

Analysis of the Logic of the Spatial Linkage between the Local Government Debt Risk and the Housing Price Risk

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Abstract

This paper attempts to explain the logic of the spatial linkage between the local government debt risk and the housing price risk, and sort out the formation mechanism and transmission mechanism of the linkage. Based on the dual characteristics of land and real estate, with land finance as the medium, housing price and the local government debt risk form the linkage. Under the spillover effect of risk, local government debt and the housing price risk further form the spatial linkage. The competition among local governments promotes the spatial linkage between the local government debt risk and the housing price risk. The housing price risk is transmitted to the real economy through the liquidity effect and the crowding-out effect, land finance and credit market intensify this risk transmission, and the local government debt risk then presents a U-shaped change. Based on this, starting from the prevention of the local government debt risk, the housing price risk and risk linkage, the government should further improve the promotion incentive mechanism, reasonably control housing price, actively seek new sources of fiscal revenue, and reduce reliance on land finance.

Keywords

The Local Government Debt Risk; The Housing Price Risk; The Spatial Linkage of Risk.

1. Introduction

Since 2020, the scale of local government debt has remained at a high level, and the pressure on local governments to repay debt has been increasing. As of June 2023, the debt balance of local governments across the country is 37,799.9 billion yuan, nearly 90% of the debt limit (see Table 1). The continuous expansion of debt scale has led to the further accumulation of debt risk, which brings many uncertainties to the high-quality development of China's economy (Li Ruxia, 2023).

Table 1. Balance and limit of local government debt since 2020 (unit: 100 million yuan)

TIME	Debt balance	Debt limit	Debt balance/debt limit
June 2020	241583	288074.3	83.86%
December 2020	256615	288074.3	89.08%
June 2021	275849	332774.3	82.89%
December 2021	304700	332774.3	91.56%
June 2022	347503	376474.3	92.30%
December 2022	350618	376474.3	93.13%
June 2023	377999	421674.3	89.64%

After rising for nearly a decade, China's housing price experienced a significant decline in 2022 (see Figure 1), and the housing market began to weaken.

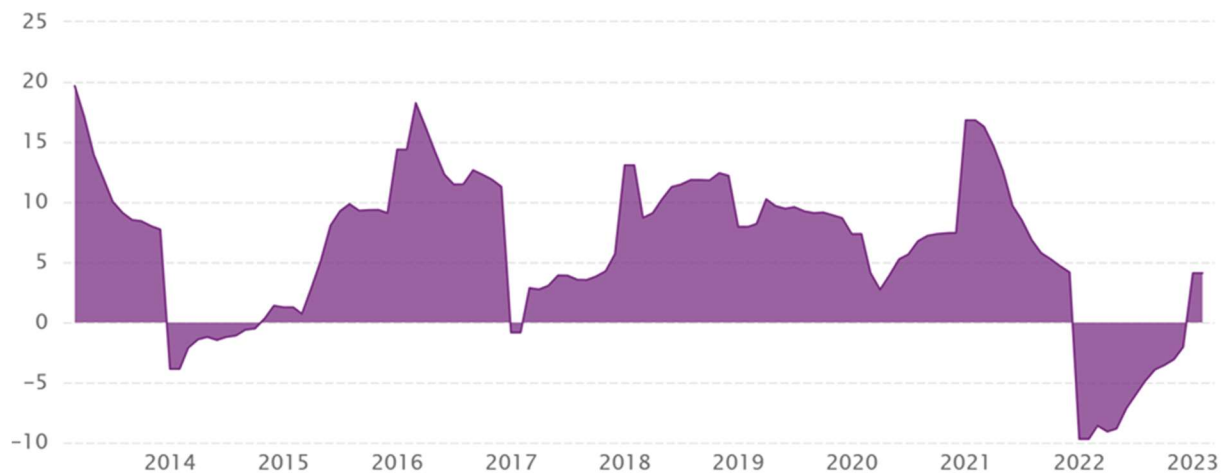


Figure 1. Monthly year-over-year growth rate of China's housing price from 2014 to 2023

Source: CEIC Data, <https://www.ceicdata.com>

In the context of superimposed economic pressures, China has experienced the coexistence of weak housing price and surging local government debt, and the long-term divergence between the two trends may induce systemic financial risk (Wu Di, 2023).

