The Impact of Local Government Debt on Economic Growth in the Post-Epidemic Period - Taking Beijing as an Example

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Abstract. As an important tool for China to achieve fiscal goals and promote economic growth, government debt has played an important role during the epidemic. Beijing, as one of the earliest regions in China to try the self-issuance and repayment of local government bonds, has a wealth of experience modifying the economic cycle via local government debt. However, by combing the existing literature, this paper reveals that there is ongoing debate in academia over the function of local government debt. Therefore, this paper examines the relationship between local government debt and economic growth using Beijing as an example and concludes that debt held by Beijing's local government primarily encourages economic growth by boosting public and private investment. Finally, based on that the local government debt of Beijing has a favorable impact on economic growth in the post-epidemic period, this paper puts forward the two problems of Beijing's excessive hidden debt risk and the bad debt use structure and then puts forward relevant suggestions.

Keywords: Local government debt; economic growth; public investment; hidden debt.

1. Introduction

Government debt has become one of the crucial ways for all nations in the contemporary world to reach their fiscal objectives and promote economic growth. During the COVID-19 epidemic, China's economic development has been severely impacted, and government debt is an important tool for ensuring the normal operation of the economy. Therefore, it is very meaningful to examine the impact of government debt on China's economic growth. As the capital of China, Beijing is not only the political center of the country but also one of the key points of economic development. As one of the 10 pilot provinces or cities in China where local government bonds are issued and repaid spontaneously, Beijing has been exploring this fiscal tool since 2014 and has rich experience in using local government debt to promote economic development. Analyzing how local government debt affects Beijing's economic recovery in the post-epidemic period has a reference significance for other provinces and cities to a certain degree.

2. The Impact of Local Government Debt on Economic Growth

Academic circles have been debating the mechanism by which government debt affects economic development in recent years, and three basic points of view have emerged.

First of all, among the scholars who support the view that government debt may spur economic expansion, Yin and Ye hold the point of view that local government debt can boost economic expansion by stimulating household consumption [1]. Zhu and Chen come to the conclusion that local government debt significantly drives economic growth, with the growth rate rising as the debt ratio rises [2]. Other researchers have found that debt held by local governments will encourage economic development by raising the proportion of investment in public infrastructure and promoting the formation of physical capital [3, 4]. The research of Lin which is based on the local investment platform has found that the economy can benefit greatly in the short and long term from the expansion of local government debt [5].

Second, opponents argue that economic growth is not facilitated by high levels of public debt. Guo et al. conclude that excessive borrowing will lead to a decline in the return on capital and an increase in interest rates, thereby hindering economic recovery [6]. In the light of new urbanization, Zhou and

Yang propose that local government debt harms regional economic growth, and new urbanization has strengthened this negative effect [7].

Third, at the same time, there is another point of view, which is also a conclusion that is more recognized by scholars in recent years and is in line with China's reality, that is, there is a nonlinear relationship between government debt and economic growth. Zheng and Zhong have found that there is an optimal debt scale to maximize economic growth and believed that hidden debt has a crowding-out effect on local government debt [8]. Li further raises the view that the increase in debt scale hinders economic growth by crowding out private investment [9]. Based on the fact that China's price level fluctuates alternately between debt inflation and debt deflation, Peng finds that the impact of local government debt on price level fluctuations is both positive and negative, and these two effects occur regularly sexual transformation [10]. According to Bai et al., public and private investment and total factor productivity are two of the most significant channels via which government debt affects economic growth [11].

With the continuous deepening of the study on the impact mechanism of local government debt, the relevant theories are becoming more and more completed, but few people carry out research in combination with regional actual conditions. This paper believes that using Beijing as an example, how local government debt affects economic recovery can be examined in the post-epidemic period. Besides, it can provide a reference and guide for Beijing and other regions in China on how to make better use of this tool.

3. The Government Debt and Economic Growth in Beijing

Next, based on analyzing the current situation of Beijing's government debt and the changes in local government debt and economic development during the epidemic, this paper will propose the impact mechanism of Beijing's local government debt on economic growth.

