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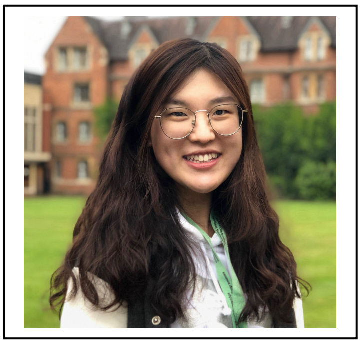

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Date of submission: 02 April 2024

Title of submission: What makes a city to fail?

I am a candidate for the degree: PhD in Land Economy

Department: Department of Land Economy

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Biosketch (approximately 150 words)

Emily is a 3rd-year PhD Candidate at the Department of Land Economy, University of Cambridge. Her research empirically examines whether planning strategy truly matters for city growth, by extracting strategic planning policies from a large number of government reports for 100+ cities over the past 10 years, and further tests their potential effects on city development outcome.

Before starting the PhD, she received her Bachelor's and Master's degree from The University of Sydney, specialising Data Science in Business, and subsequently MPhil in Land Economy Research from Cambridge. Her interest is utilising data science and computing techniques to deliver scientific and evidence-based policy implications to support urban development.

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Declaration Form

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Number of words of submission: 4089

I am a candidate for the degree: PhD in Land Economy

Academic Institution/Department: Department of Land Economy, Uni of Cambridge

Declaration

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What makes a city to fail?

Understanding fiscal vulnerabilities and risks from local government finance

Emily Tianyuan Wang
PhD Candidate at Department of Land Economy, University of Cambridge

ABSTRACT

What does it mean for a city to fall into bankruptcy? It is rare for a local government to go bankrupt but a turbulent 2023 has raised this question into the spotlight: In China, a number of cities struggling to repay their mounting debts; in the UK, Birmingham and many other councils have already officially declared effective bankruptcy. Recognizing this phenomenon is not unique but rather a global occurrence, this essay delves into three key inquires: 1) what would happen when a city fails financially; 2) what causes such financial failures, and 3) what could cities do. Through a case study of China, marked by rapid urbanization and unprecedented economic growth but also a mounting debt crisis, this essay draws lessons from the past with the aim of laying a foundation to inform future planning and policymaking in sustainable urban development.

1 Introduction

Cities, the place of our daily lives, provides us with essential services that we enjoy every day, from public transport (i.e., Bus, Railway) for daily commuting to utilities (i.e., electricity, clean water) and amenities. In terms of 'failure', note that this essay specifically focuses on the financial aspect, targeting the risks at the city levels. For instance, in the US, 31 cities officially declared bankruptcy since 2001. In the UK, Birmingham which declared 'effective bankruptcy' in 2023 is noteworthy, with 26 other councils facing similar financial situations. In China, while not officially bankrupt, many cities struggle to repay their mounting debts, with interest payments alone becoming a significant burden. So, what does it mean for a city to fail?

For local (subnational) governments, a key responsibility is to provide public services and infrastructure. However, this is challenging especially for developing countries, as local and central governments often have insufficient capital to afford the upfront costs, which is exacerbated by the inefficiency of the financial system due to poor legal and institutional development. On the other hand, because of the urbanisation, that a growing number of urban residents, local governments should bear more responsibilities in providing public services (Yan et al., 2022). Currently, 56% of the global population resides in urban areas, a figure projected to reach 6 billion by 2045, with an additional 2 billion urban residents (The World Bank, 2024). Thus, the complexity of managing infrastructure services under tight fiscal conditions is a critical concern faced by many local governments worldwide.

In the case of China, the rapid urbanization and remarkable economic expansion in the past decades exemplify this complexity. From year 1981 to 2022, the total area of urban construction land in China has increased 785%, from 6720 km^2 to 59451.7 km^2 (Source: *China Urban Construction Statistical Yearbook* series), highlighting a significant urbanisation achieved, as well as the significant achieved of economic growth. Its infrastructure-led development has historically propelled economic growth, but the mounting local government debts raise a significant concern regarding the fiscal sustainability risk. By the end of 2023, local government debts in China has already accumulated to 40.74 trillion RMB (equivalent to 5.61 trillion USD), 32% of the GDP that year (Source: *China Ministry of Finance*, 2023). So, what makes this happen? Why did it work in the past but not now?

