

Thailand Urban Infrastructure Finance Assessment:

Challenges and Opportunities

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Acronyms

AFD	Agence Francaise de Developpement
ANC	African National Congress
AWC	Andaman Wellness Corridor
BAAC	Bank for Agriculture and Agricultural Cooperatives
BCG	Bio Circular Green Economy
BMA	Bangkok Metropolitan Administration
BTS	Bangkok Mass Transit System
CCTV	Closed-circuit Television
CDC	City Development Corporation
CMU	Chiang Mai University
DEPA	Digital Economy Promotion Agency
DFI	Development Finance Institutions
DOLA	Department of Local Administration
DSCR	Debt-service Coverage Ratio
EEC	Eastern Economic Corridor
EV	Electric Vehicle
GDP	Gross Domestic Product
GHB	Government Housing Bank
GO	General Obligation
GSB	Government Savings Bank
ICE	Internal Combustion Engine
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KKTS	Khon Kaen Transit System
KKU	Khon Kaen University
KTB	Krung Thai Bank
LAO	Local Administrative Organization
LCC	Low Carbon City
LGFV	Local Government Financing Vehicles
LLCR	Loan Life Coverage Ratio
LRT	Light Rail Transit
MFMA	Municipal Finance and Management Act
MIIU	Municipal Infrastructure Investment Unit
MoHUA	Ministry of Housing and Urban Affairs
MoU	Memorandum of Understanding
MRTA	Mass Rapid Transit Authority
NBC	Nakhonsawan Biocomplex
NEC	Northern Economic Corridor
OECD	Organisation for Economic Co-operation and Development
ONWR	Office of the National Water Resources
OTP	Office of Transport Policy and Planning
PAO	Phuket Provincial Authority Office
PCAT	Project Concept Assessment Tool
PDMO	Public Debt Management Office
PLA	Polylactic Acid

PMI	Partnership for Marker Implementation
PPP	Public–Private Partnership
PSU	Prince Songkhla University
PWA	Provincial Water Authority
RAS	Reimbursable Advisory Service
SALGA	South African Local Government Association
SEPO	State Enterprise Policy Office
SMEs	Small and Medium-sized Enterprises
SPV	Special Purpose Vehicle
STeP	Science and Technology Park
THB	Thai Baht
TOD	Transit-Oriented Development
ULB	Urban Local Body
US	United States
WBG	World Bank Group

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Executive Summary

Urbanization in Thailand has been uneven. Bangkok has been the focus of urbanization, economic growth, and urban investment. The urbanization of Bangkok and the surrounding region has been responsible for a great deal of Thailand's economic growth. As that growth has slowed, it is time to consider what role secondary cities can play in continuing Thailand's growth trajectory and expanding the benefits in their regions. To play their part, these cities must have access to capital for investment in the infrastructure on which economic growth and sustainability depend.

Enabling secondary cities to take on a greater share of urban investment would benefit the nation as a whole. With an enabling policy environment, these cities can attract private sector investment without a national guarantee. The municipalities are likely to need encouragement, mentoring and support to step assertively into this role, but the fundamentals are there. They have a solid tax base and regular operating surpluses, which provide a solid foundation. Greater flexibility, autonomy, and accountability are necessary if municipalities are to develop their creditworthiness and borrowing capacity, and thus attract the interest of investors and lenders, without creating fiscal risk for national government. The central government has its own fiscal challenges, and these should not hold the cities back from raising their own capital.

The Khon Kaen Model¹ and the broader issues. As requested by Khon Kaen University (KKU), our research began with an examination of the Khon Kaen Model and the Khon Kaen Development Corporation. As part of the Khon Kaen Model, a group of private investors has agreed to contribute the full capital cost of building a light rail network, which would then be operated as a public–private partnership (PPP). The proposal is at an advanced stage and has received necessary approvals, though construction has not begun. The specific circumstances leading to this private sector contribution may rarely be replicated, therefore we have also considered more conventional ways of attracting private investment, i.e., through municipal borrowing and PPPs.

Five cities' project proposals were assessed. As a starting point, our team evaluated the interest of the private sector and the readiness of the public sector in the context of 26 proposed projects in five cities: Chiang Mai, Rayong, Nakhon Sawan, Khon Kaen, and Phuket. Three of the projects were judged to be good candidates for PPPs. Nine projects were judged to be potential candidates for PPPs but would need more developed proposals to be certain. The remaining 14 proposals were either unsuitable for PPPs or were not clearly enough developed to demonstrate what their potential might be.

The readiness of municipalities was assessed. All five cities were judged to be potentially creditworthy, though they have not yet engaged with rating agencies, potential lenders, or investors to test how the market will react. None have prior experience with long-term PPPs

¹ The 'Khon Kaen Model' refers to the decades-long process of civic engagement by the private sector, which has led to the formation of a the Khon Kaen City Development Corporation, which is the first such institution in Thailand. One result of the process is the private-sponsored approach to funding a proposed light rail project. Its admirers sometimes focus on these outputs, rather than the ongoing collaborative process.

where investment and risk are shared, though some have entered into concessions which allow entrepreneurs to use municipal property for business ventures. The local administrative organizations (LAOs) were not aware of potential sources for funding and capacity to help support PPPs. Their planning and budgeting policies are reasonable but would need a longer-term planning horizon to support municipal borrowing or PPPs. The LAOs have the legislative authority for infrastructure and service delivery, and PPP legislation authorizes them to enter into partnerships for such projects. In short, these five municipalities are ready to consider PPPs, with appropriate support and mentoring.

Thailand's urban infrastructure challenge is much bigger than these proposals. The core challenge facing Thai policymakers is how to finance the infrastructure needed in secondary cities to support economic growth in their regions and to adapt to a changing climate. Like many other countries, Thailand adopted decentralization legislation in the 1990s, but moving real responsibility for infrastructure planning and investment to municipalities is not yet a reality. LAOs remain fiscally dependent on the center. As elsewhere, a fundamental challenge of fiscal decentralization is that it asks central authorities to give up control over decisions about local spending and capital investment priorities. LAOs have not yet been given the authority and autonomy they would need to take control of their own investment planning and financing.

While there will be challenges, empowering secondary cities to develop infrastructure appears promising. Among the challenges would be to ensure accountability and transparency in local decisions, and to promote participatory and collaborative decision-making involving residents, businesses, civil society, and other levels of government. The potential payoffs include expanded growth opportunities in these cities and their surrounding regions; innovation and experimentation in meeting the needs of communities, business, and industry; a higher quality of life for more people; and increased global and regional competitiveness. The key will be to help these cities build up the technical, management, and governance skills to meet these new challenges. Based on what our team has encountered in the five cities we visited, this is a realistic and promising prospect. At the same time, shifting more authority and accountability to the municipal level would represent a significant change from current patterns of thinking about responsibility for infrastructure development and financing.

A clear national framework for financing local infrastructure would be helpful. A well-designed framework for municipal borrowing and PPPs can accelerate the provision of services to citizens and enterprises. Such a framework would provide policy guidance to all levels of government, to the private sector, and to regulators of pension funds, insurance funds, and financial institutions. Lessons from elsewhere demonstrate that developing and implementing such a framework will take time, perseverance, and coordination. The outcome can be significant urban investment.

We suggest four main activities to support a paradigm shift. To catalyze a transformation in how infrastructure is developed and funded in secondary cities, we recommend four key initiatives. These proposed actions will only be impactful if there is dedicated leadership and a long-term commitment to adopt a new paradigm. Our suggestions lay the foundation for a significant departure from status quo approaches to infrastructure in these cities. These four

efforts could run in parallel—they are not necessarily sequential. Actualizing this shift would require strong champions in positions of leadership and influence, who are willing to commit to a vision of capable municipalities that can access private capital to build infrastructure and their local economies. These activities are as follows:

1. **White Paper:** We suggest the development of a White Paper that that lays out a framework for financing local infrastructure at the municipal level. Such a White Paper would include specific policies and strategies that will enable municipalities to attract investment for local infrastructure through a combination of borrowing and PPPs. The development of this framework document would require inputs from those who will lead the paradigm shift effort, and those who will be affected. It would describe what will be required of national government, municipalities, and the private sector. Engaged discussions around which policies are to be included could support a paradigm shift and help participants internalize and ‘own’ an approach that puts more responsibility on municipalities to define and meet their needs for investment, and that gives them more authority and accountability in these matters.
2. **Policy Unit:** We recommend a policy unit in the Ministry of Finance (or elsewhere) to manage and monitor policy implementation; to manage a database of municipal infrastructure projects, financing arrangements, and PPPs; to conduct research and analysis on local infrastructure projects and financing; and to support the market by regularly convening shareholders to discuss policies and projects. Some of this work is already being done, or is anticipated by law to be done, by the Public Debt Management Office in the Ministry of Finance. This unit could take on some additional responsibilities, or these responsibilities could be assigned elsewhere.
3. **Infrastructure Investment Support Unit:** We suggest a municipal infrastructure investment support unit that would make experts in engineering, finance, planning, and law available to directly support and mentor local officials as they develop their capital planning skills and seek investment capital, whether through municipal borrowing or PPPs. This would ideally be a relatively autonomous unit that would be seen by local officials as trustworthy in championing and supporting their infrastructure efforts. Its work would be practical, helping guide municipalities in how best to prepare long-term plans and specific project proposals, how to seek municipal bond credit ratings if appropriate, and how to engage with prospective lenders, investors, and partners. As more local infrastructure is created, this unit could also support municipalities in implementing and operating the new projects or PPPs.
4. **Project Development Fund:** We suggest the creation of a project development fund which could provide financial resources to fund advice, mentoring, and professional services to support LAOs interested in borrowing for infrastructure or in developing PPP projects. Resources could be provided from the national budget and/or from bilateral development partners or multilateral development banks. To promote responsible use of the fund, municipalities could be required to contribute a small amount when tapping into it. This co-investment could turn the fund into a force multiplier, rather than an easily accessible free resource. Any advances made from the project development fund could be repaid out of project financing, if and when

projects come to fruition. It could thus be a revolving fund that at least partially recovers its expenses.

Local capacity is required. It is easy and perhaps facile to say that municipalities lack absorptive capacity, but capacity cannot be developed in the abstract. As municipalities begin to take more responsibility for local infrastructure, they will develop capacity. To speed that process, serious and sustained efforts will be needed to empower, mentor, and support local officials as they take on new tasks. Learning by doing can allow municipal officials to build practical skills. Advisors and mentors can provide close guidance and feedback as local officials carry out tasks such as: identifying needs across sectors; developing long-term capital improvement plans; forecasting revenues and expenditures; projecting the impact of various projects on these forecasts; and developing long-term financial plans. Advisors with capital market and investor experience can help these municipalities articulate their needs, their plans, and their commitment to potential lenders, investors, and partners. An explicit capacity development strategy would be useful, with clear objectives, indicators, and methodologies. On-the-job training and mentoring will be particularly important as local officials grow into their expanded roles.

National and provincial capacity is also needed. The responsibilities of the Ministry of Finance, Ministry of Interior, and sectoral ministries would shift as, and if, responsibility for local infrastructure investment is assumed by the municipalities. Just as local officials will need to learn new skills, the national government will need to embrace new roles as regulator, enabler, and facilitator to help municipalities access financing for infrastructure, especially from private/commercial sources. The national government will want to monitor the impact of reforms and look for ways to streamline or eliminate reviews and approvals at the provincial or national level. National and provincial officials would need to understand and embrace a more autonomous and accountable role for LAOs, even as they collaborate with them to ensure that infrastructure and financial planning is integrated and coordinated.

Differentiated functions. We preliminarily suggest two different units at the national level: a municipal finance policy unit would focus on ensuring a supportive policy environment as municipalities take on expanded responsibility for planning and financing infrastructure; and an investment support unit would provide active, hands-on support, mentoring, and advice to local officials taking on these new planning and financing challenges. On balance, our perspective is that these two jobs are sufficiently different and challenging to require separate focus and discipline in achieving their different objectives. However, if it is felt that the separate tasks can be performed by a single unit, there could be advantages in that approach e.g., more direct feedback from experience with municipalities to inform policy adjustments. In any event, it is probably premature to make any concrete decision on such institutional arrangements at this stage. It may be sensible to begin with the White Paper process described above.

1. Thailand's Urban Infrastructure Investment Matters

Thailand has made remarkable progress in reducing poverty from 58 percent in 1990 to 6.8 percent in 2020. This has been associated with steady urbanization, as more people are drawn to jobs and opportunities in urban areas and as agglomeration effects make these urban areas more productive.

Bangkok has been the focus of urbanization, economic growth, and urban investment. Bangkok has dominated Thailand's urbanization process and has become one of the biggest cities in the region. It is the center of government, industry, commerce, and finance. Bangkok's growth and size have also shaped development in surrounding provinces. However, today Thailand has a network of secondary cities beyond the Bangkok metropolitan area. As these secondary cities grow, their need for infrastructure investment to serve residents and firms also grows. Continued and sustainable growth in these cities is critical for Thailand's competitiveness and economic development.

Secondary cities are not keeping up. Most of the municipalities with which the World Bank Group (WBG) research team met with are experiencing difficulties associated with an expanding population and economic growth. It is critically important to local officials that they find ways to access capital for improvements to water and wastewater systems, solid waste management systems, and transport systems. Any city's economic and environmental sustainability demands constant investment. Thailand's LAOs are beginning to understand that they cannot rely solely on central government budgets. They want to find new ways to finance urban infrastructure and city development. At the same time, taking on the responsibility for infrastructure finance will be a stretch for these LAOs which have traditionally relied on the central government to pay for core infrastructure that could support economic development and job creation.

Strong secondary cities can contribute to growth and help reduce rural poverty by providing accessible economic opportunities to people living in rural areas, including alternative employment for the rural surplus population. Urban growth brings better roads, more extensive and reliable electrification, markets for agricultural products, access to education, and better health services. These growing cities can also bring environmental benefits. Infrastructure and public services such as water, wastewater, and solid waste management are more cost-efficient to build and operate in urban areas. The urban infrastructure that enables productive firms to grow and compete is a key to both economic growth and long-term sustainability. Enterprises of all sizes need dependable water and electricity² to make goods and deliver services; they need good roads and efficient transportation to get raw materials in and finished goods out; and they need collaborative local, regional, and national governments to ease regulatory barriers and ensure a predictable environment for their investments.

² Some secondary cities operate water pipelines, while others rely on the Provincial Waterworks Authority. The bulk of electricity generation is handled by the state-owned Electricity Generating Authority of Thailand, and outside of Bangkok distribution is the responsibility of the Provincial Electricity Authority.