In December 2022, the Central Economic Work Conference made it clear that China should adhere to the position that housing is for living in, not for speculation, and promote the smooth transition of the real estate industry to a new development model; at the same time, China should also guard against and defuse the local government debt risk, resolutely curb the increase of debt, and resolve the debt balance. It is not difficult to see that real estate financial risk and the local government debt risk are two important risks, and it is crucial to effectively prevent and defuse "gray rhino" risk in real estate, avoid its interweaving with the local government debt risk to cause systemic risk. Therefore, this paper intends to analyze the logic of the spatial linkage between the local government debt risk and the housing price risk, sort out its formation mechanism and transmission mechanism, so as to find effective measures to prevent and defuse risk, reduce risk linkage and avoid the formation of systemic risk, and put forward corresponding policy suggestions.

2. Trace the Source of the Spatial Linkage between the Local Government Debt Risk and the Housing Price Risk

2.1. The Chinese-style Fiscal Decentralization and Promotion Incentive Mechanism

Fiscal decentralization means that the central government and local governments both have a certain degree of autonomy in fiscal revenue and expenditure. A review of the evolution of China's fiscal relations shows that during the major tax system adjustment in 1958, the central government decentralized its power in fiscal revenue to local governments, and the proportion of local government fiscal revenue jumped from 19.59% in 1958 to 75.62% in 1959. Since then, the proportion of local government fiscal revenue continued to fluctuate at a high level. After the reform of the tax-sharing system in 1994, the central government centralized its power in fiscal revenue, and the proportion of local government fiscal revenue dropped from 77.98% in 1993 to 44.30% in 1994. The fiscal revenue of local governments was basically the same as that of the central government and both remained within a reasonable range.

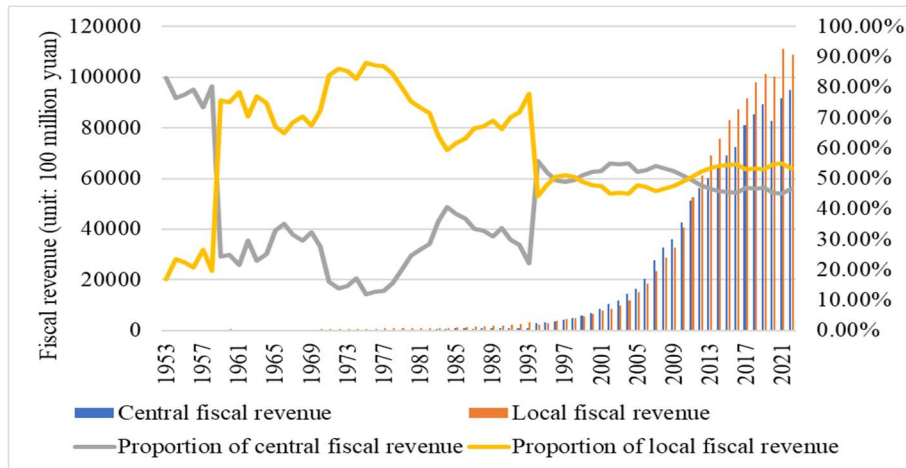


Figure 2. Fiscal revenue of the central and local governments from 1953 to 2022

Source: National Bureau of Statistics (NBS), <https://data.stats.gov.cn/easyquery.htm?cn=C01>

At the same time, the central government’s power in fiscal expenditure was also decentralized. As shown in Figure 3, from 1953 to 2022, local government expenditure showed a power-level growth, accounting for an ever-increasing proportion of national government expenditure. In 2022, local government expenditure reached 2,2503.925 billion yuan, accounting for as high as 86.35%.

Thus, it can be seen that the Chinese-style fiscal decentralization presents the basic feature of power mismatch in fiscal revenue and fiscal expenditure, and its core connotation is fiscal decentralization under political centralization (Liu Chengli, 2011; Zhang Hong and Cui Gengrui, 2022).

Under the background of the Chinese-style fiscal decentralization, local governments are faced with the pressure of an ever-widening gap in fiscal revenue and expenditure. In order to maintain a balance in fiscal revenue and expenditure, local governments can only seek more sources of funds, and therefore prefer measures that can stimulate local economy (Liu Chang et al., 2020), such as infrastructure construction projects. Nevertheless, due to the long-term shortage of financial funds, when implementing economic development measures, local governments often issue debt to obtain funds and then invest in projects, which leads to the continuous expansion of local government debt.