The complexity of managing infrastructure services under tight fiscal conditions is not unique to China but is prevalent in all the high-urbanization cities, especially in developing countries, as people/residents always demand for more high-quality public services and unwillingness to pay higher taxes. Lessons learned from China's experience are crucial, as similar financial challenges may arise elsewhere. Therefore, this essay outlines the potential risks and consequences of financial failure at the city level at Section 2. It then conducts a deep analysis of China's case to uncover the root causes of financial issues in Section 3. Section 4 discusses lessons learned from the past.

This essay provides two key contributions to local government risk management in cities. Firstly, it conducts a comprehensive analysis of factors contributing to financial failure, emphasizing effective risk management, and addressing concerns such as under-utilized infrastructure, the close link with the real estate market, and the implications of GDP-oriented promotion evaluation systems for city leaders. Secondly, it draws two key lessons that aiming to inform policymakers towards achieving sustainable urban development across cities at various developmental stages.

2 What would happen when a city fails financially?

When a firm bankrupts, it shuts down and disappears. When a city bankrupts, residents still live in the city, at least initially, and the city will not disappear. So, what are the risks, and why should we be concerned? Before proceeding with further analysis, this session briefly discusses the impacts and consequences when a city fails financially, focusing on three aspects: residents, the city, and the broader implications for the country.

2.1 Impacts on residents

Severe public services cut. In the UK, Birmingham has announced £300 million cuts of local services in early 2024, echoing similar measures in other bankruptcy cities like Nottingham. These cuts hit services include reductions in funding for vital youth programs, a matter of paramount concern for parents; arts budgets have been slashed; and streetlights have been switched off, etc., as reported by The Guardian News (2023). Examples in other countries including Yubari, Japan, show that bankruptcy leads to a sharp decline in public sector jobs and spending (Mabon & Shih, 2018). There is also an interesting argument that, city growth does not guarantee improved services; rather, if local governments exhaust funds, service quality inevitably suffers. Residents life experience may undergo dramatic change.

The potential burden of higher taxes and fees, as well as lower personal disposable income. Additionally, residents may also face increased tax burdens, as seen in Birmingham's council tax hike of 21% over the next two years from 2024 to 2026 (BBC News, 2024), other bankruptcy councils also raised the council tax significantly including 15% rise in Croydon (BBC News, 2023) and 9.99% rise in Slough in 2023/2024 (Slough Borough Council, 2023), exacerbating financial strain on households. Especially, such cost may deepen the burden on the working class, exacerbating social disparities between different socioeconomic groups. Recent study also found a significant relationship between local government financial sustainability and the overall residents satisfaction, emphasizing the tangible impact on residents' lives (Tran & Dollery, 2023).

2.2 Impacts on the city

Less population and workforce. A significant concern for local governments, unlike their national counterparts, is the ease of labour mobility within countries (Glaeser, 2013). Consequently, cities facing financial distress may witness a rapid exodus of residents seeking better opportunities elsewhere, leading to a decline in both the city's workforce and the associated tax revenue base. Examples such as Detroit in the USA, burdened with a staggering debt of 18.5 billion USD, the departure of young and affluent residents to other cities has severely hampered productivity and tax revenues (McDonald, 2014), exacerbating the city's financial woes. Similarly, in Yubari, Japan, the aftermath of bankruptcy witnessed a significant decline in population, plummeting from 116,908 in 1960 to 6,374 people in 2024 (a drop of 94.5%) (Source: *Yubari City Statistical Book*), further complicating the city's economic predicament. Moreover, the loss of skilled labour compounds the issue by eroding productivity, perpetuating a cycle of economic decline.

Creditworthiness and city reputation. Once the credit risk of the city looms large, that bankruptcy cities would face creditworthiness plummets, making it increasingly difficult to borrow funds and attract external investments for future initiatives. Reduced public services and deteriorating infrastructure tarnish the reputation of the city, deterring potential investors and residents. The ensuing cycle of decline perpetuates a vicious cycle, further eroding the city's resilience and vitality.

2.3 Impact on the country / nation

Systemic Risk. From a country/national perspective, localized crises may be able to spur competition and innovation, prompting struggling cities to enact reforms and innovative policies to revitalize their economies. However, when multiple cities experience financial failures simultaneously, it poses significant systemic risks, threatening national stability. The cross-industry links exacerbate the impact of city financial failures, leading to reduced public services, government layoffs, and deteriorating infrastructure. These factors collectively dampen economic activity, diminish consumer confidence, and erode investor trust, heightening the risk of broader economic downturns and systemic crises. Additionally, the failure of one city can exert pressure on others, amplifying the risk across the nation.