A changing climate requires more robust urban infrastructure. Thailand has experienced increasingly severe floods and droughts since the middle of the 20th century, with increased flood risk during wet seasons and more severe water shortages.³ Climate change will continue to increase the frequency and intensity of both floods and droughts, and the economic costs associated with each. The impact on the economy and livelihoods is substantial, including significant losses in the manufacturing sector. The impacts are not limited to companies that are directly affected, e.g., when there is damage to transport networks. Infrastructure measures to address a changing climate include better urban storm management facilities to cope with floods, and investments in water storage capacity, and repairs to leaking distribution systems to improve water use efficiency.

The national fiscus cannot support the amount of urban investment that is required. It is increasingly clear that urban investment needs, in these secondary cities, are greater than can be borne by the national fiscus, which is experiencing its own stresses and financial demands. From July of 2020 to March of 2023, Thailand's national debt has grown from 47.11 percent of GDP to 61.63 percent of GDP,⁴ as the country was forced to deal with global crises such as COVID-19, the war in Ukraine, and supply-chain issues. Strategically, it is therefore important that the national government supports these cities in attracting their own capital from diverse sources. This implies that the national government can be more of a regulator and facilitator, and less of a direct funder of urban infrastructure.

These secondary cities could attract investment capital without a national guarantee. Although these cities have not yet taken on the full responsibility for attracting investment, they could do so with appropriate mentoring and support. Within their regions, these cities are the center of economic activity. They are where local wealth and incomes are concentrated, and where the agglomeration effects that have worked to Bangkok's advantage can raise incomes, create jobs, and boost the economy. These cities have a solid tax base, although their ability to tap into that tax base was restricted during COVID-19. As these restrictions are lifted, these cities should be able to raise the necessary capital on the strength of their revenue streams, including both own-source revenues and dependable, predictable transfers. Even with these revenues, secondary cities seeking to attract capital investment must have greater flexibility, autonomy, and accountability. Moving in this direction is necessary if LAOs are to develop their creditworthiness and borrowing capacity, and thus attract the interest of investors and lenders, without creating fiscal risk for national government.⁵

Enabling cities to raise capital reduces pressure on the national treasury. To the extent that LAOs are empowered to attract financing directly, there is less of a need for grant funding, and less of a burden on the national government's fiscal resources. This will allow the national government to focus more of its resources on national level investment priorities.

³ World Bank Group. 2023. Building a Resilient Future: Coping with Droughts and Floods, Thailand Economic Monitor.

⁴ Public Debt Management Office. <https://www.pdmo.go.th/en/public-debt/debt-outstanding>

⁵ It would be easy to help LAOs to attract investment if the national government were to provide guarantees or otherwise assume the risk of non-payment, but this could lead to reckless lending and create significant fiscal risk.

In enabling municipalities to raise capital, it is important to manage fiscal risk. No one should encourage lending to weak or financially struggling LAOs. Municipalities must be able and willing to ensure that investors and lenders can be repaid, and those lenders and investors must do their due diligence. They must satisfy themselves that any municipality with which they are dealing has sound management, including but not limited to financial management. Investors and lenders are putting their capital at risk, and they must assure themselves that the municipality can and will pay its debts. Expanding municipalities' access to private sector finance puts new burdens on all parties: national government, local government, and private sector financiers.

A clear national framework for financing local infrastructure could be helpful. A well-designed and widely supported framework for municipal borrowing and PPPs could accelerate the provision of services to citizens and enterprises. Such a framework could provide policy guidance to all levels of government and clarify roles and responsibilities. It could signal the importance of urban investment to the private sector, to fund managers, and to regulators of pension funds, insurance funds, and financial institutions. The development of such a framework is itself an opportunity for building consensus about the way forward. Lessons from other countries demonstrate that developing and implementing such a framework will take time, perseverance, and coordination. A coherent and consistent approach can generate significant urban investment.

Thailand is at a crossroads. If policymakers want to spread the benefits of urban economic development to all regions of the country, and to enable secondary cities to develop the infrastructure needed to support economic growth, then they must choose how to achieve these things. Secondary cities like those we have studied can play an important role in restoring Thailand's growth trajectory, ensuring that the benefits of growth are spread equitably around the country, and addressing the risks and costs of climate change. How can this be achieved?

The policy choice. Since embarking on the decentralization path in the 1990s, Thailand has only gone part of the way down the road of LAO fiscal autonomy and accountability. One option is to keep moving in this direction by consolidating local governance, supporting secondary cities, and making fully effective the powers and functions given to LAOs in the Municipalities Act, the Decentralization Act, and the PPP Act. That is the direction in which this

A Traveler

A traveler approaching a crossroads spotted a man coming towards him. He asked, "does the road to the left lead to the village?"

"It does indeed," said the man.

The traveler took a few steps down the left road, then stopped and looked back, unsure. "How about the road to the right?" he called out. "Where does that one lead?"

The man replied, "It also leads to the village, by a longer route."

The traveler turned around and took the road to the right instead. He walked for some time before stopping halfway down the road, paralyzed by indecision. Unable to pick a direction, the traveler remained stranded between the two paths.

The man shook his head as he passed the traveler. "You only get halfway there if you are unable to commit to a choice."

paper points. An alternative would be to decide that decentralization is, after all, not right for Thailand, and instead consolidate central responsibility for infrastructure and development. This is essentially a political choice, so it will be important to understand the political dynamics and willingness of the various stakeholders to commit to one path or the other.

What should be the role of LAOs in infrastructure investment? This paper proposes that LAOs can generate a greater share of their own revenues, if they are willing and if the national government provides an enabling and supportive environment.⁶ LAOs can then leverage their recurring revenues, through borrowing and/or PPPs, to access the capital needed to build the infrastructure that drives economic growth. This responsibility for infrastructure investment would represent an expanded role for most of these LAOs, and they would require significant support, mentoring, and guidance to do so.

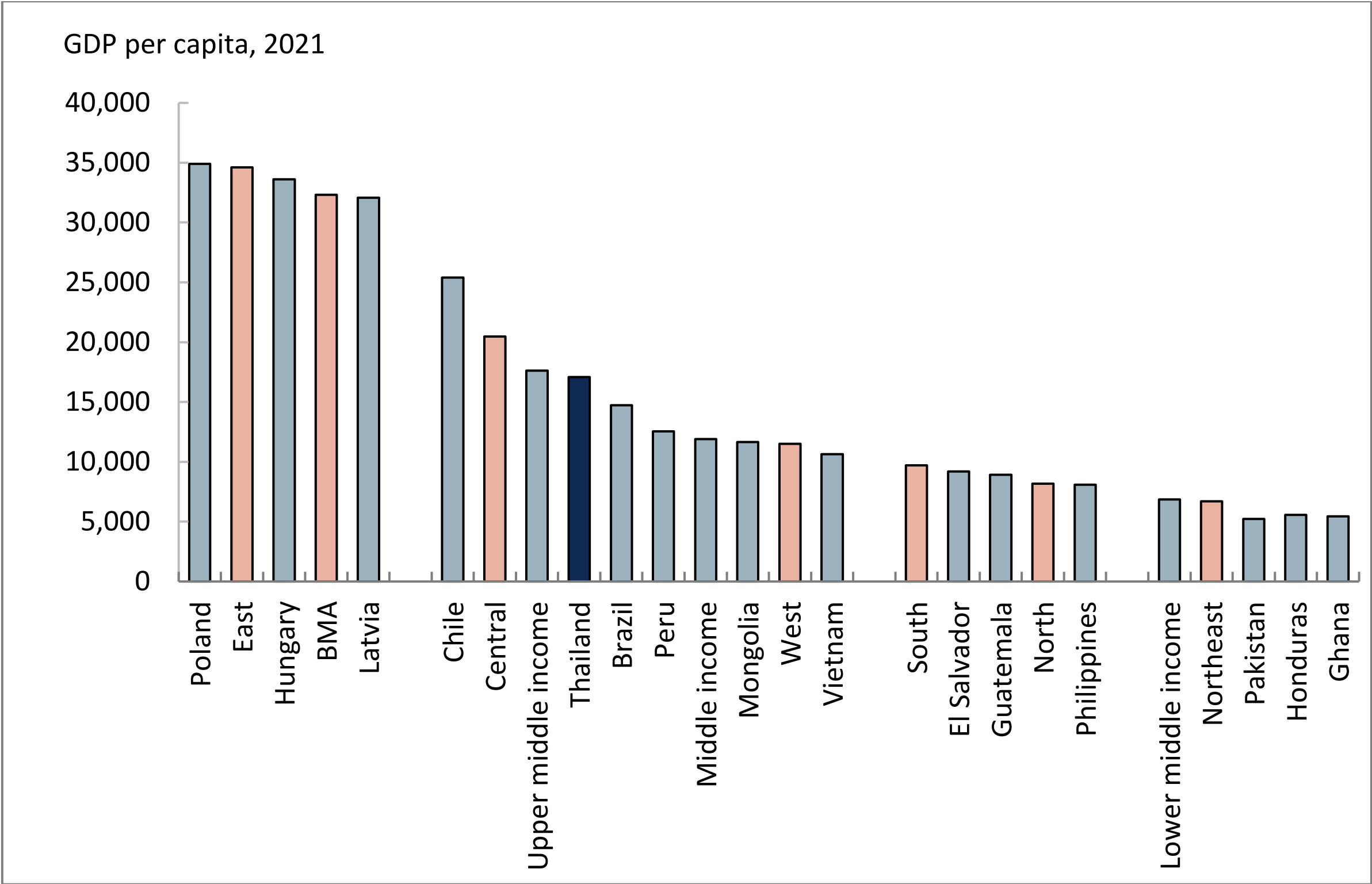
Integrating sustainability into notions of growth. While national economic growth clearly matters, focusing exclusively or excessively on national GDP trends risks leaving regions behind, and can hide distributional inequalities. Over the past several decades, we have learned that sustainable economic growth means that we must also protect natural resources, the environment, and the social fabric. A 2018 OECD report documents Thailand's progress towards upper-middle-income status, and its success in reducing poverty. At the same time, the report points out that "economic development has taken a toll on the environment and the benefits of prosperity have not been shared evenly nationwide."⁷ A key recommendation of this report was that Thailand commit to effective multi-level governance work, including subnational finance systems. The present report suggests some options for shaping the intergovernmental and sub-national fiscal architecture, specifically for Thailand's secondary cities. These cities are growing quickly and are poised to help spread economic opportunity and prosperity in their regions.

Addressing regional disparities. GDP per capita across Thailand is so diverse that different regions can be compared to countries at all stages of development (See Figure 1). Secondary cities across Thailand's regions have various challenges and opportunities. Some cities are in regions that focus on tourism, others depend on agriculture, and still others on industrial productions. These varied circumstances place different demands on roads, energy, water, and other inputs. LAOs need flexibility to respond to these challenges, and to develop policies aimed at solving local challenges and taking advantage of local opportunities. To be most effective, LAOs cannot be mere implementers of national policies. They must be able to target their fiscal policies (taxing and spending), their capital investments, and their planning to meet the needs of both families and firms.

⁶ A study of the revenue potential of these secondary cities, based on reasonable estimates of land and building values in each city, and using the centrally determined Land and Building tax rates, would be useful.

⁷ OECD. 2018. Multidimensional Review of Thailand: Volume 2. In-depth Analysis and Recommendations, OECD Publishing, Paris. <https://doi.org/10.1787/9789264307674-en>

Figure 1. Thailand's regions compared with benchmark countries



Note: For comparative purpose, GDP per capita is measured in PPP (constant 2017 international \$).
Source: NESDC and World Development Indicators database.

2. Our Findings

2.1 Scope of Our Investigations

Our mandate. The research reflected in this report represents the World Bank Group’s first engagement with Thailand’s LAOs and responds to an initiative by the Khon Kaen University (KKU), acting on behalf of, and in consultation with, the participating cities and national entities. KKU identified the affordability of infrastructure as one of the fundamental challenges facing subnational government. KKU further asked the Bank to enter into a dialogue with the cities with a view to understanding the efficacy of what is known in Thailand as the ‘Khon Kaen Model’.

The research questions. Our investigations into financing local infrastructure in these cities began with three research questions:

1. To what extent can the emerging innovative approach of public–private collaboration through city development corporations promote and advance urban infrastructure investment in cities across Thailand?
2. What are key supporting factors and constraints for the five target cities to obtain private and/or other types of innovative funding and financing for their urban infrastructure investment projects?
3. Do city/local governments and relevant agencies have absorptive capacity to attract and implement financing currently or potentially available to them for their capital infrastructure investment needs?

We began our work by exploring the potential of the Khon Kaen Model. As we gathered feedback from LAO officials and came to understand the gaps and challenges faced by potential financiers (domestic and foreign), it became appropriate to consider broader issues connected with unlocking investment in local infrastructure. While answering the three specific research questions, we also suggest some preliminary thoughts on the broader question of how Thai municipalities might unlock investment in urban infrastructure.

What do we mean by urban infrastructure? When speaking about investment in urban infrastructure, it is useful to be specific about what we mean. Every country is different, and even within countries, there are often different arrangements in different places. See Table 1 for a sample of typical urban public and private infrastructure.

Table 1. Typical Urban Infrastructure in Thailand

Roads and highways	Usually public, though toll roads and bridges may be built and/or operated by private firms
Mass transit	Rail and buses are usually public, and there are often private operators of minibuses, metered taxis and tuk-tuks
Water and wastewater	Usually public, though private operators and PPPs are not unusual
Solid waste management	Mostly public, but private collection is not uncommon, and PPPs for waste disposal sites are increasingly common
Telecoms	Increasingly private, though some public systems remain
Electricity	Considerable variation: public and private models are widespread
Schools	Usually public, though private schools often serve higher-income students
Hospitals and clinics	Both public and private models are widespread, and may exist side-by-side
Parks	Usually public, though theme parks and amusement parks are often private
Housing	Private developers create most housing, especially market rate units. Public authorities are often responsible for social housing
Libraries	Usually public

Source: World Bank Study Team

As we can see, there is room for private involvement in most urban sectors. That said, it can be difficult to attract private partners where the legal and regulatory regime is cumbersome or unpredictable. As experience in Thailand’s Eastern Economic Corridor has shown, although PPP-specific processes can be accelerated, there are many other rules that can come into play. This includes legislation and regulation related to specific sectors, such as water or transport, as well as environmental protection legislation and other safeguards.

PPPs are not charities. Even where the regulatory regime is conducive, private firms seldom provide public infrastructure and services as a matter of charity. Rather, they invest where they see a profit opportunity. This could include direct revenue from user fees such as tolls, or availability fees to be paid by a LAO or state agency. Alternatively, the profit potential can be indirect. Infrastructure investments can increase land values. Highway interchanges, mass transit stations, or network services can increase the value of nearby private property. The potential increase in land value may be part of the picture in Khon Kaen. It might be interesting to know more about the land holdings of project proponents.