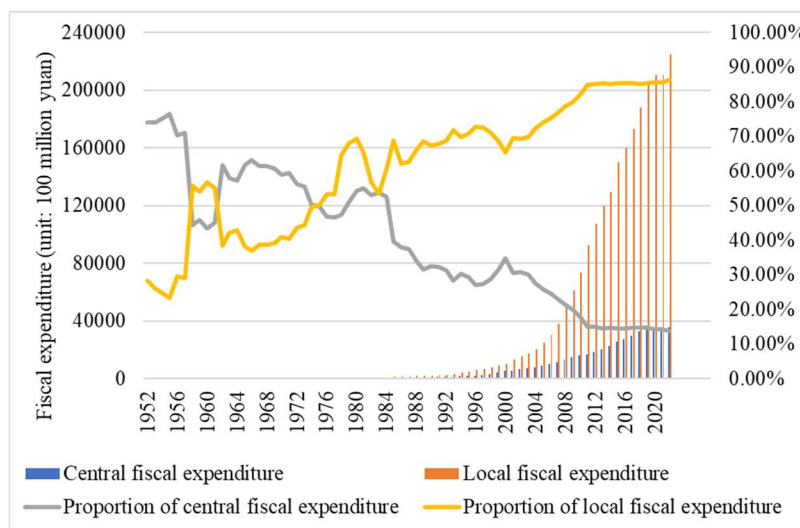


Figure 3. Fiscal expenditure of the central and local governments from 1953 to 2022

Source: National Bureau of Statistics (NBS), <https://data.stats.gov.cn/easyquery.htm?cn=C01>

At the same time, under the Chinese-style fiscal decentralization system, political centralization leads to regional competition among local governments for recognition by the central government (Tang Yunfeng and Liu Qingjie, 2021), and fiscal decentralization gives local governments a certain degree of economic autonomy (Zhang Hong and Cui Yonggrui, 2022), which can effectively mobilize the enthusiasm of local governments for economic construction. Under the assessment system based on economic performance as the main criterion for promotion incentives, local governments will give priority to investing more fiscal funds in capital-intensive infrastructure construction projects that can highlight political performance (Xu Lin et al., 2022), so as to promote the development of other related industries and generate economic benefits. Such projects will further expand the scale of government financing, distort the fiscal revenue and expenditure structure of local governments, and aggravate the risk of local government debt.

2.2. Characteristics of Land and Real Estate

As a factor of production, land is the most basic means of production for human development. Land has the dual characteristics of resource and asset. On the one hand, land has the natural characteristic of resources, that is, land has the important characteristics of being regional, limited, and irreplaceable. On the other hand, land also has the economic characteristic of assets, that is, the property ownership of land, including ownership and use right, can be traded in the market so as to obtain economic benefits. Resources always flow to the sector with the highest return on investment. The limited and irreplaceable nature of land makes it the scarcest resource. The economic characteristic of land determines that land transfer will inevitably show an upward trend.

Real estate refers to land, buildings and other fixed objects on the ground. It is a synthesis of material objects, rights and interests, and location, which determines the financial and spatial characteristics of real estate. Among these characteristics, real estate and its equity elements enable real estate holders to obtain economic benefits such as assets preservation and appreciation, risk dispersion and avoidance, namely the financial characteristic of real estate (Wang Ke and Yang Yuqing, 2018). The location element of real estate determines the spatial orientation of real estate itself, and also determines its relationship with other real estate or physical objects in terms of spatial orientation and distance, namely the spatial characteristic of real estate. Land is the premise of real estate construction, and the rise of land price will lead to the rise of housing price.

2.3. Land Finance

Land finance relies on the dual characteristics of land, which means that local governments rely on the income from the transfer of land use rights to maintain the balance of local fiscal revenue and fiscal expenditure (Ji Yunyang and Lv Lingyao, 2023). After the reform of tax-sharing system in 1994, the legislative power of tax laws was concentrated in the central government, and local governments were only the implementers of tax laws, regulations and others. The principle of legal taxation was first put forward in 2013 and was officially included into the Legislation Law on March 15, 2015. Since then, local governments can only implement the tax laws formulated by the central government and cannot levy or suspend local taxes according to the features of their economic development, so it is impossible for local governments to increase tax revenue in a short period of time. Therefore, regions with insufficient fiscal funds could only rely on means such as issuing local bonds and transferring land use rights to increase fiscal revenue. In 2015, local government debt was included in the fiscal budget and written into the Government Work Report, and local government bond issuance was supervised by the Budget Law. The central government no longer arbitrarily underwrote local government debt, and many local governments also introduced restrictive measures to restrict the subjects, uses,

