

Land Resource Allocation and local government debt: a perspective based on Rural land reform and Urban Change

Chiyu Duan

MSc City Planning, University of Glasgow, Glasgow, G12 8QQ, United Kingdom of Great Britain and Northern Ireland

Corresponding Email:
duanchiyu36@gmail.com

Abstract:

This study examines the interrelationship between land resource allocation and local government debt, aiming to reveal the importance of both in China's urbanization process and their impact mechanisms. The study reveals, upon examining the nature of land resource distribution and its effects on local government income that while land transfer revenues, a primary provider of local government finance and short-term debt relief, excessive dependence on land financing could elevate the debt risk. Concurrently, judicious handling of municipal debt may invert the efficient distribution of land assets, fostering the development of infrastructure and enhancement of public services. However, the increased debt burden may lead to short-term behaviors and exacerbate the inefficient use of land resources. Through typical case analysis, This paper reveals how local governments can adjust the structure of land resource utilization in debt management, and discusses the challenges and risks faced in the process. Drawing from these studies, the research suggests strategies to enhance the distribution of land resources, bolster the management of local government debt, and foster sustainable growth. This study's findings offer not just a theoretical framework for grasping the intricate interplay between land resource distribution and municipal debt, but also bear significant practical consequences for urban development, economic growth, and policy development. However, the study still suffers from limitations such as insufficient regional coverage and lack of quantitative analyses, and a wider range of cases and quantitative models can be further explored in the future to deepen the understanding of the field.

Keywords: Land Resource Allocation, Government Debt, Urbanization, Fiscal Revenue, Debt Risks

1. Introduction

Since the 1980s, China has embarked on a rapid urbanization process, with large-scale population migration and infrastructure development contributing to the rising number, size, and population density of Chinese cities [1]. As the urbanization process continues to deepen, the mobility of land resource allocation between urban and rural areas has gradually improved. Rural land reform has become an important means for my country to achieve urban-rural integration and promote the rational allocation of urban and rural resources. Against this background, the policy of transferring rural collective land, the reform of the land acquisition system, and other multifaceted measures have promoted the transfer of rural land resources to the cities in order to meet the huge demand for land in the cities[2]. However, the dualistic structure of China's urban-rural land resource allocation process, along with the system of separating rural collective land from urban state-owned land have resulted in a number of constraints on the flow of urban and rural land elements[3]. Such limitations have resulted in an uneven distribution of resources between city and countryside regions, hindering rural economic growth and exerting increased economic strain on municipal authorities. Local governments have obtained revenues through land concessions and financing to support urban construction and economic growth, creating a fiscal structure dominated by land finance[4].

Therefore, the allocation of land resources not only affects the optimization of the urban-rural structure and the flow of economic resources but also profoundly influences the debt burden of local governments. Against this background, it is particularly important to study the interaction between rural land reform, urban change, and land resource allocation. The literature review of this study aims to summarise the research results of previous researchers on land resource allocation and local government debt, sort out the theoretical basis and practical experience of related research, and identify the deficiencies and gaps in existing research. By analyzing the existing literature, the cutting-edge issues and shortcomings of the current research can be clarified, which will provide the theoretical basis and innovative direction for the research of this paper. In addition, the review will also help to locate the unique contribution of this study in the field of land resource allocation and local government debt and ensure that the research direction is in line with the practical needs.

2. Literature review

2.1 Concepts and characteristics of land resource allocation

Land resource allocation refers to the process of regulating

the use, flow and distribution of land resources through various means, such as policies and markets, in order to optimise resource allocation and enhance the efficiency of land use[5]. Compared to other factors of production, land resources are distinctly territorial, long-term, and complex. Territoriality manifests itself in the fact that the use of land resources is limited by geographic location, natural environment, and other constraints. The long-term nature is reflected in the irreversibility and long-term impact of land use. Complexity stems from the fact that the allocation of land resources involves a combination of policy, market, and social factors [6]. Several elements affect how land resources are distributed. First, areas with better natural conditions tend to attract more investment, driving up land values [7]. Second, the government directly influences the direction and use of land resources through land-use policies, land acquisition and transfer systems, and other means, especially under China's land system, where the impact of policies on land resource allocation is particularly obvious[8]. Finally, market demand for land resources directly determines the value and efficiency of land resource allocation. Economic development leads to increased demand for land, and the dynamism of the land market affects local governments' sources of revenue and land-use decisions[9].