3.1. Government Debt

As the capital of China, Beijing is one of the earliest regions to use local government debt to regulate economic development. Guo found that the debt repayment ability of various regions in China varies greatly, and that in comparison to the central and western regions, the eastern region experiences less debt repayment pressure. Among all citys in eastern region, Beijing has always maintained a lower pressure level [12]. According to the statistics of Wind Database, Beijing’s debt ratio has been ranked behind the fifth in the East and outside the top 20 in China, and the debt ratio is around 100%, which is far lower than 150%, the warning line of China’s debt ratio calculated by Guo et al. [13]. At the same time, Yao et al. carried out research on major countries in the world and concluded that this impact on national economic growth is highly heterogeneous. Developed countries (100%) are more debt-sustainable than emerging market countries (60%) [14].

These data surveys fully demonstrate that the scale of Beijing's government debt is compatible with the local economic level and that the local government attaches great importance to risk management when issuing debt. Beijing's debt scale should be near the optimal debt scale.

Next, this paper uses data graphs to visually show the changes in Beijing's local government debt in the post-epidemic period. Figure 1 reflects the changes in bond balance and debt balance in Beijing from second quarter of 2020 (2020B) until first quarter of 2023 (2023A). All data comes from the provincial quarterly data of the National Bureau of Statistics (All quarterly data in this paper represent in this way).

Figure 1 shows that the debt balance and bond balance shifting trends are quite similar, and both indicators may accurately depict changes in the size of Beijing's local government debt following the epidemic. The period from 2020B to 2021C is the early stage of the epidemic in China. The figure shows that Beijing's debt balance is about 600 billion yuan, and the debt level is relatively low. Considering the hysteresis of government debt adjustment, and because the epidemic is a sudden public health event, the debt scale of the Beijing area is in line with the expectations for 2019 and

2020. From 2021D to the 2022B, Beijing's debt balance continued to grow significantly, eventually reaching more than 1 trillion yuan. The changes in this stage indicate that Beijing responded to the epidemic and decisively adopted the fiscal tool of government debt to make counter-cyclical adjustments and stimulate economic growth. From 2022C, however, the balance of government debt has declined slightly. It means that in the post-epidemic period, Beijing's new debt has begun to shrink, which reflects the local government's concerns about high government debt and debt risk management.

