The End of Fiscal Autonomy: Rising Local Debt and Fiscal Constraints in Chinese Provinces

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Abstract

The extant literature on the political economy of China has highlighted the role of fiscal autonomy in fostering growth and reform since 1978. By collecting detailed data on local debt issuance and servicing, as well as comprehensive fiscal data from provincial budgetary and extrabudgetary accounts, we show that fiscal autonomy has been heavily eroded in the vast majority of localities in China since 2018. The bond data show that by the end of 2025, average monthly debt servicing had surpassed 50 per cent of monthly budgetary and extrabudgetary income for all but seven Chinese provincial units. From the budgetary data, we show that outside of Beijing, Shanghai and Guangdong, consolidated expenditures of local governments drew 70 per cent of their funds from central fiscal resources by 2025. As a result, the fiscal space for sizable policy experiments or discretionary spending without substantial central backing has been dramatically reduced.

Keywords: fiscal policy; local budget; fiscal federalism; reform; China; intergovernmental relations

摘要

现有关于中国政治经济的研究普遍强调，财政自主权在 1978 年以来推动经济增长与改革进程中发挥了重要作用。通过系统地收集地方债券发行与偿付的详细数据，并整合省级预算内与预算外的财政数据，我们发现，自 2018 年以来，中国绝大多数地区的财政自主权已受到显著侵蚀。地方债券数据显示，截至 2025 年底，除 7 个省级行政单位外，其余地区月均债务偿付额均已超过月度预算内与预算外收入总额的 50%。预算数据进一步表明，到 2025 年，除北京、上海和广东外，各地地方政府合并口径支出中约

70%的资金来源于中央财政资源。由此，地方政府在缺乏中央大规模财政支持的情况下开展较大规模政策试验或实施自主性支出的财政空间已大幅收缩。

关键词：财政政策；地方预算；财政联邦制；改革；中国；中央地方政府关系

Introduction

Local governments in much of China began the reform period with considerable fiscal latitude to carry out reform, although ideological restrictions led to an uneven pattern of reform.[1] Ideological relaxation and fiscal autonomy in the 1980s inaugurated over three decades of daring reform in many regions of China, which helped spur growth. However, in recent years, our analysis of provincial debt and budgetary data shows that nimble developmentalism has transformed into debt-weary fire fighting in the majority of provinces in China today. High debt servicing relative to local revenue from both the budgetary and extrabudgetary accounts means that local authorities heavily rely on central transfers and new bond issuance approved by the central government to maintain basic government functions, depriving them of much of the fiscal autonomy witnessed in previous decades.[2] Also, although the seeds of the current predicament were sown in the mid-1990s revenue centralization, our data reveal that truly onerous levels of debt did not deprive fiscal agency from the majority of provinces until after 2018, when extrabudgetary fund (EBF) accounts began to accumulate high debt. Outside of Beijing, Shanghai, and Guangdong, consolidated expenditures of local governments drew 70% of funds from central fiscal resources by 2025. The fiscal space for a sizable policy experiment without firm central backing was dramatically reduced as a result.

This paper adds to the extant literature on the deleterious effects of high debt in developing countries, as well as the growing literature on local debt in China by using detailed and comprehensive bond data to document the over time and cross-sectional rise of local debt in China. Going beyond the literature linking high debt to financial crises, this paper instead focuses on other potentially harmful effects of high local debt. By collecting

[1] Oi 1999; Fewsmith 1994.

[2] Montinola, Qian and Weingast 1995.

detailed data on provincial debt and comparing them to data on provinces' discretionary fiscal resources, which includes tax revenue, land sales, and fees, this paper documents the reduction in fiscal autonomy, which the literature has identified as a key to economic reform.[3]

In essence, when debt servicing, which is the sum of the repayment of matured debt and interest payments on outstanding debt, makes up the bulk of a province's own fiscal income, the province must rely heavily on central transfers and new bond issuance quotas to maintain even basic governmental functions and to avoid defaults, which is considered a "bottom-line" (*dixian* 底线) by Xi Jinping 习近平.[4] Growing reliance on central resources reduced provincial fiscal autonomy since these resources have designated usage, which are monitored by the Ministry of Finance (MOF). In regression analysis, we show that land revenue, as measured in EBF income, had half the impact on budgetary and EBF expenditures in the 2021-2025 period compared to the 2017-2020 period. Meanwhile, centrally allocated special purpose bonds (SPB, *zhuanxiang zhaiquan* 专项债券) had more than doubled their impact on EBF expenditures in the post-2021 period compared to the prior period.

On the empirical front, this paper breaks new ground by measuring debt and debt servicing at the province-month level using a specially curated dataset of bonds issued since 1997, as well as an annual provincial budgetary and extrabudgetary account data compiled from 170 fiscal disclosures after 2015 (see Appendix). By collecting these data, we can calculate monthly debt servicing costs, including interest payments and repayment of principal and compare them to provinces' own fiscal resources. We also document rising reliance on central fiscal resources both in summary statistics and in regression analysis. By the end of 2025, average monthly debt servicing has surpassed 50% of monthly budgetary and extrabudgetary income for all but 7 Chinese provincial units. For the vast majority of

[3]Montinola, Qian and Weingast 1995; Maskin, Qian and Xu 2000.

[4]Xinhua, 21 January 2019.

high-debt provinces, their dependence on central transfers and central bond quotas left them little fiscal room to finance major policy initiatives. Instead, their incentives would focus on lobbying central agencies for greater allocations of transfers and bond quotas.

Below, we first discuss the role of debt in the general political economy of developing countries, as well as how it might change the political economy of China. We also provide a brief history of the growth of local debt, as well as waves of policy responses to it. Following that, we present our main empirical findings on the rapid rise of local debt, as well as its distribution across provinces and across issuing categories, including general local government debt, special purpose debt, and LGFV debt. We then delve into the core analysis of provincial debt servicing relative to fiscal income in both the budgetary and extrabudgetary accounts, which also shows rising dependence on central transfers and bond issuance quotas in recent years. In regression analysis, we show that local expenditures now relied much less on land revenue and much more on central allocation of bond quotas. We conclude with a discussion of China's evolving intergovernmental relationship in light of the escalating local debt.

Debt as Risks and Tradeoffs in Developing Countries

For decades, economists studying developing countries have focused on high debt as a source of risks and low growth. In essence, when the government of a developing country has high debt, it can borrow even more, often leading to inflation and devaluation of the currency, or it can enact austerity programs, which dramatically slow growth.[5] Alternatively, countries would need a sizable bailout from another country or from international financial institutions (IFIs), which merely defers the problem until the next payment crisis.[6] As local debt in China

[5]Reinhart and Rogoff 2009.

[6]Stiglitz 2002.

rose, many observers of China's economy increasingly worry about the crisis potential of this debt. In the IMF's 2022 appraisal of China's economy, for example, IMF staff warns that "A structural tax revenue deficit has incentivized local government to adopt opaque, off-budget financing mechanisms to cover expenditures, leading to high government debt."[7]

In the China literature on local debt, scholars and Chinese government analysts likewise have rung the alarm bell on the rapidly rising local debt, although much of their analysis has focused on the factors that have accelerated the increase in local debt. While Shih attributes the rising debt to the 2008-9 stimulus,[8] Liu, Oi and Zhang suggest the "grand bargain" between the central and local governments in the aftermath of the 1994 fiscal restructuring as the origin of the local debt problem in China.[9] Cao et al. similarly focus on the role of budgetary stress caused by the 2004 abolition of the agricultural tax in accelerating local debt accumulation.[10] Meanwhile, Zhang, Pan and Yu,[11] Liu and Guo,[12] and Ong[13] show that implicit guarantees by local and ultimately the central governments depress the costs of borrowing and incentivize higher leveraging by local governments through local government financing vehicles (*difang zhengfu rongzi pingtai* 地方政府融资平台). In the policy world, officials at the IMF, for example, are worried about the financial stability and growth spillovers of excessive local debt.[14]

Although the origin of the current debt predicament is an important issue, high debt in itself also can profoundly alter the incentive of local officials, which can change the policy

[7]IMF 2023, 33.
[8]Shih 2010.
[9]Liu, Oi and Zhang 2022.
[10]Cao et al. 2020.
[11]Zhang, Pan and Yu 2022.
[12]Liu and Guo 2024.
[13]Ong 2012.
[14]IMF 2026.

process in unintended ways. First, as debt rises, debt servicing costs of the borrowers increase, all else being equal. If revenue growth does not keep pace, local government's ability to exercise discretion over fiscal expenditures also becomes constrained as debt servicing consumes a greater share of revenue, which can have a profound impact on growth dynamics in China. Specifically, fiscal autonomy has provided the foundation to regional competition and local policy experimentation—both recognized as essential drivers of reform and growth according to the existing literature.[15] However, substantial erosion of local fiscal autonomy over time could undermine the efficacy of these mechanisms for growth and reform.

According to a well-established literature, the unique combination of centralized authority and regions with some degree of economic autonomy gave rise to competition between regions to generate growth in order to place higher in the promotion tournament.[16] This competitive dynamic led to higher growth in China than many developing countries. A key precondition of regional competition was regional economic autonomy, including some degree of fiscal autonomy.[17] Absent fiscal autonomy due to the dependence on central fiscal transfers or high borrowing from state banks, the foundation for regional competition would be much weakened. As Montinola, Qian and Weingast[18] argue, "If, in contrast, local governments were readily bailed out of their financial problems, they would have considerably fewer incentives..." These insights engendered a rich literature showing that where local governments had some degree of economic autonomy, local officials competed

[15]Maskin, Qian and Xu 2000; Zheng 2007.

[16]Montinola, Qian and Weingast 1995; Xu 2011; Oi 1999.

[17]Montinola, Qian and Weingast 1995; Zheng 2007.