The Khon Kaen Model may offer a useful template, where there are interested private actors, whose agendas align with the public interest. There are at least three challenges in applying this model of private investment in other cities and to other types of infrastructure. First, not every city will have entrepreneurs willing to take on the burden of planning and financing public infrastructure. Second, the infrastructure agenda of private entrepreneurs may not be fully aligned with a LAO's own development objectives, i.e., there may be tensions between the development agenda of private actors and the broader public interest. Third, it should be recognized that there is a long backstory leading up to the Khon Kaen Model. The model, as it now appears, represents decades of accumulated effort and discussion.

There are proven alternatives to the Khon Kaen Model. Private funding of public infrastructure with no-strings-attached capital is highly uncommon globally and depends on exceptional circumstances. To the extent that the Khon Kaen Model relies entirely on private funding, it is not likely to be a reliable model for financing urban infrastructure at the scale that these municipalities require. Accordingly, this report considers two established models for mobilizing capital, with which many cities around the world have had success. With or without city development corporations, these cities need to grow their local economies, create jobs, contribute to national economic growth, and reduce economic disparities. Therefore, Thailand's secondary cities may consider raising capital for investment through municipal borrowing and/or PPPs:

1. **Municipal borrowing** can take the form of loans, municipal bonds, and sometimes financing leases. When relying on municipal borrowing, the municipality would usually retain responsibility for seeing to the design, construction, and operation of the infrastructure, and the lender's role would be limited to the provision of capital. In exchange for up-front capital, the city promises to repay the lender or investor over time, with interest. In the municipal borrowing scenario, the city retains both responsibility and risk. If the project is poorly designed or operated, the city cannot look to lenders for relief. The city, having borrowed the money and promised to repay, must do so regardless of whether it has used the money wisely.
2. **Public-private partnerships (PPPs)** can take many forms. A PPP can offer both private capital and expertise in the design, construction, or operation of a facility or service. The difference from the Khon Kaen Model is that in a PPP the private sector is not usually expected to take on the whole burden of planning and financing infrastructure. In a true PPP, both the public and the private party bring something to the table. In appropriate cases, PPPs can bring solid private expertise and finance to the table, and risk can be shared between the parties. However, not every local infrastructure project is suitable for a PPP, and many will not be able to attract private partners. It takes significant capacity in the public entity to develop and manage a sound PPP, and it can take a lot of work to balance risk appropriately. If problems arise, or priorities change, it can be complicated and expensive to unwind a PPP.

Paradigm shift or paradigm adjustment? Both municipal borrowing and PPPs will be discussed in more detail later in this paper. We will also describe what changes in legislation and mindset might be needed for municipalities to meaningfully engage with investors and lenders. The essential change would involve reconceptualizing the powers and functions of municipalities, shifting more responsibility and accountability to the local level. There are

institutional and legal constraints to consider, but the bigger change might be to engage with the idea of increasingly self-sufficient municipalities.

Assessing project proposals and LAO readiness. Both the Khon Kaen Model,⁸ where the private sector is willing to pay for all of the light rail transit network, and the typical PPP model envision significant private sector involvement. The usual motive for the private sector to invest is profit: private sector investors can be attracted to the stable long-term revenue prospects of essential infrastructure. In some cases, and the Khon Kaen Model may illustrate this, the private sector may invest out of a sense of civic and social responsibility, or because private interests own property that will benefit indirectly from reliable public infrastructure. The WBG team used two tools to help test the interest of the private sector and the suitability of the Khon Kaen Model and/or the PPP model in the case of specific local proposals:

- 1) The team adapted the **WBG Project Concept Assessment Tool (PCAT)** to help assess the feasibility and readiness of project proposals, and specifically whether they have potential as PPPs. Using the adapted tool, each city undertook self-assessments of their proposed projects. The self-assessment results reflect how the cities perceive the technical, financial, and legal viability of their proposed projects.
- 2) The team also adapted the **WBG Municipal Readiness Tool** to consider fundamental questions concerning the municipalities' institutional capacity and the applicable legal and regulatory framework. This tool can help a city assess its capacity to implement a PPP and identify reforms that may be needed to use PPPs more effectively.

2.1.1 Assessing Project Proposals

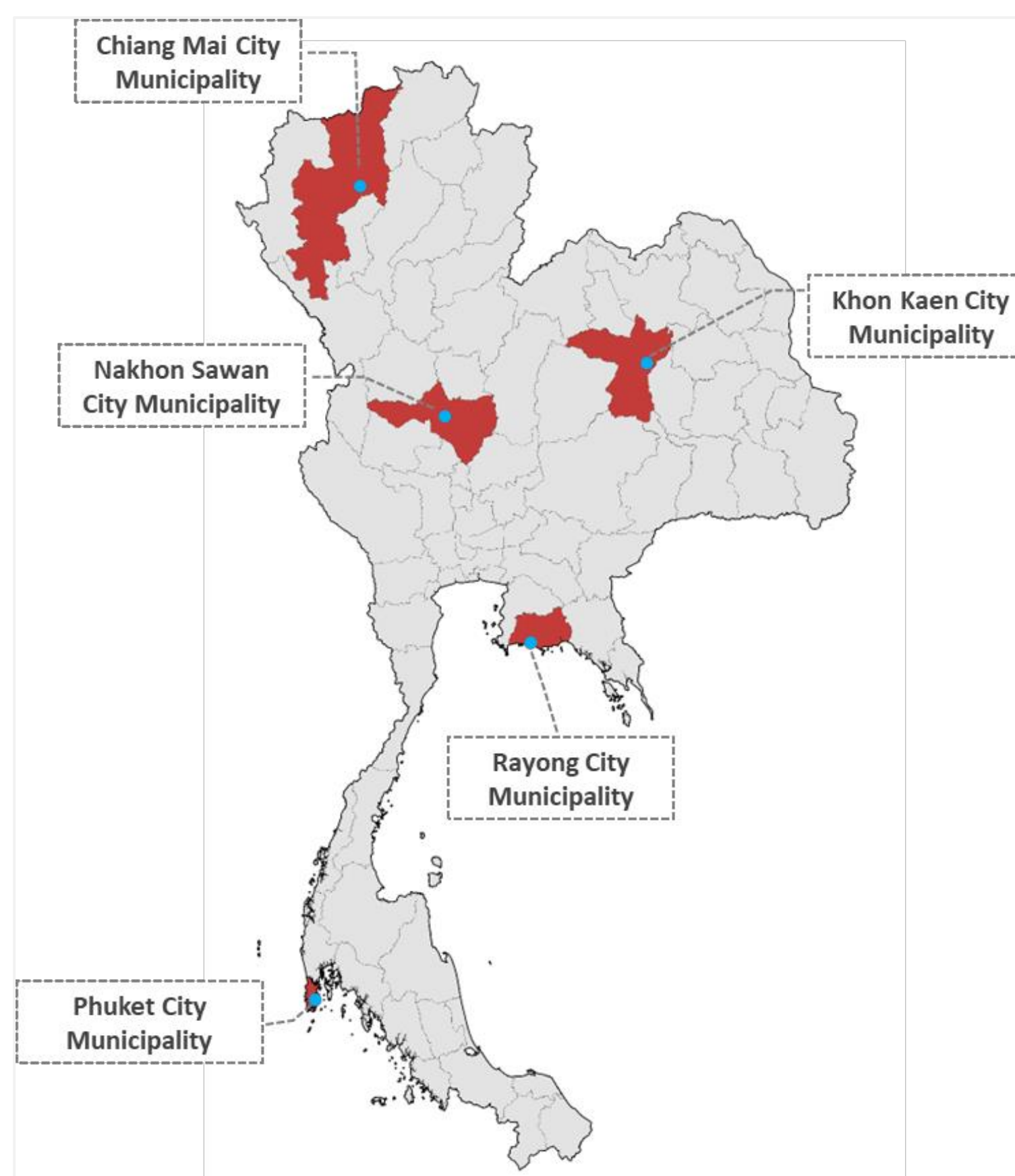
The World Bank Group sent research teams to visit Thai cities in May and October 2022.⁹ These teams visited five target cities to engage with public and private stakeholders, gain an understanding of each city's development needs, discuss proposed investment opportunities, and assess LAO capacity to attract private investment and implement projects. The team assessed 26 projects in five cities. The cities visited were:

- Chiang Mai, population 201,000
- Rayong, population 107,000
- Nakhon Sawan, population 92,000
- Khon Kaen, population 148,000
- Phuket, population 89,000.

As shown in Figure 2, these cities are distributed around Thailand, and thus well-positioned to stimulate economic growth around the country.

⁸ To be clear, the Khon Kaen Model includes a fully private component of financing the initial investment to build the LRN and then a PPP component to operate and maintain the LRN.

⁹ See October 2022 BTOR.

Figure 2. Distribution of cities visited

Source: World Bank Study Team

Chiang Mai

Chiang Mai is the largest city in northern Thailand (40.216 km²) and the second largest city in Thailand. It is 700 km north of Bangkok in a mountainous region. As a populous and significant city in the northern part of Thailand, Chiang Mai is unique in terms of its city development. The plan for city development has been mainly driven by the Central Government, rather than by the city itself. The population of Chiang Mai City Municipality has shrunk from 137,793 to 122,624 between 2011 and 2020, though the surrounding agglomeration continues to expand. The city economy relies on tourism while the manufacturing sector is mainly family-owned and small enterprises. As of fiscal year 2022, the city's revenue came from shared taxes (47 percent), transfers (35 percent), and locally generated revenue (18 percent).

Rayong

The Rayong City Municipality holds a strategic location in one of the three provinces in the Eastern Economic Corridor (EEC), surrounded by key industrial estates namely the 'Map-Ta-Phut' industrial estate in the western part of the municipality, and the IRPC Industrial Park in the eastern part of the municipality. Rayong City has the advantage of garnering strong support for city development activities from the private sector, both in terms of financial investments and technical expertise. With a large population of workers working in the industrial estates, as well as several private enterprises and multinational companies, the municipality aims to modernize through digital transformation, low-carbon development, and holistic waste management; and to improve the living conditions of the city to encourage

workers to stay in Rayong permanently. As of fiscal year 2022, the revenue of the city came from shared taxes (44 percent), transfers (45 percent), and locally generated revenue (11 percent).

Nakhon Sawan

The city benefits from political stability both at the local and national levels. The stability of the long-term city development plan and strategy is mainly based on the continuous and stable term of the current city Mayor, who has been in power for decades, succeeding his father before him. This allows for long-term planning of the city. In addition, the non-polarized position of the municipality vis-a-vis the political party at the national level enables a stable engagement and relationship which helps the municipality to secure budget allocations from the central authority. As of fiscal year 2022, the revenue of Nakhon Sawan city came from shared taxes (35 percent), transfers (43 percent), and locally generated revenue (22 percent).

Khon Kaen

Khon Kaen, situated at the heart of Thailand's northeast region, is one of the nation's most rapidly expanding cities. Like many cities, Khon Kaen is grappling with restrictive institutional and fiscal frameworks as it tackles urbanization challenges and strives for sustainable development. Through its 'Smart City' development plan, it aims to establish a solid foundation for the city's infrastructure to support new socio-economic development approaches. The private sector in Khon Kaen is very active and has made strategic efforts to unlock the barriers to investment in the municipality, driving sustainable development and economic growth of the city. The private sector is also proposing other investment projects for low-carbon transition and smart city development. As of fiscal year 2022, the city's revenue came from shared taxes (35 percent), transfers (43 percent), and locally generated revenue (22 percent).

Phuket

As one of the main tourist destinations of Thailand, the main source of income and local economic activities of Phuket comes from tourism. Hence, both the municipality and the private sector were severely affected by COVID-19 pandemic. To alleviate the economic impacts of COVID-19, Phuket initiated the 'Phuket Health Sandbox', which commenced on July 1, 2021, with a specific focus on tourism and wellness to attract high-income tourists and create a 'livable' city. While Phuket as a province is a famous travel destination, it should be noted that most of the tourist attractions are not located in Phuket City Municipality on the east coast of the island, but rather on the west coast, particularly around Karon Sub-District Municipality. As of fiscal year 2022, the revenue of the city came from shared taxes (38 percent), transfers (39 percent), and locally generated revenue (23 percent).

Summary of project assessments. During city visits and workshops, the WBG team considered a total of 26 local infrastructure proposals, with a view to determining whether they would be appropriate for finance as PPPs.¹⁰ The proposals were mainly in the areas of: urban transport (cable cars, light rail networks, etc.); Transit-Oriented Development (TOD); smart and low-carbon cities to support livability, waste and water management; housing; medical hubs;

¹⁰ Municipal PPPs need to meet two tests: 1) they must be of sufficient public value to attract the interest of the municipality; and 2) they must be of sufficient private interest to attract investment by the private sector.

wellness tourism; and bio-chemical industrial development. A summary of the project assessments is contained in Annex 1 of the World Bank Group's October 2022 Back to Office Report.

Of the 26 proposed projects:

1) Three proposals were assessed as 'highly probable' for PPPs:

Rayong Transport Oriented Development (TOD) Project:

A pre-feasibility study has been completed. The WBG team suggested that it be updated to incorporate land value capture and that the redevelopment plan consider different, and possibly more ambitious scenarios. Further information and analysis need to be added, including:

- **Project focus:** What is the full investment plan for the city? Rayong municipality needs investors to capture the vision of the city. Rayong needs to identify the various projects which will enable the city to achieve its vision. Early presentations included the land plots around the bus station in the project, to provide a larger piece of land to allow for a larger vision and more opportunities to the investor. The bigger piece of land will allow the project to induce investment, not only in the bus station area but also the commercial area around the station. Clarity is needed about investment needs and what the city can do to make it happen.
- **Project size:** The project, as currently proposed, is relatively small which may not attract investors. Rayong needs to make clear whether additional commercial areas and connected industrial areas might be included in the project.
- **Financial:** The city needs to be clear as to what elements are included in the project. Financial projections should include the sources and uses of capital, and the projected operational costs and revenues.

Khon Kaen Municipal Office Project

The Mayor would like to redevelop a small plot of land with an old municipal building to include a new municipal and mixed-use building. Again, land value capture may play a role. Khon Kaen has learned lessons from the Bangkok Mass Rapid Transit Authority (MRTA). The proposal needs more details, and a better description of exactly what investors are meant to deliver and where revenues will be sourced.

- **Project focus:** The city needs to be specific on the project to attract the right investor. Is Khon Kaen Transit System (KKTS) looking for just borrowing or investing in equity? How will the investment be structured, will KKTS be used as the project vehicle, or will a Special Purpose Vehicle (SPV) be created. There are various models available, including unbundling the components of the project and addressing some by SPV.
- **Project plan and progress:** The proposal needs to include a comprehensive list of what has been done by whom, what is needed (existing equity ownership, existing contracts or promises of contracts, existing equity invested), and what flexibility there is regarding

implementation. This will give investors a clear understanding of their role and the project expectations.