3 What causes the current financial failure?

Intuitively, the financial failure of cities stems from their inability to meet financial obligations due to insufficient funds. But why does this occur? Why do cities find themselves in a situation where they lack the necessary funds to fulfil their responsibilities? Drawing on the case of China, this section begins with a brief introduction to how cities finance themselves. It then proceeds to explore the three triggers that transform controllable budget deficits, initially employed to stimulate economic growth, into severe crises where the accumulation of debts becomes difficult to manage and repay.

3.1 How cities finance themselves

In China, local governments' revenue sources rely mainly on tax and land leasing revenue alongside direct central government funding. Since the tax-sharing reform in 1994, which mandates that a significant portion of tax revenue be remitted to the central government, yet no significant change in expenditure assignments was made (that local governments are now responsible for much of infrastructure investment, service delivery, and social spending), leaving local authorities with significant fiscal shortfalls. The transfers from central governments mainly cover current spending, leaving a smaller margin to finance infrastructure spending.

In order to supplement public funding, local government debts, is used to finance major infrastructure projects, such as rails, roads, bridges, etc. The establishment of Local Government Financing Vehicles (LGFVs) was originally intended to finance infrastructure development and urbanisation projects. Approximately 90% of the debt formation sources are used for urban municipal infrastructure and public service (Mao et al., 2023). Technically it aims to bring revenue in the future, to cover the initial cost.

Initially, this initiative indeed spurred economic growth, particularly at the end of the 20th century and the beginning of the 21st century. However, as local governments increasingly prioritized economic stimulation over fiscal prudence, it led to aggressive debt accumulation. By the end of 2023, LGFV debts had soared to over 13.39 trillion RMB (equivalent to 1.84 trillion USD). This unchecked expansion has reached unsustainable levels, compelling local governments to issue new debts to service existing ones, severely straining resources. In Guiyang, for instance, the payment of annual interest devours 56% of the yearly revenues, indicative of a precarious financial predicament. So, what went wrong? What led to the current situation where debt accumulation has spiralled out of control, resembling a 'snowball' effect?

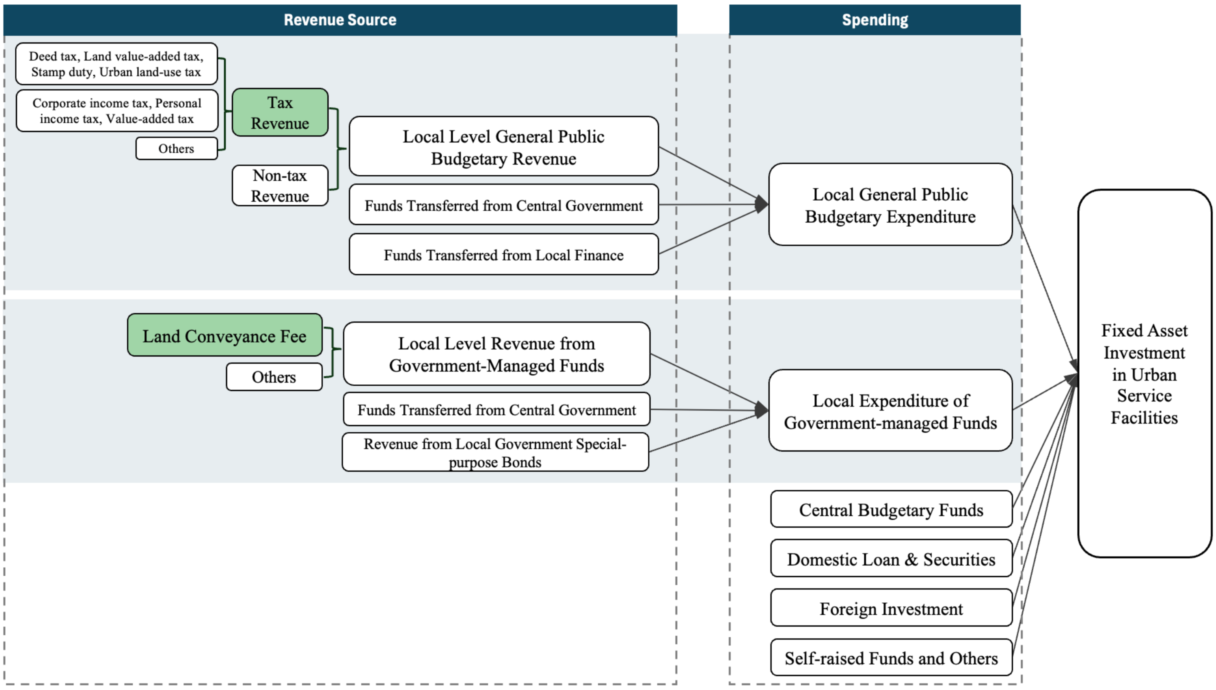

Fig. 1. Local government revenue and land-related income in China (Drawn by the author)