[18]Montinola, Qian and Weingast 1995, 56.

to generate growth through preferential policies for local firms or greater state-directed investment.[19]

Another strand of the literature suggests that economic autonomy at the regional level also enabled local governments to launch policy experiments, some of which injected new energy to the national-level policy reform.[20] Heilmann and Perry[21] argue that local experimentation constituted an important route for policy adaptation because "a changing, complex, and unpredictable environment" demanded local agency and flexibility for policy innovation. However, in order to launch experiments in a timely and flexible manner, ie without requesting for central approval or funding, localities must have some degree of fiscal autonomy. In Wang's study on the experiments for the new cooperative medical scheme, for example, a mix of middle and high-income provinces made use of central subsidies and local funding to launch this experiment, which later had a profound impact on rural health care.[22]

Given the importance of local-level fiscal autonomy to the two major engines of growth and reform in China, fiscal autonomy would need to maintain at a steady level or increase over time for these mechanisms to remain effective. Even after budgetary centralization in 1994, local governments in China retained considerable autonomy over extrabudgetary funds (EBFs), which are funded mainly by land sales proceeds and related fees.[23] The spectacular increase in real estate and land prices after the 2008-2009 stimulus led to high growth in EBF income, which allowed local governments to finance many infrastructure and "political achievement" projects (*zhengji gongcheng* 政绩工程). Equally important, this extraordinary

[19]Han and Kung 2015; Li and Zhou 2005; Oi 1995; Whiting 2001; Zheng 2007.

[20]Heilmann and Perry 2011.

[21]Ibid.

[22]Wang 2011.

[23]Liu, Oi and Zhang 2022.

run-up in EBF provided most localities considerable fiscal leeway to finance new policy initiatives even as budgetary revenues became increasingly centralized.[24]

As debt accrued in local governments' budgetary and extrabudgetary accounts over the past decade, fiscal autonomy declined dramatically across most Chinese provinces, likely eroding the foundations of "M Form" competition and policy experimentation. In recent years, even historically autonomous jurisdictions such as Shanghai and Guangdong have seen debt servicing consume a growing share of total revenue. This contraction of provinces' own budgetary and extrabudgetary resources fundamentally altered China's political economy: whereas many provinces retained substantial fiscal autonomy in the mid-2010s, by 2025 they had become heavily dependent on central resources. Given this new reality, local officials would spend their effort lobbying for more central resources instead of innovating policies on their own, as poor provinces in China had done all along.[25]

The Evolution of the Local Debt Conundrum

Throughout much of the history of the People's Republic of China, local governments did not possess the authority to borrow money independently because of the Chinese Communist Party (CCP)'s apprehension about a recurrence of debt-driven inflation of the late-Republican Era.[26] Into the 1980s, however, local governments, especially in high-growth localities, kept a larger share of budgetary income and were given more leeway to raise revenue through local enterprises, which infused the local extrabudgetary accounts with many more resources.[27] More important, even through the centralization of the fiscal system in the mid-1990s, extrabudgetary fund (EBF) accounts remained under the control of local governments.[28]

[24]Ibid.

[25]Hillman 2014.

[26]Shih 2008.

[27]Wong 1998.

[28]Liu, Oi and Zhang 2022.

Thus, these accounts funded projects undertaken by government enterprises, major local infrastructure projects, and subsidies to the budgetary accounts.[29] For localities with high growth, such as Guangdong and Zhejiang, the 1980s and the 1990s saw them controlling substantial fiscal resources through both budgetary and EBF accounts. These accounts are now reported in MOF statistics as "income and expenditures of ordinary public budget" (*yiban gonggong yusuan shouzhi* 一般公共预算收支) and "income and expenditures of governmental funds" (*zhengfuxing jijin yusuan shouzhi* 政府性基金预算收支) for EBF. By 2019, EBF income was equivalent to 80% of ordinary fiscal income, which provided local governments with a powerful fiscal lever.

In the late 1980s, the government began experimenting with borrowing in EBF accounts through trust and investment companies (*xintuo touzi gongsi* 信托投资公司). In contrast to centrally owned state banks, which took deposits, trust and investment companies (TICs) raised funds for local governments and firms from both domestic and overseas investors. The rapid increase in TIC leveraging through bond or trust products led to a wave of defaults in the mid-1990s. Despite this, local revenue shortages and incentives for local officials to promote investment resulted in the revival of these entities as local government financing vehicles (LGFVs). As subsidiaries of local authorities, LGFVs used land owned by local authorities as collateral to secure loans from banks and other investors. These loans were then used to partly finance local infrastructure projects, including new roads, water drainage systems, development zones, and even public housing. LGFVs also issued trust products (*xintuo chanpin* 信托产品), which were pools of high-yielding funds investing in particular construction projects. Unlike deposits, trust products come with no government guarantees.[30]

[29]Shanghai Department of Finance 2023.

[30]21st Century Business Herald, 12 October 2013.

In response to the export collapse in 2008, Beijing formally endorsed a surge in LGFV creation and borrowing.[31] In a single year, thousands of LGFVs were formed to borrow trillions of RMB from the state banks to finance infrastructure and real estate projects all over China. Although Zhu Rongji 朱镕基 had put in place prudential regulations earlier in the decade, the banks, being state-owned, gave into political pressure from both local and central authorities and lent "...in a whirlwind, full-throttle manner".[32] At first, most of LGFV borrowing was considered "off-budget" and not officially part of the budgetary or EBF.[33]

The surge in LGFV borrowing since late 2008 resulted in the rapid accumulation of local debt, reaching 11.4 trillion RMB, approximately 33 percent of China's GDP by the end of 2009.[34] Yet, without a firm rebuke from the central government, trillions more in both loans and shadow credit to local governments accumulated in subsequent years, even after the global financial crisis had concluded. Local governments and their financing vehicles issued a large amount of trust products, which were financed by the rapid creation of wealth management products (*licai chanpin* 理财产品, WMPs) by banks.[35] In essence, wealth managers in banks enticed large depositors with high-yielding WMPs which became pools of funds financing multiple trust products issued by LGFVs and real estate developers, allowing risks to build up with little visibility to regulators.[36]

In 2012, the new Hu-Wen 胡温 Administration ordered a comprehensive audit, revealing over 18 trillion RMB in local debt by mid-2013.[37] Initially, the China Banking Regulatory Commission (CBRC) sought to curb the risks by restricting LGFVs from issuing

[31]Shih 2019.

[32]Xinhua, 3 August 2009.

[33]Shih 2019.

[34]Shih 2010; Xinhua, 3 August 2009.

[35]Xinhua, 3 August 2009.

[36]21st Century Business Herald, 12 October 2013.

[37]Shih 2019.

debt-like instruments such as trust products. However, the CBRC's efforts faced a formidable challenge: intense political pressure on local governments to invest and sustain economic growth. LGFVs got around regulations by issuing trust products based on their own equity, but with repurchasing provisions which promised investors cash refunds at a premium some time in the future, making them in essence loans.[38]

Faced with an unstoppable tide of debt, the Ministry of Finance devised a strategic maneuver: a policy of "opening the front door, closing the side door" (*kai zhengmen du pianmen* 开正门堵偏门). Under this approach, high-yield trust and WMP debts were transformed into lower-yield local government bonds (LGBs), backed by the guarantee of the central government. As we show below, local government bonds were issued both in the budgetary account as ordinary debt (*difang zhengfu yiban zhaiquan* 地方政府一般债券) and in the EB account as special-purpose bonds (SPBs, *difang zhengfu zhuanxiangzhai* 地方政府专项债). These bonds were issued to repay some portion of LGFV off-budget debt, essentially bringing some LGFV debt on to local governments' budgetary or EBF balance sheets. This tactical shift represented a delicate balancing act, aiming to mitigate financial risks while accommodating the demands of local political interests.

Despite reducing interest payments and cash flow pressure, this approach did not decrease the overall debt. To ensure buyers for the torrents of newly issued official local government bonds, the Ministry of Finance compelled banks to purchase official local government bonds through "designated allotments" (*dingxiang chengxiao* 定向承销).[39] In 2015, amid stock market turmoil, the government expanded the debt exchange program, and by 2016, municipal debt outstanding increased significantly. By 2018, the overall amount of

[38]Yi 2013.

[39]Shih 2019.

local debt continued to rise at a high speed, prompting a desperate central government to require an "implicit debt resolution plan" in every province. These plans required provinces to outline both the amount of debt reduction and specific mechanisms for reducing implicit debt.[40] While local cadres were held accountable for achieving debt reduction targets, they quickly found ways around them, such as using funds borrowed by newly formed LGFVs to repay maturing government or LGFV debt.[41] As we show, the central government also allowed EBF accounts to grow debt rapidly through SPB issuance.

In the meantime, high debt has been exacerbated by sluggish growth in local fiscal resources. In Figure 1, we show that as the result of revenue centralization, local revenue only grew by 21% between 2018 and 2024, while nominal GDP grew by 44% in the same period. Land revenue, as encapsulated by EBF revenue statistics, only grew by 1% between 2018 and 2024 due to the concerted campaign to deleverage the real estate industry.[42] Thus, the 30% increase in non-debt income of local governments was mainly driven by a dramatic increase in central government transfers, which grew 62% in this period.

We further collect ordinary budget and EBF account data by province from government bond issuance disclosures and show in Figure 2 that in both the ordinary budget and in the EBF accounts, fiscal shortfalls across all provinces were over 100% of the income in these accounts by 2025.[43] In other words, local governments as a whole were spending twice as much as they collected in revenue in both the ordinary and EBF accounts starting in 2024. As discussed, the fiscal shortfall was driven by slow revenue growth in the ordinary account. In the EBF accounts, the collapse of the land market from the "three red line" (*san dao*

[40]Chen 2019.

[41]Ibid.