- **Financials:** Financial information could be elaborated in more detail both on the revenue and expenditure side. The project already has B 4 billion of equity but there is no clarity as to where the money has come from and who controls it. The financial model needs more description and detail. The period for investment (and for debt) is 3 years of grace followed by 16 years of debt service, which is long time. The model should include the minimum debt-service coverage ratio (DSCR), loan life coverage ratio (LLCR), sensitivity analysis for revenue and debt service scenarios, etc. Given the overlaps with central government issues, the proposal should discuss plans for coordination with the Office of Transport and Traffic Policy and Planning (OTP) and Ministry of Transport.
- **Central government guarantee:** Private investors will need to understand the risk relating to whether the LAO will fulfill its contractual obligations, including making any payments on time. Investors may ask for government guarantees, the proposal will need to discuss this risk and any potential for guarantees to reduce the cost of borrowing.
- **Structure of KKTS:** Investors will want more transparency of KKTS structure and governance, and what role/rights that investors might be given.

Phuket-Patong Cable Car Project

Plans for this 10 km cable car project have been developed by the private sector with support from the municipality and from Prince Songkhla University. A feasibility study was done and needs to be updated. Ownership issues require clarification.

- **Government support:** Cable car projects are not currently addressed by regulations, there is no responsible entity in the government. As a transport project, cable car development will require support from various government entities and authorities, and hence will require an active and capable coordination role. The proposal should address this challenge and identify a potential solution.
- **Financial:** The proposal should have a ‘peak hour’ estimation of demand. Agence Française de Développement (AFD) conducted some research during 2019 under COVID-19 circumstances, when the traffic was very light. Tourists are coming back, and Phuket needs an alternative mode of transportation. Hence, the feasibility study and proposal should be revised to identify the most appropriate mode of transport and whether there is demand for the project. The government is also looking to build a tunnel from east to west; more information on this is needed to help investors understand context and it could reduce investor appetite if a competing transport mode is under development. EGIS¹¹ received a grant from the French government to study the project and plan to get another grant for a revised feasibility study. OTP is a key counterpart.

¹¹ Egis is an international company active in the consulting, construction engineering and mobility service sectors that designs and operates intelligent infrastructure and buildings.

- **TOD opportunities:** Land value capture. The feasibility study needs to be updated and needs to map out what land and what part of TOD is included in the project. Fares alone will not be enough. TOD is an important opportunity to provide additional revenue.

- **Feeder transport:** Current electric vehicle (EV) bus capacity is not enough to feed traffic to the cable car. Phuket Provincial Authority Office (PAO) is transforming 30 internal combustion engine (ICE) buses to EV but it is not going to be enough. The EV bus project is moving from LRT as it is cheaper. It is an intermediate solution. There is a need to understand government plans for EV bus versus LRT and links to the cable car. There is also a plan to introduce EV bike swapping, EV car sharing, and a charging hub. The updated feasibility study should explore these feeders and interfaces (first mile/last mile) to help investors understand demand risk.

Further descriptions of each project can be found in Annex A to this report and in the August 1, 2023 “Summary Note of Completion of Five Virtual Workshops with Foreign Investors (Deliverable 4)”.

2) Nine proposals need significant work before they could realistically be considered as PPPs:

Rayong City Municipality Office

Somewhat like the Khon Kaen project above, the plan is to redevelop an old municipal property with a larger municipal office and mixed-use improvements. As in Khon Kaen, land value capture may play a role.

Nakhon Sawan City Municipality Piped Water System Expansion

This proposal would double the capacity of the current water system. The municipality is interested in a PPP and does not want to borrow money.

Khon Kaen City Municipality Wastewater Treatment Plant (Phase 2)

This is a proposal to expand the plant, which is near capacity, and for which the municipality has not been able to collect fees. This municipality is also interested in a PPP and does not want to borrow money.

Tram System and ‘Khon Kaen Eye’

This is a proposal from Rajamangala University of Technology to build an observation wheel like the London Eye, along with a tram system, and several other uses. Some of the land is privately owned, and the plan depends on revenues from the future light rail project.

Karon Sub-District (Phuket) Municipality Sport Complex

The plan is to redevelop an existing stadium into a multi-sport complex. This is a high-risk project, and the revenue potential is unclear.

Phase 2, Chiang Mai University (CMU) Science and Technology Park (STeP)

STeP management is not keen on a PPP, and would prefer to use public funds for Phase 2 of this science and technology park.

Chiang Mai Smart City

This is a conceptual stage project to join the old city area with the CMU campus, providing free wi-fi, CCTV, streetlights, and electric school buses along a 1.3 km route. It is unclear whether the city is better served with a PPP or with simple outsourcing to the private sector.

Chiang Mai Provincial Administrative Organization Land

There is a general plan to build a hospital in a prime location in Chiang Mai. Few details were available.

Chiang Mai Smart Mobility

A private company is interested in promoting conversion of ‘songthaews’ (pick-up truck taxis or buses) and motorbike taxis in Chiang Mai to EVs. Given the potential for emissions reduction, there could be ways for the public sector to support this and help lower the cost of borrowing.

Further descriptions of each project can be found in Annex B to this report and in the August 1, 2023 “Summary Note of Completion of Five Virtual Workshops with Foreign Investors (Deliverable 4)”.

3) As to the remaining fourteen proposals:

Some may eventually have potential as PPPs, but there is currently too little information about these proposals to be sure, one way or another. A preliminary description of each of these can be found in Annex C, along with reasons why the team did not consider these proposals to currently have potential as PPPs.

Conclusion as to proposals. Three of the project proposals have been reasonably well defined, and while some additional work is necessary, there is clear potential for PPPs to implement these. Another nine proposals show some promise and would require significant additional work before they are ready for PPP implementation. The remaining 14 proposals are a mixed bag: some are too ill-defined to form an opinion one way or another, and some do not appear to be suitable for PPPs.

In general, these proposals are relatively limited in scope and ambition. It would be useful to understand how they fit into a longer-term local economic development strategy that considers the situational advantages and disadvantages of each locality, the needs and hopes of the local citizens and enterprises, and the potential pathways to realizing the development potential of the municipality. For example, a city’s economic development strategy is closely linked to its land use and spatial development planning. Strategic land use and spatial planning will identify locations for: industrial, commercial, and residential development; tourist zones; and for interfacing with surrounding agricultural production. This will inform the infrastructure and investments that will be needed to enable these locations to develop as envisioned.

2.1.2 Assessing LAO Readiness

The key findings of the WBG team regarding municipal readiness for potential PPP investment were as follows:

- 1) All five municipalities have the potential to be creditworthy

These municipalities are in good financial shape. As compared to local governments around the world, these five municipalities appear to have good accounting systems, reliable financial data, and are in sound financial condition. They have all successfully borrowed from commercial banks. None have previously issued a municipal bond. As compared to other Thai municipalities, most of these have a higher percentage of own-source revenues than the national average.

It is important to understand that creditworthiness is a subjective judgement, and it is a matter of degree. A municipality may be regarded as creditworthy for modest borrowing, but not yet for the scale of borrowing that might be envisioned for large scale infrastructure. A municipality's access to credit, and the price it will pay to borrow depends on lenders' or investors' perceptions about the likelihood that debts will be repaid, or more generally that future financial obligations will be honored. Different parties may have different perceptions.

None of these five cities have credit ratings yet, and it may be useful for them to pursue shadow credit ratings from a reputable rating agency, as a way of understanding how the market would evaluate their creditworthiness. Ratings agencies are in the business of evaluating creditworthiness.¹² Municipal credit ratings are assigned by these agencies, whose business model is to evaluate and render an opinion on credit risk. They undertake research to inform their view as to the likelihood that a municipal borrower will pay its credit obligations as and when due. Their models differ somewhat from one rating agency to another, but they consider both financial and non-financial issues. Their ratings are intended to help investors assess credit risks, and to compare the risk associated with different municipalities. These ratings often serve a regulatory purpose as well, because fund managers are generally required to invest in instruments with a minimum credit rating.

- 2) LAOs have very limited experience with PPPs

None of these municipalities have previous experience with PPPs,¹³ though some have experience with concessions. Negotiating and implementing PPPs will therefore require expertise in legal, financial, and technical areas that are beyond what municipal staff would currently be able to provide. With appropriate training, mentoring, and experience there is no reason that municipal staff could not gain the necessary expertise.

PPPs expose government budgets to both direct and contingent liabilities. Direct liabilities are those that are explicit in the PPP arrangement, such as viability gap payments, take or pay

¹² Note that rating agencies have no direct risk exposure if a municipality defaults, and global experience shows that rating agency judgements are often reactive rather than predictive.

¹³ Here we distinguish between PPPs which involve the allocation of investment and risk between public and private parties. In these cities' concessions, they have essentially rented out public property to a private party, which then operates a facility at its expense, and for its profit.

arrangements, and subsidies. Contingent liabilities can arise from user-funded, but government guaranteed, projects or from renegotiations and disputes.

It takes time to build the skills to negotiate and manage PPPs. To help the municipal staff gain the necessary skills it might be appropriate to bring in experts to mentor and work alongside them. However, resources for such on-the-job training have not yet been identified. Fees for external consultants are capped by Ministry of Finance regulations, which makes it difficult to hire private sector expertise. Additionally, rule number 58 - 59 of Rules of Ministry of Interior Re Supplies Unit of Local Administration BE 2535 (1992) and its amendments limit remuneration for each type of contract.

- 3) LAOs were not aware of sources for funding and additional capacity to help oversee, coordinate, and support PPPs

There are national and international opportunities. Since these municipalities have limited experience with PPPs, they were not aware of potential sources for funding and additional capacity to help oversee, coordinate, and support PPPs. The good news is that there is relevant experience available in Thailand, which could be leveraged to benefit LAOs who are interested in pursuing PPPs. And there are multilateral development finance institutions and bilateral development partners that may be able to support these efforts with international experts.

Thailand has a PPP Unit under the State Enterprise Policy Office (SEPO), in the Ministry of Finance, which could potentially assist with both large and small PPP projects. The PPP unit's operations are governed by the Public–Private Partnership Act, B.E. 2562 (2019), which applies to PPPs undertaken by any state agency, including local governments.

The Bangkok Metropolitan Administration (BMA) has used PPPs for many public transport projects, e.g., BTS Skytrain. It would be useful to document and disseminate their experiences for the benefit of other cities.

- 4) LAO planning and budgeting policies are conducive to long-term infrastructure financing commitments

Planning and budgeting for future financial obligations is critical for both PPPs and municipal borrowing. The need to commit to long-term financial obligations is anticipated in relevant budget regulations. Although budget appropriations are generally annual, the regulations provide for multi-year commitments for investment projects, subject to certain criteria and with the approval of the local council.¹⁴

- 5) Municipalities have extensive institutional mandates for infrastructure and service delivery

¹⁴ See Regulation No. 37 of Ministerial Regulation on Budget Procedure of Local Administration Organizations, BE 2563 (2020).

Municipalities derive their powers and functions from two sources. First, according to the Municipalities Act, BE 2496 (1953), most recently amended in 2019, municipalities have the following main and secondary tasks:

Main mission

1. Infrastructure improvement
2. Promotion of quality of life
3. Community and social organization and peacekeeping
4. Conservation of natural resources and the environment
5. Political and administrative development
6. Education promotion
7. Disaster prevention and mitigation

Secondary mission

8. Cultural revival and promotion of traditions
9. Supporting and promoting the potential of professional groups
10. Agricultural promotion and agricultural occupation
11. Planning investment promotion.

Second, in addition to the above list from the Municipalities Act, the Decentralization Act¹⁵ has another list of public services authorized to a municipality:

1. To develop a local self-development plan
2. To provide the maintenance of land route, water route, and water drainage
3. To manage and control the market, wharf, pier, and parking lot
4. To provide public utility and other constructions
5. To provide public assistance
6. To promote and do training for occupation
7. To conduct commerce and investment promotion
8. To promote tourism
9. To provide and manage education
10. To arrange social welfare and develop quality of lives of children, women, the old and disadvantaged people
11. To conserve local arts, tradition, local wisdom, and cultures
12. To improve slum areas and arrange for housing
13. To provide and maintain recreational areas
14. To promote sports
15. To promote democracy, equality, rights, and freedom of people
16. To enhance public participation in developing local community
17. To keep the community clean and in perfect order
18. To manage waste, sewage, and wastewater
19. To provide public health services including family health and medical treatment
20. To provide and manage cemetery and cremation
21. To control domestication
22. To provide and control animal slaughter

¹⁵ The Plans and Process of Decentralization to Local Government Organization Act B.E. 2542 (1999).

23. To provide security and orderliness measures, sanitation, theatre, and other public venues
24. To manage, maintain and utilize forestry, national resource land and environment
25. To conduct city planning
26. To provide public transportation and traffic engineering
27. To preserve public properties and places
28. To control the construction of building
29. To prevent and mitigate disaster
30. To provide security measures and promote safety and security of lives and properties
31. Any other activities that are beneficial to the local community announced by the Commission.¹⁶

Municipalities may delegate to the private sector. A municipality also has express authority to delegate responsibility for providing a service. If a service is under municipal authority, it can be delegated to the private sector. Under Section 22 of the Decentralization Act, the LAO may entrust the private sector to proceed on its behalf in accordance with regulations, procedures and conditions stipulated in Ministerial Regulation. Municipalities also have the explicit authority to enter into long-term contracts. A local council has the authority to commit up to three years, or longer with the Governor’s approval.¹⁷

Collaboration with private sector can be by forming a limited company or holding shares in a limited company where:

1. A limited company has specific objectives of providing public utility services
 2. The municipality must hold shares worth more than 50 percent of the registered capital of the company. In the case where there are multiple municipalities, PAO, Sub-district Administrative Organization holding shares in the same company, such shares shall be counted together
 3. The arrangement is approved by the Minister of the Interior.
- 6) LAOs have the power to prepare and implement PPP projects

Municipalities are empowered to prepare and implement PPP projects under section 4 of Public–Private Investment Act BE 2562 (2019). This act identifies LAOs as one type of public entity eligible to participate in a PPP. The Act provides as follows:

1. Section 22 requires that, in proposing a project, a study and/or assessment must be carried out in accordance with the criteria set by the PPP Committee
2. The agency proposing the project may identify supporting measures such as: (1) benefits under the investment promotion law; (2) rights of land/ property usage of not exceeding 50 years of lease; and (3) other financial support
3. Section 28 requires the agency proposing the project to submit for ministerial approval: the study and assessment of the project, type of PPP, liability of parties, duration of project, ownership, and profit sharing

¹⁶ The Commission means the “Determining Plans and Process of Decentralization to Local Government Organization Commission,” established by the Decentralization Act.