3.2 Trigger 1: The marginal return from infrastructure (fixed-assets) investments is decreasing

Over the past decades, it is essential to recognize that infrastructure-led economic growth has been a driving force behind China's impressive economic expansion, fuelling substantial increases in GDP. By utilizing debt to invest in infrastructure, local governments have boosted land values and generated significant tax revenues, thus stimulating overall economic activity. This trend was particularly pronounced from the late 20th century to the early 21st century, when rapid urbanization necessitated extensive construction of roads, bridges, ports, and other vital infrastructure services.

However, as time progresses, it becomes evident that the demand for certain types of infrastructure has shifted. While rapid growing cities still require expanded infrastructure services, some less developed cities already faced over-supply or underutilization of existing infrastructure. Using high-speed rail as an example, which is indeed a monumental achievement in China, but recent studies have revealed varying efficiency gains across different cities, with some regions already reaching optimal economies of scale and experiencing obvious under-utilization of facilities (Li & Chen, 2023). In that case, the return from the infrastructure investments will be suboptimal. Fig. 2 plots the local government infrastructure investment over the years and the projected decreasing total population in China as mentioned by the *Nature* Journal, see Ye (2022).

This underscores the importance of exercising caution in assessing actual demand before embarking on further infrastructure expansion. Failure to align investment with genuine demand can lead to inefficient allocation of resources and worsen debt burdens, potentially culminating in a debt crisis as the servicing of accumulated debts becomes increasingly unsustainable.

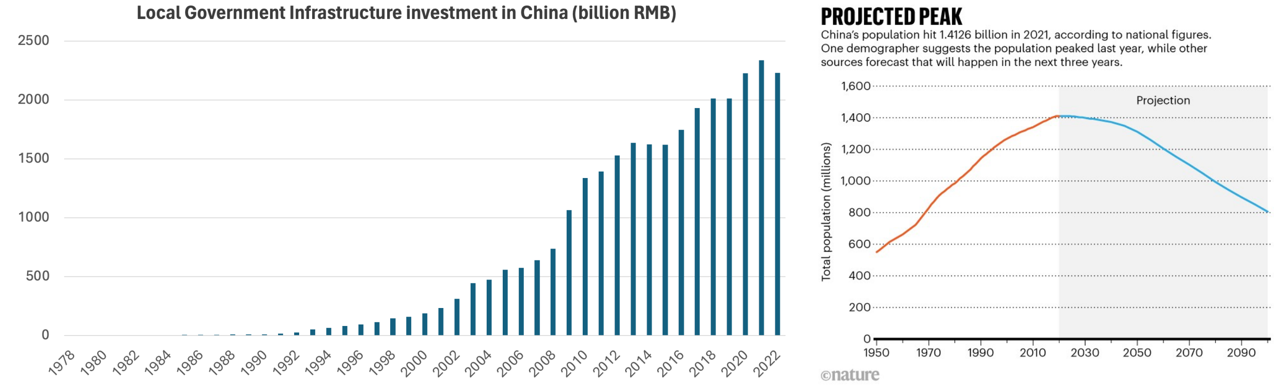

Fig. 2. (left) Local government infrastructure investment in China (unit: billion RMB; drawn by the author); (right) Projected total population in China (Source: https://www.nature.com/articles/d41586-022-02304-8)

3.3 Trigger 2: Re-structure of real estate market

Additionally, the re-structure of real estate market in recent years further added the burden to local governments. In the context of China, local governments have been increasing reliance on land-related revenue, having a close link with real estate market through 1) selling land-use rights, and 2) real estate tax revenue. Regarding the first channel, following the 1994 tax-sharing reform that required 75% of tax revenue to be remitted to the central government, local governments in China faced significant fiscal constraints. Consequently, they increasingly depend on revenue from land leasing as a crucial source of development finance. Fig. 3 shows the amount of land revenue as a percentage of total income for local governments from 2012 to 2022. Note that in China's leasehold land rights system, where all land is state-owned, local governments lease out land development rights to crucially fund urban infrastructure projects through this mechanism. However, the decreasing availability of land for local governments to seize and sell to developers is making the primary financialization channel through selling land-use rights less sustainable. Thus, the heavy and growing reliance on land-related revenue poses a significant risk to the financial stability of local governments. A more detailed discussion regarding on how land serves as a financial instrument for urban development is provided in the existing study by Wu (2022).