[42]Oi, Luo and Xu 2025.

[43]The shortfall in these accounts are calculated by subtracting revenue, fees, and land sales income from the expenditures plus debt repayment in these accounts.

hongxian 三道红线) policy in 2021 drove much of the reduction in income,[44] although Figure 2 also shows a significant uptick in both budgetary and EBF account shortfalls in 2020 because of the Covid shock. This illustrates that during shocks, the central government can always issue more central debt and transfer more funds to the local level to alleviate fiscal stress. The Chinese government did not do so in 2020.

The fiscal shortfalls in these accounts could only be balanced by debt issuance or a dramatic reduction in expenditures, and no policy up to this point has improved this fundamental reality. In addition, the more debt accumulated in these accounts, the more new debt needed to be issued to repay the interest and principal due. Thus, the only impact of the "front door" policy and various debt reduction schemes has been the slowdown of the growth of LGFV debt. The overall local debt level, expressed as outstanding bonds, continued to grow at a rapid pace in subsequent years, reaching 70 trillion RMB by the beginning of 2026 (See Figure 3). Although this analysis does not include LGFV bank loans and shadow financing, bonds alone still reveals a dramatic rise in local debt. In essence, the front door opened with the introduction of official ordinary fiscal bonds and SPBs, but the side door of LGFV debt never closed.

[44]Oi, Luo and Xu 2025.

Figure 1: Growth Rate of Sources of Local Income

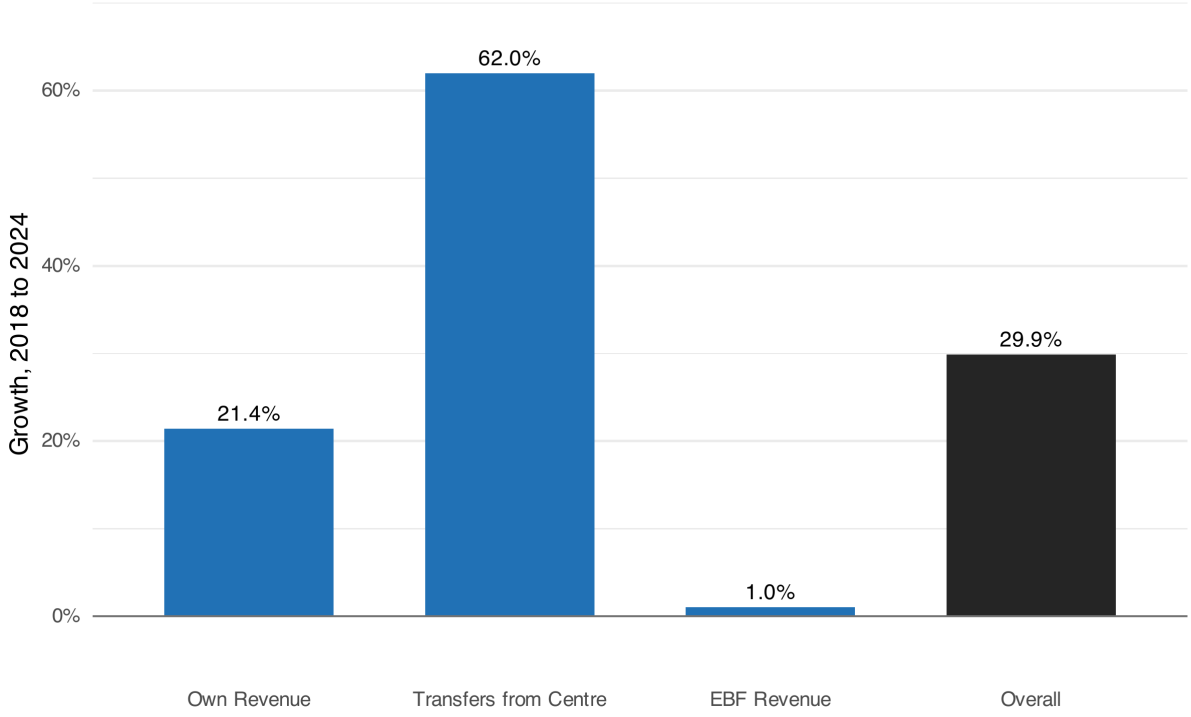
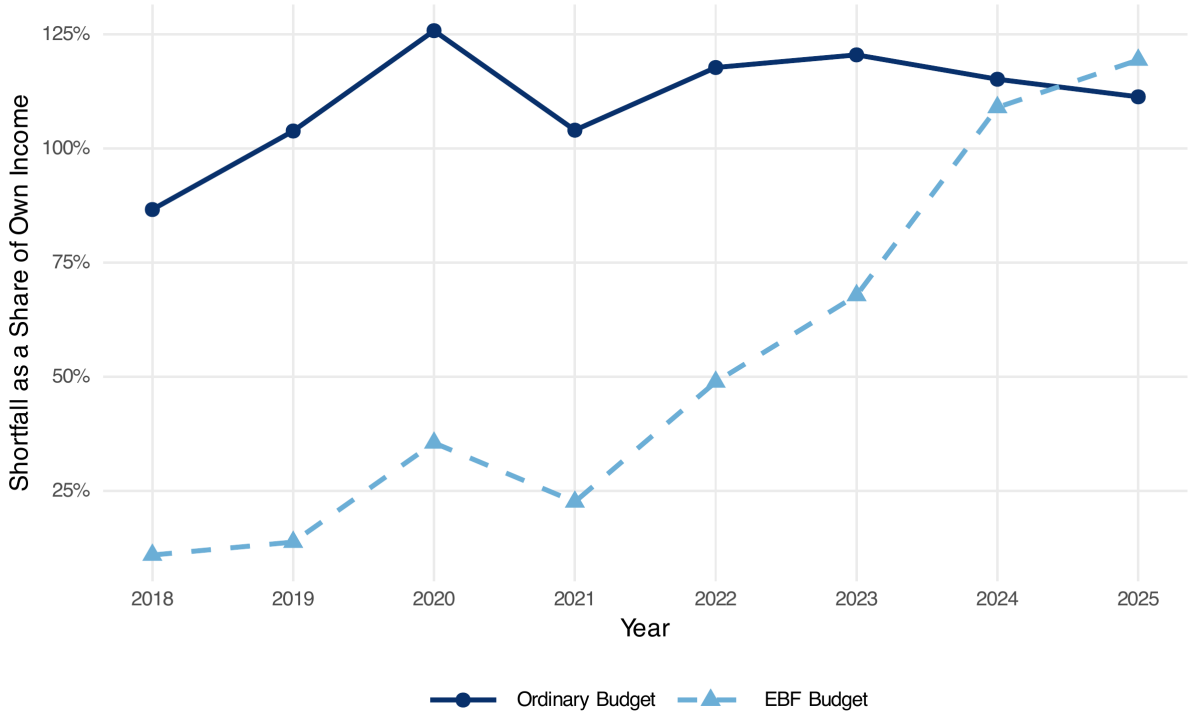


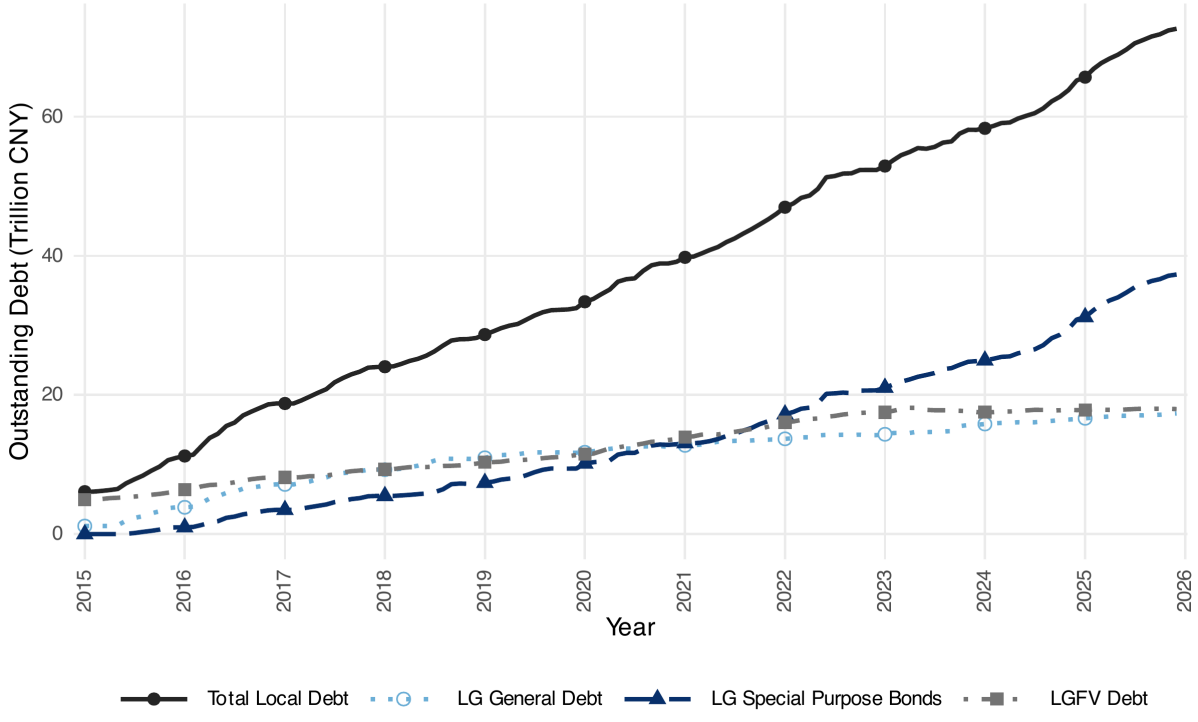
Figure 2: Fiscal Shortfall Share of Ordinary Income and EBF Accounts



The Relentless Rise of Local Debt and Debt Servicing

We begin our analysis with an examination of accumulated debt in the provinces. Total debt outstanding is defined by the sum of all official local government bonds (LGBs) and local government financing vehicle (LGFV) bonds not yet matured at a given point in time (see Appendix for details). As depicted in Figure 3, until 2015, the majority of the debt was issued by LGFVs. After the beginning of the 2015 "front door" policy, local governments began to issue debt directly, taking advantage of lower costs due to the reduced risks of official government debt for investors. By 2016, the outstanding LGBs surpassed that of LGFV bonds. Around 2016, government special purpose bonds (SPBs) also began to accumulate to finance fiscal shortfalls of EBF. These bonds either financed new infrastructure projects or refinanced LGFV or other extrabudgetary debt that came due. Starting in 2022, SPBs became the biggest driver of local government debt, since both general debt and LGFV debt remained relatively stable after 2022 (Figure 3).