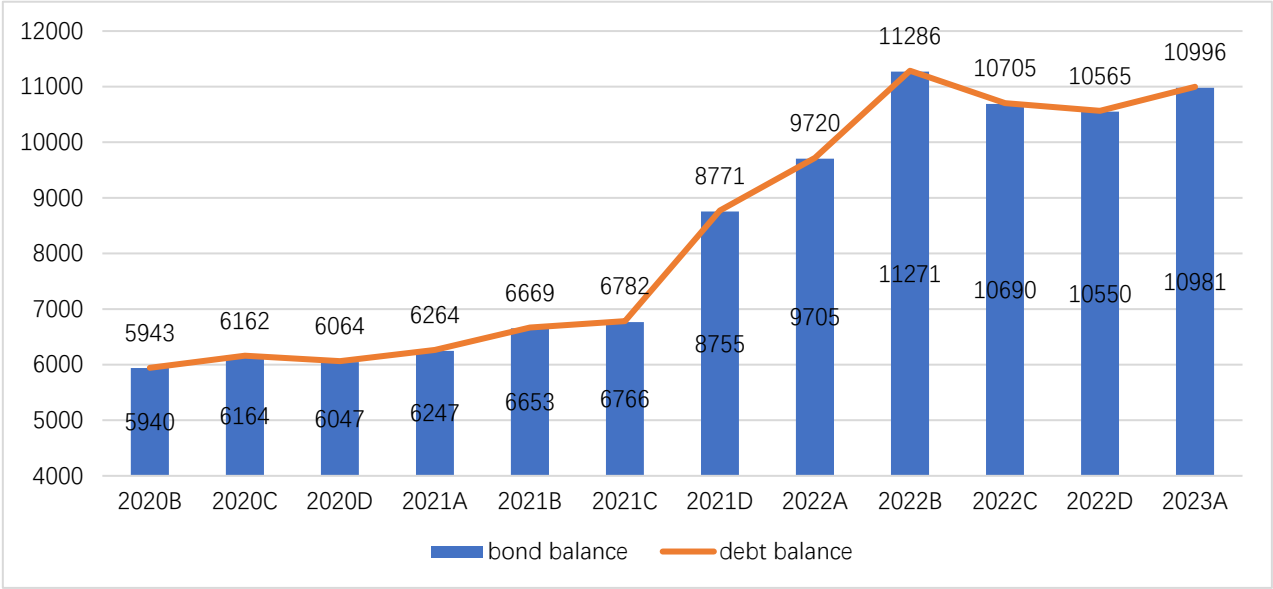

Fig. 1 2020B-2023A Beijing quarterly changes of bond balance and debt balance (Unit: 100 million yuan) (Photo credit: Original)

3.2. Hidden Debt

Hidden debt refers to debt that is not included in the quota and budget management plan, it is not included in official statistics and is not disclosed, but local governments may need to bear the responsibility for repayment. Due to the lack of a unified identification standard for hidden debt, its scale is often underestimated. In China, the hidden debts of local governments mainly include six forms: commitment letters issued by local people's congresses or governments, debts raised in the name of enterprises and institutions, debts that local governments uniformly use and repay, government purchase of services, illegal financing of PPP projects, and financing of government-industry guidance funds. Excessive hidden debt will have a crowding-out effect on the promotion in economic growth. According to Zheng's calculation, the crowding out effect is at least 12.7% [11], and it will increase with the increase of the debt scale.

Since the promulgation of the new "Budget Law" in 2014, local government debt financing management and accountability mechanisms in China have continued to develop, risks of using this tool are also generally controllable. But the hidden debt risk is still huge. China is aware of the problem of hidden debt. Therefore, since 2017, the state has introduced intensive regulatory policies aimed at local debt risks, clarified local illegal borrowing, and curbed the increase of local hidden debt. In 2018, the General Office of the State Council issued the "Guiding Opinions on Maintaining the Intensity of Making Up for Weaknesses in the Infrastructure Field" and proposed that, on the premise of not increasing the scale of hidden debts of local governments, if the existing hidden debts are difficult to repay, financing platform companies are allowed to maintain capital turnover by adopting appropriate extensions and debt restructuring based on consultations with financial institutions. In August 2018, the national regulatory authorities completed the statistics on hidden debts. Since 2019, hidden debt restructuring, and replacement have begun to increase in various places.

Taking Beijing's budget implementation and budget draft reports over the years as an important window to observe the progress of its hidden debt resolution, it can be found that Beijing was aware

of the hidden debt problem earlier, and the repayment of hidden debt is progressing steadily, with little impact from the epidemic: In 2020, Beijing's general public budget revenue was 548.39 billion yuan with a decrease of 5.7%, while general public budget expenditures were 677.60 billion yuan with a decrease of 3.6%; in 2021, Beijing's general public budget revenue was 593.23 billion yuan, which showed an increase of 8.1%, while the public budget expenditure was 686.27 billion yuan with an increase of 1.3%. The data show that Beijing's hidden debt gap has been decreasing year by year. At the same time, Beijing will successively issue several batches of special refinancing bonds in 2021 and 2022, with a scale of about 340 billion yuan, which are specially used to repay existing debts. In 2023, Guangdong and Beijing completed the clearance of hidden debts, leading the rest regions of China.

3.3. Economic Development

Table 1 shows Beijing's annual GDP index from 2020 to 2022. It can be found that the trend of index changes and debt balance changes is the same: in 2020, Beijing's local debt balance was at a relatively low level, and the GDP index for that year was 101.1, which means that Beijing's economic growth slowed down in the early stage of the epidemic; in 2021, however, the balance has increased significantly, and the GDP index has become 108.8, which well reflects the role of counter-cyclical adjustment; in 2022, the debt balance in Beijing remained stable again, and new debts decreased slightly, while the GDP index for this year also declined to 100.7.