¹⁷ Municipalities Act, BE 2496 (1953), amendment no 14, section 57.

4. The restrictions on foreign participation, ownership, investment, or repatriation of profits need to be assessed by PPP Unit.

The PPP Act and the PPP Unit: From the language of the PPP Act, it is clear that if a local government organization intends to carry out a partnership project related to one of the twelve categories of infrastructure and public services listed in the PPP Act, it must comply with the Act.¹⁸ If a significant number of PPP projects are developed, the capacity of the PPP unit may need to be expanded. Alternatively, a separate channel to support and assist municipalities with both PPPs and borrowing may be useful.¹⁹

All parties surveyed were a bit unsure that LAOs are ready to lead on infrastructure. These five municipalities seem to do relatively well at delivering the services that they do provide, and they are careful stewards of the resources they have, but they have not yet taken on the responsibility of investing in infrastructure that can grow the local economy. And the private sector investors, lenders, and developers with whom we spoke do not feel that these municipalities have the capacity and vision to engage meaningfully with their proposals.

Conclusion as to municipal readiness. Our assessment is that while most of the necessary powers and authorities are in place, most municipal leaders are not yet thinking comprehensively about what they could do at the local level to identify and meet the infrastructure needs of their citizens, firms, and local economy. It may take a change in mindset for local leaders to accept the challenge of pursuing transformational investments, given prior expectations that the funding to support infrastructure investments would come from the national level.

Capacity building and collaboration: Despite the 1999 Decentralization Act and the 2019 PPP Act, there appears to be limited inclination on the part of LAOs to fully step into the roles envisioned for them in legislation. Sustained support and mentoring would be helpful if the government wants to build the capacity and confidence of LAOs to take on their potential role as drivers of sustainable local economic development. Working collaboratively with national and provincial government, and with universities and the private sector, is important. It would be constructive if those collaborations extended beyond specific projects to consider broader long-term development strategies.

¹⁸ Section 7 of the Public–Private Partnership Act, B.E. 2562 (2019) lists twelve types of services or infrastructure to which it applies: (1) roads, highways, express ways or transport by road; (2) railways, mass transit or transport by rail; (3) airports or transport by air; (4) ports or transport by water; (5) water management, irrigation, waterworks or water treatment; (6) energy; (7) telecommunications or communications; (8) hospitals or public health; (9) schools or education; (10) residences or facilities for low-income or middle-income people, the elderly, underprivileged people or people of disabilities; (11) exhibition centers and conference centers; (12) any other undertaking as prescribed in the Royal Decree.

¹⁹ In the early days of democracy, South Africa had established a Municipal Infrastructure Investment Unit (MIIU), staffed with legal, engineering, and financial experts, whose mandate was to support municipalities in their efforts to attract private sector capital, whether through borrowing or through PPPs. This was a joint creation of the National Treasury and the Department of Provincial and Local Government, but was semi-autonomous, and was housed in the Development Bank of Southern Africa. It was eventually dissolved after the two sponsoring departments could not agree on its future.

2.2 Policy and Institutional Considerations

During the 1990s, many countries adopted decentralization policies for a variety of reasons, including: the end of the Cold War and the decline of central control as a model; demands from citizens for more control over local matters; international consensus that decentralization could improve accountability and efficiency; and others. Thailand’s 1997 Constitution²⁰ and 1999 Decentralization Act²¹ reflected this global trend toward decentralization. Although the 2006 military takeover abolished the 1997 Constitution, the 1999 Decentralization Act remains in place. The 2017 Constitution, currently in force, mentions decentralization in saying that laws regarding provision of public services by LAOs “shall at least contain provisions relating to mechanisms and processes for decentralization of duties and powers”.²² As in some other countries that started on the path to decentralization in the 1990s, results in Thailand have been mixed.

There are many models for subnational finance around the world. In some countries, local governments are largely responsible for their own revenues, expenditures, and capital investments. At the other extreme, some local governments are almost entirely dependent on transfers from other levels of government for both operational expenditures and capital investments. There is no ‘right’ answer, but it is important that the policies and institutions follow some logic and strategy. If the goal is to encourage and allow local innovation in financing capital investments, then the rules must allow some flexibility to LAOs, and must provide some predictability to potential investors.

Functional decentralization implies fiscal decentralization. If municipalities are to be responsible for operating and maintaining the major productive investments that drive a modern economy (water, electricity, transport) then they need more revenue, and more control over tax and other instruments that generate local revenue. To generate the funds to build roads, transit systems, water, and wastewater treatment facilities, they need reliable revenues in excess of their expenditure obligations. When they have reliable annual revenues in excess of their annual operating expenditures, which the five cities studied have, then they have options to leverage these revenue streams to generate capital for investment. To the extent that LAOs can generate their own revenues, this can ease fiscal pressures on the national fiscus.

In this section of the report, we will consider the policies and institutions that enable or restrict how LAOs manage their finances, including raising capital for infrastructure investment. We will discuss the revenues and revenue instruments LAOs have at their disposal, and how these relate to the functions they are expected to perform. It should be noted that although these municipalities are authorized by the Municipalities Act and the

²⁰ The 1997 Constitution provided that government policy “shall undertake the decentralization of power to localities for the purpose of independence and self-determination of local affairs” [Article 78]. Chapter IX on Local Government further stipulates that government “shall give autonomy to the locality in accordance with the principle of self-government according to the will of the people in the locality” (Article 282), and that local administrative organizations were to be governed by directly elected local assemblies and local official committees (Article 285).

²¹ Determining Plans and Process of Decentralization to Local Government Organization Act, B.E. 2542 (1999).

²² Constitution of the Kingdom of Thailand 2017, Section 250.

Decentralization Act to perform a broad range of functions, in practice they need approvals from various line ministries to do so.²³

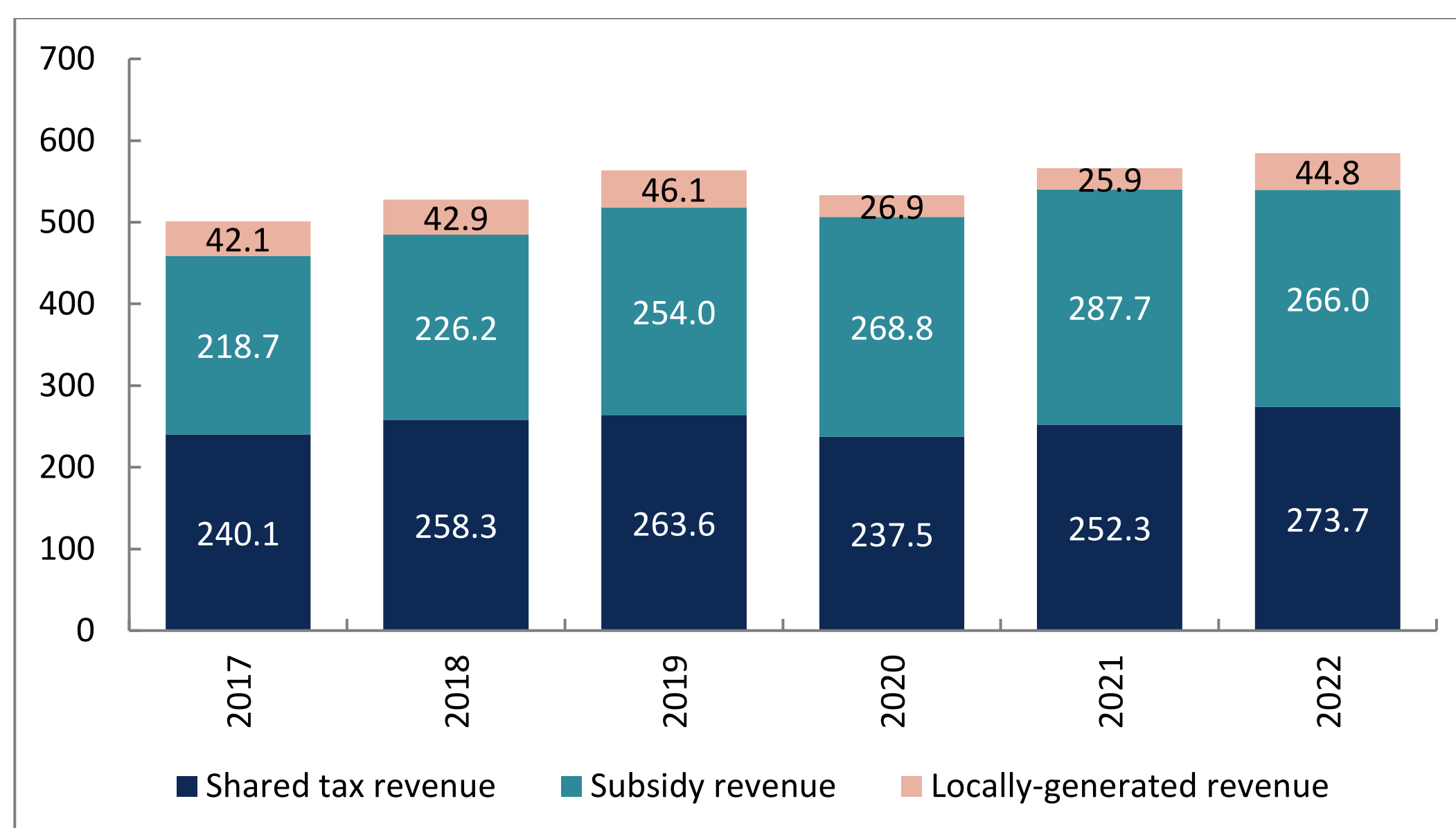
2.2.1 Municipal Finance

Revenues

Thailand's LAOs remain fiscally dependent on the central government. A fundamental challenge of fiscal decentralization is that it asks central authorities to give up power and control over decisions about local revenue and expenditure policy, and local capital investment priorities. LAOs remain dependent on the center for most of their revenues despite the Decentralization Act and despite the provisions of the 2017 Constitution requiring the State to ensure that LAOs have revenues of their own by establishing an appropriate system of taxation and allocation of taxes, as well as promoting and developing means for LAOs to earn revenue.²⁴ Land and building tax²⁵ rates are determined centrally, and LAOs' power to borrow capital for infrastructure is strictly limited.

Municipal revenues in Thailand come from three sources: transfers (sometimes known as subsidies) from the center, shared taxes, and locally collected revenues. Figure 3 below shows recent trends of LAOs, excluding Bangkok and Pattaya City. Locally collected revenues are regularly about 8 percent of total LAO revenues. During the COVID-19 pandemic, property tax collections were severely limited by Royal Decree, resulting in a sharp drop in own-source revenues, to the point that locally collected revenues accounted for only 5 percent of total revenues. All of this is quite low by global standards and reflects limited authority (as to tax rates) and efficiency in collections.

Figure 3. LAO revenue by sources, excluding Bangkok and Pattaya City (THB billions)



Source: Department of Local Administration and World Development Study Team

²³ In the case of the proposed Khon Kaen light rail project, it took a number of years to receive the required approvals from various ministries.

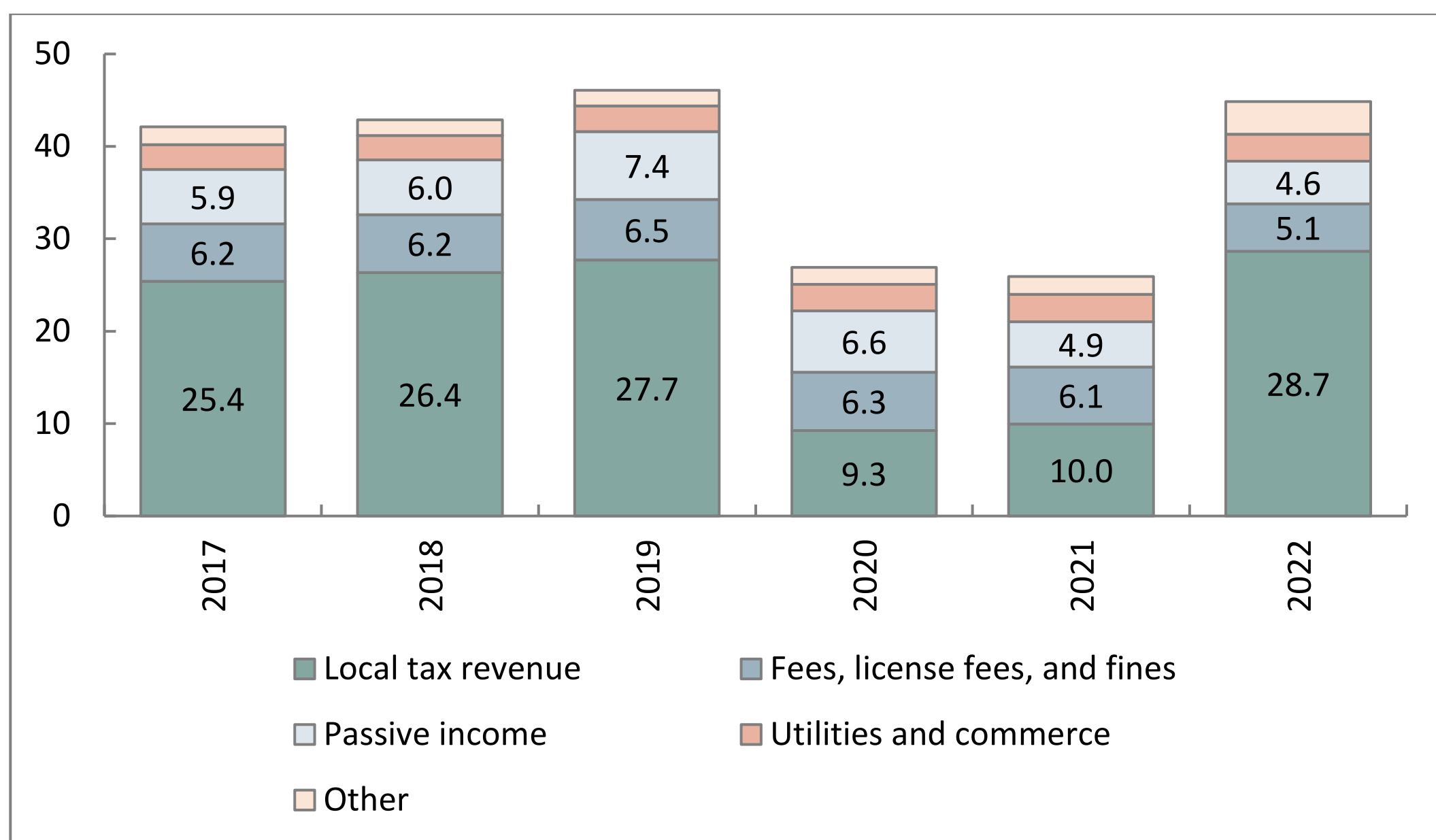
²⁴ Constitution of the Kingdom of Thailand 2017, Section 250.