Figure 3: Aggregate Local Outstanding Debt



Altogether, local debt continued its unrelenting rise despite various policies to arrest or slow down its rise. To be sure, central debt in China still compares favorably with most advanced and developing countries at 30% of GDP in 2025. Yet, combined with Bai, Hsieh and Song's[45] estimates of non-bond local debt in 2015, total local debt in China likely is around 80% of GDP or more, which combined with over 30% in central government debt, puts Chinese general government debt over 110% of GDP.[46] Even this estimate does not include local government and state firm wage arrears and accounts payable, which had become a serious problem for some provinces by 2023.[47] Furthermore, as a more recent IMF paper shows, rapidly escalating local government debt had already eroded the net financial assets of the entire Chinese government to less than 10% of GDP by 2019.[48] The rapid growth in local debt in combination with stagnant valuation in land assets in recent years likely brought net financial assets much closer to zero by 2025.

[45]Bai, Hsieh and Song 2016.

[46]Ibid.

[47]Wong 2025.

[48]Lam and Moreno Badia 2023.

Table 1: Outstanding Debt by Province

Province	2017		2025	
	Outstanding Debt Billion RMB	Outstanding Debt to GDP	Outstanding Debt Billion RMB	Outstanding Debt to GDP
Tianjin	733	58.78%	1,839	99.18%
Qinghai	165	65.61%	396	96.10%
Guizhou	1,076	76.48%	2,206	93.62%
Jilin	385	34.76%	1,268	84.69%
Xinjiang	464	40.51%	1,633	76.08%
Gansu	282	36.89%	1,013	73.98%
Hainan	152	33.28%	595	73.40%
Chongqing	878	43.33%	2,440	72.27%
Jiangxi	659	32.13%	2,556	70.95%
Heilongjiang	415	32.80%	1,134	67.18%
Yunnan	706	37.44%	2,014	61.48%
Hunan	1,438	42.15%	3,354	60.64%
Guangxi	562	31.12%	1,796	60.41%
Sichuan	1,232	31.97%	4,051	59.86%
Tibet	10	7.01%	180	59.38%
Zhejiang	1,602	30.15%	5,593	59.16%
Ningxia	126	38.44%	311	54.68%
Hebei	694	22.35%	2,651	53.76%
Shandong	1,402	21.92%	5,484	53.14%
Anhui	907	30.09%	2,767	52.21%
Inner Mongolia	668	44.53%	1,337	50.06%
Shaanxi	688	31.59%	1,829	50.03%
Liaoning	1,013	45.84%	1,637	49.33%
Henan	815	18.27%	3,185	47.80%
Hubei	953	25.32%	2,991	47.74%
Shanxi	329	22.42%	1,148	45.03%
Jiangsu	2,852	32.96%	6,244	43.87%
Fujian	750	21.79%	2,546	42.30%
Beijing	492	15.71%	2,051	39.39%
Guangdong	1,000	10.75%	4,962	34.02%
Shanghai	567	16.50%	1,429	25.19%

Note: Description of Colors: Light blue represents a level of outstanding debt to GDP ratio below 25%, medium blue represents outstanding debt to GDP ratio between 25% and 50%, and dark blue represents a level of outstanding debt to GDP ratio above 50%.

Sources: Authors' calculations from the authors' dataset.

At the provincial level, the picture is equally alarming. In Table 1, we compare absolute debt level and debt level as a share of provincial GDP at the end of 2017 and the end of 2025. In 2017, only three provincial units (Qinghai, Guizhou and Tianjin) had debt levels, as calculated in LG and LGFV bonds outstanding, above 50% of provincial GDP. By the end of 2025, 22 provinces had debt level above 50% of provincial GDP. For these provinces, which

include some economic heavyweights like Zhejiang, Tianjin, and Sichuan, they are essentially locked into a high debt trajectory with onerous debt servicing and the constant need to issue more new debt to service existing debt. Our estimate of high debt provinces in 2025 correlates closely to the 12 high-debt provinces identified by the Ministry of Finance in 2023.[49] In addition to these 12 provinces, our data also identify Xinjiang, Hainan, and Jiangxi as having debt at over 70% of their GDP in 2025.

Concurrently, the number of provinces with a manageable debt level of less than 25% of GDP reduced from 9 in 2017 to none by 2025. Even in 2023, Shanghai and Guangdong had local debt below 25% of GDP, but just two years later, their debt had built up significantly. Guangdong, which issued large tranches of SPBs in recent years, saw its debt-to-GDP ratios rise over three-fold between 2017 and 2025. In order to assess how debt translates to fiscal pressure for local governments, we calculate debt servicing for each province by summing the coupon payments and bond maturity each month for all the outstanding bonds for each province. Figure 4 displays monthly debt repayments across all provinces and shows notable seasonality in debt servicing, mainly caused by reduced financial activity during the Spring Festival and the timing of fiscal cycles. As a result, provinces occasionally need to gather significant funds to cover bond repayments during peak months. For instance, for several months in 2023, provinces disbursed more than 1 trillion RMB for debt repayments, likely driven by the bond replacement program aimed at retiring existing high-interest debt.[50] Also, Figure 4 shows that over time, the monthly debt servicing burden has become heavy even during trough months. In 2018, for example, the Lunar New Year month required only 150 billion RMB in debt servicing for all local governments and LGFVs in China. However, by the Spring Festival of 2023, monthly debt servicing has

[49]Wong 2025. According to Wong (2025), the MOF identified these high debt provinces: Tianjin, Inner Mongolia, Liaoning, Jilin, Heilongjiang, Guangxi, Chongqing, Guizhou, Yunnan, Gansu, Qinghai, and Ningxia.
[50]Wong 2025.

reached nearly 400 billion RMB, a nearly three-fold increase in five years. In subsequent years, even with the peak repayment months stabilizing around 1 trillion RMB, the payments during trough months continued to be around 400 billion RMB. Considering that the average monthly local revenue, from both budgetary and EBF accounts, was 1.44 trillion RMB in 2025, peak repayment months in 2025 required local governments to devote 70% of revenue to repayments, clearly impossible without extensive transfers and new debt issuance. The data shown on Figure 4 provide clear evidence that the 2023-24 debt refinancing program arrested the uncontrollable rise in monthly debt repayment during peak months, but the burden continued to be very onerous throughout much of the year given tepid revenue growth.

Figure 4: Aggregate Debt Service

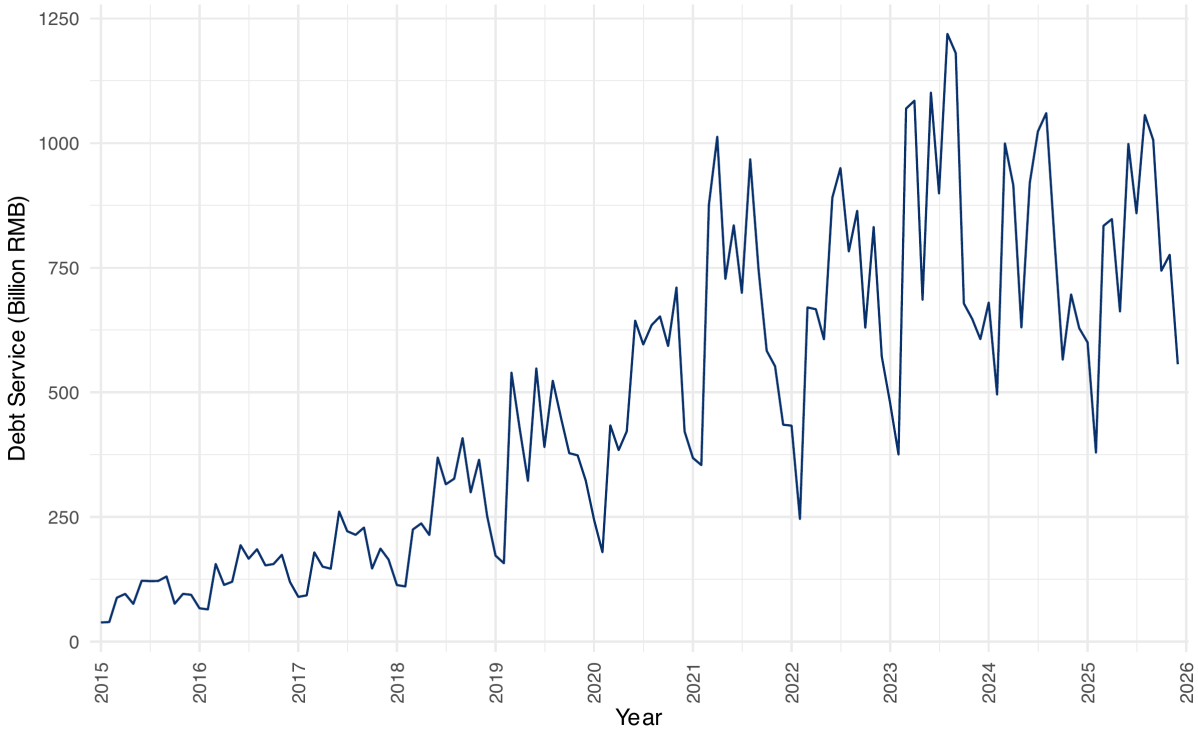


Table 2 presents two static pictures of debt servicing dynamics for all provincial units in 2017 and 2025. For both time periods, we calculate the average monthly debt servicing, again interest payments plus debt maturity repayments, across all provinces. We then

compare the repayment average to the average monthly fiscal income of the province, summing revenue from the ordinary budget and EBF accounts. Table 2 indicates a remarkable surge in average monthly debt servicing for certain provinces from 2017 to 2025. Chongqing, for instance, experienced a 457% increase in debt servicing during this period, while Zhejiang, an economic juggernaut, witnessed a staggering 574% rise in average monthly debt servicing. Even low-debt provinces, such as Guangdong and Shanghai, saw their average monthly debt servicing expand dramatically, by 414% and 313%, respectively between 2017 and 2025. For the vast majority of Chinese provinces, because their revenue and other discretionary sources of income did not grow at nearly those rates, the amount of discretionary spending has been shrunken by escalating debt servicing requirements, a dynamic explored in detail below.

