

FINANCING A SUSTAINABLE AND INCLUSIVE URBAN TRANSITION IN CHINA

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Executive summary

China's development strategy has been remarkably successful, driving one of the most significant demographic and economic transformations the world has ever seen. In 1980, fewer than one in five people in China lived in an urban area. Over the past 40 years, China's gross domestic product (GDP) achieved double-digit growth almost consistently, lifting around 750 million people out of poverty.¹ Today, China is the second-largest economy in the world and three out of every five residents live in urban areas.² Most of this urban population and economic growth has been concentrated in the megacities on China's east coast, from which firms can ship their products easily to global markets.

This paper explains how China's rapid industrialisation and urbanisation was underpinned by fiscal policy choices, particularly the establishment of a modern national tax system. In 1993/94, China introduced a central tax administration that put in place a value-added tax (VAT) and corporate tax, along with a revenue-sharing system and an equalisation system. For political economy purposes, China also established a time-bound revenue transfer back to the provinces and cities producing revenues. Taken together, these fiscal reforms were remarkably successful, strengthening national fiscal institutions, increasing the tax-to-GDP ratio sufficiently to meet basic services and infrastructure needs, and creating millions of manufacturing jobs in China's coastal cities. The 1993/94 reforms therefore placed China in a strong position to address major economic challenges and shocks.

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ABOUT THIS WORKING PAPER

This paper summarises a research programme led by the London School of Economics and Political Science (LSE) and carried out in conjunction with colleagues from the Capital University of Economics and Business, Fudan, Sun Yat-Sen and Zhejiang Universities, and the Chinese Academy of Social Science. China's Ministry of Finance and the Chinese Academy of Fiscal Science have been kept informed and have commented on the research at regular intervals. The research programme is supported by the Coalition for Urban Transitions, the leading global initiative helping national governments unlock the power of inclusive, zero-carbon cities. The opinions expressed and arguments employed are those of the authors.

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However, China's emphasis on coastal cities, combined with the deployment of specific fiscal tools, has also had significant negative consequences. Inequality has increased – both within cities and between the coastal metropolitan areas and the rest of the country. Local governments have vast spending responsibilities but have progressively lost control over revenues. To finance spending and investments, they turned to land sales and debt-financing using off-budget local financing vehicles to borrow (as they were prohibited until 2015 from borrowing directly). Few local governments now have clear records of their full liabilities. The concentration of production and workers in coastal megacities has exacerbated severe pollution and environmental degradation, and China is now the world's largest greenhouse gas emitter. Between 2000 and 2014, China's urban areas expanded by an area of land bigger than Belgium – often into fragile ecosystems such as deltas and wetlands.³ Consequently, urban sprawl and vulnerability to environmental hazards are a growing concern. These challenges are exemplified in three case study cities in this paper: Guangzhou, Nanchang and Jieshou.

This paper identifies four key fiscal reforms that could help create the right incentives for a sustainable, inclusive urban transition.

As China prepares its 14th Five-Year Plan (covering 2021–2025), it needs to deploy fiscal instruments strategically to address all these issues simultaneously. The Five-Year Plan needs to foster continued economic growth in a time of increasing uncertainty about future trade patterns and related job creation. At the same time, it needs to ensure that economic opportunity and wealth are shared more equitably, improving living standards while sharply reducing carbon emissions and pollution. Finally, it needs to nurture effective, accountable local governments that can fulfil their assigned responsibilities in a fiscally sustainable way.

Given their central role in the economy, cities are at the heart of the challenge ahead. China needs to transform its established urban areas into more compact, connected and clean cities while simultaneously steering future urbanisation towards sustainable hubs in its interior to secure long-term improvements in well-being for its people. Fiscal policy has a crucial role to play in delivering sustainable urban development, accompanied by strategic policies and investments in the energy, environment, housing, industry, land use and transport sectors.

This paper identifies four key fiscal reforms that could help create the right incentives for a sustainable, inclusive urban transition, supporting China to achieve its broader development objectives:

- 1. Convert some revenue-sharing arrangements, such as on the personal income tax, into a surcharge, or piggy-back, on the national tax** (administered by the State Taxation Administration for all levels of government). This should directly enhance equity within cities but also create incentives for local governments to provide the information needed to improve taxation of assets and non-wage income. This builds on the current arrangement for some taxes on property transactions, whereby central legislation permits rate-setting by local governments within specified bands.

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- 2. Introduce a national carbon tax and authorise a surcharge or piggy-back.** China is currently refining and scaling a national emissions trading scheme. This could be complemented by a national carbon tax, which would establish a base rate for greenhouse gas emissions that prevents a race to the bottom. A surcharge within a legislated band (to build on existing precedents) could further help achieve local environmental goals by enabling higher carbon pricing in more polluted, congested cities, while attracting businesses to cleaner cities that have lower carbon tax rates.
 - 3. Introduce a recurrent beneficial property tax at the city level.** A property tax could help achieve distributional goals by strengthening the taxation of assets, as well as redressing local governments' dependence on land sales that distort planning and investment decisions. A pioneering new analysis commissioned for this working paper demonstrates that linking such a property tax to local services, such as education or social housing, improves the distributional impact of the tax, enhances accountability to citizens, provides an assured stream of funding for basic services and enables access to private finance for investment.
 - 4. Make a concerted effort to generate full information on liabilities within local balance sheets.** Accurate and timely information on subnational liabilities is tremendously important to manage national fiscal risks, but it is difficult to generate data accurately. An examination of the books of a small Chinese city found that its explicit debt was double the amount shown on its balance sheet, and implicit liabilities were four times higher again. This finding shows why local governments and their financing vehicles need to use international accounting and reporting standards if they are to access credit in the future, whether bank loans, bonds or public-private partnerships (PPPs). Improved recording and monitoring of liabilities should be complemented by more stringent criteria for new infrastructure projects to ensure investments are helping create compact, connected and clean cities.

Taken together, these fiscal reforms could establish the incentives necessary to advance the central government's other urgent priorities: accountable local governments, balanced macroeconomic growth, high-quality public services, cleaner air and falling greenhouse gas emissions. In this way, China's fiscal policy can help secure national economic prosperity and improve quality of life while tackling the climate crisis.

1. Introduction

Twenty years ago, two thirds of China's population lived in the countryside. Today, over 60% live in urban areas. Around half of China's urban residents live in cities with 1 million or more residents,⁴ mainly in coastal provinces. This dramatic demographic and spatial shift is the result of deliberate policy choices since the 1980s that have helped China achieve remarkable economic development. Hundreds of millions of people have been lifted out of poverty through rapid export-driven industrialisation.

Yet the costs have also been substantial. The concentration of production and workers in coastal megacities has exacerbated severe pollution and environmental degradation, and China is now the world's largest greenhouse gas emitter.

This paper makes the case that further tax and institutional reforms are now needed to deliver sustainable development in China, particularly by modernising local government finances.

Inequality has increased – both within cities and between the coastal metropolitan areas and the rest of the country. Urban sprawl and vulnerability to environmental hazards are a growing concern. Local governments have vast spending responsibilities but have progressively lost control over tax revenues.

Many of these successes and challenges are the consequence of fiscal policy choices. The tax reforms of 1993/94 established a national tax administration and introduced modern tax instruments that effectively consolidated and increased general government revenues. Special economic zones (SEZs) and public investments in urban infrastructure along the coast fuelled population and economic growth in the eastern metropolises. Revenue-sharing arrangements and equalisation policies distributed growing public revenues across local governments.^a The decisions taken in 1993/94 were pragmatic and began to establish the fiscal regimes and institutions that are taken for granted in Organisation for Economic Co-operation and Development (OECD) countries.

However, this paper makes the case that further tax and institutional reforms are now needed to deliver sustainable development, particularly by modernising local government finances. Local governments' dependence on shared rather than own-source tax revenues has left them vulnerable to shifts in national fiscal policy, including the recent contraction of revenues as the central government responds to threats to trading patterns and potential increases in unemployment. Instructions to local governments to support industry have further undermined their ability to address basic public services, including education and preventive health care. In order to meet their spending mandates, local governments have returned to land sales, fuelling costly urban sprawl, and to borrowing, creating significant fiscal risk today.

^a The Chinese authorities refer to all lower layers of subnational government – provincial, prefectural, county, township and village – as “local” governments.

As China prepares its 14th Five-Year Plan (covering 2021–2025), it needs to deploy fiscal instruments strategically to address all these issues simultaneously. The Five-Year Plan needs to foster continued economic growth in a time of growing uncertainty about future trade patterns and related job creation. At the same time, it needs to ensure economic opportunity and wealth are shared more equitably, improving living standards while sharply reducing carbon emissions and pollution. Finally, it needs to nurture effective, accountable local governments that can fulfil their assigned responsibilities in a fiscally sustainable way. The Government of China has accordingly outlined three guiding principles for its medium-term economic policy and structural reform agenda (2018–2021):⁵

1. Address fiscal risks, especially liabilities that have built up in local government finances and state-owned enterprises;
2. Eliminate extreme poverty during 2018–2020 and address the prevention of poverty in the medium term, with a reduction in spatial and interpersonal inequality; and
3. Ensure a cleaner environment and improved quality of life.

Given their central role in the economy, cities are at the heart of the challenge ahead. If China can transform its established urban areas into more compact, connected and clean cities and steer urbanisation towards sustainable hubs in its interior, it can secure long-term improvements in well-being for its people. The transformation of the coastal metropolitan areas into high-tech hubs will increase the cost of land and wages in these cities, displacing low-end manufacturing. Investing in urban service provision and regional connectivity in the central and western provinces would help stimulate economic activity inland, allowing firms in big metropolitan regions to move to cheaper locations and creating employment opportunities that would attract and retain less-skilled workers. The growth of services and industry in these regions may redress the spatial imbalances in China's ageing population, creating incentives for young people to stay in the interior rather than migrate *en masse* to the coast. At the same time, the Government of China needs to ensure local governments have access to an appropriate balance of fiscal transfers, own-source revenues and sustainable financing instruments to replace distorting land sales and hidden debt. It may also need to overhaul spending assignments so local governments' responsibilities are more in line with their revenue generation capabilities.

If China cannot achieve this urban and fiscal transformation, the negative consequences of current development patterns will be profound.

The work needed to transform China's cities is significant and costly, but policy-makers start with important advantages. There is a growing body of research on the benefits of clean, compact, connected urban development – and on a wide array of policy options available to decision-makers in the energy, environment, housing, industry, land use and transport sectors.⁶ There are also proven models on how to fund and

finance such development. Many critical planks of this effort are already in place, such as the Belt and Road Initiative that continues to expand global markets for Chinese exports while creating new income generation opportunities in central and western Chinese cities.

This paper examines fiscal reforms that could help China achieve its development objectives, maximising the ability of all tiers of government across the country to fund and finance public investments that support clean, compact and connected urban development. Fiscal policy can also influence migration patterns, easing

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the pressure on megacities, supporting economic development in China's interior, redressing regional disparities and supporting an ageing population. This paper also considers how national fiscal and financial policies can increase access to private finance to augment resources for urban infrastructure investment without creating undue financial risks, particularly through a well-coordinated national and subnational tax agenda.

There are a number of attractive and urgent opportunities for China's Ministry of Finance. The paper's first three recommendations focus on establishing tax handles for provincial and metropolitan governments. Adequate own-source revenues are critical to enhance accountability and impose hard budget constraints. They also protect local budgets from variations in national tax rates by stabilising their revenues, as well as facilitating access to private finance in a sustainable manner. The specific tax handles identified in this paper should also tackle income inequality, improve local urban environments and reduce urban

sprawl. The final recommendation, about generating full information on subnational liabilities, lays the foundations for the central government to manage fiscal risk.^b

The analysis and recommendations in this paper draw on an ambitious, multi-year research programme led by the London School of Economics and Political Science, involving colleagues from the Chinese Academy of Social Sciences, Fudan, and Sun-Yat Sen and Zhejiang Universities, as well as the World Bank and the University of Montreal. The key findings have also been submitted for the 14th Five-Year Plan through background papers for the Asian Development Bank and the World Bank.⁷ This research was supported by the Coalition for Urban Transitions, extending its foundational work on nurturing a multi-level tax and spending agenda that can mobilise the funding and financing for sustainable urban transitions.⁸

^b Given demographic and economic change over recent decades, China will also need to reassign local spending responsibilities to bring them in line with local revenue constraints. Reforming social security financing will be particularly important in light of the ageing population and the constraints imposed by local pools and the largely pay-as-you-go format. This topic has begun to be addressed during the 2018–2021 medium-term economic plan but is beyond the scope of this paper.