Secondly, in terms of the real estate market, the looming real estate market makes in recent years makes this situation even more difficult. In other words, without real estate market, the land will not produce value, thus no land-leasing revenue could be generated as revenue source for local government. As developers play a pivotal role in driving land values higher, the defaults by major real estate developers, like the recent cases involving Evergrande Group, a major developer in China, directly impact local government revenue streams (Chu et al., 2023). Particularly for the local government, the reliance on land leasing fees exacerbates the situation, as revenue shortfalls from the real estate market downturn contribute to financial strain. The decreased revenue from land leasing, coupled with lower tax income from the real estate market, reduces local government income, exacerbating their ability to repay debts. Therefore, the intertwined nature of local government finance with the real estate market serves as a key trigger for the debt crisis.

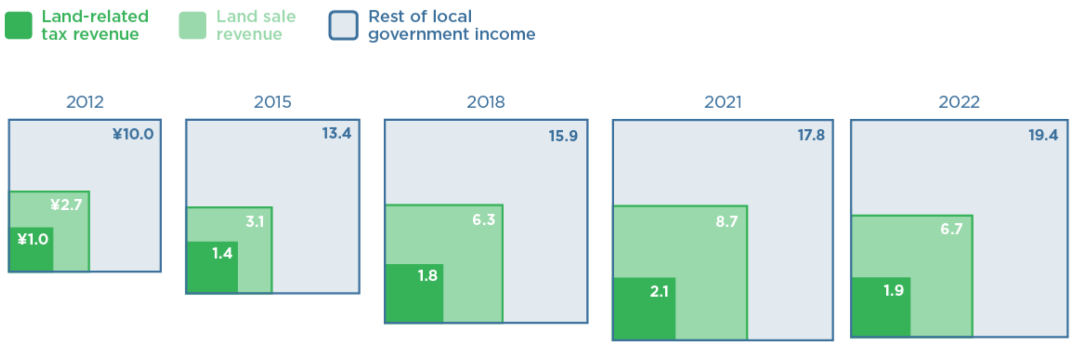

Fig. 3. Land revenue in local governemnt income from 2012-2022 (Unit: Trillion RMB; Source: *https://www.piie.com/research/piie-charts/local-governments-china-rely-heavily-land-revenue*)

3.4 Trigger 3: GDP-orientated cadre evaluation system

Since the economic reform in the 1980s, greater weight has been put on local economic growth, as measured by the local GDP growth rate. This results in a GDP-orientated cadre evaluation system in Chinese local government. It should be acknowledged that, the decentralised/devolution of power has indeed encouraged positive competition mechanism between cities, which is one of the condition for the success in the 2000s decade.

However, given local governors are highly motivated to boost the GDP growth in their jurisdiction to compete with their peers, it pushes local government officials has incentivized short-term economic expansion at the expense of fiscal prudence (Bao et al., 2024; Chen et al., 2020). In other words, the emphasis on GDP-orientated promotion evaluation systems compels the above two triggers together, that local governments to prioritize infrastructure development and increasingly rely on land-related revenue. With tenure typically limited to five years or less, officials prioritize immediate growth to enhance their prospects for promotion. This focus on short-term gains has led to extensive infrastructure investment, often exceeding actual revenue generation capacities. Consequently, local governments resort to borrowing to meet debt obligations, perpetuating a cycle of debt accumulation. The risk of the promotion incentive to the local government debt issue has been formally examined in the recent study by Zhang et al. (2023).

4 To Minimise the Risk: What could cities do?

Based on the three aforementioned aspects explaining the reasons and triggers for city financial failures, this section further derives two key lessons learned from the past.