Table 2: Debt Service to Own Income by Province: 2017 and 2025

Province	2017		2025	
	Debt Service Monthly Average Million RMB	Debt Service to Own Income Monthly Average	Debt Service Monthly Average Million RMB	Debt Service to Own Income Monthly Average
Qinghai	1,250	43.96%	3,356	104.61%
Hunan	9,852	30.94%	42,377	100.71%
Chongqing	7,036	18.59%	29,365	84.96%
Guangxi	4,170	18.27%	16,550	83.73%
Jiangsu	26,586	21.51%	108,962	80.47%
Yunnan	4,437	21.54%	18,835	75.82%
Jiangxi	5,048	15.89%	28,321	74.33%
Anhui	7,460	15.02%	31,476	67.97%
Jilin	2,351	15.96%	9,511	67.80%
Heilongjiang	2,470	18.98%	8,809	66.97%
Guizhou	4,800	23.19%	26,535	66.75%
Henan	5,335	10.97%	32,210	64.29%
Gansu	2,914	28.28%	7,432	62.92%
Sichuan	9,027	17.43%	44,623	61.15%
Liaoning	5,054	20.06%	15,942	61.14%
Zhejiang	10,422	10.32%	68,130	59.25%
Hubei	6,711	13.88%	32,163	55.66%
Fujian	5,791	16.35%	22,122	55.42%
Inner Mongolia	4,034	27.40%	15,252	54.71%
Shaanxi	5,700	23.31%	19,736	54.30%
Shandong	7,092	9.37%	53,109	54.15%
Ningxia	704	15.47%	2,897	52.32%
Hainan	820	10.01%	5,073	50.75%
Tianjin	8,057	35.25%	16,637	41.65%
Hebei	4,056	8.08%	20,995	38.13%
Beijing	4,078	6.25%	26,931	37.52%
Xinjiang	3,498	20.89%	9,552	35.90%
Shanxi	2,913	13.10%	9,792	31.96%
Guangdong	7,142	5.34%	31,573	22.11%
Shanghai	4,647	6.71%	17,619	20.98%
Tibet	110	6.10%	812	n.a.

Note: Own income is general public budget revenue plus EBF. Colours: light blue below 50%, medium blue 50–100%, dark blue above 100%.

Sources: Authors' calculations from the authors' dataset.

Escalating Debt and Declining Provincial Fiscal Autonomy

To gauge the strain that debt servicing might have placed on the provincial budget, we examine the debt service coverage ratio in both general budgetary and in EBF accounts at the provincial level. In the general budgetary account, debt servicing for general government debt is divided by revenue in general budgetary accounts. General revenue includes a variety of

business and transaction taxes collected by local (provincial, municipal, county) tax bureaus, as well as local portion of shared taxes such as the value-added tax.[51]

To be sure, a province's ordinary revenue is almost never the totality of a province's fiscal resources — this has been the case since the centralization of the fiscal system in 1994.[52] As such, we also calculate annual debt service coverage ratios in EBF accounts. In these accounts, debt servicing of LGFV bonds and SPBs calculated from our bond data are divided by extrabudgetary proceeds from land sales and other fees in EBF accounts.

As shown in Figure 5, debt service to revenue ratios in the ordinary budgetary account has remained remarkably stable at around 20%. Of course, this still suggests a large degree of dependence on central policies since 48% of expenditures in the general account still came from central transfers in 2025, as discussed below. However, this suggests that uncontrollable debt repayment has not diminished local fiscal autonomy in the ordinary account by much since 2018. Figure 6 shows that deliberate central policies to limit debt issuance in the ordinary fiscal account in recent years has limited debt servicing in this account. Although refinancing bonds in this account grew tremendously between 2019 and 2025, it was partially offset by an absolute reduction in newly issued ordinary fiscal bonds.

Since Covid, EBF accounts have seen servicing-to-revenue ratios rise from just 25% in 2017 to well over 100% by 2024 (Figure 5). By 2024, debt servicing of these bonds was equivalent to over 125% of all revenue in the EBF accounts, suggesting a key role of the policy-induced collapse of the land market.[53] However, Figure 5 reveals that trouble was already brewing in the EBF accounts before 2021 as debt servicing to revenue ratio approached 50% even in 2019. Had the pace of growth in debt-servicing to revenue ratios in

[51]Wong 1997.

[52]Wong 1997; Liu, Oi and Zhang 2022.

[53]Oi, Luo and Xu 2025.

the fund accounts kept at the pre-2021 pace, it still would have reached close to 100% by 2025. The real estate crackdown merely accelerated the speed of SPB issuance and prolonged the expansion of LGFV debt to finance land purchases in the aftermath of the land market seizing up (Figure 6).[54] In any event, the extraordinary rise in the debt-servicing to income ratios to over 100% in the EBF accounts left little for local government to deploy for other purposes.

Given that EBF accounts have provided the bulk of the discretionary spending at the local level after waves of revenue centralization in the ordinary budget accounts, the recent imperatives to deploy the bulk of these funds to debt repayment dramatically reduced local fiscal autonomy in both the ordinary and the EBF accounts. Prior to the recent run-up in EB debt servicing, as much as 9% of the general budgetary expenditures came from EBFs, giving local governments substantial discretionary leeway.[55] Given the dramatic rise in debt servicing ratios, EBFs likely could no longer subsidize budgetary spending to the same degree.

Revisiting Table 2, which reports the average debt coverage ratio of provinces in 2017 and 2025, a dire picture also emerges. First, no province in China had a coverage ratio of more than 50% in 2017, i.e. average monthly debt servicing was less than 50% of average monthly budgetary and extrabudgetary revenue for all provinces. In fact, for Shandong, Hebei, Guangdong, Shanghai, and Tibet, their debt servicing was below 10% of total revenue in 2017. Thus, provinces generally could pay for their own expenses and repay maturing debt with their own revenue, modest amounts of central transfers, and perhaps just a small amount of new debt issuance for the higher debt provinces. By 2025, however, Qinghai and Hunan had debt servicing greater than revenue deriving from both the budgetary and extrabudgetary

[54]Ibid.

[55]Wong 2025.

accounts with Chongqing and Jiangsu not far behind. 21 provinces had average debt repayment greater than 50% of average monthly revenue by 2024, suggesting that they would need greater central transfers and bond issuance quotas to avoid defaults.

For some of the most heavily indebted provincial units, their debt coverage ratios also deteriorated very rapidly between 2017 and 2025. Chongqing, for example, saw its coverage ratio worsen from 18% to over 84%, while Qinghai saw its coverage ratio rise from 44% to over 100%. Yet, the highest increase in debt servicing to revenue ratios did not necessarily take place among the highest debt provinces, probably because medium-debt provinces were still allowed to issue large amounts of shorter-maturity and higher-yielding LGFV debt. For example, Hunan, which had local debt equivalent to 60% of GDP in 2025, saw its debt coverage ratio rise from 31% of revenue in 2017 to over 100% of revenue by 2025. Likewise, Henan, which had debt-to-GDP ratio of 47% in 2025, saw its debt coverage ratio rise from 11% in 2017 to 64% in 2025, a nearly six-fold increase. This perhaps shows the flaw of the MOF's approach of imposing strict austerity on only 12 high-debt provinces in 2023– those left out of the list still did their best to increase debt, thus creating a new crop of high-debt provinces facing onerous debt servicing.[56]