Table 1. Beijing's annual GDP index from 2020 to 2022 (previous year =100)

Year	2020	2021	2022
Annual GDP index	101.1	108.8	100.7

Figure 2 reflects a pattern similar to Table 1: pay attention to the cumulative value of regional GDP at the end of each year (ie 2020D, 2021D, 2022D), it can be found that in 2021, when local government debts increased significantly, the growth of regional GDP was also the most, increasing from 3594.325 billion yuan to 4104.6 billion yuan. However, with the reduction of new government debt, the fact that the cumulative value of GDP in 2022 still increased slightly compared with that in 2021 indicates that Beijing's economy has begun to recover gradually.

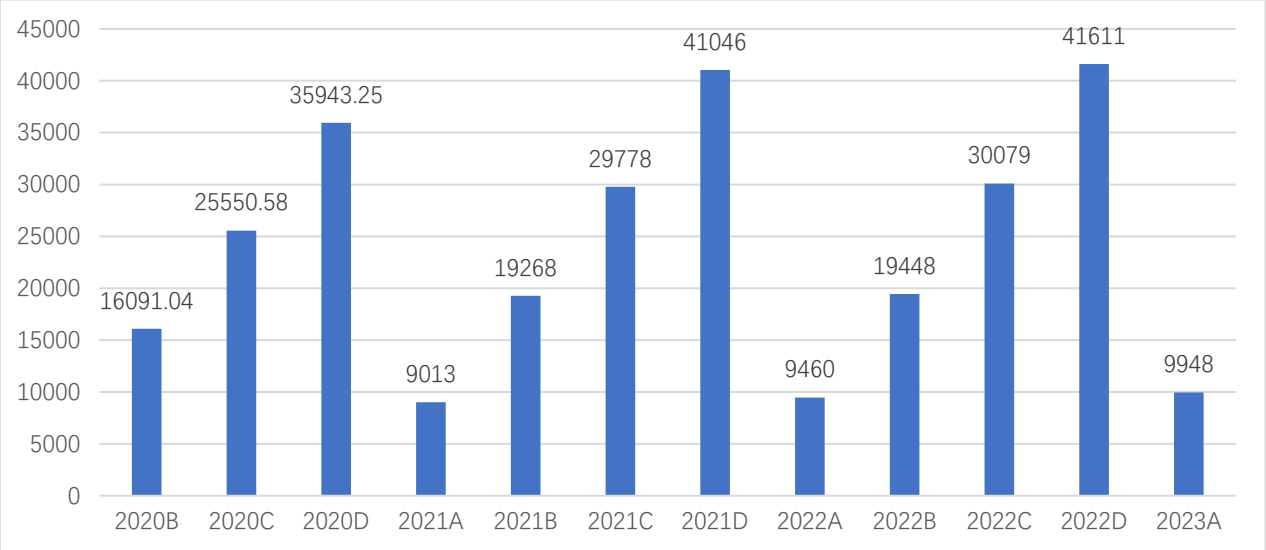

Fig. 2 2020B-2023A Beijing cumulative value of GDP (Unit: 100 million yuan) (Photo credit: Original)

3.4. Public Investment

As an important channel through which China's local government debt affects economic growth, public investment has played a huge role in the recovery of Beijing's economy during the epidemic.

Taking the period from 2020B to 2023A as an example to analyze the fixed asset investment data of road and waterway transportation in Beijing, the data comes from the public report of the Ministry of Transport of China.

In Figure 3, the bar graph represents the quarterly data of fixed asset investment in Beijing's highway and waterway transportation (view on the left vertical axis), and the line graph represents the quarterly cumulative data (view on the right vertical axis). Considering quarterly data, the investment in fixed assets increased year-on-year in each quarter from 2020 to 2021 and decreased year-on-year from 2021 to 2022. Considering quarterly cumulative data and focusing on the cumulative fixed investment in the fourth quarter of each year, however, from 2020 to 2022, there was an overall upward trend: In 2020-2021, the cumulative amount of fixed asset investment increased significantly, while in 2021-2022 there was a slight decline. This is consistent with the analysis of Beijing's economic development in the same period above. Therefore, public investment is one of the important channels to promote Beijing's economic growth.

