at the same level. Stimulated by the promotion incentive for officials, inter-governmental competition has become an unavoidable topic, and it is not surprising that the debt is expanding. In addition to the risks of growing debt, the central government should respond to the national call of the construction of business environment of "one should have business done once in the official department" and "the last mile should be completed" against the background of comprehensively deepening the reform of streamlining administration, delegating power, strengthening regulation and improving service. Since the Third Plenary Session of the 18th CPC Central Committee, the regional business environment, as an important part of modernization in government governance, has been required with more attention to implementation. As a comprehensive indicator of regional development, the business environment is directly related to the survival of non-public enterprises. It is not difficult to see that the deepening of theoretical research guided by practical innovation and the discussion of business environment in the context of government debt has become a realistic "rigid need". The clarity of the relationship between the two is of great value in improving the modernization of China's capacity in government governance and serving the overall strategic layout of the country.

2. Literature Review and Proposal of Hypothesis

2.1 government Debt and the Business Environment

In the current research, the academic circle focuses on the discussion of the borrowing power mechanism of government. Moreover, the motivation of government debt can be attributed to the following endogenous factors: the 4 trillion RMB bailout fund in 2008, reform on tax distribution, urbanization process, soft constraints within the budget, promotion and incentive for officials, etc. [3-5]. However, little has been engaged in the research on the relationship between government debt and the business environment. In view of this, the mechanism of government debt and business environment is discussed in this paper, holding that local government debt is conducive in improving regional economy to a certain extent, thus optimizing regional business environment and providing "debt welfare". But more government debt does not always mean better outcomes: there is a "threshold effect" of government debt on the business environment. When the "debt benefits" disappear, government borrowing will weaken the regional business environment, that is, there is a non-linear relationship between government debt and the business environment. Hypothesis H1 is thus proposed that:

H1: Non-linear relationship between government debt and the business environment

2.2 Fiscal Decentralization and the Business Environment

Government organizations are endowed with the characteristics of endogenous expansion which can be accelerated by the fiscal decentralization between the central and local governments [6]. Fiscal decentralization not only affects regional economic development and public goods supply, but also profoundly affects the construction of regional innovation ecosystem and the improvement of regional innovation efficiency [7]. As the capability in directly governing residents within their jurisdictions, local government can accurately grasp the local economic development, provide corresponding public goods and financial support, and optimize the business environment of the region to a certain extent, which the central government is not equipped with [8]. However, in reality, China's fiscal decentralization has occurred with the dislocation of financial power and administrative power, which is manifested as the downward shift of administrative power and the upward shift of financial power. Most of the academic circles criticize fiscal decentralization believing that the tax distribution reform clarifies the financial and administrative powers between the central and local governments, leading to a mismatch between the financial and administrative powers. It is not surprising that local governments borrow money [9]. At the same time, after the Budget Law is issued, the government's borrowing behavior is "constrained" by the central government, and the hidden debt under fiscal decentralization is rapidly expanding, consequently, local governments do not have enough funds to realize the development planning of the region [10]. It can be seen that if the financial and affairs in fiscal decentralization can be reasonably and effectively allocated, local governments will get enough funds, which will greatly promote the regional business environment. Thus, hypothesis H2 is proposed in this paper that:

H2: Fiscal decentralization plays an optimized role in regional business environment

3. Design of Empirical Model

This paper intends to use the threshold model to verify the nonlinear relationship between different scales of local government debt and regional business environment under the background of fiscal decentralization. Taking the scale of local government debt as the threshold variable, the variables affected by the threshold model are tested and estimated successively, and the influences of different explanatory variables on the explained variables are measured by parameters.