Section 2 offers a brief overview of China’s urban transition over the past half century, and reviews the economic and fiscal policy choices that have shaped its cities. Section 3 looks at how economic and fiscal policy has affected three different types of cities: the mega-metropolis of Guangzhou, the provincial capital of Nanchang and the smaller hub of Jieshou. Section 4 then examines how to fund sustainable urban economic growth, increase local governments’ accountability for service delivery and address distributional and environmental goals by strengthening subnational revenue collection. This builds on surveys and simulations for six cities: Fuzhou, Guangzhou, Shanghai, Shenyang, Xi’an and Wuhan – the last of which has been the focus of global attention since the outbreak of the coronavirus pandemic. Section 5 underscores the critical importance of tracking and monitoring liabilities across different tiers of government, including a new analysis of the balance sheets and hidden debts for a Chinese city. Section 6 concludes with a summary of key recommendations for policy-makers.

2. Cities: the key to China's economic transformation to date – and in the next decade

DEALING WITH THE PROBLEMS OF SUCCESS

Since the late 1970s and early 1980s, China has recognised the critical importance of urbanisation for structural economic change. It is more efficient to provide services when people and infrastructure are spatially concentrated, since it requires less land, material and energy to physically connect them. The larger markets in urban areas reward specialisation by firms and labour, enhancing productivity. Cities allow for more frequent interactions among a wider range of people, which enables ideas and knowledge to spread more quickly.⁹ Consequently, urbanisation offers a host of potential economic advantages that support the growth of industrial and services sectors. This manifests as higher wages, higher rents and higher rates of innovation. Chinese workers benefit from unusually large agglomeration effects: a worker moving from a low-density city (in the first decile of density) to a high-density one (in the last decile) would experience a wage gain of 53%.¹⁰ Materialising these benefits depends on urbanisation being well managed, otherwise the costs of density can outweigh the benefits.

Recognising the advantages of concentrating people, infrastructure and economic activity, China has closely aligned its fiscal, industrial and urban strategies. For four decades, the national government has supported the rapid development of coastal cities, providing a pool of labour to work in export manufacturing. The coastal location of these hubs means that firms can ship their products easily to global markets.¹¹ Over 160 million people have moved to the coastal cities from China's interior.¹²

China's export-driven model of industrialisation has been underpinned by fiscal policy choices, particularly the establishment of a modern, national tax system that seeks to generate public revenues and minimise distortions. China's tax system is based largely on a value-added tax and corporate tax that generate adequate revenues for basic expenditures at the national level. Revenue-sharing mechanisms have channelled resources to local governments along the coast, facilitating aggressive public investment in urban infrastructure in (mainly coastal) metropolitan areas.

China's economic development strategy has been remarkably successful, driving one of the most significant demographic and economic transformations the world has ever seen. In 1980, fewer than one in five people in China lived in an urban area. Just 40 years later, that share has risen to more than three in five. Combined with rapid population growth, this means that, against 192.4 million urban residents in China in 1980, there are 856 million in 2020.¹³ Over 40 years, China's gross domestic product (GDP) has almost consistently achieved double-digit growth, leading China to become the second-largest economy in the world. Around 850 million people have been lifted out of poverty.¹⁴ This is an extraordinary achievement.

However, China's emphasis on coastal cities, combined with the deployment of specific fiscal tools, has also had significant negative consequences.

First, China's coastal cities are not capturing the full economic advantages associated with higher density and proximity. Local governments' dependence on land sales to generate funds has fuelled significant urban sprawl: between 2000 and 2014, China alone accounted for 31.8% of global urban land expansion.¹⁵ This equates to 35,380km² – an area of land bigger than Belgium. Much of this urban expansion has been at the expense of productive agricultural land or fragile ecosystems such as deltas, potentially jeopardising China's food security and increasing exposure to natural hazards.¹⁶ Nearly 130 million urban residents in China live in low-lying coastal zones less than 10 metres above sea level, where they are at particular risk of flooding, storm surge and (in the longer term) sea-level rise.¹⁷

Moreover, sprawling and disconnected cities are less economically productive since they do not fully realise the matching, sharing and learning benefits associated with agglomeration.¹⁸ Without the option of safe, adequate public or active transport, people's time is wasted in traffic: in Beijing, congestion has been estimated to cost the city as much as 15% of GDP a year.¹⁹ Land sales have also rewarded land speculation, pushing up housing costs. Although the central government has recognised the costs of sprawl and environmental degradation, its recent efforts to persuade local governments to desist have not been entirely successful because the latter lack alternative sources of revenue.

Second, China is grappling with chronic inequality. The Gini coefficient, a common measure of inequality whereby 0 is perfect equality and 1 suggests all wealth is concentrated in the hands of a single individual, has risen by 15 points since 1990, to 0.50 in 2015.²⁰ Inequality may be even higher within provinces and cities: for instance, the Gini coefficient within Guangdong, one of the richest provinces in China, is greater than for China as a whole.²¹

Across the country, inequality is driven by the unprecedented migration of workers from rural to urban areas, and from small towns to metropolitan hubs, in search of higher incomes and better services. Within urban areas, inequality has been driven by the rapid rise of personal incomes and wealth, especially among higher earners. Inequalities within China are further exacerbated by a tax system that (as in many emerging economies) focuses on wage income, with challenges to expanding the tax base to rent, profits or assets – particularly property. Additionally, around 100 million Chinese people from the interior live in coastal metropolises but retain their original *hukou* (a household registration scheme that assigns families to particular regions for accessing public housing and services). Most of these migrants work in unskilled or low-skilled jobs. Although they are considerably better off in monetary terms in the cities, they face inequalities in access to local services in their new place of residence. Meanwhile, the quality of local services has suffered at lower levels of government and in poorer provinces as local budgets have been squeezed by central tax cuts – intended to stimulate domestic demand in response to global trade shocks – and due to instructions to local governments to focus their attention and resources on supporting industry in order to maintain employment.

Finally, China faces pressing environmental concerns. Many Chinese cities rank among the most polluted in the world, with air pollution contributing to over a million premature deaths in China every year.²² PM_{2.5} and PM₁₀ concentrations average 73 µg/m³ and 92 µg/m³ over the course of a year, much higher than the World Health Organization (WHO) recommended limits of 10 µg/m³ and 20 µg/m³ respectively.²³ Regulatory measures and investments in public transport have led to some improvements in air quality but pollution remains a daily concern for urban residents in the coastal megacities. A closely related issue is China's rapidly growing carbon footprint. As of 2014, China produces 7.5 tonnes of carbon dioxide (tCO₂) per person per year – and emissions have risen steadily since then. For reference, the European Union produced 6.4 tCO₂ per person and Japan 9.5 tCO₂ per person in that year.²⁴ The science clearly shows that urban, industry and energy systems need to reach net-zero emissions by mid-century to keep global warming below 1.5°C and thereby avoid catastrophic climate change.²⁵

China already suffers disproportionately from environmental hazards, having experienced more natural disasters than any other country in the world between 2004 and 2014.²⁶ The impacts of flooding, drought, extreme heat and storms will only worsen as average global temperatures rise. Many of the sources of air pollution and greenhouse gas emissions are the same: coal- and gas-fired power plants; fossil fuel-powered vehicles; coal heating; the production of cement, steel and plastics; and inefficient waste disposal. China thus has an opportunity to simultaneously tackle air pollution and climate change, delivering better living standards for its citizens today and in the future.

THE CASE FOR COMPACT, CONNECTED AND CLEAN CITIES

The next wave of urban development needs to bring prosperity and well-being to a wider range of Chinese cities, particularly by rebalancing urban population and economic growth in the coastal megacities through improving living standards and employment opportunities in the interior. Understanding and responding to migrants' motivations can help shape more effective spatial economic strategies.

Surveys conducted in 2010 and 2014 (Luo and Zhu, 2020) gathered information on the characteristics of migrants, including on skill levels and on where they go and to do what, as well as public services and environmental considerations. Analysis of these data reveal that migration decisions over the five year period^c were driven primarily by employment and income opportunities or services. Availability of health care services in particular proved a hugely important motivation for migration, whereas environmental considerations did not play a significant role in migration decisions over the decade.²⁷ However, for higher-skilled workers, quality of life, including a clean environment, has recently proven increasingly important.²⁸

^c Note that these surveys do not reflect the impacts of recent policies, including either the tax cuts intended to offset the impacts of trade shocks on economic activity and employment or the quarantines intended to reduce the spread of COVID-19. These policies have had significant impacts on the spatial distribution of job creation and the quality of local services.

Luo and Zhu's analysis of the survey data found that the coastal megacities were still drawing large numbers of migrants from eastern and central China (see Figure 1), including skilled migrants. However, while the share of manufacturing jobs in cities such as Beijing and Shanghai has declined, the services economy has boomed, including high-tech sectors. This has expanded demand for higher-skilled workers. These cities also offer significant advantages to *hukou* residents (including high-quality education and social protection benefits). These factors have helped sustain population growth, particularly attracting migrants with higher education levels (see Figure 2). By comparison, the province of Zhejiang focused on traditional manufacturing and construction in 2014 and saw a significant outward flow of high-skilled workers. However, Zhejiang's migration patterns are continuing to change, thanks to the emergence of new industries; e-commerce giant Alibaba is headquartered in Zhejian's capital Hangzhou, while the port city Wenzhou has recently started manufacturing and exporting robots. Unfortunately, it was not possible to capture these changes with available data.

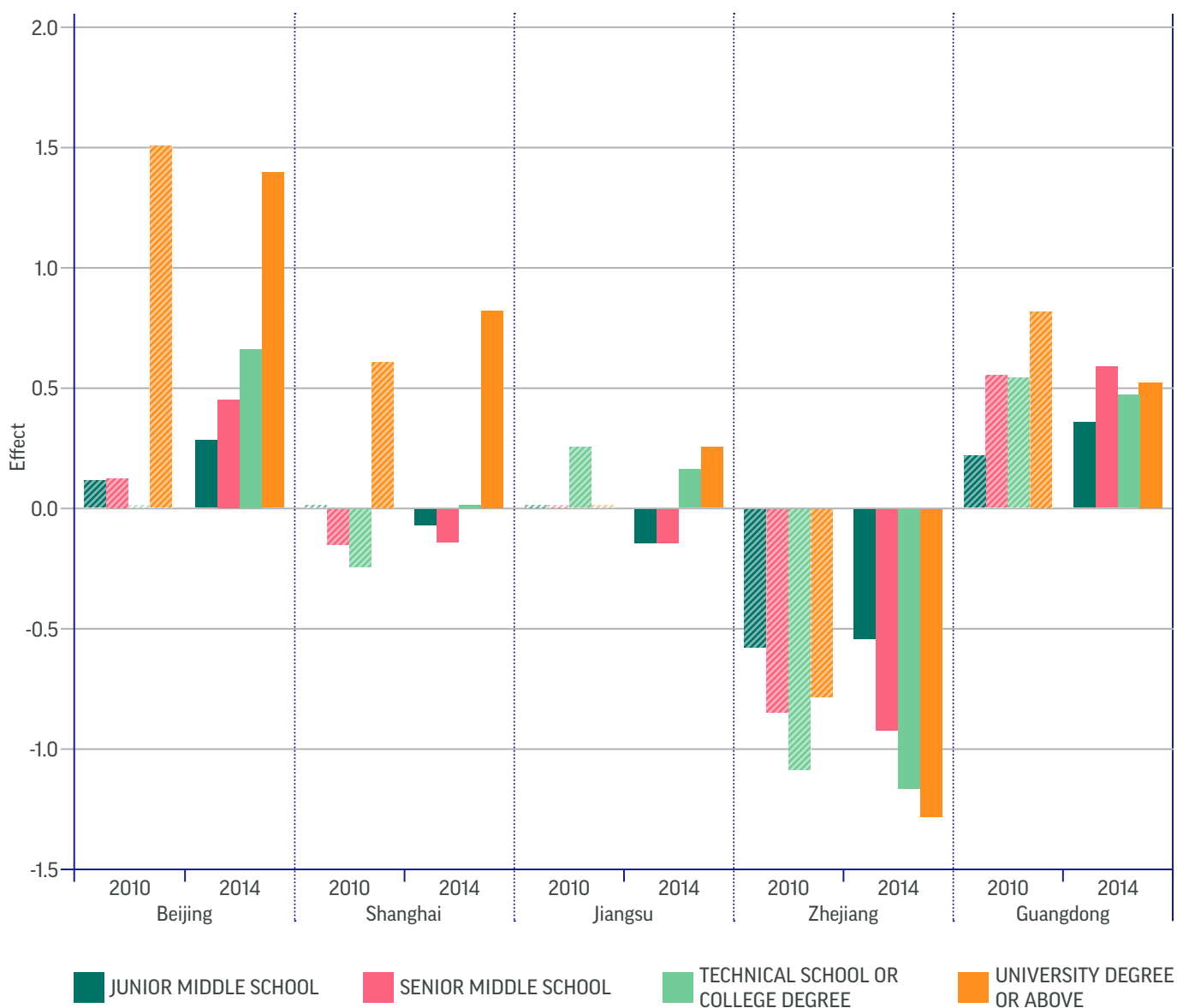
Figure 1: Inter- and intra-provincial migratory flows, 2010 and 2014



Note: The thickness of arrows indicates approximately the intensity of corresponding inter-provincial migratory flow, and the grey level indicates approximately the intensity of migrations within a province.