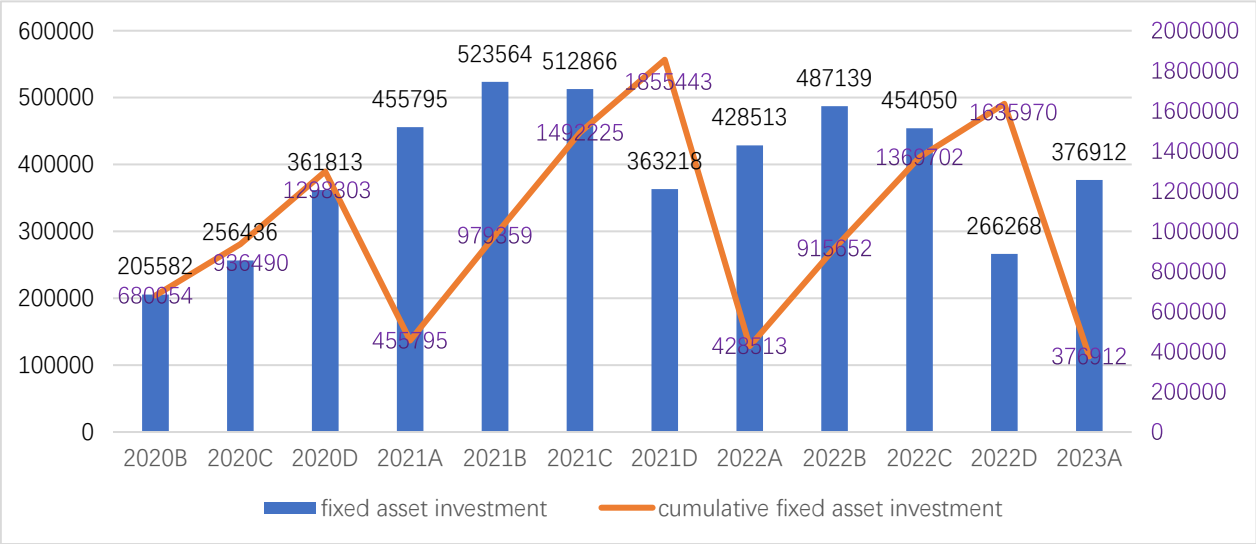

Fig. 3 2020B-2023A Beijing quarterly changes in fixed asset investment in highway and waterway transportation (Unit: 10,000 yuan) (Picture credit: Original)

3.5. Impact Mechanism

Through the analysis above, and combined with the literature survey and policies in the post-epidemic period, this paper draws the following explanations:

China’s government debt, especially the special-purpose debt, which is usually aimed at raising funds for specific capital projects or providing support for infrastructure investment with more space for change and adjustment, mainly affects economic growth through investment channels. Since 2020, the amount of special-purpose debt has been significantly higher than that of general debt, and the proportion of special-purpose debt issued in the Beijing-Tianjin-Hebei region has been significantly higher than that of the whole country. Investments in both public and private sectors are significantly encouraged by the rise in government debt [15]. The boost of public investment significantly promotes economic development, while the boost of private investment has a crowding out effect on economic growth [4, 12]. During the epidemic period, government debt in Beijing has a more obvious role in promoting public investment. The possible reason is that under the circumstances of increased uncertainty, individuals will be more cautious in investment than the public sector. Consequently, it can be said that Beijing's government debt has greatly contributed to the country's economy.

Another channel of impact is total factor productivity [14]. As a developing country, China’s infrastructure construction and large-scale construction projects are highly dependent on policies. More specifically, a considerable part of government debt is invested in these large-scale projects by local governments. This increases the total factor productivity by creating more jobs, building more factories, introducing more advanced machines, etc. But in China, one of the important ways that

government debt participates in the construction of large-scale projects is to carry out public investment, so the impact of this channel is relatively limited.

4. Countermeasure and Feasible Solution

4.1. The Disposal of Hidden Debt

Goldman Sachs Group economists have expressed concerns about the debt situation of China's local governments. In a report released by Goldman Sachs in 2019, he said that the total hidden debt of China's local governments has increased to more than half of the country's economic size [15]. The report also said that about 60% of the funds raised by local government financing vehicles in China are not used for investment, but for repayment of debt maturing in 2020-2021 [15]. Guo et al. also stated that the Beijing-Tianjin-Hebei grassroots governments will transfer risk responsibilities to the fund pool and the central government through hidden debt channels [12]. These findings indicate that municipal hidden debt is more widespread than previously thought as well as the underestimation of the risk associated with local government debt. With the economic downturn in recent years, local debt repayment pressure is increasing.