As for the relationship between regional business environment and local government debt, a double-threshold model is initially established as:

$$\begin{aligned}
DB_{it} = & \alpha_i + \beta'_1 Debt2_{it}I(Debt_{it} \leq r_1) + \beta'_2 Debt2_{it}I(r_1 < Debt_{it} \leq r_2) + \beta'_3 Debt2_{it}I(Debt_{it} > r_2) \\
& + \beta_4 Power_{it} + \beta_5 Balance_{it} + \beta_6 Competition_{it} + \beta_7 Mutual_{it} + \beta_8 \lg People_{it} \\
& + \varepsilon_{it}
\end{aligned} \tag{1}$$

Correspondingly, β'_1 , β'_2 and β'_3 are the parabolic coefficients $Debt2_{it}$ of the threshold variables $Debt_{it} \leq r_1$, $r_1 < Debt_{it} \leq r_2$ and $Debt_{it} > r_2$. $Debt2_{it}$ is the quadratic term of government debt. In order to reduce the effect of multicollinearity, it is standardized for $Debt_{it}I$ before generation of $Debt2_{it}$. β_4 represents the influence coefficient of vertical fiscal decentralization faced by local governments from the central government. β_5 represents the fiscal balance coefficient of local governments. β_6 denotes the competitive pressure coefficient from horizontal governments at the same level. β_7 means that local governments are subject to the interaction coefficient between vertical central government decentralization and horizontal fiscal balance, which is similar to the quadratic term of government debt. Before the generation of this interaction term, fiscal decentralization and fiscal balance are standardized. β_8 represents the population factor coefficient after logarithmic treatment, which can reduce the influence of heteroscedasticity to some extent.

In addition to the double-threshold model, the following single-threshold model can also be constructed according to the test results of the threshold effect (coefficient meaning is similar to the double-threshold)

$$\begin{aligned}
DB_{it} = & \alpha_i + \beta'_1 Debt2_{it}I(Debt_{it} \leq r_1) + \beta'_2 Debt2_{it}I(Debt_{it} > r_2) + \beta'_3 Power_{it} + \beta_4 Balance_{it} + \\
& \beta_5 Competition_{it} + \beta_6 Mutual_{it} + \beta_7 \lg People_{it} + \varepsilon_{it}
\end{aligned} \tag{2}$$

4. Test Method

As the provincial government data from 2010 to 2018 are used in this paper, the span of time series is 9, and the panel unit root test has low efficacy, so the stationarity test step of the panel data is omitted and the threshold effect test is carried out directly. In the study, we used Hansen's point of view for reference, only the threshold variables were searched and the non-repeated values were used, ignoring 1% before and after the observation, 98% data in the middle were used as the expected range of threshold value. According to Hansen's suggestion, this paper adopts the "grille search method" to get the threshold value. Firstly, the threshold interval of (1%, 99%) is grated at the level of 0.0025 []. Next, all the grid points are used to get the threshold value, and the corresponding threshold value is selected to calculate the threshold value. In order to ensure the robustness and reliability of the obtained results, this paper takes 30 provinces as clustering and uses Cluster robustness standard error for estimation to process the heteroscedasticity, and all statistical work is realized by Stata 16.

5. Result Analysis

Table 1. Descriptive analysis

Variable Types	Variable declaration	Mean value	Quantile of 25%	Quantile of 50%	Quantile 75%	Variance	Min	Max
Explained Variable	Business environment	6.49	5.15	6.38	7.69	1.88	2.33	10
explanatory variable	Fiscal decentralization	0.85	0.82	0.85	0.88	0.04	0.75	0.94
	Fiscal balance	0.51	0.38	0.46	0.66	0.191	0.15	0.93
	Government competition	0.27	0.18	0.23	0.35	0.11	0.015	0.56
Threshold variable	Government debt	4330	2263	3599	5823	2630	408	13286
Control variable	Population	4536	2505	3833	6083	2715	563	11346

6. Conclusion and Suggestion

Based on the above threshold model, as well as the empirical and robustness test results of government competition, local government debt and fiscal decentralization, the following conclusions are drawn: (1) The threshold regression is carried out uniformly across the whole country and what is to be confirmed is that there is a threshold effect between government borrowing and regional business environment.(2) According to the regression results of the threshold model, there is an "inverted U-shaped" relationship between government debt and the regional business environment to the left of the threshold, indicating that with the increase of government debt, there is a "welfare" for the business environment, but the "welfare" will become a "resistance" with the increase of debt.(3) There is a "U-shaped" relationship between government debt and regional business environment on the right side of the threshold value.