Source: Luo, X. and Zhu, N., forthcoming. *Spatial mobility and regional structural transformation in China*.

Figure 2: Skills and migratory patterns in five major regions in China, 2010 and 2014



Note: Effects for skilled migrants are compared to a reference scenario of effects for migrants with a primary education or less. The striped bars reflect migration patterns in 2010; the solid bars reflect migration patterns in 2014.

Source: Luo, X. and Zhu, N., forthcoming. *Spatial mobility and regional structural transformation in China*.

The spatial diversification of manufacturing activities created a wider range of economic opportunities within provinces, particularly eastern provinces. This meant that unskilled and semi-skilled workers were more likely to migrate within their province in 2014 than they were in 2010, including to small- and medium-sized cities. This should be encouraging for decision-makers looking to ease the pressure on mega-metropolises such as Beijing and Guangzhou.

Despite efforts to rebalance the economy towards the interior, Luo and Zhu's research suggests that it will continue to be difficult to persuade firms and skilled workers to relocate to less well-developed areas, even though connectivity is now less of a problem in China. Workers are seeking more economic opportunities and better services than are currently available in the cities in China's western and central provinces, while firms need decent infrastructure and an adequate labour supply. It is clear that rebalancing China's economy to bring prosperity to a wider range of cities – not just the coastal mega-hubs – will require making those other cities attractive to investors and workers alike.

In this context, focusing on making China's cities compact, connected and clean (the “3C” model) offers an opportunity to meet social, economic and environmental objectives at once.²⁹ 3C cities (see Figure 3) are characterised by high but liveable density. Residents benefit from mixed land use, with residential, employment, retail and leisure opportunities located close together. People do not have to travel far and, with investment in protected paths and sidewalks, they can safely cycle or walk. For those who need to travel among neighbourhoods, investments in building and maintaining mass transit ensure every part of the city is connected quickly and affordably. In 3C cities, homes are small but comfortable, with lots of natural light and good ventilation. Reduced dependence on cars frees up spaces for parks, trees, canals and other green-blue infrastructure. The air is clean, since buildings, industries and (increasingly) vehicles are powered by renewable electricity.

Creating a network of 3C cities throughout China could help rebalance economic and population growth towards the poorer western and southern provinces, particularly as these regions are increasingly connected to markets in Europe, the Middle East and Africa through the Belt and Road Initiative. Fostering higher population densities in smaller and denser urban areas could reduce the costs of providing infrastructure and services for the 255 million additional urban residents expected to swell Chinese cities by 2050.³⁰ The relocation of labour-intensive firms to inland cities will also facilitate a green transformation of the mega-metropolitan areas such as Guangzhou. Committing all cities to renewable energy, electric vehicles and green building materials today could further consolidate China's dominance over the rapidly growing market for low-carbon technologies. China is already home to 99% of the world's electric buses and electric two-wheelers,³¹ with a booming electric vehicle manufacturing sector. Shenzhen was the first city in the world to have an entirely electric bus fleet.

However, China can realise a sustainable urban transition only through coordinated, multi-level fiscal reforms that simultaneously:³²

1. Mobilise sufficient local public revenues to meet current spending commitments and anchor access to credit to finance sustainable urban infrastructure;
2. Systematically incentivise firms, households and subnational governments to make more sustainable economic choices; and
3. Monitor and manage total liabilities across all levels of government to avoid debt crises.

A key first step in achieving such reforms is to understand how the fiscal policies that have enabled much of China's extraordinary growth in the past few decades have also created significant obstacles to the transformation needed today.

Figure 3: The key characteristics of compact, connected and clean cities



Source: Coalition for Urban Transitions, 2019. *Climate Emergency, Urban Opportunity: How National Governments Can Secure Economic Prosperity and Avert Climate Catastrophe by Transforming Cities*. World Resources Institute Ross Center for Sustainable Cities and C40 Cities Climate Leadership Group, London and Washington, DC. Available at: <https://urbantransitions.global/urban-opportunity/>.

THE FISCAL POLICIES THAT SHAPED MODERN CHINA'S ECONOMY AND CITIES

Structural economic change throughout the 1980s reduced the share of GDP collected as taxes from almost 30% in 1980 to just over 10% in the early 1990s. Tax reforms were therefore critical to generate enough public revenues to maintain and improve public services and support economic development. In 1993/94, China's new State Administration of Taxation (SAT) introduced a VAT, replacing largely local tax administrations that had shared revenues upwards to Beijing and virtually eliminating local governments' own-source revenues. The tax-to-GDP ratio increased to around 20% in a relatively short period of time.³³ Overall, this was a remarkably successful reform package.

Political economy considerations required that no province would lose out as a result of these fiscal reforms, so the reform package involved a combination of tax and transfer policies. However, as explained below, success created new challenges, as both fiscal instruments and supporting institutions required further development to keep pace with structural economic change and evolving governance arrangements. The 1993/94 reform package involved:

1. A guarantee that all provinces would receive, at a minimum, a lump sum equivalent to 1993 levels of revenue. This lump-sum guarantee has declined in importance over time as a result of economic growth.³⁴
2. A revenue-sharing system between national and local governments to ensure local governments would also have a vested interest in the new system. The increasing reliance on shared revenues exposes local governments to budgetary pressures, as national tax rates are reduced in response to trade shocks. Further, higher levels of government tend to be given priority, leaving the lowest tiers (which provide many basic services, including health care, sewerage systems, piped water and solid waste management) most at risk of revenue shortfalls.
3. An equalisation system to redress spatial differentials in costs, spending needs and resource generation, providing some assurance to poorer provinces that they would be able to provide a modicum of services. However, the equalisation system largely encompasses current spending (not investment) and operates at the provincial level, leading to disparities within provinces.³⁵
4. A unique arrangement that returned revenues to the provinces that had generated them, for a specified period of time. This mainly benefited the wealthy coastal provinces and enabled massive capital investment in their metropolitan areas. The policy was designed to nurture export-oriented coastal hubs that could generate economic growth and develop higher value-added industries – and, indeed, these cities continue to be the powerhouses of China's economy. However, the arrangement also contributed to spatial and income inequalities that need to be addressed.

The VAT has played a critical role in reducing the cost of doing business, creating a unified economic space and raising significant revenues.³⁶ However, it initially did not provide refunds or offsets on capital purchases. This effectively meant it was a tax on production rather than consumption. To an extent, these distortions were offset by the establishment of SEZs, which completely exempted firms in these areas. These SEZs played an important role in industrialisation and economic growth in metropolitan areas, such as in Shenzhen and Pudong.

In the mid-2000s, the VAT was reformed so that the VAT on capital purchases could be offset against the VAT liabilities on sales, converting the VAT into a tax on consumption rather than production. The VAT was further reformed in 2015 to include services, which had formerly been covered by a local business tax collected by subnational governments. These reforms were intended to reduce the cost of doing business, facilitating export refunds and simplifying tax payments. The integration of the VAT and local business taxes generated more complete information on wages and profits along the value chain, improving the efficiency

of collection by addressing tax leakage and expanding the tax base. As a result, the reformed VAT successfully increased total tax revenues and improved the equity of that revenue collection by facilitating improvements in income tax collection. The improvements to the VAT coverage also made it possible to remove the boundaries around some SEZs, such as the one in Shenzhen, since exports would receive the same treatment inside or outside the SEZ. This improved economic linkages between Shenzhen and other neighbouring cities in the Greater Bay Area, reinforced by investments in connectivity made by the national and local governments.

The reformed VAT successfully increased total tax revenues and improved the equity of that revenue collection by facilitating improvements in income tax collection.

However, the integration of the local business taxes with the nationally administered but shared VAT has left no significant own-source revenues for local governments. These governments were also prohibited from borrowing to meet

current spending before 2015. Instead, they are expected to rely almost exclusively on shared revenues and transfers from the central government, and (more recently) some limited access to credit permitted under the 2015 Budget Law. These trends are illustrated for the case study cities of Guangzhou and Nanchang between 2000 and 2014 in the next section of this paper (see Figures 6–9). Revenue shares were adjusted in 2015 to ensure provinces did not lose out as a result of the integration of the VAT and local taxes on services. However, when overall tax rates were cut recently to stimulate demand, subnational revenues also fell as a consequence. Local budgets have been squeezed, affecting the ability of cities to provide basic services.

Unpredictable shared revenues, lack of own-source tax handles and limited access to credit limit local governments' ability to provide decent public services and infrastructure – the essential foundation for thriving cities. Despite their shrinking budgets, local governments still have the same responsibilities and expenditure

assignments. As a result, many have resorted again to land sales to meet their spending mandates for education, health care, housing and other services. Local governments have the authority to appropriate land at a low cost for public interest and to develop it so it can be sold (primarily for residential and commercial use) at a higher value. In 2015, a quarter of local revenues came from land sales. Fiscal policy thus continues to fuel sprawling urban growth into prime agricultural land, as well as severe ecological damage to the main deltas.

Local governments have also resorted to borrowing. Although not legally allowed to borrow for current spending before 2015, their Urban Development Investment Corporations (UDICs) could borrow using local government financing vehicles (LGFVs) for capital investments – the so-called “golden rule”. This policy was not always followed in reality, and the LGFVs became convenient off-budget funds for all sorts of spending. In response to the global financial crisis in 2008–2010, the central government used the UDICs and LGFVs to finance the CNY 4 trillion stimulus. The consequent spiralling of subnational debt (see Table 1) is an urgent concern for the national government, particularly as local balance sheets have rarely reflected the full scale of actual and prospective liabilities (see Section 5).

China now has one of the highest levels of decentralised structures of spending responsibilities in the world, but relatively weak monitoring of spending and borrowing at the lower levels of administration. While aggregate public debt levels are well within prudential limits, given the resources of the central government, a telescoping downwards of spending responsibilities with limited resources generates deficits and liabilities that are hard to detect. This poses heightened fiscal risks.³⁸ As a result of concerns about growing subnational debt, the National Development and Reform Commission (NDRC) has recently frozen or cancelled a large number of infrastructure investment proposals, such as metro systems, that would have been mainly financed by public-private partnerships and borrowing.

The reforms to the national tax structures and systems in the late 1990s brought China close to OECD standards in terms of fiscal institutions, and today the country is in a strong position to address major challenges and shocks. However, the absence of own-source revenues at the subnational level exposes local governments to fluctuating revenues and leaves them unable to sustainably access credit. Further, the absence of full information about local liabilities jeopardises the cost-effective allocation of limited resources and ultimately the local provision of core services. Thus, additional fiscal reforms, especially at the subnational level, are now needed to ensure the 14th Five-Year Plan leads to improved quality of life and balanced economic development while minimising the impacts of trade shocks, environmental hazards and other risks.

The next section explores the effects of national economic and fiscal policies through case studies of three cities.