2.2 Concept and classification of local government debt

The term 'local government debt' denotes the financial obligations incurred by local authorities due to budgetary shortfalls, building of public infrastructures, and the demand for additional public amenities [10]. In recent years, with the acceleration of urbanization and the high-frequency allocation of land resources, the scale of local government debt has continued to expand. Revenue from land concessions has become one of the main sources of income for local governments, which is used to alleviate debt pressure. However, this revenue model also brings hidden concerns, as the high dependence of local governments on land finance may lead to debt accumulation and increased risks. In addition, fluctuations in the property market have made land grant revenues unstable, further exacerbating the debt risk of local governments.

2.3 Relationship between land Resource allocation and Local Government Debt

The allocation of land resources has a strong influence on local government revenues. Local governments increase their fiscal revenues through land transfer revenues and real estate-related taxes, which are then used for urban construction and public services[11]. However, over-reliance on land concessions can lead to a single revenue structure and increased risk. When the land market is hot, local government revenues increase, when the land market

is sluggish, revenues fluctuate, affecting the government's fiscal health. A correlation between the augmentation of land resource distribution and the growth in local government debt size[12]. High-frequency concessions and exploration of land resources have attracted huge amounts of capital, and local governments have raised funds for infrastructure development through land-financing platforms, but this approach has led to an increasing scale of debt. The long investment cycle of some land development projects has resulted in short-term revenues that do not cover the debt, further increasing the debt burden of local governments. Complex interaction mechanisms exist between land resource allocation and local government debt[13]. In order to obtain revenue from land sales, local governments will increase capital investment to enhance the value of the land, such as building infrastructure to attract more investment. In addition, local governments have adopted policies to restructure land use in order to increase fiscal revenues, but changes in land use will have long-term social, economic and environmental impacts.

3. Analysis of the impact of land resource allocation on local government debt

3.1 Case studies

In order to conduct an in-depth study on the impact of land resource allocation on local government debt, this study selected several representative regions as case study objects, focusing on areas with faster urban development and more frequent land transfer, aiming to examine the different impacts of land resource allocation in different regions on the scale, structure and risk of local government debt.

Case 1: Suzhou, Jiangsu Province

As a developed city on the eastern coast, Suzhou is highly dependent on land grant revenues for its economic development and urban expansion. The Suzhou municipal government has generated substantial fiscal revenues through large-scale land concessions, which have been used for infrastructure development and industrial upgrading. However, this fiscal structure that relies on land concessions also brings debt risks. Due to its high dependence on land finance, the Suzhou government's fiscal revenues were significantly affected during periods of land market volatility, and debt risk increased, especially after the implementation of real estate market control policies, which resulted in a decline in land grant revenues and an increase in the local debt burden.

Case 2: Xiongan New Area, Hebei Province

As an important test area for China's new round of regional development strategy, Xiongan New Area's land resource allocation is closely linked to urban development

policies. Through the land consolidation and centralized development model, Xiongan New Area has gradually reduced its reliance on land grant revenues through a public finance-led approach and has explored diversified financing channels. However, as the construction of the new area involves a large amount of infrastructure investment, local governments continue to face greater financial pressure in the process of land resource allocation. The case of Xiongan New Area shows that the rationalization of land resource allocation and diversified financing methods can help alleviate debt pressure, but land resource allocation puts higher demands on debt management during the long-term investment period.