²⁵ Thailand's property tax is officially denominated as the Land and Building Tax.

Land and building tax is locally collected, but not locally controlled. The legislation authorizing the tax was updated in 2019, with a single Act replacing a patchwork of earlier legislation.²⁶ The 2019 Act grants local governments the power to collect tax on land or buildings in their jurisdiction, with statutory exemptions including property belonging to the State, embassies, international organizations, religious organizations, charities and foundations, and public utilities. The tax base, exemptions, and tax rate are all established nationally.

Land and building taxes rates are subject to *ad hoc* changes by national government. The authorized tax rate in the 2019 Act was 0.15 percent for agricultural uses, 0.3 percent for residential properties, and 1.2 percent for other uses. However, these rates were cut by 90 percent in 2020 and 2021 by Royal Decree, in order to provide COVID-19 relief. Shared tax revenue from the central government was also significantly down in these two years. Since then, another Royal Decree has limited actual land and building tax rates to levels well below the limits in the Act. The net effect is that Thailand's land and building tax is not currently generating revenues at the levels we see in other developing or developed economies. It may well be that without the Royal Decree, the LAOs themselves would have chosen to reduce tax levels, given the operating surplus and reserves that they have at their disposal. The key point is that they were not given a choice, i.e., they do not have local autonomy in this regard; these decisions are made centrally.

²⁶ Land and Building Tax Act B.E. 2562 (2019).

Figure 4. LAO sources of local revenue (THB billions)

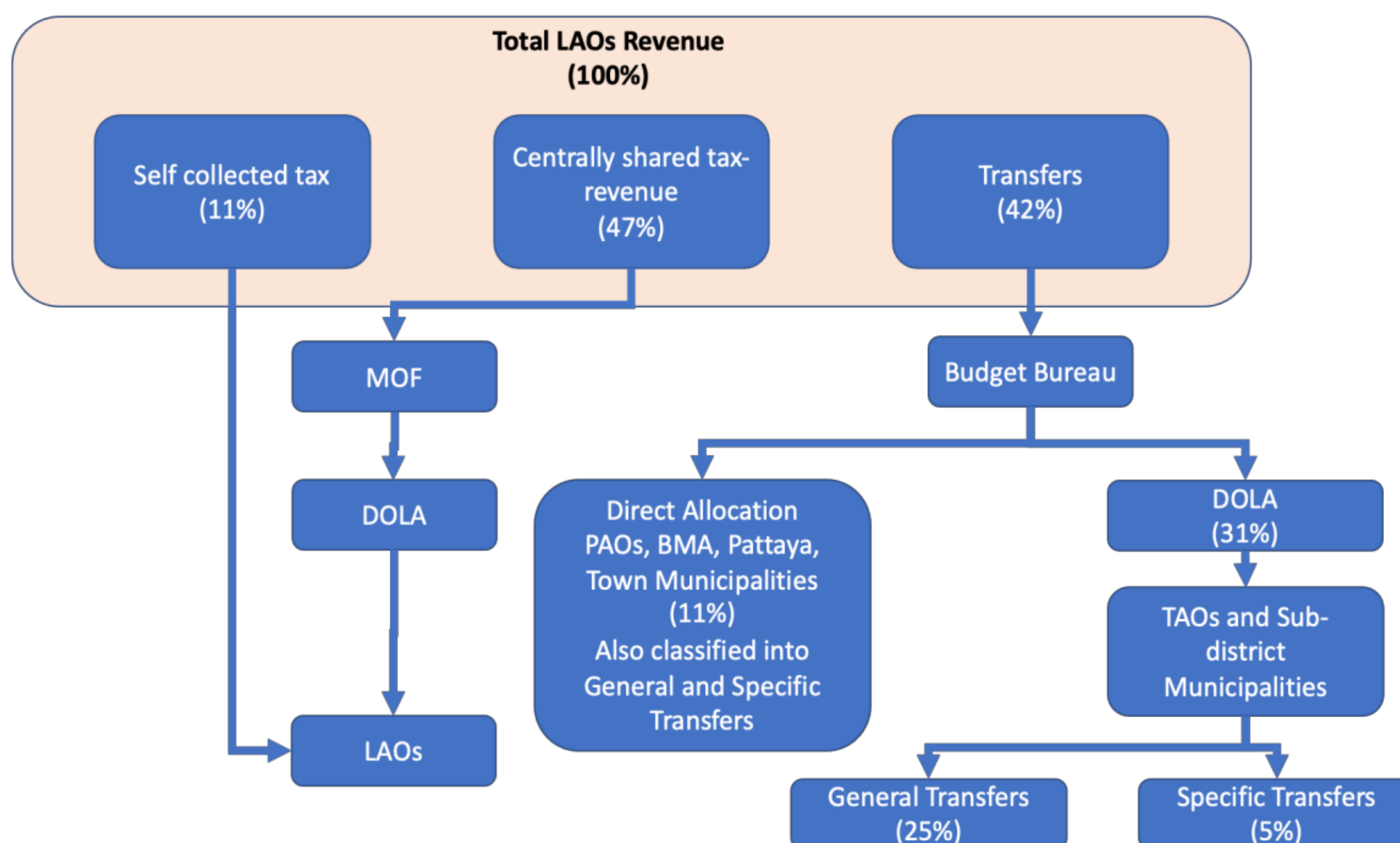
Source: Department of Local Administration and World Development Study Team

Ideally, local taxes are the basis of a social contract between the community members (families and firms) that pay taxes and the LAO that uses these to provide public benefits. People pay their taxes because they are part of the community, and they share in the public benefits supported by taxes. These benefits may take the form of streets, sidewalks, parks, libraries, schools, and other cultural or educational resources; in some countries, property taxes also support local public safety and public health programs. The most important thing that any local government can do to help collect taxes is to build trust with the community. Taxpayers pay more willingly if they believe that everyone is treated fairly, whether they are rich or poor; and whether politically connected or not. Taxpayers want to know that their taxes are used to benefit the community and are not ending up in the pockets of individuals, or in the treasuries of political parties.

Local taxes require that individuals and firms contribute some portion of their wealth or income for the benefit of the greater community. Taxes do not depend on whether the taxpayer uses any specific services. Globally, the most important taxes for local government are property tax and business tax.

Fees, charges, and tariffs are conceptually different to taxes. They are payment for specific goods, services, or activities. For example, a local fee might be charged for parking, waste collection, water, or electricity. Other examples include building permit fees and transit fares. Fees, charges, and tariffs are often, but not always, in proportion to the amount a customer uses. For example, a typical electricity customer would pay more for 500 kWh than for 50 kWh. These fees may not cover the full cost of providing the service (e.g., mass transit is subsidized in most places) but a citizen that does not use the bus or train does not have to pay the fare. Across the years, local fees, licenses, and fines accounted for only about 1 percent of LAOs revenues (see Figure 4).

Figure 5. LAO revenue sources, FY 22 Budget



Source: Budget Bureau and World Bank staff

Transfers and shared taxes from national government. As mentioned above, there are three main sources of revenue for LAOs. In Figure 5 above, we see that self-collected revenues amount to 11 percent of total revenues, shared taxes collected by the central government amount to 47 percent, and transfers account for 42 percent of the total. The transfers can be further subdivided into general and specific transfers. The specific transfers are for specified projects,²⁷ and spending is carefully managed by the Department of Local Administration (DOLA), under the Ministry of the Interior. Some LAOs do not receive any specific transfers in a given year. General transfers are also to be used for designated purposes,²⁸ but expenditures are not managed with the same rigor as the specific transfers. All LAOs will receive general transfers every year.

A comprehensive assessment of municipal revenues would be useful. The focus of this paper is on access to capital for infrastructure investment. However, municipalities' ability to leverage recurrent revenues (whether from taxes, fees, or transfers) in order to access capital depends on revenue streams which are adequate and predictable. Therefore, if the paradigm shift we discuss in this paper is to become real, i.e., if municipalities are to access capital markets on the strength of their recurring revenue streams, those revenues are foundational. It would be useful to better understand the character and quantity of local revenues across the local government sector, and in each city individually, as a basis for estimating the cities' capital investment financing capacity.

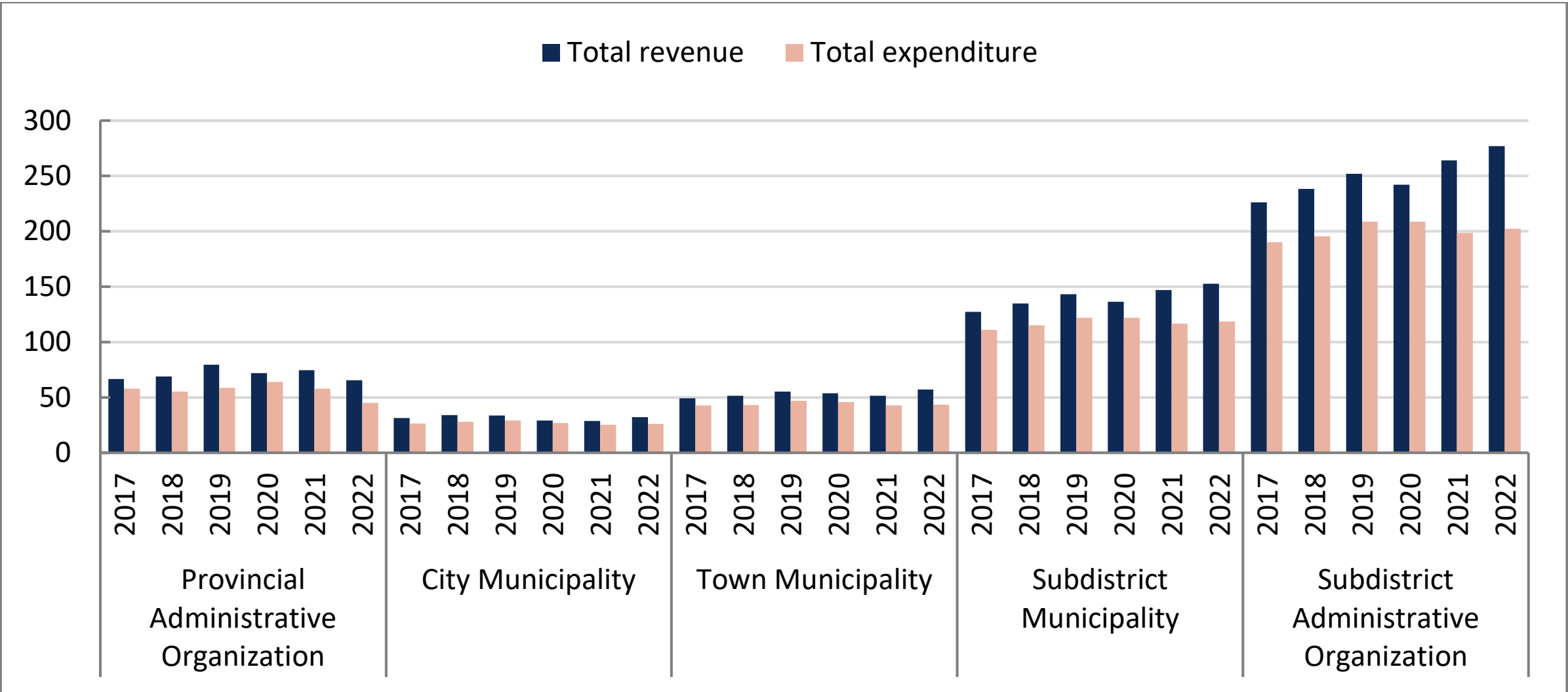
²⁷ Specific transfers may include amounts for water management, education-related expenses, environmental projects, local development projects, and personal transfers (transfers made from LAOs directly to individuals or households).

²⁸ The general transfers are intended to fund public services and administration that all LAOs must provide, such as a rail subsidy, public health services, school lunch programs, elderly housing, etc. These are mandatory expenditure responsibilities of the LAOs.

Expenditures

Local expenditures are a function of the services that a local government is meant to provide. The central principle is that revenues should be equal to or greater than expenditures. Figure 6 below shows that, in the aggregate, LAO revenues have exceeded LAO expenditures across all classes of LAO for at least the past six years. Consistent with this national picture, the WBG team found that all five of the municipalities studied have significant liquidity in their savings, reserves, and Municipal Promotion Asset Funds²⁹ that can be used to cover short-term deficits. This indicates that annual levels of revenue collection are more than adequate to cover the functions that these municipalities are providing.

Figure 6. Revenue and expenditure by LAOs (excluding Bangkok and Pattaya City) (THB billions)



Source: Department of Local Administration and World Development Study Team

Choices related to operating surpluses. These cities all appear to be generating an operating surplus. The team could not obtain complete fiscal information for Nakhon Sawan, but the other four cities give us some sense of the current situation, as shown in Annex D. For the years 2018 through 2020, all four cities had an operating surplus. 2020 was the first year of the COVID-19 pandemic, and all four cities saw a significant drop in both own-source and shared revenues. In 2021, the second year of the pandemic, these revenue streams continued to be low, and one city, Chiang Mai, fell into a small operating deficit. Projections for 2022

²⁹ Savings (revenue less expenditure) can be used to: 1) support operations during the first 3 months of the FY if there is insufficient revenue; 2) support activities which will be funded by central government subsidies not yet received; 3) support LAOs commercial activities with council approval and subject to repayment by the end of FY. LAOs can use savings with council approval to provide mandated services to community, to increase LAOs revenue, or to aid those in need.

Reserves: 15 percent of LAOs’ savings each year is sent to reserves. The reserves can be used when the savings are not enough to cover operations, to provide mandated services to community, to increase LAO revenue, or to aid those in need. The use of reserves requires council approval. The projects/activities must also be in the Local Development Plan.

Municipal Promotion Asset Fund: As noted above, 15 percent of savings is sent to the reserve. Then a further 10 percent is deducted from the remaining surplus and deposited to the Municipal Promotion Asset Fund under the Local Treasury Bureau of the DOLA. The municipalities can borrow up to 10 times their savings at concessional rates.

show a substantial uptick in all four cities. This creates choices: operating surpluses can be saved as reserves; they can be invested directly in infrastructure; or they can be leveraged to finance costlier infrastructure at scale through borrowing, PPP arrangements, or other mechanisms. In addition to the operating surpluses, these cities all have large account balances in savings, reserves, and Municipal Promotion Asset Funds. More investigation would be required to understand why these balances continue to accumulate and are not spent on infrastructure. A reasonable hypothesis, which would need to be tested, is that the municipalities naturally prefer to spend central government resources and protect their own. Developing a better understanding of this phenomenon could be important if government decides to pursue a paradigm shift to make municipalities more responsible for local infrastructure investment.