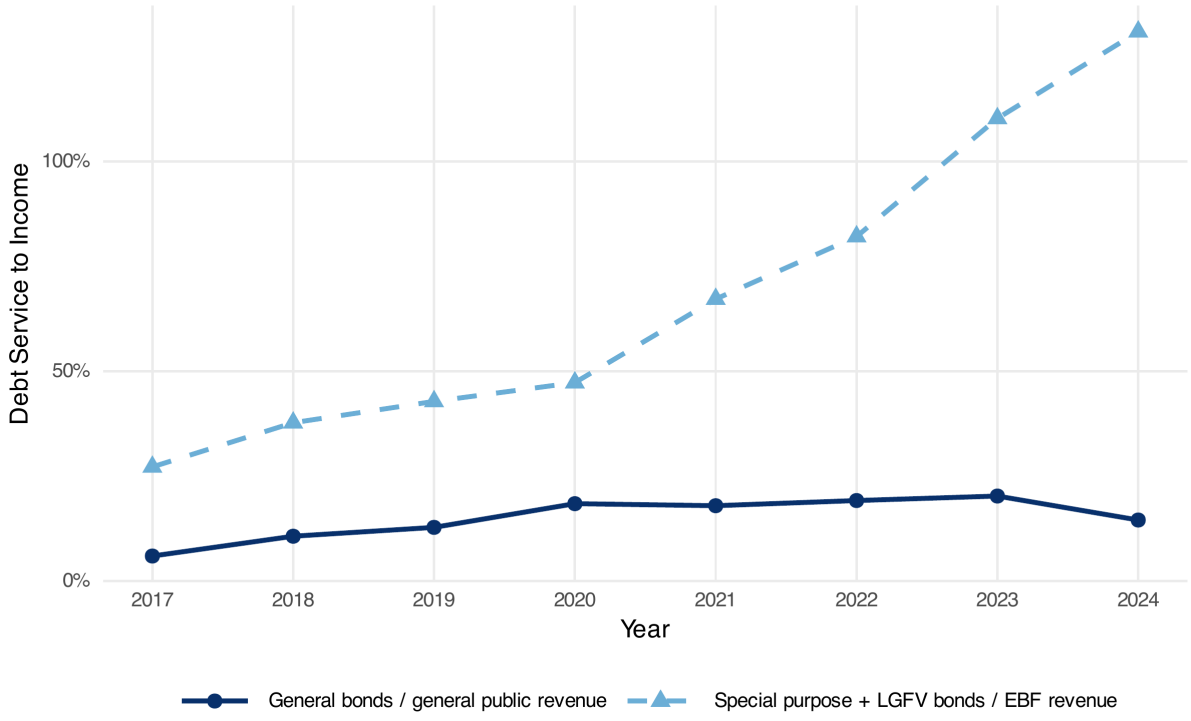
The debt servicing coverage ratios reported on Table 2 also suggest that fiscal autonomy is likely a luxury enjoyed only by a small handful of fiscally sound provincial units, including Guangdong, Shanghai, Beijing, and perhaps Shanxi and Hebei. For the vast majority of provinces, high debt servicing requirements meant that major infrastructure or policy projects must be funded to a large extent by central transfers or centrally approved bond issuance. Transfers from the central government divide into two categories, general transfers and earmarked transfers; earmarked transfers must be used for specific purposes.[57]

[56]Ibid.

[57]Wong 1997.

Even for general transfers, where local governments have more discretion, roughly 20% of them must be used for purposes designated by the central government.[58] For both general budgetary bonds and SPBs, a large share of their issuance in recent years has gone to refinancing purposes (Figure 6). For general government bonds issued for expenditure purposes, the central government either specified a usage category, such as road construction, or particular projects, such as the Guangzhou Municipal Emergency Material Base.[59] For SPBs issued for project financing, local governments must use proceeds to finance an increasingly narrow range of purposes, ie projects which meet "the expenditure needs of major strategies and projects determined by the Central Committee and the State Council."[60]

Figure 5: Disaggregate Debt Service Coverage Ratio



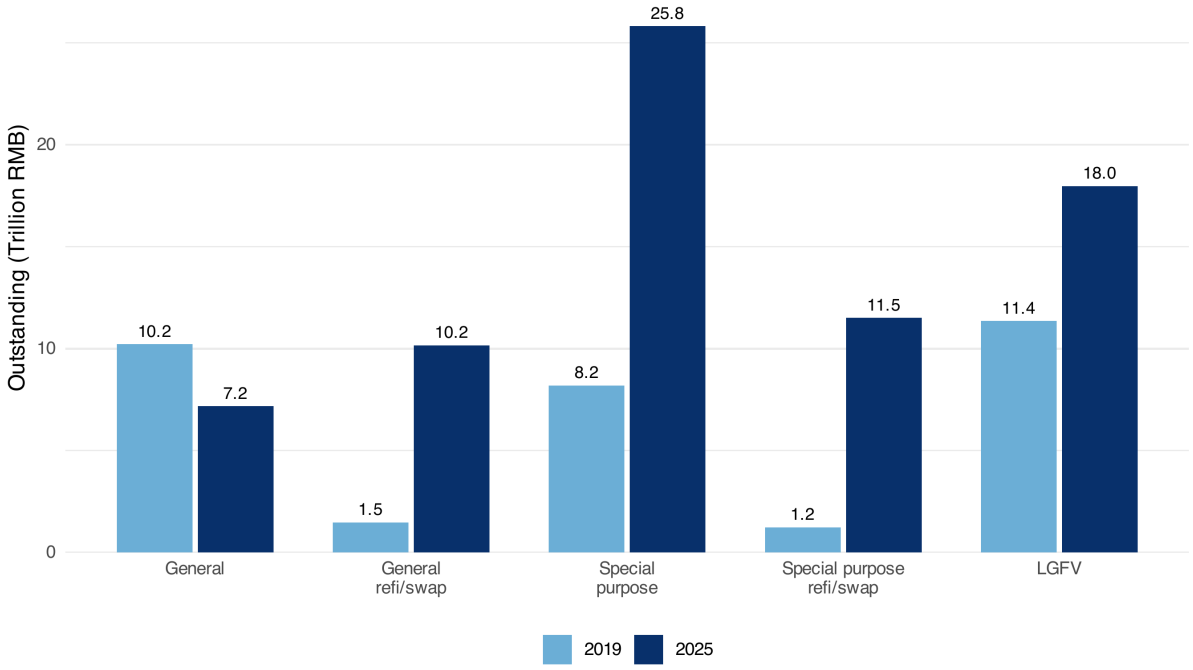
Note: The debt service coverage ratio is calculated by the amount of debt service divided by revenue in the budgetary and EBF accounts for that year. Simply, a debt coverage ratio of 1 means that the revenue and debt service are the same, higher numbers indicate that the debt service is larger than the revenue.

[58]MOF 2022.

[59]Guangdong Department of Finance 2026.

[60]General Office of the State Council 2024.

Figure 6: Bond Composition Growth



Consolidating the ordinary budget and EBF accounts and taking into account both central transfers and centrally approved bond issuance, we show in Figure 7 a consolidated indicator of local dependence on central resources. Figure 7 shows that since 2017, consolidated outlays, including debt repayments, have grown by 50% to 33 trillion RMB across all provinces, whereas central transfers have grown by 71% to 11.3 trillion RMB, roughly 1/3 of expenditures. Meanwhile, annual general debt and SPB issuance has grown by 127% since 2017 to 9.8 trillion RMB in 2025. Thus central resources overall nearly doubled from 10.9 trillion RMB in 2017 to 21.1 trillion RMB in 2025. One should note that the heavier reliance on local bond issuance was a central government choice. The center could have chosen to increase its own deficits more and transfer more funds to localities, reducing the need of local debt issuance.

Figure 7 shows two inflection points for local dependence on central resources. First, local government usage of central resources grew by 31% in 2020, reflecting central

emergency spending and debt authorization in reaction to the Covid pandemic.[61] After the implementation of the property deleveraging policy, local usage of central resources rose by over 10% in both 2022 and 2023. However, the increase in local usage of central resources in 2019 was also high at 14%, driven mainly by SPB issuance that was 1 trillion RMB higher than in 2018. Thus, the trend of rapidly rising SPB issuance pre-dated Covid and the real estate crackdown.

Local expenditures, which include debt servicing, especially in the EBF accounts, drew 63% of the funds from centrally allocated funds in 2025. Even in 2017, this ratio was 50%, partly due to the already high costs of restructuring LGFV debt in the 2014-15 period.[62] If one were to exclude Beijing, Shanghai, and Guangdong from this calculation, nearly 70% of expenditures in 2025 were funded by central transfers and centrally approved bond issuance. In other words, outside of Beijing, Shanghai, and Guangdong, local governments could only finance 30% of total expenditures with their own revenue, including taxes, fees, and land sales proceeds. Given that much of the central resources are earmarked or designated to specific expenditures and that civil service payroll remained a major, immutable expenditure category, local governments across most provinces likely had very little fiscal space with which to finance major policy experiments. At most, they can petition central agencies for transfer payments or designated allotments from bond issuance to finance policy experiments. In that case, these experiments would have to dovetail with central fiscal priorities instead of true experiments that reacted to the changing local environment with new policies.[63] Of course, Guangdong and Shanghai continue to have the fiscal space to implement large scale

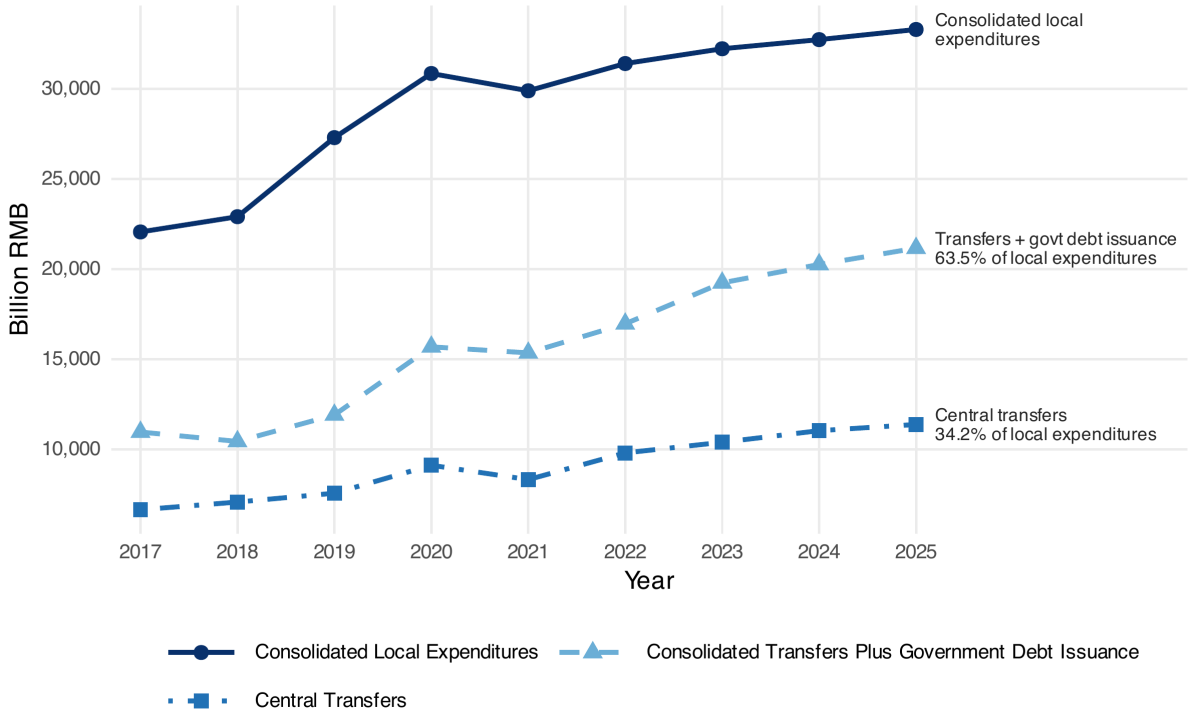
[61] Oi, Luo and Xu 2025.