As a first-tier city, Beijing has relatively strict risk control and supervision systems. It is very necessary to deal with this problem flexibly and set an example for the whole country. Because the economies of various regions have recovered one after another in the post-epidemic period, the scale of debt issuance by local governments should be gradually reduced. At the same time, the financial department should further improve the standardized debt financing system of local governments and strengthen the prevention of hidden debts caused by disguised debts through local financing platforms, cooperation with social capital, and government purchases of services. Besides, local governments should also improve the screening method for hidden debts, record the identified hidden debts promptly for monitoring by the Ministry of Finance, and implement real-time monitoring.

But from a technical point of view, clearing the hidden debt will reduce the financing difficulty of city investment bonds. The current regulatory policy has many restrictions on the financing of city investments with hidden debts. For example, city investment with hidden debts cannot obtain supporting financing from current loans and special-purpose debts. With the elimination of hidden debts, these restrictions will be lifted, and the financing channels of city investment will be broadened, which will improve the financing ability.

4.2. The Structural Adjustment of Debt

Yang studied the influence of debt distribution on economy and found that only an increase in the proportion of productive debt can significantly promote the economy, such as public infrastructure like electricity and roads, factory construction, and financing debts in the financial industry. Debt in these areas has a significant positive effect on the economy. On the contrary, the increase in the proportion of non-productive debt (such as consumption or retail), loan repayment debt, and real estate development debt has no obvious impact on economic growth and may even have a restraining effect [4]. Guo and Wang, however, found earlier that compared with developed countries, China's government debt accounts for a large part of GDP and is more productive [7]. That is, productive debt is more conducive to economic growth. The governments borrow money for investment to form a large amount of government assets, and these investments will become a huge force to drive China's economic expansion. In addition, government debt will also be more vulnerable to interest rate fluctuations.

Therefore, while optimizing the debt scale and reducing hidden debts, Beijing and other local governments must also focus on optimizing the structure of debt. If special-purpose debt funds are used for repayment of loans and other purposes, it will drag down economic growth. To limit non-productive expenditures, the government is required to strictly control the scale of non-productive expenditures, like moderately reducing administrative expenditures and welfare expenditures for public servants; to increase productive expenditures, it is necessary to expand productive expenditures

such as infrastructure, health care, and education to promote the increase of employment and economic growth.

Based on this conclusion, on the one hand, local governments should keep the government debt scale to GDP at a sustainable level. On the other hand, it is necessary to not only invest government debt in projects that help promote economy, such as increasing investment in human resources, research and development but also lessen the economy's reliance on government spending and develop other projects that can help China's economic sustainable and healthy development, thereby weakening the effect of government spending on economic development and reducing the impact of interest rate fluctuations on government debt.

5. Conclusion

Through the discussion above, this paper concludes that the channel of local government debts in Beijing to influence economic expansion is mainly public investment. Besides, through the analysis of the effect of the Beijing government's use of government debt to stimulate economic recovery in the post-epidemic period, it is concluded that Beijing's local government debt can boost the economy and play a role in counter-cyclical adjustment in sudden public events. Finally, this paper puts forward suggestions on the current problems of Beijing's local government debt, which not only provides some guidance for Beijing's future policy adjustment but also provides a good case for how to better use local government debt as a tool in other regions of China.

But this paper also has many flaws. First of all, the research on the impact mechanism lacks the support of empirical results, but since the discussion of the impact mechanism in this paper is based on rich empirical research of scholars, the conclusion is relatively reliable. Secondly, the analysis in this paper does not consider the two-way causal relationship between local government debt and economic development, which may lead to unreliable conclusions. However, this paper takes into account the lag of policy adjustment in the data analysis and concludes that supporting local government debt to promote economic development, which can eliminate this two-way causality to a certain extent. Finally, this paper only considers a single factor of local government debt in the analysis of economic growth in Beijing and does not include other factors such as population and technological progress. This is because this paper does not use empirical analysis methods and cannot study the compound effects of multiple factors. It is a point that needs to be improved in future research.

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