6.1 This Paper Puts Forward Suggestions From The Following Four Aspects:

6.1.1 Fiscal Decentralization

The result of the threshold model shows that fiscal decentralization can greatly improve the regional business environment. Under the background of fiscal decentralization, the matching of financial power and administrative power will bring a lot of positive externalities to the regional business environment. Based on the reasonable division of financial and administrative powers, local governments have sufficient funds to directly invest in the optimization of the regional business environment. In addition, given to the fact that the different degrees of influence in the eastern, central and western regions, reasonable fiscal decentralization should be advocated for the eastern regions with its sound economic foundation and sound infrastructure, which is a strong attraction for enterprises.

6.1.2 Competition among Local Government

The important source of local government competition is the promotion incentive for officials under the tax distribution reform. In order to gain leverage in promotion, officials have launched inter-governmental competition. One consequence of government competition is the worsening business environment. As mentioned above; the main form of government competition in China is "imitation". In this form of competition, the business environment of various regions will tend to be homogeneous, and the mechanism of "voting with feet" of enterprises will fail. As a result, it is impossible for regions with competitiveness to attract investment and let alone the optimization of

the business environment. In this regard, the traditional inter-governmental competition should be abandoned by government officials who are to be required to optimize the business environment through cooperation. This is not only the case for provincial governments, rather for those in the eastern and central regions. (The competition between the eastern and central regions is weaker than that of the west)

6.1.3 Government Borrowing

Government debt is the core of this paper. This paper assumes a nonlinear relationship between debt and the business environment. First of all, regarding the overall regression results of threshold model, there is a "inverted U" relationship between debt and the business environment in the region whose debt is less than the threshold, that is: firstly, there is "welfare" of government for business environment, but with the increase of debt, the debt will prove not to be a long-term solution, and will become a "resistance" for regional business environment. This shows that borrowing is a technical task. How to control the amount of debt so as to generate positive externalities without damaging the business environment? This is true for provincial governments of all regions and even just the case for the western regions with weaker economic ability as far as the regression results of regions are concerned. The parabolic curve representing western regions is small, indicating that debt benefits come early and go early, which tests the governance ability and skills of the local government. Secondly, when the amount of debt exceeds the threshold, there is a "U-shaped" relationship between government debt and the business environment. In other words, the increase of the amount of debt will weaken the regional business environment, and there is a "bottleneck" in government debt. In reality, the "short-sighted effect" of government officials reveals that borrowing does not have a positive externality on the business environment, so they abandon borrowing and resort to other measures. It is worth noting that this "U-shaped" relationship is not only reflected in the entire threshold model, but also confirmed in the threshold model by region, which strongly indicates that there is not only a "big threshold" for the national government debt, but also a "small threshold" for each region due to the gap in resource endowment and economic foundation. If we compare the government's development of business environment with "going upstairs of a building", then local governments should not only climb the national "stairs", but also climb the regional "stairs" similar to their own situation. By describing statistical analysis, it is found that under the "big stair" across the country, regions, higher than the threshold value, are those such as Zhejiang Province, Jiangsu Province, Shanghai and other eastern economic developed regions as these areas are characterized with low debt and low benefits. It is suggested that the optimization of regional business environment can be realized by other means such as: introduction of talents, fiscal decentralization and fiscal balance. Most of the regions below the threshold are underdeveloped regions such as Qinghai Province, Shanxi Province and Ningxia Hui Autonomous Region. For these provinces, it is suggested to adopt reasonable debt measures to make debt become "assistance" rather than a "predator".

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