3.2 Analysis of impact mechanisms

3.2.1 Land transfer policy

The most direct way for local governments to obtain financial revenue is through land concessions[14]. The implementation of the land grant policy has enabled local governments to supplement their finances with one-time revenues, but such short-term revenues make it difficult to form a long-term stable revenue structure. The policy of over-reliance on land grant revenues has led local governments to grant large amounts of land for fiscal revenues when the land market is buoyant and to difficulty in maintaining stable revenues when the market is downward, with a consequent increase in debt risk[15]. In addition, the instability of land grant revenues further increases the risk of local debt owing to the rigidity of the supply of land grants.

3.2.2 Real Estate Tax Policy

Real estate tax policy is another important way in which land resource allocation affects local government debt[16]. Real estate taxes. Real estate taxation not only provides an additional source of income for local governments but also has a regulatory effect on the real estate market. Fluctuations in the property market have a direct impact on related tax revenues, and if local governments rely heavily on real estate tax revenues, the problem of 'land finance dependence' may arise, which makes the debt risk closely related to fluctuations in the property market. In addition, the current real estate tax policy is not yet perfect, and the instability of the tax mechanism may increase the debt risk of local governments.

3.2.3 Infrastructure investment and land-use structure

Local governments usually invest more in infrastructure, such as roads and public service facilities, in order to enhance the value of their land[17]. These investments raise the market value of the land, but they also create a large amount of upfront debt. Restructuring of land use, such as converting agricultural land to commercial or industrial land, increases land grant revenues but may also generate

a waste of land resources. In the long term, infrastructure investment has a long payback cycle, which may lead to debt accumulation in cases where revenue is difficult to recover in the short term.

4. The inverse effect of local government debt on land resource allocation

4.1 Financial commitment effect

An important use of local government debt lies in infrastructure development [18]. Through debt financing, local governments are able to invest in public infrastructure, such as transport, water, and energy, and improve the level of infrastructure in cities and villages. These investments have a direct impact on the market value of land resources, making land more economically viable, which in turn attracts more businesses and people to a particular area. For example, improved transport networks can enable neighboring land to be converted from agricultural land to industrial or commercial land, thereby driving land values and regional economic development. In addition to infrastructure construction, local government debt has also been used to support education, health care, and other public goods, projects that have enhanced the quality of life of residents and the attractiveness of cities, and contributed to the urbanization process [19]. This investment of funds not only improves the level of local public services but also has a long-term impact on the utilization structure of land resources. Particularly in newly built areas, the concentrated construction of infrastructure and public services tends to lead to the concentrated development and use of land, resulting in a more aggregated and efficient allocation of land resources.

4.2 Policy adjustments

In order to alleviate the pressure of debt, local governments will adjust the land use structure through policies to optimize resource allocation and raise fiscal revenue[20]. For instance, local governments will increase the supply of industrial and commercial land and reduce agricultural land or idle land, with a view to increasing fiscal revenue through land sales. In addition, some local governments will choose to speed up the transformation of old urban areas or old industrial zones in order to achieve more revenue through land appreciation[21]. Such policy adjustments have a direct impact on the direction of the use of land resources and, to a large extent, have led to the diversion of land resources to more economically efficient uses. On the other hand, to repay their debts, local governments may adjust their land grant policies, shorten the land supply cycle or increase land supply in exchange for more revenue from land grants. In order to attract investment, some regions may also implement favorable investment

promotion policies, such as reducing land premiums and lowering the cost of land for enterprises[16]. Although such policies can increase fiscal revenues in the short term, they may bring the risk of wasting resources in the long term. Adjustments in land grant policies are closely linked to the debt-servicing needs of local governments and may result in the centralization and short-termisation of regional land use[11].