Table 1: A comparison of local governments' debt limits and debt outstanding in 2017 (CNY 100 millions)

PROVINCE	GENERAL DEBT			SPECIAL DEBT		
	DEBT LIMIT	DEBT OUTSTANDING	DEBT COMPLETION RATE (%)	DEBT LIMIT	DEBT OUTSTANDING	DEBT COMPLETION RATE (%)
Beijing	2,284.3	1,860.4	81.4	5,452.1	2,016.5	37.0
Tianjin	1,363.2	1,333.3	97.8	2,099.3	2,090.7	99.6
Hebei	4,931.6	4,153.8	84.2	2,270.4	1,997.2	88.0
Shanxi	1,890.7	1,811.5	95.8	837.1	767.0	91.6
Inner Mongolia	5,281.3	5,219.6	98.8	1,076.23	997.8	92.7
Liaoning	6,684.5	6,111.7	91.4	2,716.2	2,343.5	86.3
Jilin	2,664.8	2,353.1	88.3	1,020.9	840.1	82.3
Heilongjiang	3,046.2	2,713.5	89.1	755.8	741.1	98.0
Shanghai	3,664.9	2,523.5	68.9	3,446.6	2,170.7	63.0
Jiangsu	7,146.2	6,668.5	93.3	5,957.1	5,357.8	89.9
Zhejiang	5,769.5	5,159.6	89.4	4,718.9	4,079.5	86.5
Anhui	3,884.3	3,415.3	87.9	2,737.8	2,408.1	88.0
Fujian	2,997.4	2,779.9	92.7	3,057.9	2682.9	87.7
Jiangxi	3,108.6	2,827.4	91.0	1,675.6	1,441.7	86.0
Shandong	6,775.9	6,189.8	91.4	4,440.9	4,007.1	90.2
Henan	4,948.7	3,648.7	73.7	2,316.8	1,899.8	82.0
Hubei	3,604.3	3,402.6	94.4	2,392.2	2,313.0	96.7
Hunan	5,168.5	5,092.1	98.5	2,718.8	2,575.4	94.7
Guangdong	6,476.7	5,297.4	81.8	4,253.9	3,726.0	87.6
Guangxi	3,329.7	3,049.8	91.6	1,983.1	1,787.0	90.1
Hainan	1,212.0	1,162.4	95.9	622.3	556.9	89.5
Chongqing	2,441.6	2,235.8	91.6	1,941.8	1,782.7	91.8
Sichuan	5,489.9	5,173.4	94.2	3,719.1	3,323.6	89.4
Guizhou	5,528.5	5,113.7	92.5	3,748.0	3,493.5	93.2
Yunnan	5,383.2	4,760.9	88.4	2,138.9	1,963.6	91.8
Tibet	145.3	77.5	53.3	23.0	21.2	92.1
Shaanxi	3,471.3	3,155.2	90.9	2,394.5	2,240.3	93.6
Gansu	1,469.3	1,397.3	95.1	830.2	671.3	80.9
Qinghai	1,389.1	1,253.2	90.2	287.8	259.4	90.1
Ningxia	1,096.4	984.7	89.8	279.5	241.6	86.4
Xinjiang	2,841.4	2,706.6	95.3	772.3	671.2	86.9
TOTAL	115,489.2	103,631.8	89.7	72,685.1	61,468.0	84.6

Note: General debt refers to the authorised limits for on-budget debt, mainly municipal bonds and borrowing, whereas special debt is related to project related bonds and borrowings.

Source: Ministry of Finance, China.

3. A tale of three cities

In order to better understand both fiscal challenges and the potential for Chinese cities to shift towards 3C development, three very different cities were chosen for a closer review of trends in public policy, economic activity and migration (see Figure 4). **Guangzhou** is a mega-metropolis with more than 13 million people and a greater metropolitan area that is home to 25 million people. The urban population has increased fourfold since 1990. It is an integral part of the Greater Bay Areas initiative, which aims to turn the region's nine largest coastal cities, plus Hong Kong and Macau, into a global hub for innovation and technology. **Nanchang** is a provincial capital with an urban population of around 2.9 million. It is a major logistical centre with good infrastructure connecting eastern and southern China, and a city of focus under the 13th Five-Year Plan. **Jieshou** is a much smaller hub with an urban population of around 140,000 people that only recently graduated from “poverty level” status. All three cities have been designated special high-tech zones. Together, Guangzhou, Nanchang and Jieshou illustrate key trends in China's urban development over recent decades and highlight opportunities and constraints for a sustainable and inclusive urban transition.

Each case study is outlined below, with further details presented in Niu and Zhang (forthcoming).³⁹

Figure 4: Geographic location of the three city case studies: Guangzhou, Jieshou and Nanchang



GUANGZHOU

The metropolitan area now known as Guangzhou has been settled for over 3,000 years and today is one of the largest urban agglomerations in China. Despite its huge population, Guangzhou is not particularly densely settled, with an average population density of 2,000 people/km². The ancient city is being modernised as a centre for finance and innovation, with a number of prestigious research centres and 93 of the 111 biotechnology research and development parks in the country. With one of the highest per capita incomes of any Chinese city, Guangzhou remains a magnet for migrants at all skill levels. This has contributed

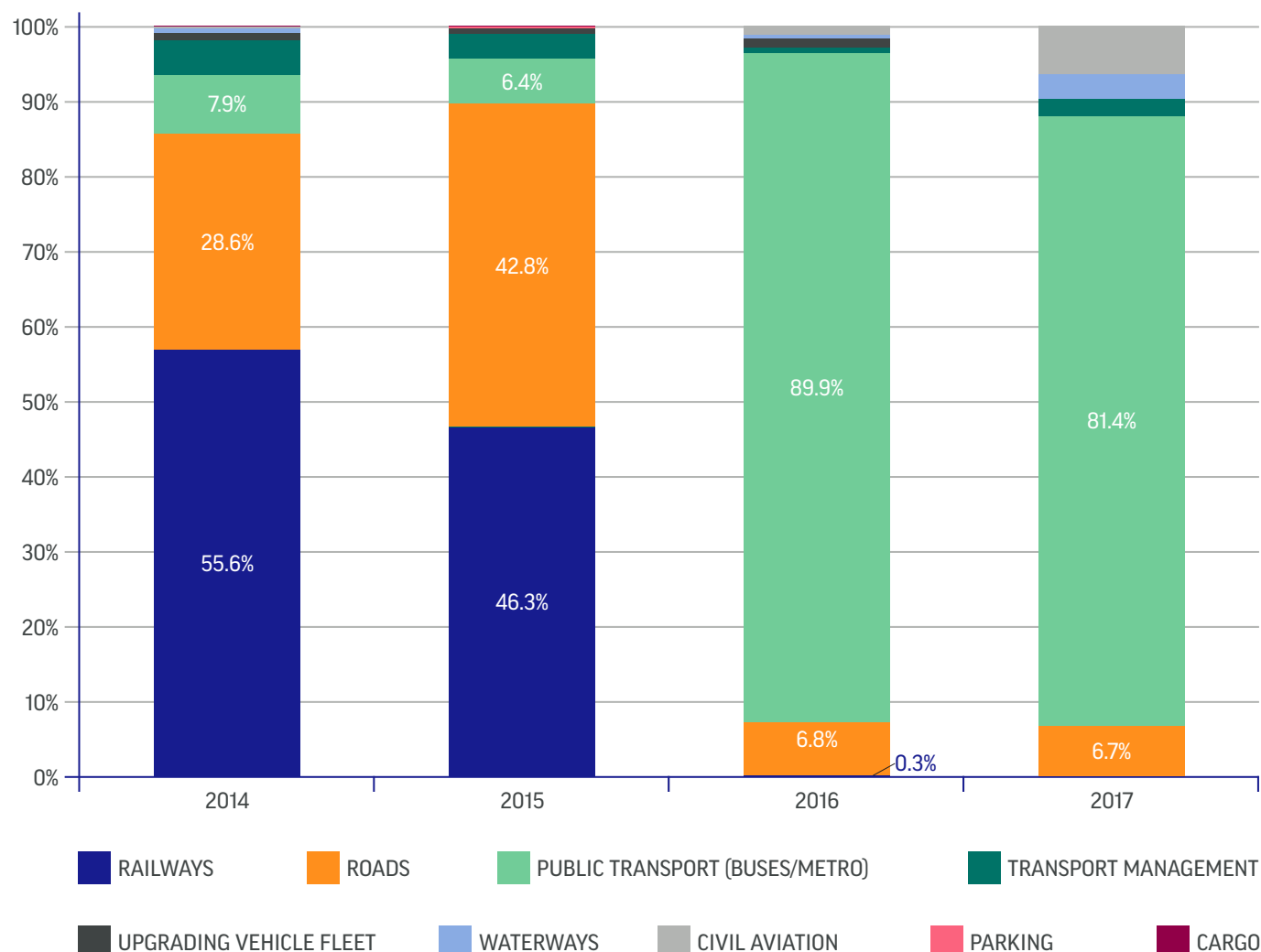
With one of the highest per capita incomes of any Chinese city, Guangzhou remains a magnet for migrants at all skill levels.

to an improving quality of life, with very good public services and a rich cultural scene. However, as a delta city in the western Pacific, it is prone to flooding and typhoons.

Guangzhou has long been a major port city. More recently, it has benefited from extensive investments in connectivity infrastructure that have made it the southern hub for a vast network of high-speed trains. It currently houses one of the largest and busiest airports in Asia, and a second, larger, one is due to open soon. The economic and intellectual dynamism of the city has benefited from these strong linkages, enabling specialisation and partnerships

with neighbouring cities such as Shenzhen and Zuhai. Connectivity within the metropolitan area has also improved, with a world-class bus rapid transit (BRT) system that many other megacities look to emulate. However, a planned extension to the BRT has been stopped in response to a citizens' audit;⁴⁰ instead, the extensive new metro system is being complemented by more cost-effective dedicated bus lanes. The shift in public investment from roads to buses is illustrated in Figure 5. Recent transport investments are likely to help mitigate the city's dangerous air pollution: in 2016, Guangzhou was choking with an annual mean ambient air quality of PM₁₀ of 56ug/m³ and PM_{2.5} of 36ug/m³.⁴¹ For reference, the safe limits recommended by the WHO are PM₁₀ of 20ug/m³ and PM_{2.5} of 10ug/m³.

Figure 5: Changing allocation of transport budgets in Guangzhou, 2014–2017

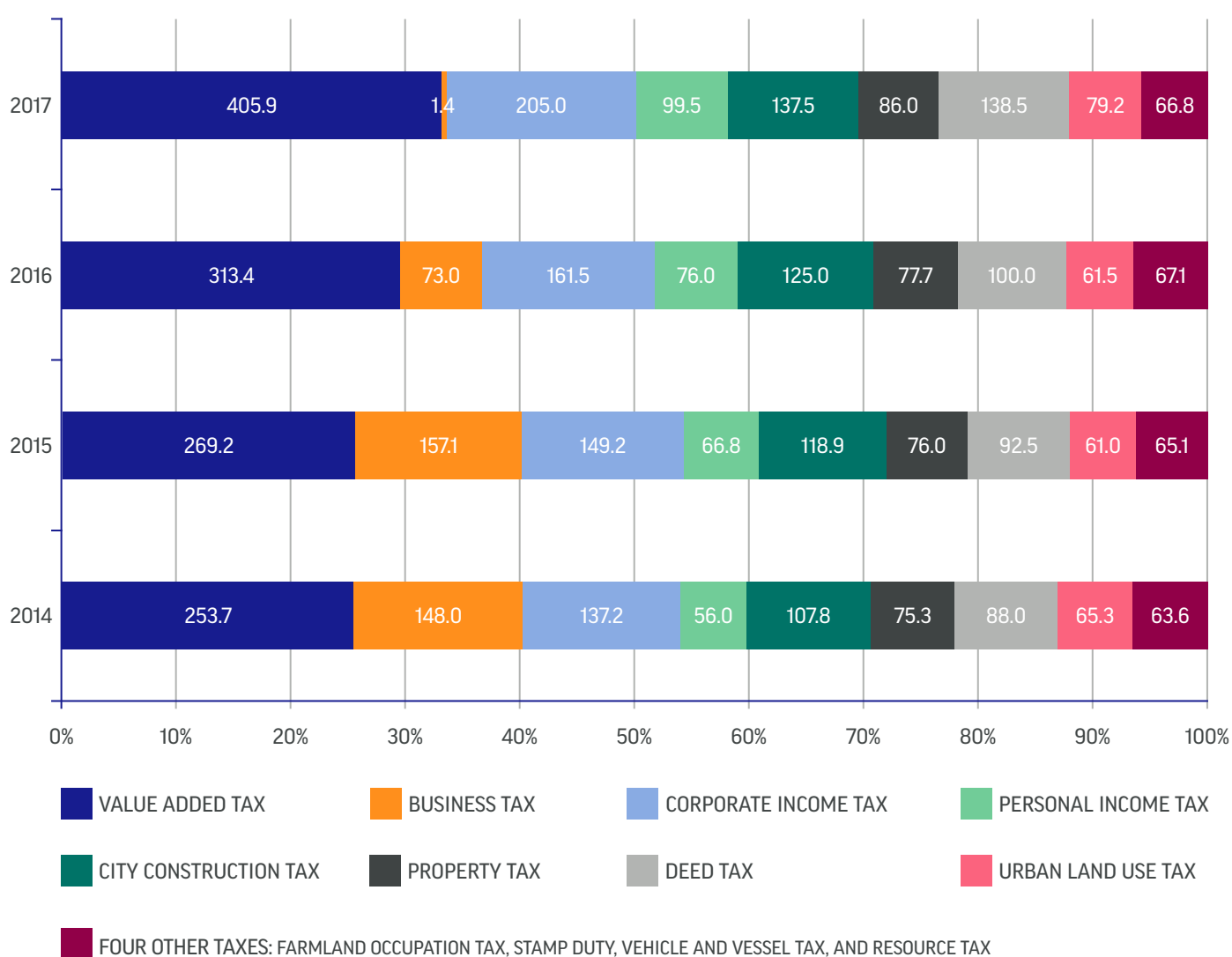


Source: Budget reports for various government departments in Guangzhou, 2014–2017.