Financing Tools

There are many tools that can be used by municipalities that have the authority and accountability to make creative financing arrangements.

- **Land value capture and land-based financing** tools can tap into the increased value of nearby real estate to help finance public investments
- **Transit-oriented development** can specifically capture a portion of the increased value that accrues to land near a transit station or highway intersection
- **Business improvement districts** can ask owners of commercial real-estate to pay a surcharge for extra improvements or services that create a better business environment
- **Tax increment financing** can use the tax revenue increases resulting from public infrastructure investment to pay the debt service on loans taken or bonds issued to pay for the investment
- **Development charges** imposed at the time a building permit is issued can ensure that development pays its own way, and that the costs of new infrastructure are borne by the properties that trigger the need.

There are many creative financing tools that have been developed and used around the world to support infrastructure development. All of these have their uses, but none are silver bullets that can resolve the infrastructure challenges in secondary cities. Their use depends on effective and empowered local governments that take it as their responsibility to identify infrastructure needs, prioritize these, and engage with the private sector to meet the needs of residents and firms.

Fiscal autonomy for LAOs is weak. LAOs have a very narrow own-source revenue base, relying primarily on the land and building tax, over which they have little control. Municipal revenues depend heavily on fiscal transfers from the national government, most of which are earmarked for specific purposes. Municipal borrowing and PPPs are tightly controlled by the central government. Municipalities do not have access to competitive capital markets, where they might find fund managers willing to invest in their debt obligations. The municipalities we studied for this report exhibit substantial fiscal dependence on the central government with limited revenue and expenditure autonomy. They do not feel they have the tools or mandate to access

capital for investments that would correspond to local needs and priorities.

Financial Management

Accountability and regulation. In no country, regardless of how decentralized, are municipalities free to manage their finances without accountability and regulation. Broadly, we can classify the applicable regulations into two categories: substantive and procedural.

Substantive financial regulations limit what a municipality can do with its resources. They limit its fiscal autonomy. For example, can a municipality borrow? Can it enter into long-term financial commitments? Can the current elected council bind future councils to honor the financial commitments it makes? Substantive regulations may limit the degree to which LAOs are free to set their own taxes, fees, and charges, or restrict certain types or amounts of expenditure. They may require review and approval by other levels of government.

Substantive fiscal rules. Many countries place numerical or percentage limits on subnational fiscal choices, e.g., whether budget deficits are allowed, how short- and long-term debt may be used, how much long-term debt is permitted. To mitigate subnational fiscal risk, countries resort to a wide range of institutional arrangements. These arrangements seek to enforce fiscal discipline and ensure that fiscal policies of the different government levels are consistent. Fiscal rules are one such arrangement. Almost all advanced countries and many developing economies impose numerical limits on certain aggregates of subnational budgets, such as the fiscal balance or debt service.³⁰

Procedural regulations can specify budgeting and spending processes and can also limit how a municipality manages its resources. They typically require that budgets be prepared according to annual timetables, that they be submitted to the public and/or other levels of government for review and comment, and that expenditures not exceed budgeted amounts with certain exceptions. They may require internal and external audits. They may assign responsibility to specified municipal officials for management or mismanagement of municipal funds. Ideally, these regulations are consistent with good management practice, and support municipal managers with the tools they need to manage well. There is a balance to be struck that ensures reasonable managerial discretion, combined with accountability.

We have not researched financial management legislation and regulations. That would be a worthwhile exercise for future research. Areas of interest include: the specific authority of provincial and national officials to approve or reject municipal loans, and the criteria applicable to such reviews; legislation and regulations related to municipal accounting and treasury procedures; prudential limits on aggregate LAO debt or debt service; legislation and regulations related to issuance, listing and trading of municipal bonds; and legislation and regulations related to long-term financial obligations under PPP arrangements.

Capital budget execution is highly variable. We do not have complete data from Nakhon Sawan municipality. The figures for the remaining four municipalities are shown in Table 2 below. Chiang Mai is the outlier, in some years spending significantly more than their budget projections, and always spending a higher percentage of the budget than the other three cities.

³⁰ Luc Eyraud et al. 2020, “How to Design Subnational Fiscal Rules: A Primer” International Monetary Fund.

Table 2. Capital budget execution in four cities

Year	2018	2019	2020	2021
1. Chiang Mai Municipality				
Budget	191,595,600	197,091,420	189,514,580	189,514,580
Actual	210,841,029	245,158,477	88,856,497	132,914,588
Execution rate	110%	124%	47%	70%
2. Phuket Municipality				
Budget	113,987,000	143,850,080	139,251,560	118,839,010
Actual	24,451,215.86	43,317,027.09	56,215,294	29,726,110
Execution rate	21%	30%	40%	25%
3. Rayong Municipality				
Budget	97,975,200	131,702,500	117,670,990	83,531,780
Actual	9,756,346	17,441,800	7,115,275	8,684,088
Execution rate	10%	13%	6%	10%
4. Khon Kaen Municipality				
Budget	167,585,650	141,172,560	174,023,660	90,307,160
Actual	9,121,125	30,160,135	13,153,850	15,948,164
Execution rate	5%	21%	8%	18%

Source: World Bank Study Team Compilation

2.2.2 Borrowing and Borrowing Rules

Not every project is suitable for a PPP approach. The likeliest projects are those where private sector expertise and efficiency can be brought to bear in a long-term partnership that meets the objectives of both the public and the private partner. Not every public project can be a PPP project, therefore policymakers would be wise to develop an enabling environment for municipal borrowing at the same time that they develop the environment for PPPs.

Around the world, municipal borrowing to finance infrastructure is common. Borrowing is the most understandable and widely used technique by which local governments dedicate a portion of their recurring revenues in future years to raise capital for investment. Many countries, including Thailand, place limits on how much can be borrowed, or on how much of a municipality's revenues can be used to pay debt service. It is also common to limit the purposes for which money can be borrowed.

Thailand's rules about municipal borrowing are straightforward. Debt repayment is at first claimed against municipal resources. Section 67 of Municipalities Act, BE 2496 (1953) states that municipality must pay off its loans from its resources regardless of whether or not it budgets for this type of expenditure. There is a total debt service ceiling: outstanding debt must not exceed 35 percent of the development (investment) budget as stated in the "Criteria for PAO, Municipal and Pattaya city borrowing" dated 23rd November 2554 (2011). Any borrowing must be for the municipality to provide services as stated by law³¹ and the project must be included in the Local Development Plan. Perhaps most importantly, LAO borrowing is

³¹ Renovating a municipal office building may not qualify as an eligible investment, as this is not considered a service to the population.

not guaranteed by the Ministry of Finance or any other state agency, and the principal and interest may not be repaid by the Ministry of Finance or any other state agency.³²

The Public Debt Management Office (PDMO), in the Ministry of Finance, has three responsibilities with regard to LAO debt. First, it has the authority to prescribe rules on the raising of loans and the issuance and management of debt instruments, including those of LAOs.³³ These rules are subject to approval by the Council of Ministers. Second, the PDMO is charged with studying, analyzing, and reporting on the debt of LAOs, along with debt incurred by the Ministry of Finance and state agencies.³⁴ Finally, the PDMO is charged with providing consultation and recommendations to, and enhancing capabilities of LAOs, along with state agencies, for the purpose of efficient debt management.³⁵

Borrowing is not an additional revenue source: rather, it is a claim against future revenues. If used wisely, it is a powerful tool for creating public assets, building the foundational infrastructure to encourage and enable private investment, and grow the local economy. If used unwisely, it can lead to serious financial problems. The essential point is that these future revenues should be adequate and predictable. Adequate in this context means that the projected revenues should be able to cover all of the LAO's operating costs with surplus. The amount by which current revenues exceed current expenditures is the operating surplus, which can be: 1) saved for future investments or contingencies; 2) used for smaller capital projects on a pay-as-you-go basis; or 3) used to pay debt service on capital that has been borrowed to fund bigger capital projects. In practice, most municipalities do some of all three.³⁶

Using borrowed capital leaves the municipality in control of its projects. When a municipality borrows for an infrastructure project, it retains control of the project. It typically hires an engineering firm to design the project, prepare specifications and bidding documents, and supervise the construction. It hires a construction contractor to build the project. The municipality typically operates and maintains the project with its own staff, although these functions could be contracted out as well. The municipality is responsible for the outcome – if the design is bad, or the construction is flawed, or the project is allowed to become derelict, it is clear where the blame lies.

The most common borrowing tools are loans and bonds. LAO's can seek a loan from a financial institution, or it can issue bonds to investors. In either event, it gets the capital it needs in exchange for a promise to pay over years to come. Loans are often amortized, in equal monthly or quarterly payments including principal and interest. Bonds usually require only interest to be paid until maturity, at which point the entire principal amount becomes due. Either instrument can have various repayment structures, but these are the most typical.

³² Public Debt Management Act, B.E. 2548 (2005), section 19.

³³ Public Debt Management Act, B.E. 2548 (2005), subsection 35(3).

³⁴ Public Debt Management Act, B.E. 2548 (2005), subsection 36(1).

³⁵ Public Debt Management Act, B.E. 2548 (2005), subsection 36(3).

³⁶ LAOs can use their reserves when savings are not enough to fulfill LAOs' functions, to provide mandated services to community, increase LAOs revenue, or to aid those in need. The use of reserves requires local council approval. The projects/activities must also be addressed in the Local Development Plan. All of the interviewed municipalities have hundreds of millions of Thai Baht in their reserves.

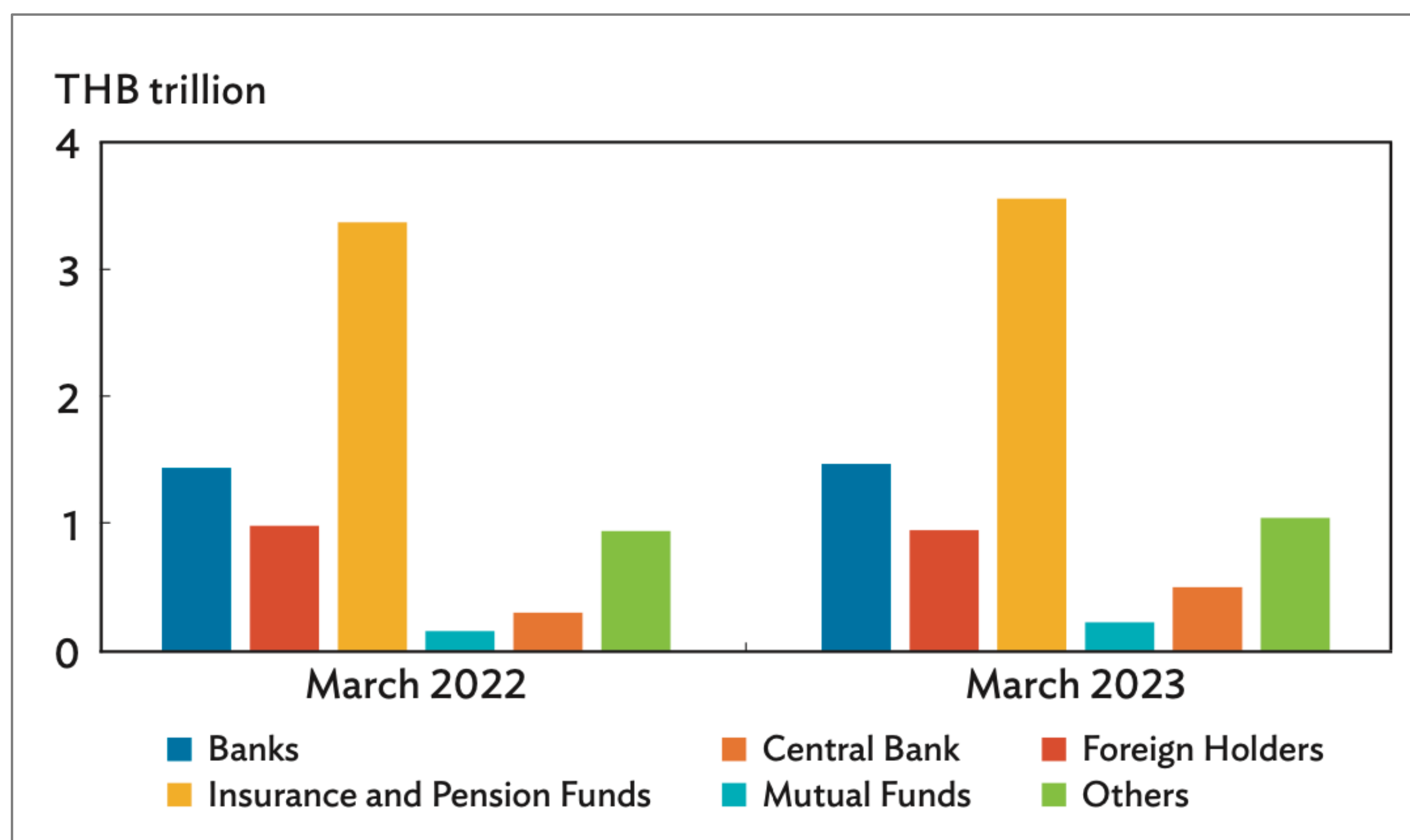
Borrowing is a way to get capital for investment now, and pay for it over time, ideally as the benefits of the investment are realized.

LAOs can borrow against the amounts in their Reserve Fund, held by the Ministry of the Interior. Fifteen percent of LAOs' annual surplus each year is sent to a Reserve Fund which is held and managed at the national level by the Ministry of the Interior in a separate account for each municipality. Municipalities can borrow up to seven times the amount in their reserve at a discounted interest rate, for up to 10 years. We have not researched whether, and to what extent, municipalities have actually borrowed from their reserve accounts. Going forward, it would be important to understand if they are borrowing, what they borrow for, at what rates, and for how long. If they are not borrowing, it would be important to understand why. Future work on municipal borrowing could also consider using the amounts in each municipality's reserve fund as a credit enhancement for any loans or bond issues, and maybe even in the context of PPPs, so that in the event of a temporary liquidity crisis, the reserve funds could be used to temporarily pay financial obligations while the underlying issues are sorted out.

LAOs can also borrow from commercial banks.³⁷ All five of the municipalities covered by this study have good relationships with several commercial banks as a creditor including Krung Thai Bank (KTB), Government Savings Bank (GSB), Bank for Agriculture and Agricultural Cooperatives (BAAC), Government Housing Bank (GHB), and Islamic Bank of Thailand. If a municipality borrows from a state-owned bank the term can be 10 to 20 years.