scales, methods, and others of local government bond issuance in accordance with the principle of "acting within its capability and controlling risk". Under the circumstance that local government debt issuance is limited, land transfer through "bidding, auction, and listing" and agreement has become important means for local governments to obtain fiscal revenue under the pressure of fiscal expenditure (Wang Yubo, 2019). As shown in Table 2, land transfer fees jumped from 2,851.7 billion yuan in 2012 to 6,685.4 billion yuan in 2022, and the proportion of local government fiscal revenue rose from 46.69% in 2012 to 61.44% in 2022 (up to 84.02% in 2020). And taxes directly related to the real estate industry, namely deed tax, land value added tax, property tax, cultivated land occupation tax, and urban land use tax, rose from 1,012.8 billion yuan in 2012 to 1,921.6 billion yuan in 2022. Land price that increased by 134% and taxes that nearly doubled are one of the main reasons for the rise in housing price (Hujia, 2022).

Table 2. Land-related taxes from 2012 to 2022 (unit: 100 million yuan)

Year	Tax revenue	Deed tax	Land value added tax	Property tax	Cultivated land occupation tax	Urban land use tax	Land transfer fees	Fiscal revenue of local governments	The proportion of land transfer fees
2012	100601	2874	2719	1372	1621	1542	28517	61078	46.69%
2013	110497	3844	3294	1582	1808	1719	41250	69011	59.77%
2014	119158	3986	3914	1852	2059	1993	42606	75877	56.15%
2015	124892	3899	3832	2051	2097	2142	32547	83002	39.21%
2016	130354	4300	4212	2221	2029	2256	37457	87239	42.94%
2017	144360	4910	4911	2604	1652	2360	52059	91469	56.91%
2018	156401	5730	5642	2889	1319	2388	65096	97903	66.49%
2019	157992	6213	6465	2988	1390	2195	72517	101081	71.74%
2020	154310	7061	6468	2842	1258	2058	84142	100143	84.02%
2021	172731	7428	6896	3278	1065	2126	87051	111084	78.36%
2022	166614	5794	6349	3590	1257	2226	66854	108819	61.44%

3. The Logic of the Spatial Linkage between the Local Government Debt Risk and the Housing Price Risk

3.1. Formation Mechanism of the Spatial Linkage between the Local Government Debt Risk and the Housing Price Risk

Land finance is the intermediate variable linking housing price and local government debt. The real estate market is an important guarantee for land fiscal revenue increase, and land fiscal revenue increase can temporarily alleviate the pressure on local government debt but indirectly promote the increase of debt scale (Chen Rui et al., 2017). Thus, based on the financial characteristic of land and real estate, the housing price is linked with the local government debt risk through land finance (Tang Yunfeng and Liu Qingjie, 2021); based on the spatial characteristic of land and real estate, under the spillover effect of risk, local government debt and the housing price risk further form the spatial linkage.

The Chinese-style fiscal decentralization and promotion incentive mechanism increase the local government debt risk through land finance (Zhang et al., 2021). Under the Chinese-style fiscal decentralization system, the power mismatch in fiscal revenue and fiscal expenditure causes great financial pressure on local governments. Local governments generally choose to raise the land price in the way of "bidding, auction, and listing" to obtain a large amount of land transfer fees so as to relieve the fiscal pressure. At the same time, under the promotion mechanism based on economic performance, local governments rely on their investment and financing

platforms (Diao Weitao, 2015), and use debt for industrialization and urbanization construction (Chen Rui et al., 2021), which promotes regional economic growth, makes the real estate market boom, and drives up housing price. In turn, the boom of the real estate market will lead to the rise of land price, resulting in the expansion of land mortgage value and the premium of land financing, and it is easier for local governments to expand the scale of land financing, which will increase the scale of debt (Yang Ying and Park Yingai, 2023). As a result, the linkage between the local government debt risk and the housing price risk is formed through land finance. In this case, the solvency of local governments significantly depends on the boom of the real estate market (Li Youdong et al., 2022). Rising housing price can relieve the pressure on local government debt, but it can also lead to a further increase in the scale of debt and further strengthen the reliance of local governments on land finance. Once housing price fall, the land price support of local government debt financing will be broken, and they will face greater debt risk. The positive effect of housing price in reducing the local government debt risk gradually weakens and has a negative effect as the reliance on land finance deepens.