Recent cuts in national taxes and fiscal transfers have increased budget pressures, making it difficult for Guangzhou to maintain spending levels on critical services such as education. The city also has one of the highest levels of official debt among cities in China, severely constraining policy options. Disparities across counties in Guangzhou are another matter for concern. As noted earlier, reforms to combine VAT and local business taxes have meant that local governments are increasingly reliant on revenue-sharing, and these resources have decreased as a result of national efforts to stimulate demand. In the past few years, Guangzhou's local government has depended increasingly on minor fees and charges, such as deed taxes, urban land use taxes and city construction taxes (see Figure 6) and land sales (Figure 7). Indeed, land sales accounted for 94% of Guangzhou's revenue in 2017,

which implies that costly urban sprawl will continue apace. Guangzhou's limited own-source revenues and extraordinarily high levels of debt mean that it has not issued any general municipal bonds in the past few years. It has instead focused on project-related bonds, PPPs or "special debt" to finance infrastructure. Under current accounting practices, local balance sheets do not include PPPs and the debts of local government financing vehicles, so this practice obscures the full extent of local liabilities. In the medium term, hidden debt will make it difficult for the city government to share the costs of common infrastructure in the Greater Bay Area with less indebted cities, such as Shenzhen.

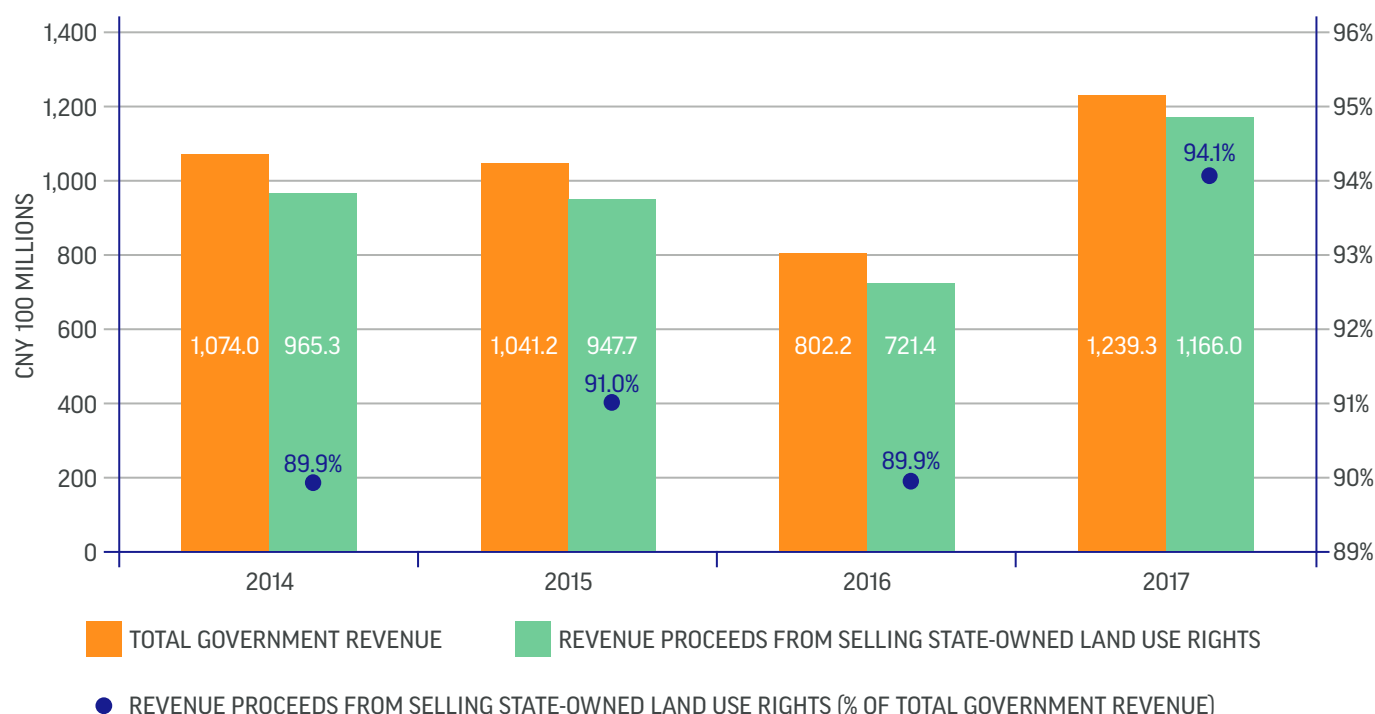
Figure 6: Sources of tax revenue in Guangzhou, 2014–2017 (CNY billions)



Note: The VAT and corporate income tax revenues are shared between national and local governments. The VAT and local business tax were integrated in 2017.

Source: Guangzhou Government Final Accounts, 2014–2017.

Figure 7: The share of total government revenue attributable to land sales in Guangzhou, 2014–2017



Source: Guangzhou Government Final Accounts 2014–2017.

NANCHANG

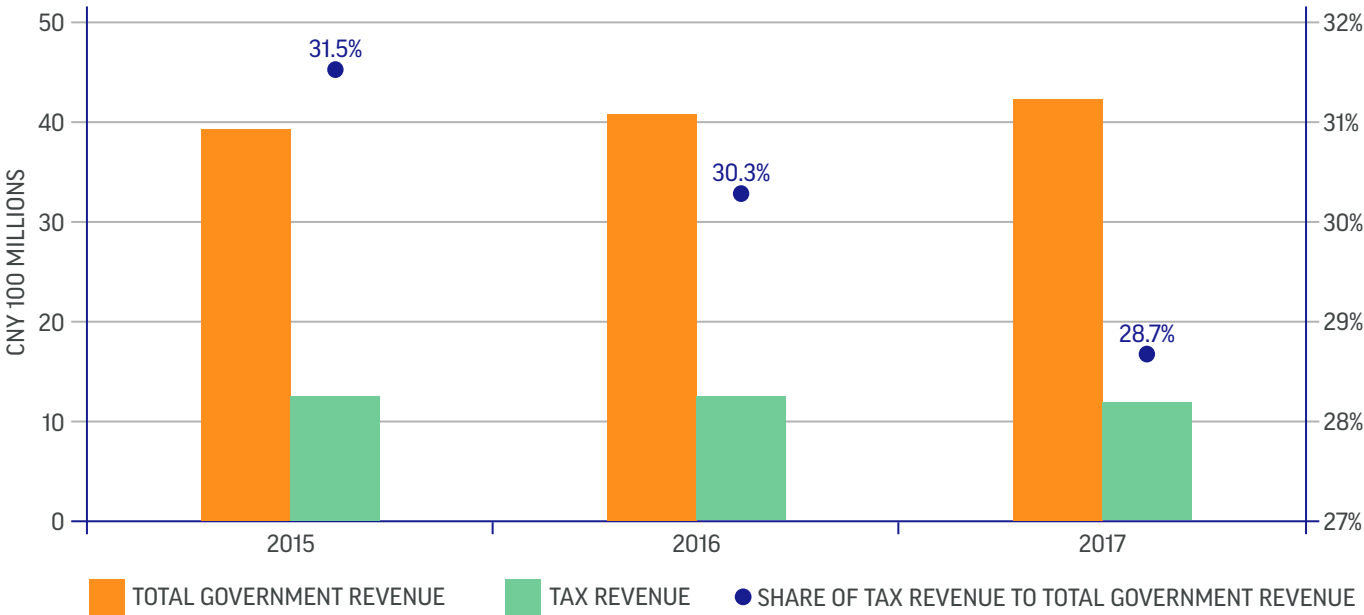
Nanchang is the capital of the Jiangxi province. It has been an administrative and political hub for over 2,000 years, though its relative economic significance has declined over the past 150 years as access to the coast has become increasingly important. It has been revitalised by rail links that have encouraged industrialisation, and today Nanchang is a major producer of textiles, paper, vehicles and chemicals. The average per capita income in Nanchang is around 57% of that in Guangzhou, but urban population growth rates are higher. This is probably because lower costs of living lead to higher real incomes.

Nanchang is also a compact city, with a population density of 4,300 people/km². The city is struggling with toxic air pollution: the WHO includes Nanchang as one of the 500 most polluted cities in the world, with an annual mean of PM₁₀ of 92ug/m³ and PM_{2.5} of 43ug/m³ in 2016.⁴²

As in Guangzhou, the combined VAT does not generate as much revenue for Nanchang as the separate VAT and local business tax did in 2015. Local governments are therefore looking to non-tax revenues, such as land sales, to maintain levels of spending (Figure 8). Nanchang had successfully reduced its share of revenue from land sales from over 90% to around half between 2014 and 2015, in response

to the “golden rule” policy. However, more recent budgetary pressures owing to a cut in national tax rates (and, consequently, to the share of revenue accruing to subnational governments) have led to a resumption of land sales. In 2015, land sales in Nanchang generated CNY 188 million; in 2018, they generated CNY 483 million (see Figure 9). This does not bode well for compact and connected urban growth.

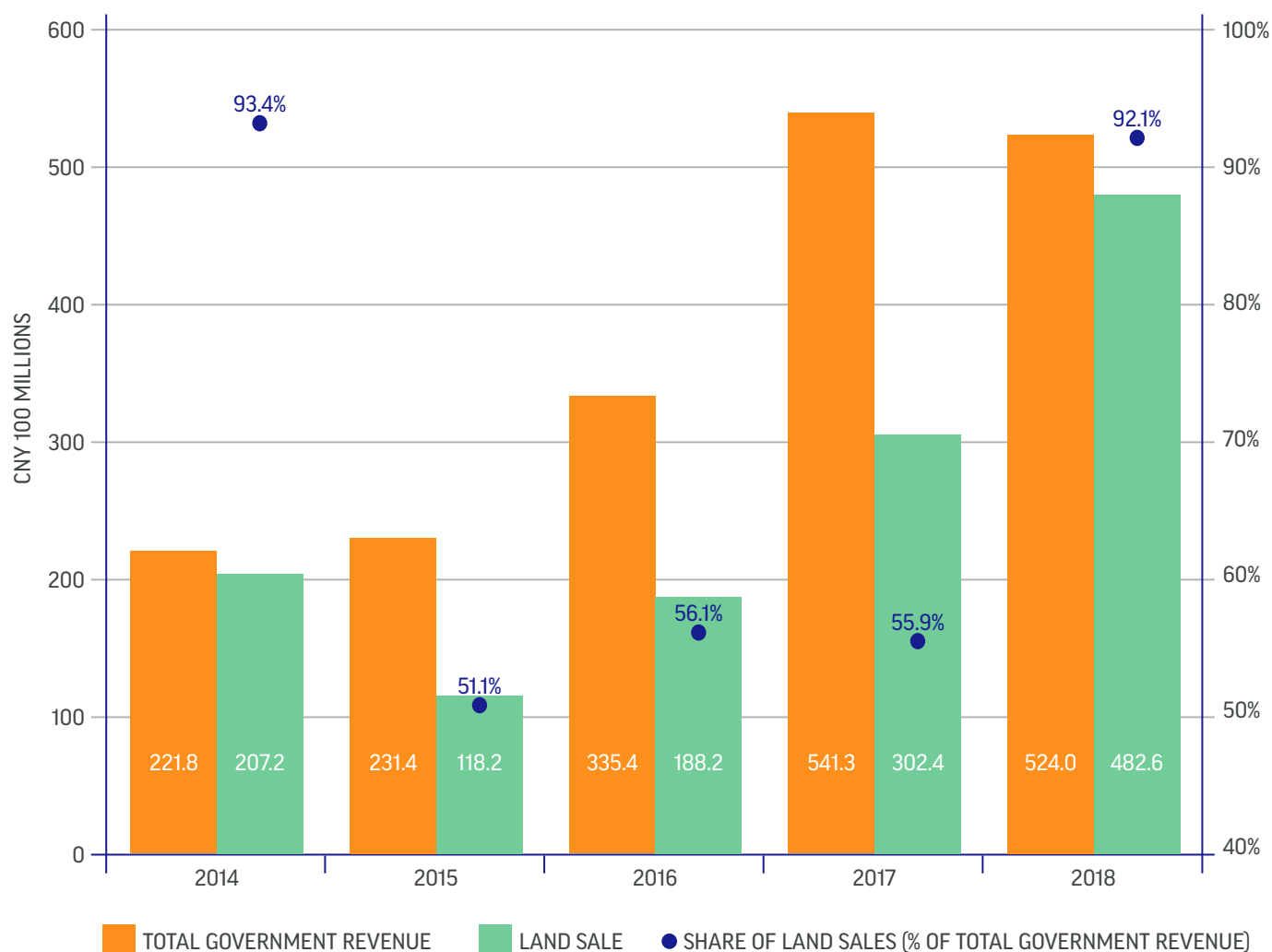
Figure 8: The share of tax revenue to total government revenue in Nanchang, 2014–2017



Source: Nanchang Final Accounts Reports 2015–2017.