4.1 Recognise the heterogeneous needs between cities

Infrastructure investment cannot always be the ‘trick’ to spur economic growth – it should align with local needs and with cautious assessment. One significant lesson learned from China’s experience is the necessity of exercising caution when investing in infrastructure projects. It is vital to acknowledge that infrastructure needs vary among cities. Unlike in the past, with most cities in China are under-supplied for the infrastructure services, as time progresses, it is crucial to highlight that infrastructure demand varies across cities. The rapidly growing cities often require keep significant investment continually support their expansion, while smaller or less developed cities may not have the same level of expansion investment, especially if their existing infrastructure meets current needs sufficiently. Over-supplying infrastructure in areas where it is not needed can lead to a decreasing of marginal return from infrastructure and fixed assets, making it further difficult for local governments to repay debts incurred from these investments. Therefore, cities must carefully assess the genuine demand for infrastructure before committing to large-scale projects based on their own situations. This lesson underscores the importance of aligning investment decisions with real market demands to ensure financial sustainability and avoid the risk of debt accumulation beyond manageable levels. In short, cities shall recognize their unique differences. Simply adopting successful strategies from other cities may not yield the same results, though this is currently the approach adopted by most cities worldwide.

4.2 Re-think: What is a 'good performing' city?

4.2.1 More indicators for the promotion evaluation system to enhance far-sighted action

On the leadership front, to foster a long-term/far-sighted action in city governance, it is encouraged to expand the evaluation criteria beyond a narrow reliance on GDP growth. The GDP-orientated evaluation system may effectively drive quick economic expansion by incentivizing local leaders to leverage resources for immediate gains in short term, but its sustainability over time poses considerable challenges. Additionally, GDP is a highly aggregate term for measuring economic output, which may be inflated by debts and subject to data manipulation concerns in the particular context. Diversifying evaluation criteria with indicators such as tax revenue and job creation promotes economic stability and sustainable development. Prioritizing these indicators informs policy decisions to enhance resilience and productivity. This shift aligns city governance with goals of financial sustainability and equitable development, boosting competitiveness and resilience against evolving challenges.

4.2.2 Shift the focus from one-off income to more long-term sustainable revenue

To mitigate debt dependency, in the case of China, cities are also encouraged to diversify their revenue streams, moving away from heavy reliance on land-related revenue towards more sustainable sources such as corporate and personal tax revenue. Exploring alternative revenue streams like tourism and business taxes is essential for reducing vulnerability to economic fluctuations. By broadening the revenue base, cities can enhance their financial resilience and better withstand market uncertainties. Additionally, fostering job growth is crucial, as it not only boosts productivity but also contributes to a more stable economic base. In other words, to increase tax income, assuming constant tax rate, increasing jobs and/or improving labour productivity are instrumental.

5 Conclusion

In conclusion, the essay underscores the criticality of ensuring financial stability at the local government level, shedding light on the diverse manifestations of city-level financial failure and the associated risks. The narrative pivots around a central issue: the mismatch between debt allocation for infrastructure investment and the actual demand for such development varies across cities. This highlights the necessity of addressing the inherent heterogeneity among urban centres, recognizing that while some cities may benefit from expansion, others may not. Some less developed cities may already face under-utilization issues. However, this endeavour is impeded by entrenched challenges, including the heavy reliance on real estate-linked revenue streams and predominant GDP-orientated cadre evaluation system.

To navigate these complexities and mitigate the risks of financial instability, this essay draws two key lessons from the past. Firstly, given the heterogeneous needs among cities, a cautious assessment of additional infrastructure investment is crucial to prevent oversupply and underutilization. This lesson may seem straightforward, but it necessitates a deep understanding of the diverse economic and developmental trajectories across different cities. Secondly, cities are encouraged to re-think what is a ‘good performing’ city, recognizing that solely defined by GDP indicators is not enough. Long-term indicators such as job creation and local government revenue, which reflect the pocket money available to local governments, are encouraged to be included in the assessment. In the case of China, a fundamental shift in perspective is imperative, from short-term gains focused on one-off land-related revenue towards sustainable sources of income generation. Prioritizing long-term actions such as fostering job creation and generating personal and corporate tax revenues not only enhances fiscal resilience but also catalyses broader economic growth and prosperity.

It is crucial to note that to offer more actionable ‘solutions’ for cities and inform sustainable urban development policy-making, additional empirical evidence is essential to provide convincing, evidence-based support. My current PhD research is particularly aimed at addressing that objective, where I compared hundreds of cities over the past decade, refining language models alongside employing economic quantitative research methods, to see whether and to what extent certain planning policy or policy combinations may play a role in determining the city development outcome. The analysis spans 19 planning policy domains, aiming to identify the potential commonalities among cities. I look forward to sharing the outcomes and findings through my upcoming academic papers soon.

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