At the same time, the local government debt risk has a spillover effect (Li Cheng and Liu Yaxin, 2022), and borrowing behaviors among local governments at the same level may have a interactive effect that leads to risk contagion (Borck et al, 2015; Yang Zheng, 2018). Due to the first law of geography and the learning effect, the correlation between neighboring regions is stronger, and it is easier to produce demonstration and imitation effects. When a local government invests in fixed assets, their neighboring local governments will also expand their investment, resulting in spillover of the local government debt risk. The risk of housing price fluctuation produces a ripple effect among geographically adjacent regions, and forms a spatial spillover among regions with close economic correlation (Li Zheng et al., 2019). With the addition of double spillover effects, a local government's investment choices, fiscal decisions and other measures to increase the scale of government debt not only stimulate the rise of housing price in its region, but also have a significant impact on housing price fluctuations in adjacent regions (Ge Kun et al., 2018).

3.2. Transmission Mechanism of the Spatial Linkage between the Local Government Debt Risk and the Housing Price Risk

Local governments rely on land transfer and land mortgage loans to raise revenue, and the decline in land price caused by housing price control will lead to the decline of local government revenue, which will directly affect the repayment ability of local governments (Meidong Zhou et al., 2021), then the default risk of local government debt will increase. The risk of rising housing price is transmitted to the real economy through the liquidity effect and the crowding-out effect, which is further exacerbated by land finance and credit market (Gao Ran and Gong Liutang, 2017; Zhou Shaofu and Long Wei, 2020), and the local government debt risk subsequently shows a U-shaped change. On the one hand, as housing price rises, land price rises due to the boom in the real estate market, and local governments can obtain more fiscal revenue through land financing or land transfer, further strengthening their reliance on land finance. After obtaining funds, local governments will invest in urban construction and industrialization, which will prosper the regional economy and lead to population inflow and further prosperity of the real estate market. With the increasing scale of local government debt, its risk is increasing. On the other hand, rising housing price increases the leverage of the real estate industry compared with other industries, prompting the government and other industries and enterprises to shift investment to the real estate industry, and residents bear the debt risk of the government and enterprises to a certain extent (which means the proportion of house purchase expenditure in household income is too high, and the household debt ratio is also high), and at the same time, the credit risk of financial institutions with commercial banks as the core is increasing (Li Cheng et al., 2021).

Local government competition is an important driving force for the spatial spillover of the local government debt risk (Eckhard & Maximilian, 2018; Shen Li et al., 2019; Huo et al., 2023). Local government debt issuance has an interactive effect. On the one hand, local governments compete and compare with each other. Under the political performance assessment model that focuses on economic performance, there exists an incentive mechanism that causes local governments to compete to expand the scale of debt. On the other hand, the imitation and demonstration effects between neighboring regions also make government debt spread among regions. Finally, the local government debt risk can break through the limitation of geographical distance and spread to other regions with which it is closely related, and the spatial spillover effect is significant.

At the same time, the competition among local governments will also affect the real estate market (Li Yonggang and Li Xiang, 2012), resulting in spillover of the housing price risk. Under fiscal decentralization, local governments are under great fiscal pressure and need more capital investment to cope with competition. Local governments often choose to obtain fiscal revenue through land financing or land transfer, which pushes up land price. And that increases real estate development costs and housing price. Rising housing price leads to a new cycle: it is easier for local governments to obtain funds through land financing or land transfer, land price rises, real estate development costs rise, and housing price rises. In this process, the housing price risk and the local government debt risk are constantly intertwined, and the spillover effect is more significant.

4. Conclusion

This paper analyzes the formation mechanism and transmission mechanism of the spatial linkage between the local government debt risk and the housing price risk from the perspective of Chinese-style fiscal decentralization and promotion incentive mechanism, the characteristics of land and real estate, and the source tracing of land finance. Due to the dual characteristics of land and real estate, under the Chinese-style fiscal decentralization, and the promotion incentive mechanism that focuses on economic performance, real estate price forms the linkage with the local government debt risk through land finance as the medium. Under the spillover effect of risk, local government debt and the housing price risk further form the spatial linkage. At the same time, the competition among local governments has become an important driving force for the spatial linkage between the local government debt risk and the housing price risk. The housing price risk is transmitted to the real economy through the liquidity effect and the crowding-out effect, land finance and credit market further aggravate this risk transmission, local government debt risk then presents a U-shaped change, and the housing price risk and the local government debt risk are intertwined. Based on this, the government should further improve the promotion incentive mechanism and take the repayment of local government debt as an assessment index to promote the rational issuance of local government debt, should properly control housing price, adhere to the principle of "housing is for living, not for speculation", and reduce real estate bubbles, and should actively seek new sources of fiscal revenue, reduce local governments' reliance on land finance, avoid exacerbating the linkage between the housing price risk and the local government debt risk, and ultimately avoid causing systemic risk.

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