Lack of own-source tax revenues means Nanchang has limited means to access credit in a fiscally sustainable way. As a result, the local government has the incentive to “kick the (fiscal) can down the road” through PPPs, often undertaken by entities owned by local governments. Actual and possible liabilities from PPPs are not always transparently recorded on local government balance sheets.⁴³ This can lead to a rapid build-up of fiscal risks, jeopardising government agencies’ ability to mobilise funding and finance in the future. In the future, Nanchang’s government may struggle to deliver the services and make the infrastructure investments necessary to ensure economic prosperity, social well-being and healthy urban environments.

Figure 9: Share of total government revenue attributable to land sales in Nanchang, 2014–2018



Source: Nanchang Final Accounts Reports 2015–2017.

JIESHOU

As of 2020, 23% of China’s urban dwellers – 202 million people – live in cities of 5 million people or more. By comparison, around half live in cities of fewer than a million people, and fully 32% of all China’s urban dwellers – 282 million people – live in cities of fewer than 300,000. The number of people living in these smaller cities is growing.⁴⁴ Although domestic and international attention has often focused on powerhouses such as Shanghai, Chongqing, Shenzhen and Guangzhou,⁴⁵ China’s future also depends on creating jobs, attracting investment and providing a decent quality of life in much smaller cities such as Jieshou.

Jieshou covers an area of 660 km² in China's interior. With a population of 140,000 people, it has a much lower population density than the larger cities examined in this paper. It historically faced similar challenges to its counterparts across the region, particularly a lack of passenger and freight transport connectivity, which deterred both migration and investment. Today, Jieshou enjoys much better connectivity thanks to motorways and high-speed rail networks. It has also benefited from a recent designation as a national scientific zone for the development of high-tech research and development. This has fuelled extraordinarily rapid economic development, with per capita GDP more than doubling from CNY 13,000 in 2013 to CNY 30,000 in 2017. Although the city has graduated recently from its designation as a poor area, incomes are still only around half of the national average, and Jieshou's population has continued to decline.

As in Guangzhou and Nanchang, fiscal pressures in Jieshou are mounting. However, this is not because of the integration of the VAT and local business taxes: shared revenues accruing to the local government of Jieshou have actually increased, unlike in Guangzhou and Nanchang. However, there is less demand for land sales than in metropolitan areas, so smaller cities like Jieshou rely much more heavily than larger cities do on fiscal transfers from higher levels of government to fill gaps in their budget. Central cuts to tax rates and reduced shared revenues have contributed to widening spending shortfalls in Jieshou. *Ad hoc* fiscal transfers are being deployed to meet budget deficit gaps. The consequence is that the Jieshou government has no effective hard budget constraints, and is incentivised to maximise its deficit to secure additional transfers from higher levels of government.

Jieshou is currently engaging in a flurry of contracts through UDICs and LGFVs, accumulating liabilities that the local government is not likely to be able to cover in the future. One analysis suggests that its debt ratio to government revenue is 996% (see Table 2). Debt servicing will affect its ability to continue funding and financing infrastructure and services, which will in turn undermine its ability to attract workers and firms. Yet, with current fiscal arrangements and the absence of hard budget constraints, the local government is incentivised to continue increasing its deficits rather than to start increasing its revenues or tackling its liabilities. Many other Chinese municipalities face the same constraints and perverse incentives. Given its excellent connectivity, and with appropriate fiscal reforms, Jieshou should be well placed to attract private firms in the value chains that ultimately serve high-tech activities in the Yangtze River Delta. Jieshou is unlikely to compete directly for the research and innovation that is taking place in dynamic high-tech hubs such as the Shanghai-Wenzhou-Hangzhou corridor, which enjoy strong agglomeration economies. However, it could attract some manufacturing firms and provide educational, employment and cultural services to rural residents living around Jieshou.

INSIGHTS FROM THE THREE CITIES

Despite the major differences between Guangzhou, Nanchang and Jieshou, there are remarkable commonalities. Each of the cities has seen economic growth over recent decades. They are now very well connected with other major urban centres across the country and are well integrated into domestic and international supply chains. However, there are no signs that the income gaps are closing across these cities, or that there is a rebalancing towards the interior. Guangzhou has seen high migration since the early 1990s and continues to grow in both numbers and land area. It now has one of the highest proportions of migrant workers in China – mostly domestic migrants but also temporary foreign residents. Its population growth and in-migration has been accompanied by rising incomes, and today Guangzhou has one of the highest GDP levels in China (CNY 162,950, or around US\$24,000, per capita in 2018). Per capita GDP in Nanchang is about half that of Guangzhou, at CNY 82,472 (US\$12,500) in 2016. Infrastructure investment and service provision has not kept pace with rapid

population growth but the city continues to attract workers. Jieshou has also seen per capita incomes rise to CNY 31,000 (US\$4,600) but its population has steadily declined, as it is not able to provide sufficiently attractive public services and employment opportunities.

Looking forward, China's cities are expected to swell by 255 million people in the next 30 years. Coastal megacities such as Guangzhou are still expanding (albeit at a slower rate) but should ideally not absorb all of the projected urban population growth. Affordable service delivery, poverty alleviation and healthier local environments all demand that smaller cities in the interior absorb some of this population growth. This depends on the creation

of thriving provincial capitals with diversified urban economies, such as Nanchang, as well as a network of smaller cities, such as Jieshou, that can become employment hubs with good economic opportunities. But to succeed, cities such as Nanchang and Jieshou need to provide adequate public services and infrastructure to attract sufficiently skilled workers and private investment.

Fiscal policy needs to support the rebalancing away from coastal megacities and incentivise the creation of 3C cities in all parts of the country. The case studies above illustrate how fiscal measures taken in recent years are influencing urban development and municipal finance. In each case, the national government has attempted to rein in land sales, borrowing and PPPs, which it rightly recognises as unsustainable and risky sources of local finance. However, other fiscal measures have undermined these efforts. The national government has cut taxes in order to stimulate domestic production and consumption, reducing the resource envelope available to all tiers of government. At the same time,

Fiscal policy needs to support the rebalancing away from coastal megacities and incentivise the creation of 3C cities in all parts of the country.

local governments have to meet basic spending requirements on education, health care and certain capital investments. In the absence of own-source revenues to meet the funding gap, and in light of weak monitoring of liabilities, local governments have had strong incentives to generate debt through opaque financing vehicles or PPPs. As a result, all three case study cities are highly indebted (Table 2). Official balance sheets significantly understate the true extent of their liabilities. Such an evaluation is not an easy task even for the Ministry of Finance to conduct on a regular basis. The Audit Bureau's assessments take time to carry out, and the last ones published were for 2011.

Table 2: Levels of indebtedness in Guangzhou, Nanchang and Jieshou, 2018

City	Debt outstanding (rank within province) (CNY billions)	Debt ratio to government revenue
Guangzhou	3,786.83 (1st among 21 cities)	592%
Nanchang	1,153.44 (1st among 11 cities)	581%
Fuyang (Jieshou)	797.66 (2nd among 16 cities)	996%

Source: Industrial Securities, 2018.

4. Driving sustainable development in China's cities

A sustainable economic development strategy in China depends on tackling the sprawl, congestion and pollution associated with some of the country's coastal megacities, and encouraging internal migration to 3C cities throughout the interior. This in turn depends on creating jobs there by shifting some of the lower value-added activities to the western and southern provinces, as well as encouraging less polluting technologies and more efficient urban forms. Delivering high quality of life and safeguarding local environments around these cities will depend on firms choosing cleaner technologies and processes. These outcomes would also help address

Improving public health through cleaner air and water will be an important precondition for enhancing labour productivity, as well as addressing growing concerns about quality of life.

disparities in income, employment opportunities and health across the country. Rural development is of course essential, but successful rural development will also release surplus labour to move to urban areas. If all of these workers and their families continue to move primarily to the east coast, the pressure on public services, cost of living and local urban environments will continue to mount.

A network of productive, well-connected cities throughout the interior can also help China respond to potential disruptions in global trading patterns, allowing Chinese firms to access new markets and build new value chains. The Belt and Road Initiative has the potential to reduce the costs (including the time costs) of transporting goods from the poorer western and southern provinces to markets in Europe, the Middle East and Africa, thereby stimulating regional economic development that has previously proved elusive.⁴⁶ The shifting value chains and structural economic composition of the coastal hubs provide an opportunity for the traditional sectors, such as textiles, to move inland to take advantage of lower costs and new trade routes.

Private sector investors are already responding to new opportunities, as exemplified by the largely private sector-financed hub in Khorghas on the Chinese side of the border with Kazakhstan. This investment comes largely from east coast firms taking advantage of the new dry port, from which trains can transport goods to Western Europe in around two weeks. By comparison, container shipping from China's eastern cities to Europe takes several weeks and shipping by air is prohibitively expensive for most goods. Of course, the net economic, social and environmental impacts of the Belt and Road Initiative and other connectivity investments will depend on the specific choices governments make: for example, projections for embedded and operational emissions from new infrastructure along the route vary substantially depending on spatial and technological choices.⁴⁷

At the same time, a national urban strategy must pay greater attention to local and global environmental pressures. A structural economic transition to high-tech manufacturing and tradable services demands skilled workers. Improving public health through cleaner air and water will be an important precondition for enhancing labour productivity, as well as addressing growing concerns about quality of life. President Xi Jinping personally underscored the importance of this agenda in 2016, placing health at the heart of

policy-making.⁴⁸ The importance of preventive and curative health care has been brought into sharp relief with the coronavirus pandemic of 2020. As with other hazards, local capacity to finance disaster prevention and response is important to minimise the scale of catastrophe and the need for a central response.

It is therefore urgent that China create and nurture a network of 3C cities throughout the country, with local governments that are able to pay for the infrastructure and basic services necessary for more citizens to enjoy the efficiency and productivity advantages of urbanisation and manage potential costs such as pollution and overcrowding. Achieving these macroeconomic and spatial goals will depend on aligning policies across levels and sectors of government (energy, housing,

industry, land use, transport, etc.) but must be underpinned by an appropriate bundle of tax measures to stimulate the desired structural change while sustaining employment generation.⁴⁹ Fiscal and financing strategies therefore need to pay close attention to the dynamics of urbanisation and agglomeration economies.

Both national and subnational actions will be required to strengthen own-source revenue collection in Chinese provinces and cities.

The central government already raises sufficient revenues through national taxes to anchor infrastructure spending throughout the country. However, infrastructure spending alone cannot address spatial inequalities. The very extensive investments in transport connectivity in China have not reversed investment and migration towards the coastal megacities, nor stimulated the movement of firms and workers to cities in the interior. These development patterns, even in the most advanced provinces of Guangdong and Zhejiang, are

outlined in Section 2. Both are highly developed provinces with excellent connectivity infrastructure, but Guangdong is attracting skilled migrants while Zhejiang, with a more traditional industrial economy, was more attractive to less-skilled workers in the 2010–2014 period (although this may have changed with the recent development of e-commerce, as Alibaba is headquartered in the capital of Zhejiang).

Effective service delivery (particularly health care and education) is clearly needed to encourage the private sector to invest in less well-developed cities, like Jieshou, and qualified workers to migrate there. Based on current spending assignments, achieving this goal will require a strengthening of local own-source revenues and access to private finance. Without reliable own-source revenues, local governments depend entirely on higher levels of government for funding, which reduces their accountability to local residents. Moreover, own-source revenues are critical if subnational governments are to access debt financing or undertake PPPs sustainably, as there must be incentives for them to manage their balance sheets and maintain creditworthiness (for more on this, see Section 5).