[62] Wong 2025.

[63] Heilmann and Perry 2011.

policy experiments, but as two of the most advanced and export-oriented localities in China, their preferred policies may not be effective in other less developed provinces.

Figure 7: Consolidated Expenditures, Central Transfers, and Consolidated Bond Issuance



To further investigate the relationship between local and central resources and local expenditures, we also run some two-way fixed effect regressions at the province-year level of how revenue in the EBF accounts, ie land sales proceeds, has impacted expenditures in the ordinary budget and EBF accounts. We compare this with the impact of special purpose bond (SPB) issuance, a centrally allocated resource in EBF accounts, on expenditures in the ordinary and EBF accounts. Although both land sales proceeds and SPB issuance are income in the EBF accounts, EBF money can be transferred to the ordinary budgetary accounts to help with governance costs. The results, shown on Table 3 show that a 10% increase in EBF revenue raised expenditures in the ordinary budget by 1.2% prior to 2021. After 2021, a 10% increase in EBF revenue only raised expenditures in the ordinary budget account by 0.5%. Although still positive, the impact has more than halved, indicating that with the reduction in

land revenue, local governments' ability to transfer EBF resources into budgetary accounts also weakened. In the EBF accounts, a 10% increase in revenue raised expenditures by 8.2% prior to 2021. From 2021 to 2025, a 10% increase in revenue only raised EBF expenditures by 4.8%. This shows that after the land market had collapsed, land revenue now played a much smaller role in EBF expenditures.[64]

In contrast, our regression analysis shows that the role of centrally allocated SPB issuance played a much more significant role in EBF expenditures in recent years. Prior to 2021, a 10% increase in SPB issuance actually decreased budgetary expenses by 0.4%. It is unclear why there was a negative correlation in that period. After 2021, SPB issuance did not have any correlation with budgetary expenditures, showing clearly that as land revenue declined, local governments' ability to transfer resources from the EBF accounts to budgetary accounts also became constrained. In the EBF accounts, SPB has become more dominant. As seen on the last two columns of Table 3, a 10% increase in SPB issuance raised EBF expenditures by 5.5% from 2021 onward, whereas in the prior period, the impact was less than half of that at 1.9%. Although land sales revenue is still significant, accounting for roughly half of EBF expenditures, SPB issuance now had a slightly larger impact. Given the strict central monitoring on how SPB issuance proceeds are spent, the rising importance of SPB has given local authorities less discretion over EBF resources.[65]

[64]Oi, Luo and Xu 2025.

[65]General Office of the State Council 2024.

Table 3: EBF Revenue, SPB Issuance, and Provincial Expenditure

Explanatory variable	log(EBF income)				log(SPB issuance)			
Dependent variable	log(Ordinary exp.)		log(EBF exp.)		log(Ordinary exp.)		log(EBF exp.)	
Period	2017–2020	2021–2025	2017–2020	2021–2025	2017–2020	2021–2025	2017–2020	2021–2025
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables								
log(EBF income)	0.1203***	0.0592**	0.8286***	0.4891***				
	(0.0307)	(0.0266)	(0.0823)	(0.1253)				
log(Special purpose bond issuance)					-0.0459**	0.0197	0.1930*	0.5530***
					(0.0217)	(0.0117)	(0.0990)	(0.1503)
Fixed-effects								
Province	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fit statistics								
Observations	123	154	123	154	123	154	123	154
R^2	0.991	0.994	0.986	0.966	0.990	0.994	0.973	0.975
Within R^2	0.114	0.057	0.516	0.160	0.041	0.012	0.069	0.391

Notes: Each column is a separate OLS regression on a province-by-year panel, estimating $\log Y_{pt} = \beta \log X_{pt} + \alpha_p + \gamma_t + \varepsilon_{pt}$, where α_p and γ_t are province and year fixed effects, both included in every column. Each column contains exactly one explanatory variable: columns 1–4 regress the outcome on EBF revenue, and columns 5–8 regress it on SPB issuance. Within each block, columns 1–2 and 5–6 take general public budget expenditure as the dependent variable and columns 3–4 and 7–8 take extrabudgetary fund expenditure; the first column of each pair covers 2017–2020 and the second 2021–2025. Both the outcome and the explanatory variable enter in natural logarithms, so each coefficient is an elasticity. Standard errors, in parentheses, are clustered at the province level. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
Sources: Authors' calculations from the authors' dataset.

Implications for China's Political Economy

Given both the high level of and the accelerating growth rate of local debt, the current trajectory will soon give China some of the world's highest levels of government debt. As we show, both at the aggregate level and for most provinces, provincial budget constraints and their fiscal autonomy have declined rapidly since 2017. We further provide clear statistics showing that rising debt servicing burden has diminished fiscal discretion at the local level for all but a small handful of provincial governments. Outside of Shanghai, Guangdong, and Beijing, 70% of local expenditures now came from central transfers or debt issuance authorized by the MOF. We also show that land revenue now played a much diminished role in budgetary and extrabudgetary expenses, whereas SPB issuance' impact has more than doubled.

This potentially has enormous implications for the political economy of China because a large literature has outlined many reasons why local fiscal autonomy has been a key ingredient for growth in China. First, local officials' incentive to engage in "yard-stick" competition to generate more growth, one of the ingredients of China's spectacular growth in the 1980s and 1990s, likely has been diminished, if not extinguished, across the majority of provinces. In the origin theory on Chinese-style federalism, Montinola, Qian and Weingast[66] highlight two key conditions for growth-promoting federalism, including provincial primacy in economic policy-making and limited intergovernmental transfer payments and government borrowing.[67] High debt and debt servicing undermine both of these conditions. If provinces depended heavily on central transfer payments and centrally administered bond issuance to finance designated projects and expenditures and to avoid defaults, they obviously do not have primacy over economic policy. In the recent IMF Article IV report on China, IMF economists acknowledge that high debt has deprived most local governments of the ability to carry out counter-cyclical stimulus to arrest deflationary pressure.[68] However, the implications of high dependence on central resources are much more far reaching. Also, if provinces rely heavily on central transfers and bond quotas to avoid defaults and to fund policies, they are incentivized by the moral hazard provided by these bailouts to seek greater bailouts instead of to innovate on pro-growth policies.[69] Recent history has shown that the central government has been ready provider of bailouts.

As fiscal autonomy at the local level disappears, the information advantage of having relatively autonomous provincial units making economic decisions also dies out. According

[66]Montinola, Qian and Weingast 1995.

[67]Ibid.

[68]IMF 2026.

[69]Montinola, Qian and Weingast 1995.

to Maskin, Qian and Xu,[70] because regions were relatively homogeneous units compared to sectors, senior leaders could more readily distinguish competent economic managers in regions than in sectors. Thus, the "M-form" of China's federalist structure in the 1980s fostered regional competition for growth, much more so than the unitary planned structure of the Soviet economy.[71] Again, as fiscal autonomy collapsed in the past few years and dependence on central resources escalated, national leaders increasingly could not distinguish between the performance of local leaders and their ability to lobby for greater resources in Beijing. Beijing's allocation of transfers and bond issuance quotas increasingly drove relative regional economic performance, not local initiatives.

To be sure, the 1994 tax reform consolidated official tax revenue to the central government, but local governments obtained more general transfer payments from the central government and land sales proceeds.[72] As we show above, however, even consolidating the ordinary budget accounts with EBF accounts funded by land sales proceeds, local dependence on central resources accelerated after 2018. Any residual fiscal autonomy had all but disappeared outside of Beijing, Shanghai, and Guangdong by 2025. This fiscal reality likely limits experimentation in at least two ways. First, with a much-diminished degree of fiscal autonomy, most Chinese provinces and cities for the first time since the late 1970s lack the means to finance significant experiments and must ask for central approval and funding for any significant experimentation. Although China was a poor country in the early reform period compared to today, the provinces where reform experiments took place, Guangdong, Anhui, and Zhejiang, all ran fiscal surpluses. Guangdong, for one, saw a massive fiscal income surplus of 21% in 1979. Even Anhui, which had launched the household

[70]Maskin, Qian and Xu 2000.

[71]Ibid.

[72]Liu, Oi and Zhang 2022.

responsibility (*baochandaohu zhi 包产到户制*) experiment due to absolute poverty, saw fiscal income exceeding expenditures by 4%.[73]

A key experiment that emerged in rural China in the late 1970s and the 1980s was the township and village enterprises (*xiangzhen qiye* 乡镇企业, TVEs), which sought to produce consumer goods outside of the central planning bureaucracy. Although a key to the TVEs' success was the political will to deviate from the planned economy, another key was sufficient local fiscal resources to provide TVEs with subsidies, bonuses, and tax breaks.[74] TVEs provided local governments with additional fiscal income throughout the 1980s, but localities had to have some degree of fiscal surplus to set them up in the first place.[75] Today, only a small handful of provinces have the resources to finance costly experiments without obtaining central fiscal or financial resources. Given this fiscal reality, the majority of provinces must take policy cues from the central government when they consider new policies.