4.3 Potential risks

The risks involved are especially notable when considering the adverse effects of local government debt on the distribution of land resources. Initially, variations in the real estate market directly influence local governments' capacity to settle their debts[22]. Local governments that are highly dependent on land concessions for debt repayment will see their debt-servicing capacity weaken significantly when land market prices fall or demand decreases, leading to a higher risk of debt default. Secondly, due to debt pressure, local governments have resorted to overdevelopment, allocating land resources with the goal of maximizing short-term benefits, but such allocation usually lacks long-term planning, leading to a decline in the efficiency of land use[23]. For example, in order to speed up debt repayment, some regions will change land originally planned for greenfield or public welfare use into commercial land, ignoring the ecological and social benefits of the land, which ultimately leads to a waste of resources and an increase in the environmental burden. This phenomenon of declining resource utilisation efficiency is more common in regions with greater debt pressure. Thirdly, among local governments with high debt burdens, there may be a risk of debt default if revenues from land concessions fail to meet debt-servicing targets as expected[24]. This risk will lead local governments to be more short-sighted in land resource allocation, favoring high-frequency land concession and development of land resources, making it difficult to ensure the sustainability of land resource allocation. In the long term, this will make land resource allocation oriented towards short-term interests, neglecting the long-term development needs of the social economy, and increasing the government's financial risks and the instability of land resources.

5. Optimisation Strategies and Policy Recommendations

Addressing the issues of chaotic development and sub-optimal land utilization in land resource distribution, it's imperative for local authorities to fine-tune land supply systems, prioritizing land needs for public services and infrastructure, and guaranteeing the judicious employment of land resources. At the same time, land supply plans should be rationally formulated in accordance with

regional development needs, avoiding excessive concessions due to short-term financial needs, and balancing the relationship between supply and demand in the land market in order to reduce the impact of fluctuations in the land market on local finances. Secondly, in order to effectively control local government debt risks, it is recommended that a multilevel debt risk early warning mechanism be established. Through dynamic monitoring of the scale, structure, repayment capacity, and other indicators of local debt, it is possible to grasp the debt situation in real-time and provide timely early warning. In addition, local governments can provide regular assessment and feedback on debt risk by setting up special oversight bodies, so that effective countermeasures can be taken when the risk exceeds the early warning line and potential fiscal risks can be reduced. In addition, optimizing debt structure is an important measure to reduce the pressure on local government debt. It is recommended that local governments rationally choose debt financing instruments, give priority to types of debt with lower risks and longer maturities, and reduce dependence on a single source of debt through diversified financing channels.

6. Conclusion

This study analyses the interaction between land resource allocation and local government debt and finds that the two are closely dependent and mutually influential. Local governments rely on land grant revenues to repay their debts, and land resource allocation plays a key role in local financial stability. On the other hand, local government debt affects the allocation of land resources through channels such as infrastructure investment, promoting the enhancement of land market value or changing the direction of land resource allocation. Specifically, the allocation of land resources can help to improve the local government's fiscal revenue, but over-reliance on land finance may exacerbate the debt risk; while the reasonable management of local government debt can optimise the efficiency of land resource utilisation, but the increase in debt risk may lead to the short-sightedness of the allocation of land resources. In addition, by empirically analysing the case, we further validate the interaction mechanism between land resource allocation and local government debt, providing systematic theoretical support for understanding the complex relationship between the two.

This study has made some progress in exploring the relationship between land resource allocation and local government debt, but there are still shortcomings. Firstly, the case analysis in this paper fails to cover different types of regions across the country and is limited to some typical cities, failing to fully demonstrate regional differences, which limits the generalisability of the study's conclusions to a certain extent. Secondly, due to the difficulty of obtaining data, this paper lacks time-series analyses of debt

size and land transfer revenue, which fails to fully reflect the dynamic relationship between the two in different economic cycles. In addition, this paper has less quantitative analysis of the synergy between land resource allocation and debt management, and future research can introduce more quantitative analysis methods and construct models to more accurately measure the interaction between the two.