Both national and subnational actions will be required to strengthen own-source revenue collection in Chinese provinces and cities. Tax legislation is solely under the National People's Congress (NPC), as China is a unitary state, while all tax administration is currently centralised into the SAT. Introducing subnational tax handles therefore depends on the NPC legislating bands for specific taxes

(as it already does for a number of taxes on property transactions), and permitting provinces and cities to choose their own rates within this band structure.⁵⁰ This is all that is needed to realise the recommendations for a surcharge on the personal income tax and a national carbon tax.

This section examines two promising options for China to strengthen subnational governments' own-source revenue collection: (1) a surcharge or piggy-back on the national personal income tax (to replace the current sharing arrangement) and on a national carbon tax; and (2) the creation of a "beneficial" property tax on a recurring basis to replace land sales. With a piggy-back model, the NPC typically sets legislation defining the tax base while the centralised tax administration (SAT) takes responsibility for administration of the tax; the local government then sets a rate at the margin within a band prescribed by national legislation. This model is already being used for a variety of taxes on property transactions as mentioned above, so there is precedent within China. A piggy-back offers multiple advantages, including:

- Creating incentives for local governments to be more accountable for their spending;
- Facilitating local access to debt financing and PPPs in a fiscally sustainable way by enabling local governments to increase the marginal tax rate if needed;
- Removing local capacity constraints, as the provincial or city government can use the national tax administration to collect the taxes; and
- Protecting subnational budgets from national tax cuts as the piggy-back – if denominated in a band rather than a surcharge – does not change as the national rate is adjusted. This is especially important in China today to ensure the recent tax cuts by the national government successfully stimulate rather than contract demand, which may be the case if they drive local governments to slash spending on infrastructure and services such as health care.

The combination of these three subnational tax handles (surcharges on the personal income and carbon taxes, plus a beneficial property tax) should incentivise local governments to build their fiscal capacities, both to collect more revenues and to manage their total debt obligations more carefully.

TACKLING INEQUALITY: PIGGY-BACK ON THE INCOME TAX

The personal income tax has significant revenue potential given rapidly rising income levels in China. It is also the main instrument for achieving more equitable interpersonal distribution of personal income (though not for redressing spatial imbalances). Currently, revenues from the personal income tax are shared between national and subnational jurisdictions, with the amount accruing to local governments determined on the basis of amounts collected in each province or

city. A piggy-back on the personal income tax could easily replace this sharing arrangement, generating all the advantages outlined above: greater local accountability, more predictable local budgets and improved access to private finance with greater incentives for local fiscal responsibility.

A surcharge on the personal income tax would have two additional advantages. First, it would allow provincial and city governments to more aggressively tackle income inequality by adopting a rate in the upper ranges of the prescribed bracket. Second, it would generate incentives for local governments to share information on the lifestyles of taxpayers that can be used to diversify the tax base. The personal income tax in China draws largely on withholdings from formal sector wages, as in other emerging market countries. Since non-wage incomes (such as profits and rent) typically accrue to higher-income households and are hard to tax, the personal income tax becomes regressive. The Ministry of Finance has recently increased the exemption limit for the personal income tax in order to reduce the burden on poorer, fixed-income families, but this has had the perverse effect of further reducing the narrow personal income tax base. A surcharge on the personal income tax creates an incentive for local governments to generate information about their constituencies that can ultimately help expand the tax base, reducing the regressive focus on salaried workers by enabling more effective taxation of non-wage income and assets. The improved information can further help address income inequality if it reveals the need for support to low-income households. In short, reforming the current sharing arrangement for the personal income tax could ultimately improve the efficacy of the central tax administration while helping achieve distributional goals.

TACKLING AIR POLLUTION AND CLIMATE CHANGE: PIGGY-BACK ON A NATIONAL CARBON TAX

Carbon pricing is widely recognised to be the most efficient way to drive down greenhouse gas emissions, enabling the market to identify the most cost-effective mitigation options. The Carbon Pricing Leadership Coalition recommends a carbon price of US\$40–80/tCO₂-e by 2020 and US\$50–100/tCO₂-e by 2030.⁵¹ China has been experimenting with carbon pricing for nearly a decade, with pilot emission trading schemes in Beijing, Chongqing, Fujian, Guangdong, Hubei, Shanghai, Shenzhen and Tianjin. Though carbon pricing in China has not been as successful as hoped so far, the recently established Ministry of Ecology and Environment proposes to roll out a nationwide scheme from 2020, initially covering electricity generation and gradually expanding to other sectors.⁵² Once established, this would be the world's largest emission trading scheme.

A carbon tax could be adopted in tandem with this cap-and-trade arrangement,⁵³ generating a new stream of revenues and sending more powerful signals about the production of greenhouse gas emissions. A carbon tax would be more straightforward to implement than the initial emissions trading scheme,

as it could be administered by the SAT using data about energy sales and emissions generated through the VAT and cap-and-trade system. A carbon tax would establish a critical base rate to reduce demand for carbon-intensive activities or consumption, and further improve the economics of cleaner technologies, practices and processes.

Moreover, a carbon tax would permit a local surcharge or “piggy-back” to aggressively tackle severe pollution and congestion in the metropolitan areas that generate most of China’s greenhouse gas emissions. Such a piggy-back would permit polluted provinces and cities to impose higher marginal rates, creating a stronger incentive for firms and households to choose cleaner technologies. This would likely yield quick improvements in air quality and cut the carbon intensity of economic activity. Meanwhile, cleaner cities could impose rates towards the lower end of the band, thereby enjoying a new source of competitive advantage. Of course, local governments in poorer, more polluted cities may choose to keep their carbon tax surcharge low to attract industrial firms and create jobs, sacrificing local environmental quality for economic growth in the near term. However, the national base rate would prevent a “race to the bottom” and these local governments would have a powerful fiscal tool to hand when they decide to tackle pollution.

Mexico offers an important example of the possible fit between a national carbon tax and a cap-and-trade scheme. The national government introduced a fixed carbon tax of US\$3.70 per tonne of carbon dioxide as part of its 2013 fiscal reforms. The government had originally proposed a tax of US\$5.70 – the average price in relevant carbon markets, such as California’s cap-and-trade programme and the European Union’s Emission Trading Scheme – but Congress opted for a lower carbon price to ensure political acceptability. In its first two years, this carbon tax generated national revenues of US\$1.2 billion.⁵⁴ The initial carbon tax proposal in 2013 authorised Mexico’s state governments to impose a surcharge on top of the national rate to generate own-source revenues and incentivise further emission reductions, but this option was not included in the final reform package. In 2018, the national government released a draft regulation for a pilot emissions trading scheme, to cover additional sectors such as natural gas and industry. The pilot scheme is scheduled to commence in 2020.⁵⁵

TACKLING URBAN SPRAWL AND ENVIRONMENTAL VULNERABILITY: A BENEFICIAL PROPERTY TAX

Since the 1993/94 tax reforms, local governments have relied heavily on land sales (along with shared revenues) to fund their spending, including infrastructure needs. Over 1.5% of GDP is generated as local revenue from land sales. As outlined in Section 2, the scale of land sales has distorted urban development by incentivising inefficient land use and enabling inefficient local spending and

rent-seeking behaviour. A recurrent property tax^d in China should provide not only an alternative to land sales but also own-source revenues that lay the basis for access to private finance on a fiscally sustainable basis.

New research by Ahmad, Niu, Wang and Wang examines the effects of a “beneficial property tax” on revenues and income distribution in a sample of China’s cities.⁵⁶ This analysis draws on a survey of households and living conditions conducted in 2016 by the Chinese Academy of Social Sciences. The survey covers six provincial capital cities – Guangzhou, Shanghai, Shenyang, Fuzhou, Wuhan and Xi’an – all megacities with over 3 million inhabitants. Shanghai, with a population of 27 million, is a metropolitan area with the status of a province. The smallest of

the cities is Fuzhou, at 3.7 million people. Guangzhou has the highest per capita GDP (CNY 141,933) in the sample, followed by Shanghai (CNY 113,500) and Fuzhou (CNY 102,569). Shenyang and Xi’an have roughly similar per capita GDPs around CNY 70,000. Wuhan, of course, has been the focus of global attention since the outbreak of the coronavirus pandemic.

A recurrent property tax in China should provide not only an alternative to land sales but also generate own-source revenues that lay the basis for access to private finance.

A beneficial property tax could raise 2% of city-level GDP by applying a relatively modest occupancy tax based on property size (CNY/m²) for all properties (see Table 3). The linkage with city-level GDP is designed so that richer metropolitan areas are taxed at higher rates than poorer jurisdictions. For example, Table 4 shows that Guangzhou would generate the highest per square metre tax (CNY121/m²) of the cities in the sample. This is because of its higher per capita GDP, which means the target is harder to reach. By comparison, the tax in Xi’an is much lower, around CNY 49/m². This variation in property tax rates across cities

would provide an important signal to firms and workers, incentivising efficient use of land in highly productive cities as well as investment in and migration to lower-income cities. In practice, the tax could be differentiated further by neighbourhood within cities, to achieve equity objectives, but this is a subject for further work.

^d It may be helpful to distinguish between recurrent and non-recurrent taxation of properties. A non-recurrent tax may take place when ownership of a property is transferred (e.g. a capital gains tax on the sale of a property) or sees a significant increase in value as a result of public investment (e.g. a betterment levy on local investment in mass transit). China uses a range of instruments to tax commercial and residential properties when they are transferred. However, these tax handles do not raise much revenue, and the uncertain timing of transactions means this is not an appropriate revenue stream for raising private capital. By comparison, a recurrent tax generates revenue on a regular basis and therefore is a more reliable revenue source for local budgets. There are typically two broad options for recurrent taxation of residential properties: (1) a US-style model that requires accurate information on the value of a property from up-to-date cadastres; and (2) simpler but more robust mechanisms that approximate valuation changes, such as the size and location of the property.

Table 3. Projected impacts of a property tax to raise 2% of city-level GDP

City	Property tax revenues equal to 2% of GDP (CNY billions)	Current local education spending (CNY billions)	Property tax rate to reach 2% of local GDP (CNY/m ²)	Impact on inequality (Atkinson's index)			Impact on inequality (Gini coefficient)		
				Initial A ₁	Tax only A ₂	Tax/benefit education A ₃	Initial G ₁	Tax only G ₂	Tax/benefit education G ₃
Guangzhou	39.2	32.1	121.4	.60	.76	.75	.39	.40	.39
Shanghai	54.9	84.1	90.8	.71	.51	.50	.40	.41	.40
Shenyang	10.9	11.5	52.7	.63	.49	.47	.33	.34	.33
Wuhan	23.8	23.1	85.1	.52	.47	.46	.33	.35	.33
Xi'an	12.5	12.0	48.8	.47	.57	.49	.35	.36	.34
Fuzhou	12.4	15.3	54.6	.51	.89	.55	.36	.37	.36

Note: The Gini coefficient (G) and Atkinson index (A) are two different measures of interpersonal inequality. The Atkinson index is more sensitive to lower-income groups.

Source: Ahmad, E., Niu, M., Wang, L. and Wang, M., forthcoming. Designing beneficial property taxation for sustainable development in China – evidence from six cities, including Guangzhou.

On its own, the property tax is slightly regressive in Fuzhou, Guangzhou and Xi'an but not in Shanghai, Shenyang or Wuhan. To redress any regressive impacts, the revenues could be directly linked to local benefits such as education, or social housing, including for migrants. Achieving their education spending mandates is a major challenge for local governments in all the case studies. A property tax raising around 2% of GDP would roughly cover current education spending in each of the cities, except Shanghai.^e The Gini coefficients (G) reveal that a property tax linked to an education benefit would effectively reduce average inequality within all of the cities.

The simulations show that local governments should choose the precise form of a beneficial property tax based on their specific population and demographic profiles, and growth strategies. Thus, a policy-maker in Shanghai may prefer to impose a tax on all properties as this in itself improves distributional outcomes in that city. With the higher share of low-income migrants in Guangzhou, the linkage

^e Shanghai has unusually high levels of spending on education, which contributes to its strong performance in international education rankings. This expenditure is partially made possible because of its joint provincial-metropolitan status, so Shanghai benefits from the full provincial-level share of the VAT, unlike the other cities in the sample.

with benefits (including for migrants) is important. In Fuzhou, where migrants have higher incomes, targeting benefits to migrants actually worsens the income distribution. In all six cities, providing a universal educational benefit ensures a progressive outcome.

Beneficial property taxes also need to be accompanied by an equalisation transfer system within cities to ensure a decent quality of local services across all districts. Otherwise, as shown in Table 4, the poorer districts of Conghua, Liwan and Zengcheng will fall short while the prosperous districts of Huangpu, Tianhe and Yuexiu generate a significant surplus that could reinforce inequalities among neighbourhoods.