Within local government, higher debt and lower fiscal autonomy likely redistributed power between various government agencies. Agencies that specialize in applying for additional grants from the central government, such as the fiscal department, development and reform department, the anti-poverty office, or the education department, might gain ascendancy relative to departments specializing in facilitating commerce, economic reform, or even new private and foreign investment. This had been the pattern in poorer regions in Southwestern China, as observed by Hillman.[76] The increasing impoverishment of local fiscal resources likely has spread this dynamic to other provinces, even those on the East Coast. This dynamic further incentivizes officials to dedicate their energy to applying for central

[73]Zhongguo jingji nianjian 1983.

[74]Oi 1992.

[75]Bernstein and Lu 2003.

[76]Hillman 2014.

transfers and bond issuance quotas instead of experimenting with local innovation. The impact of high debt on political dynamics in local governments provides a promising direction of research.

The cumulation of these various dynamics likely has sapped much of the policy initiatives from provinces, cities, and counties in China. For a rising number of provinces, their main sources of funding now come from central transfers and debt issuance quotas. Thus, they are no longer as incentivized to foster local economic activities in order to boost revenue. In any event, they lack the fiscal resources to launch any sizable policy initiative. They must look to policy initiatives from Beijing for opportunities to launch new policy drives. Thus, in addition to the intensified political pressure from Beijing, this fiscal reality will also foster strict adherence to policy signals from Beijing, rather reaction to objective local needs. Although this can serve the government in times of crises, it also closes off bottom-up avenues to incubate new policy ideas to propel China toward the next stage of growth and development.

Appendix

Data

Our analysis begins with a comprehensive dataset of 91,905 bonds issued between 1997 and the end of 2025. 76,318 of these bonds are specifically issued by local governments or their subsidiaries. These bonds originate from 6,918 distinct issuing entities, including provinces, prefectures, counties, and LGFVs linked to these governments. To curate this dataset, we combined LGFV bond data from WIND, a mainland-based data service provider, with official data from China's bond market. Local government bonds come from chinabond.com.cn, supplemented for 2009 to 2014 by local bond disclosures that report the provincial allocation of the issues the Ministry of Finance floated on behalf of local governments in those years, which chinabond.com.cn records without a provincial breakdown. LGFV bonds issued after mid-2023 come from chinamoney.com.cn for interbank notes and from the Shanghai and Shenzhen stock exchanges for exchange-traded corporate bonds. The data include the issuance and maturity dates, the coupon rates, interest calculation method, interest payment dates, the issuance ID code, and the names of issuers.

Through human tagging and Natural Language Processing methods, we create two relevant classifications of bonds: official local government bonds (*difang zhengfuzhai* 地方政府债) and LGFV bonds (*pingtai zhai* 平台债) issued by state-owned corporate entities which engage in some form of infrastructure investment and land reclamation. Infrastructure companies here include firms engaging in the construction and operation of industrial parks, science and technology parks and "cities," and ecological and tourism parks and areas. Our classification resulted in 57,916 LGFV bonds and 18,402 local government bonds (see Appendix). The 2014 local government debt bailout reclassified LGFVs into commercially viable and non-commercially viable ones with the former no longer counting as local

government entities.[77] On the one hand, this method of classifying LGFVs does not take into account the commercial viability of LGFVs, which is not disclosed to the public in any event. On the other hand, local governments did their best to disguise failing LGFVs as commercially viable entities, which this approach overcomes. We further separate local government bonds along the two dimensions that govern how they are repaid. General bonds (*yiban zhai* 一般债), 5,352 in total, are serviced from the general public budget; special purpose bonds (*zhuanxiang zhai* 专项债), 13,050 in total, are serviced from the government-fund budget against project revenue. Within each category we distinguish new issuance financing new fiscal needs from refinancing bonds (*zairongzi zhai* 再融资债) and from the swap bonds (*zhihuan zhai* 置换债) that converted pre-2015 LGFV debt into explicit bonds. The data from the Chinabond website is comprehensive, and utilizing its granularity enables us to calculate precisely the amount of debt service and interest payments across time and provinces. We also can do so without resorting to assumptions about debt growth rates and ratios between LGFV and official government issuance.

We supplement the bond data with fiscal data gleaned from 170 pre-issuance disclosures of ordinary budget bonds and special purpose bonds, which contain much more detailed fiscal data than are available in conventional data services such as CEIC.[78] This comprehensive view of local expenditures has not been reported in recent English language studies on Chinese debt dynamics since debt repayments are not considered a part of ordinary expenditures and are missing from data for expenditures for most data services available outside of China.[79] We also use official macro-level data from CEIC. Because special project bonds and LGFV bonds are serviced from the fund budget rather than the general public

[77]Wong 2025.

[78]See, e.g., Shanghai Department of Finance 2023. Disclosures are available at https://www.celma.org.cn.

[79]MOF 2016.

budget, we measure debt service against both budgets rather than against general public revenue alone. Detailed provincial fiscal data allow us to compare debt servicing costs derived from the bond data to provincial level income and expenditures in the ordinary and extrabudgetary accounts. As granular as these databases are, we do not have information on non-bond debt of LGFVs, which, by some estimates, had reached some 40 trillion RMB by 2014.[80] Even assuming very modest growth rate of 4 percent, bank and trust loans to LGFVs should have reached roughly 62 trillion by 2025. Another research team in China based in Peking University estimates non-bond LGFV debt were around 40 trillion RMB at the end of 2022.[81] Although this figure is slightly lower than the figures implied by Bai, Hsieh and Song,[82] it still puts general government debt in China at close to 100% of GDP by 2023. In 2023, an IMF team also provided a figure of 2019 general government debt of roughly 80% of GDP.[83] General government debt according to this trajectory also likely has surpassed 100% of GDP well before the end of 2025. The analysis below refers only to bond related debt servicing, but the real debt servicing burden of local government likely is twice as much as our estimates. Still, we believe that our analysis based only on bond data provides a good reflection of the direction of debt level and debt servicing and can be considered as a very conservative estimate of debt servicing and the reduction in local fiscal autonomy.

Identifying LGFVs

To distinguish LG and LGFV from other bond issuers, we apply a multi-step classification procedure combining text pattern recognition and administrative region mapping. LGFVs are

[80]Bai, Hsieh and Song 2016. This 40 trillion figure takes the total estimate of LGFV debt by Bai, Hsieh and Song (2016), which is based on bank credit to LGFVs in the forms of loans and bonds, and subtracting from it the LGFV bonds outstanding at that time, which was roughly 8 trillion RMB.

[81]Xia and Ding 2023.

[82]Bai, Hsieh and Song 2016.

[83]Lam and Moreno Badia 2023.

typically state-owned entities that issue debt on behalf of local governments to finance infrastructure or development projects. Since they do not appear in official government debt statistics, their identification must be inferred from issuer names and contextual information.

Keyword Matching

We begin by identifying a set of issuer name keywords commonly associated with LGFVs. These include references to local administrative units (e.g., *sheng* 省, *xian* 县, *qu* 区), infrastructure (e.g., *jiaotong* 交通, *shuiwu* 水务, *ditie* 地铁), and state-owned enterprise forms (e.g., *chengtou* 城投, *jiantou* 建投, *jituan* 集团). We construct a regular expression from this list and filter all issuers whose names match any of these patterns. This step provides a broad initial classification of potential LGFV entities. To increase precision, we exclude issuers with names that contain keywords indicative of national-level financial institutions or central government ownership, such as *yinhang* 银行, *xintuo* 信托, *guojia* 国家 and *Zhongguo* 中国. For validation, we use the annotated data from WIND LGFV bond issuance. We use the name of the issuer from WIND, our algorithm achieves 97.6% accuracy on it.

Geographical Mapping of Issuers

To link issuers to specific provinces, we extract provincial, prefectural, and county-level place names from the issuer names using additional regular expressions. Administrative region name lists were derived from an auxiliary dataset of jurisdiction mappings between cities, counties, and provinces. We clean these names by removing suffixes (e.g., *shi* 市, *zizhizhou* 自治州, *xian* 县) and use the cleaned forms to match issuers to the appropriate province. If an issuer name contains both a province and a city, we use the city-to-province mapping to resolve inconsistencies. In the absence of a match, we classify the issuer under a

“no_province” category to ensure completeness in downstream aggregation. This process enables us to allocate each LG and LGFV’s debt obligations to the relevant provincial unit, which is crucial for evaluating debt servicing capacity at the subnational level.

Acknowledgements

We thank the 21st Century China Center at the University of California San Diego for financial support for this project. All mistakes are our own.

Funding

This research was supported by the 21st Century China Center, University of California San Diego.

Competing interests

Since this research was funded by privately endowed research funding, we have no conflict of interest.

Data availability statement

The bond-level data analysed in this study were compiled from publicly accessible sources – ChinaBond (ChinaBond 2026), ChinaMoney (ChinaMoney 2026), the Shanghai and Shenzhen stock exchanges (SSE 2026; SZSE 2026) and the China Local Government Bond Information Disclosure Platform (CELMA 2026) – supplemented by LGFV bond records from the Wind Financial Terminal (Wind 2023). Provincial budgetary and government-fund data were compiled from 170 pre-issuance bond disclosure documents published on the CELMA, and provincial GDP and other macroeconomic series were obtained from CEIC (CEIC 2026). Data from Wind and CEIC are proprietary and were used under license; they cannot be redistributed by the authors but are available to subscribers from these providers.

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