7. Reference

- [1] Zhao, P., & Zhang, M. (2018). The impact of urbanisation on energy consumption: A 30-year review in China. *Urban climate*, 24, 940-953.
- [2] Governa, F., & Sampieri, A. (2020). Urbanisation processes and new towns in contemporary China: A critical understanding from a decentred view. *Urban studies*, 57(2), 366-382.
- [3] Long, H., Tu, S., Ge, D., Li, T., & Liu, Y. (2016). The allocation and management of critical resources in rural China under restructuring: Problems and prospects. *Journal of Rural Studies*, 47, 392-412.
- [4] Zhao, Y., Xu, J., Feng, C., & Gong, C. (2023). Dose Land Negotiation Policy Promote or Suppress Hidden Debts of Local Governments?. *Land*, 12(5), 985.
- [5] Xi, Q., & Mei, L. (2022). How did development zones affect China's land transfers? The scale, marketization, and resource allocation effect. *Land Use Policy*, 119, 106181.
- [6] Tang, X., Sheng, L., & Zhou, Y. (2022). Exploring complex urban growth and land use efficiency in China's developed regions: implications for territorial spatial planning. *Frontiers of Earth Science*, 16(4), 1040-1051.
- [7] LIANG, X. Y., JIN, X. B., SUN, R., ZHANG, X. L., LI, H. B., & ZHOU, Y. K. (2021). Optimal allocation of land resources and its key issues from a perspective of food security. *Journal of Natural Resources*, 36(12), 3031-3053.
- [8] Tian, F., Li, M., Han, X., Liu, H., & Mo, B. (2020). A production–living–ecological space model for land-use optimisation: A case study of the core Tumen River region in China. *Ecological Modelling*, 437, 109310.
- [9] Chen, C., Restuccia, D., & Santaèulàlia-Llopis, R. (2022). The effects of land markets on resource allocation and agricultural productivity. *Review of Economic Dynamics*, 45, 41-54.
- [10] Liu, A. Y., Oi, J. C., & Zhang, Y. (2022). China's local government debt: the grand bargain. *The China Journal*, 87(1), 40-71.
- [11] Fan, X., Qiu, S., & Sun, Y. (2020). Land finance dependence and urban land marketization in China: The perspective of strategic choice of local governments on land transfer. *Land Use Policy*, 99, 105023.
- [12] Wu, F. (2022). Land financialisation and the financing of urban development in China. *Land Use Policy*, 112, 104412.
- [13] Cheng, Y., Jia, S., & Meng, H. (2022). Fiscal policy choices of local governments in China: Land finance or local government debt?. *International Review of Economics & Finance*, 80, 294-

308.

[14] Cao, J., Law, S. H., Wu, D., & Yang, X. (2023). Impact of local government competition and land finance on haze pollution: empirical evidence from China. *Emerging Markets Finance and Trade*, 59(13), 3877-3899.

[15] Li, H., & Qin, Y. (2024). Land financialization and regional innovation dynamics: Evidence from China. *Finance Research Letters*, 64, 105474.

[16] Cai, M., Fan, J., Ye, C., & Zhang, Q. (2021). Government debt, land financing and distributive justice in China. *Urban Studies*, 58(11), 2329-2347.

[17] Chen, K., Long, H., Liao, L., Tu, S., & Li, T. (2020). Land use transitions and urban-rural integrated development: Theoretical framework and China's evidence. *Land use policy*, 92, 104465.

[18] Thapa, I. (2020). Local Government: Concept, Roles, and Importance for Contemporary Society. *Public Administration Campus*, 4(10.13140).

[19] Fisher, R. C. (2022). *State and local public finance*.

Routledge.

[20] Qu, X., Xu, Z., Yu, J., & Zhu, J. (2023). Understanding local government debt in China: A regional competition perspective. *Regional Science and Urban Economics*, 98, 103859.

[21] Shen, T., Yao, X., & Wen, F. (2021). The Urban Regeneration Engine Model: An analytical framework and case study of the renewal of old communities. *Land use policy*, 108, 105571.

[22] Feng, Y., Wu, F., & Zhang, F. (2022). The development of local government financial vehicles in China: A case study of Jiaying Chengtou. *Land Use Policy*, 112, 104793.

[23] Song, Y., de Jong, M., Stead, D., Yang, W., & Wang, B. (2024). Dreaming the wrong dream: An exploratory case study of a policy change toward sustainable urban development in a medium-sized Chinese city. *Journal of Urban Affairs*, 46(2), 252-266.

[24] Ouyang, A. Y., & Li, R. (2021). Fiscal decentralization and the default risk of Chinese local government debts. *Contemporary Economic Policy*, 39(3), 641-667.