Table 4: Applying a beneficial property tax to education spending levels in Guangzhou's districts (CNY billions)

Districts	2% GDP property tax	Education spending	Surplus/deficit in financing
Tianhe	7.60	2.43	5.18
Huangpu	6.01	2.17	3.84
Yuexiu	5.82	2.03	3.79
Panyu	3.51	2.69	0.81
Baiyun	3.28	2.66	0.63
Haizhu	3.10	2.08	1.02
Nansha	2.56	1.00	1.56
Huadu	2.34	2.24	0.10
Liwan	2.16	2.35	(0.19)
Zengcheng	2.09	2.63	(0.53)
Conghua	0.75	1.73	(0.98)

Note: Figures in orange are a deficit.

Source: Ahmad, E., Niu, M., Wang, L. and Wang, M., forthcoming. Designing beneficial property taxation for sustainable development in China – evidence from six cities, including Guangzhou. Submitted to the *Journal of Chinese Governance*.

5. Managing fiscal risks in China's cities

Determining the overall resource envelope for government over the medium term, and then apportioning debt limits across lower levels of government, will be critical for a fiscally sustainable urban transition. A key part of this will be determining the own-source tax handles for those levels of government that will be permitted access to capital markets, as explored in Section 4 above. The essential complement to this is ensuring full information on the liabilities generated through their borrowing and PPPs.

In 2001, China introduced the International Monetary Fund's Government Finance Statistics Manual (GFSM2001/14) framework, an integrated system for measuring fiscal stocks and flows, at the central and provincial levels. Treasury systems were modernised at the same time, with the establishment of a nested system of Treasury Single Accounts for the central and provincial governments. The adoption of the full GFSM2001/14 framework and the nested system of Treasury Single Accounts means that the central government should be able to track cash flows in the economy, establish more detailed spending targets for local officials and minimise the diversion of funds.

However, accrual accounting was introduced at the provincial level only in 2015, and local operations are still largely managed on a cash basis. Liabilities are not recorded effectively in the budget and treasury systems, or in local balance sheets. There is also significant debt overhang from the countercyclical policies adopted between 2008 and 2010, when China's stimulus package was substantially financed through UDICs and LGFVs. It seems likely that local governments and their special purpose vehicles will not be able to service this debt, but will have to pass it on to the central government. While the central government has the capacity to handle subnational debts easily, this creates moral hazard and weakens overall budget constraints. Yet without full information on levels of indebtedness, the incentives remain for local officials to meet the detailed spending targets through further build-up of liabilities.

The challenge is exemplified by a case study of City T, an anonymised city with a population of fewer than 300,000 people in a central Chinese province. City T was selected for analysis because of its potential to pursue 3C urban development, its ambitious investment agenda and its excellent connectivity links throughout the region. Table 5 reveals that explicit debt alone is double the amount shown in the official balance sheet but implicit liabilities are four times higher again. This is an exceptionally unusual and important finding, since accurate and timely information on subnational liabilities is of tremendous national importance but data are difficult to generate accurately. These estimates do not include potential liabilities that could be hidden in PPPs, which proved difficult to estimate accurately for City T⁵⁷ and for which there is not sufficient provisioning in the local budget.

Table 5: Estimated actual liabilities of City T city government, 2018 (CNY billions)

	Government liabilities
Explicit liabilities	
General bonds	2.800
Accounts payable	0.887
+ Unreplaceable debt	0.032
+ Special bonds	2.744
Total explicit liabilities	5.576
Implicit liabilities	
Borrowing by local government financing vehicles	8.000
+ Government procurement	6.700
Total implicit liabilities	14.700
Memorandum: Public-private partnerships (PPP) (approximate city-level share of investment)	29.00*

Note: Implicit liabilities are approximate.

*Government capital is assumed to be 30% of total PPP investment

Source: Ahmad, E. and Zhang X., forthcoming. Local government liabilities and sustainable debt in China – evidence from County T in Central China. Submitted to the *Journal of Chinese Governance*.

The bottom line is that City T is unlikely to be able to repay its rapidly accumulating debts, and indeed the full scale of its liabilities is not even clear. Without its own sources of local revenue, and with the current design of fiscal transfers, the local government is incentivised to continue increasing its deficits rather than strengthen its fiscal fundamentals. Many towns across China face the same constraints and perverse incentives as City T.

Consequently, investors are becoming increasingly wary of lending to Chinese local governments. The central government has permitted the issuance of municipal bonds since 2015, expecting that these debts would be easier to monitor than those concealed off balance sheets in UDICs, LGFVs and PPPs. However, since municipal bonds are not backed by own-source revenues, there are expectations that higher levels of government will cover additional debt incurred. Even with special bonds

linked with projects, recourse to the central budget is often required. Similar issues arise with the less well-monitored financing sources such as PPPs. In 2018, the NDRC paused the approval of PPPs to assess the repayment capabilities of local governments. As a result, 2,000 proposed infrastructure projects were suspended or cancelled – including plans for new metro systems in Batou and Hohhot.

A core objective of the 14th Five-Year Plan should be to position local governments to comply with fiscal responsibility targets in their jurisdictions. To achieve this, steps need to be taken to strengthen local governments' capacity to manage debt, both by increasing their own-source revenues through specific tax handles (as outlined above) and by generating full balance sheet information. Significant work is therefore needed to generate full information on arrears and liabilities within local balance sheets as a precondition for future access to credit, whether bank loans, bonds or PPPs.⁵⁸ Pending the development of full balance sheets, the weekly/monthly monetary survey by the People's Bank of China can, with certain assumptions, be used to monitor trends in credit usage and act as an early-warning mechanism for local problems in meeting spending mandates and financing liabilities.⁵⁹

There also needs to be a tightening of the criteria for local borrowing and PPPs, ensuring that liabilities are linked and proportionate to own-source revenues. Revenue-sharing arrangements are not an adequate substitute. The NDRC and Ministry of Finance are already introducing more rigorous standards for infrastructure investment, requiring local governments to have fiscal revenues that are three times higher than under previous criteria, as well as tightening other indicators such as population and GDP. Local governments are also expected to complete more robust feasibility studies, with clearer cost recovery plans and realistic projections of passenger flow.⁶⁰ With these new urban rail investment criteria, metro plans in 13 cities are under threat, including in Guiyang, Kunming, Lanzhou and Xi'an.

This is not to imply that China is halting investment in much-needed urban infrastructure across the central and western provinces. Rather – given the existing subnational debt overhang, the weakly developed subnational tax system and the risks involved with another 2009-type stimulus – the NDRC is acting in a sensible manner, with a carefully targeted expansion of city-level clean investments. For example, the NDRC has authorised a bond issuance for CNY 78.7 billion to finance a light rail system of 135 km in Jilin, a provincial capital in the northeast rust belt. Recognising that neither the provincial nor the city government would be able to handle the financing costs of the bond issuance, the central government will have to meet these costs. The light rail investment will help create a cleaner and more efficient city in the future, making Jilin more attractive for both workers and private investors. This may help revive a deindustrialising city that is losing workers. This financing strategy is entirely in line with the medium-term objective of minimising fiscal risks and using capital investments to stimulate regional economic development while advancing distributional and environmental goals. If successful, the medium-term goal would then be to strengthen the provincial and city governments' balance sheets and repay existing debts so they can undertake responsible borrowing and investment in the future.

6. Conclusions

The Government of China has outlined three major priorities for the next few years:⁶¹ (1) tackling risks, including liabilities that are accumulating at the subnational level; (2) addressing extreme poverty and rising inequality; and (3) creating a less polluted, climate-safe environment.

The decisions made in and around cities will be critical to achieving these goals. Almost two thirds of China's residents already live in urban areas, which will expand by over 250 million people in the next 30 years.⁶² In that same time, the

world must decarbonise its energy, industry, land use, urban and infrastructure systems to hold global warming to no more than 1.5°C. Nurturing a network of compact, connected and clean cities across the country – especially in China's poorer central and western provinces, but also in the richest eastern provinces – will be key to rebalancing the economy, sharing wealth more equitably and safeguarding the natural environment. Providing high-quality services and a liveable environment will be necessary to counter the continuing incentives pushing firms and people to migrate to the coastal megacities, and to instead attract skilled workers to emerging cities in the interior.

To fund and finance this immense urban transition, the Government of China needs a far-sighted, multi-level fiscal strategy. The introduction of a central tax administration, a VAT and a fiscal equalisation system in the early 1990s did a great deal to expand public revenues and improve the efficiency and equity of the tax system. However, the subsequent integration of

the VAT and local business tax placed significant pressure on local budgets, which local governments have partially filled through extensive borrowing and PPPs. Fiscal reforms are urgently necessary to create the right incentives for a sustainable, inclusive urban transition with effective, accountable local governments.

This paper underscores two key planks of this effort.

First, it is urgent that provincial and city governments have own-source revenues based on specific tax handles with the authority to set the rate at the margin.

Currently, local governments depend heavily on land sales, a financing mechanism that is fuelling costly and environmentally detrimental urban sprawl. Access to own-source revenues would improve local governments' accountability for service delivery and protect their budgets from the effects of national tax cuts. It would also create incentives for prudent fiscal management by enabling sustainable access to private finance. Carefully designed subnational tax handles can help the national government achieve its distributional and environmental goals. National legislation is needed to authorise the collection and use of alternative tax handles.

Nurturing a network of compact, connected and clean cities across the country will be key to rebalancing the economy, sharing wealth more equitably and safeguarding the natural environment.

This paper recommends:

1. A piggy-back on the personal income tax. This would generate substantial own-source revenues for local governments. It could also reduce interpersonal inequality within provinces and cities in two ways: first, by increasing the marginal tax rate on high-income earners and second, by encouraging local governments to generate the information that can expand the tax base beyond wages to assets, profits and rents.
2. A piggy-back on a national carbon tax. A national carbon tax would help achieve environmental goals by signalling the importance of greenhouse gas emission reductions and preventing a race to the bottom. A piggy-back on this carbon tax would permit the dirtiest provinces and cities to impose higher marginal rates, aggressively tackling congestion, air pollution and greenhouse gases.
3. A “beneficial property tax”, whereby a simple tax based on occupancy, location, property size and the cost of local service delivery is explicitly linked to specific public services, such as education. A beneficial property tax would help achieve distributional goals by improving the taxation of assets and enabling vulnerable unregistered migrants to access services. Simulations suggest that a property tax that is clearly linked to benefits should reduce inequality, which would help overcome political resistance. A property tax is also important for increasing equity by bringing significant assets into the tax net, including for capital gains taxes, and for generating the information needed for the use of more sophisticated land-based financing mechanisms such as betterment levies.

Second, local governments must urgently incorporate full information on liabilities into their balance sheets. The case study of City T illustrates the possible extent of hidden indebtedness at the local level in China, and is consistent with more preliminary data from Guangzhou, Nanchang and Jieshou. The GFSM2001/14 framework has only recently been introduced to sub-provincial governments, and much more work needs to be done to fully record their actual and prospective liabilities. The framework should be adopted by all levels of government as a precondition for debt financing or PPPs. Improved recording and monitoring of liabilities should be complemented by more stringent criteria for new infrastructure projects to ensure all capital investments are helping create compact, connected and clean cities. Such efforts should also be coupled with a reassessment of spending assignments to ensure local governments’ responsibilities are proportionate to shared and own-source revenues.

These reforms could not only mobilise the funding and finance necessary for China’s urban transition but also establish the incentives necessary to advance the central government’s other urgent priorities: accountable local governments, balanced macroeconomic growth, high-quality public services, cleaner air and falling greenhouse gas emissions. In this way, China’s fiscal policy can help secure national economic prosperity and improve quality of life while tackling the climate crisis.

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ABOUT THE COALITION FOR URBAN TRANSITIONS

The Coalition for Urban Transitions is the foremost initiative supporting national governments to secure economic prosperity and reduce the risk of climate change by transforming cities. The Coalition equips national governments with the evidence and policy options they need to foster more compact, connected, clean and resilient urban development. The Coalition's country programmes in China, Ghana, Mexico and Tanzania provide models for other countries on how to effectively develop national urban policies and infrastructure investment strategies.

A special initiative of the New Climate Economy (NCE), the Coalition for Urban Transitions is jointly managed by C40 Cities Climate Leadership Group and the World Resources Institute Ross Center for Sustainable Cities. A partnership of 35+ diverse stakeholders across five continents drives the Coalition, including leading urban-focused institutions and their practice leaders from major think-tanks, research institutions, city networks, international organisations, major investors, infrastructure providers, and strategic advisory companies.

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