None of these five municipalities has issued municipal bonds. Legally, they could do so as Section 67 of the State Fiscal and Financial Disciplines Act, BE 2561 (2018) stipulates that "the creation of debts of local government organizations in accordance with the powers under the law establishing such local government organizations, if it is the making of loans or the issuance of bonds, shall also be subject to the provisions of this Act and relevant rules prescribed under the law on public debt administration." However, given the fact that municipalities can borrow at favorable rates from the Ministry of the Interior and from commercial banks, it is not obvious that municipal bonds hold any particular attraction. If these municipalities were to issue municipal bonds, they would compete with sovereign and corporate bonds for the attention of investors and would be expected to pay somewhat higher interest rates than Thailand's sovereign bonds. The sovereign bond market in Thailand is dominated by insurance and pension fund buyers.

³⁷ 'Commercial' in this case refers to the fact that these banks do retail lending. These are not private banks; all are at least 50 percent state-owned.

Figure 2. Investors in Thailand's sovereign bonds

Source: Bank of Thailand

2.2.3 PPPs and PPP Rules

For appropriate projects, PPPs can be an alternative to public investment financed through borrowing. One definition of a PPP is long-term contract between a government and a private company in which the company makes an investment in an asset and, using that asset and perhaps other assets made available by the government, provides services to the government or the public.

In a PPP, a municipality shares control of its projects. This is an important feature that differentiates borrowing from a PPP. In a PPP, responsibility for the design, construction and/or operation of the project may be assigned to a private entity. The roles of the municipality and the private party need to be carefully spelled out in an agreement between the parties.

The net effect may be similar to borrowing. Consider a typical PPP model where the private party builds a facility (e.g., a water treatment plant) and the city agrees to buy treated water in certain volumes over time. This is not functionally very different from a borrowing model where the city builds the facility with borrowed money and agrees to pay its lender certain amounts over time. In both cases, the city is promising to make future payments, and because of this promise, capital is invested to build infrastructure that provides public services.

The terms and conditions of PPPs vary tremendously. Sometimes the private party will design and build the plant, and then turn it over to the city to operate. Other times, the city may have built the facility and will turn it over to the private party to operate. A common model involves the private party building and operating the facility, and at some future date turning it over to the municipality.

PPP Lessons from the Eastern Economic Corridor

The Ministry of Finance, through the State Enterprise Policy Office, is in charge of the Thailand's main PPP law, the Public–Private Partnership Act, B.E. 2562 (2019). Under this Act, 'state agency' means a government agency, a state enterprise, or a local government organization. Any PPP project over B 5 billion in value is subject to rules and regulations under the Act. Projects under B 5 billion still have to follow regulations issued by the PPP Policy Committee. Normally, a PPP project can take up to 40 months from conception until the bidding process is completed.

There is a separate PPP law of limited geographic application. The Eastern Economic Corridor Act, B.E. 2561 (2018) provides a special PPP track for three provinces: Chachoengsao, Chonburi and Rayong. PPP projects in this region (including LAO projects) follow rules and regulations under the EEC Act. The EEC PPP Act does not overrule principles in the main PPP ACT. It simply helps to expedite the process and reduces the time frame to 10–12 months. The EEC PPP track was intended as a sandbox and pilot for future changes to general PPP processes. Several years on, there are some lessons learned:

1. There are many other laws, rules, and regulations involved in any PPP project. A special PPP track or the fact that a project is smaller than B 5 billion in value does not exempt the project from those other regulations.
2. As most transport, utilities, and social infrastructure projects in local areas are included in Article 7 of the main PPP Act, PPP principles must apply, even if a project is less than B 5 billion. For EEC projects, the bidding process and documentation follows PPP principles although the project is not under the PPP Act's project list.
3. Proper PPP structure and the capacity of all parties involved in structuring the project is very important. For complicated projects, such capacity is still lacking, including advisory services.
4. Risk allocation is crucial to project success. Unfair risk allocation is often the cause of project disputes and failure. In many cases, the PPP is structured in such a way that the 'public' takes as little risk as possible. This results in the project not being viable nor bankable for the private sector.

Financial and risk models vary. The private party may be paid directly by customers, e.g., in the case of a toll road. If the tolls are less than an agreed amount, the public party may have agreed to make up the difference. Depending on the terms of the PPP agreement, the city may have fixed and predictable obligations, or there may be contingent liabilities. Assessing and managing the liabilities associated with PPPs tends to be more complicated than managing the liabilities associated with municipal borrowing.

Expertise and efficiency. Two of the main advantages that a PPP model may offer are: 1) access to sectoral experience and expertise that the municipality does not have in-house; and

2) a performance orientation that can potentially deliver services and results more quickly than the municipality could do.

A PPP agreement depends on trust. Each party must trust that the other will honor its contractual commitments. Past performance is often the best guide. If a city has a record of honoring its contractual commitments, and has not defaulted on debt or other obligations, it is easier to trust that it will do so in the future. Similarly, if the private party has built and operated similar facilities in other places, with satisfactory results, there is a reasonable chance that it can do so again.

Not every project is suitable for a PPP. Private firms interested in undertaking PPPs are looking for good investments. They would like to invest in infrastructure or facilities that will generate a reliable revenue stream for their company, and where the risks are predictable. The revenue stream may come from user fees and charges, from municipal ‘take or pay’ arrangements, or from some combination of citizen and municipal sources. Private firms will not generally be interested in projects with limited potential for revenue generation, such as parks or roads, for which it is difficult to charge a user fee. They will tend to avoid politically sensitive projects, or projects that could involve complex permitting and approval processes and attendant delays.

PPPs can be complex. Negotiating the terms of the PPP agreement is an area that often gets the greatest attention. Municipalities can often get expert help with negotiations, which is especially important if the municipality does not have previous experience. The private party will often have an information advantage, due to previous experience in PPPs. After the PPP agreement is reached, the implementation stage is no less important, though it often receives less attention until there is a crisis. Even with the best agreement, the interests of the public party and the private party are in tension. The public party will want the best possible outcomes at the lowest possible cost. The private party will want to maximize the return on investment and avoid unexpected costs. Managing these tensions requires wisdom and often requires expertise in technical, financial, legal, and accounting skills. Sometimes a city may think that a PPP frees it from having to manage a complex construction project, only to find that the PPP project requires at least as much staff time, skills, and attention.

There are various models of assistance for PPP negotiation and implementation. Thailand has a PPP unit, though it remains unclear whether it is currently able to support municipalities in a timely fashion. It may need additional funding and staff to do so, or it may be appropriate for the Government to consider establishing a municipal-specific unit to support both municipal borrowing and PPPs. Development Finance Institutions (DFIs) such as the World Bank, the Asian Development Bank, or the Asian Infrastructure Investment Bank may also be able to offer expertise and advice. Bilateral development partners such as USAID, JICA, or GIZ may be able to do the same.

2.2.4 Financial Problems in Municipalities

Fiscal decentralization implies risk decentralization. To the extent that government wants to shift more responsibility for infrastructure investment onto municipalities, it is useful to consider how to manage decentralized risk. In many ways, decentralization is itself a risk management strategy – a kind of portfolio diversification. If municipalities were to run into financial difficulties, they are unlikely to all do so at the same time. Presently, there is no current concern about the financial health of LAOs, but as and if they gain increased fiscal powers and responsibilities, potential creditors and investors will want to understand how the government and legal system would treat any financial crises that might emerge.

A mix of ex-ante and ex-post rules is necessary. Ex-ante rules can limit a municipality from taking on loans or other long-term financial obligations that are likely to prove problematic. For example, limits on the amount of debt, or the amount of debt service, would obligate more than a certain percentage of revenues to debt service in any year. They can require oversight and approval by other levels of government or by specialized commissions. They can require public notice and an opportunity to be heard. Ex-post rules specify what support, interventions, and debt relief is possible in a financial crisis.

A clear regime for resolving fiscal problems is in everyone's interest. From the national government's viewpoint, it ensures that any fiscal risk at the local level does not become a national problem. Local financial obligations are not guaranteed by the national government, and there is no possibility of a national bail-out. From the investor's or lender's perspective, they know that there is a clear process through which they can enforce a municipality's financial obligations, to the extent that the municipality has the ability to pay. If a lender has lent unwisely to a municipality that is not creditworthy, they may not recover everything, and that risk should go into their lending decision. We do not want to encourage lending to uncreditworthy borrowers. Finally, from the municipality's standpoint, it is also good to have a clear process, and one that protects the municipality's ability to continue providing essential services.

The United States has the most experience with municipal insolvencies. American cities have always been the key tool for providing local infrastructure, clean water, reliable electricity, efficient public transport, safe streets, and other public services. Only a tiny percentage of America's cities have had serious financial problems, and problems are seldom related to over-borrowing. Most municipal defaults occur during depressions and recessions, when people cannot afford to pay taxes and utility bills, and revenues fall. Some US states have authorized their municipalities to use Chapter 9 of the US Bankruptcy Code. One of the best-known examples was Detroit, Michigan. Ten years ago, Detroit filed for bankruptcy after decades of decline in its industrial base, which was focused on automobile manufacturing. With a shrinking population and falling property values, the city could not pay all of its obligations. In the bankruptcy proceeding, all creditors took cuts, and today Detroit is again creditworthy and has borrowed extensively for new capital projects. Detroit's bonds are today in high demand from investors.³⁸

³⁸ <https://www.cityofdetroitbonds.com/detroit-mi-investor-relations-mi/about/i1383>

South Africa has good legislation, but poor implementation. South Africa's insolvency legislation is perhaps the most detailed municipal insolvency legislation, including an extensive constitutional provision, but the legislation has not been implemented as written. Dozens of South African municipalities now have quite serious financial problems, and many more have less serious challenges. This is largely due to corruption, mismanagement, and the reluctance of the governing party to act against local councils where it is in power. As a result, many municipalities have been allowed to fester in poor financial shape. Once a municipality has been allowed to fall into complete collapse, it is extremely difficult to recover. The interventions authorized in the legislation should have been happening much sooner, but the national and provincial governments have been unwilling to take a pro-active approach as the Constitution intended.³⁹

2.2.5 Institutional Capacity and Capacity Building

Subnational Capacity

Local development strategies. Experience around the world shows that for municipalities to effectively attract private investment, they must have a clear idea of what they want to accomplish through borrowing or using a PPP. This implies that they have a clear idea of how and where they want their city to grow, and what public infrastructure will be necessary to support such growth, and to attract the entrepreneurs and firms that will generate jobs and economic activity through their private investments.

Each of the municipalities has a 5-year Local Development Plan (2023–2027). These development plans contain a list of infrastructure projects, but they are not obviously related to spatial development plans, nor to market demand. It would be tremendously useful for cities, working with provincial and national authorities, to upgrade their long-term planning processes, so that they become exercises in resource identification and allocation, and so that projects are not approached one by one, but as part of a strategic plan which has a vision that extends for decades. The 5-year local development plans do not yet envision PPPs or borrowing to finance projects. If a municipality borrows (and often if it enters into a PPP) it takes on financial obligations that stretch for years or decades into the future. The benefit of these tools is that a city, its people, and its economy benefit from infrastructure immediately. The potential downside is that financial commitments in out-years limit the budgetary flexibility of future councils. It is therefore important that local officials and councilors understand the trade-offs. These tools should be used only for genuine priorities with a financial, economic, or social benefit to the community.

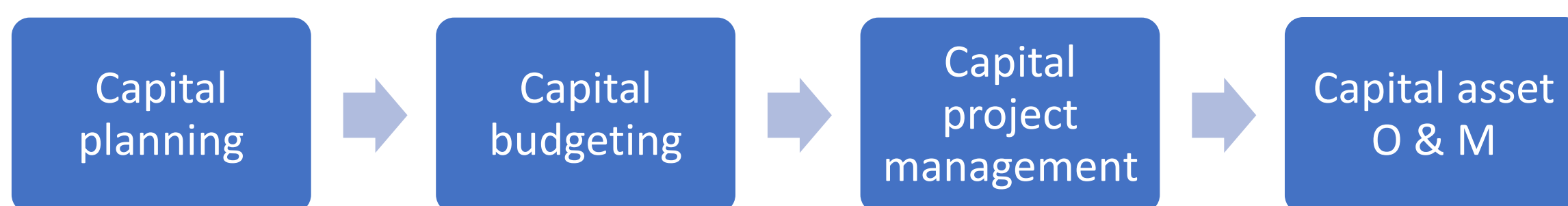
It is important to integrate spatial planning, infrastructure planning, and financial planning. Over more than three decades, the World Bank Group has worked to help local governments access capital markets. We have found that one of the biggest challenges is on the demand side. Even though there are many investors and increasing interest in urban infrastructure as an investment opportunity, local authorities often fail to plan over the long term (between 10 and 20 years). They sometimes fail to consider how spatial development is likely to occur, what that implies for the infrastructure that will be needed, when it will be needed, and how that infrastructure can be responsibly financed. Every municipality is different, and sound long-

³⁹ <https://pari.org.za/mind-the-gap-section-139-interventions-in-theory-and-practice/>

term strategic planning can identify the specific infrastructure and investment needs, and the specific fiscal capacity available to meet these needs.

The importance of synchronizing city spatial planning with capital planning.⁴⁰ Spatial planning identifies what development could occur, and where, over time, providing a vision for future built and natural environments. A spatial plan does not identify when development will occur, what it will cost, or how it will be financed. Rather, it should broadly identify needs for water, sewer, storm drainage, transport, and parks.

Figure 8. Capital Infrastructure Development Timeline



Source: World Bank Study Team

Capital planning aims to turn a ‘wish list’ into reality. Long-term capital planning and decision making can lead to and support annual capital budgeting processes, where firm fiscal commitments are made. Capital planning is deeply connected to debt management, ensuring that there will be revenues available in future years to meet the city’s obligations. Long-term financial planning, which includes both capital planning and projected operational revenues and expenses, ensures that funds will be available for operation and maintenance of physical infrastructure once it has been built.

Capital improvement identification and prioritization. It is useful to be explicit about the criteria by which urban projects will be identified and prioritized. Each city will have to decide for itself what criteria it thinks most important. Being explicit about these will signal to residents and the business community what projects the LAO is likely to support. As an example, here are three possible lenses, or ranking criteria, through which a city might evaluate proposed projects:

- 1. Economic criteria** might be similar to that used by Chinese policymakers: will this project enable or spur growth in our city’s productivity and economy? Will it bring about more private sector investment in facilities or firms? Public investment can spur economic growth in various ways. For example:
 - Transportation infrastructure can reduce firms’ transportation costs and increase access to labor inputs and to customers.
 - Utility infrastructure: reliable water, sewer, electricity, and telecommunications allow firms to operate efficiently in the city.
 - Schools, hospitals, and clinics can ensure the city has an educated and healthy workforce.

⁴⁰ This discussion draws on materials presented by Ken Rust, former CFO of Portland, Oregon, as part of the World Bank’s Creditworthiness Academies.

- Innovation hubs such as research parks centered around universities can attract biotech, pharmaceutical, and engineering firms that provide high quality jobs for an educated workforce.

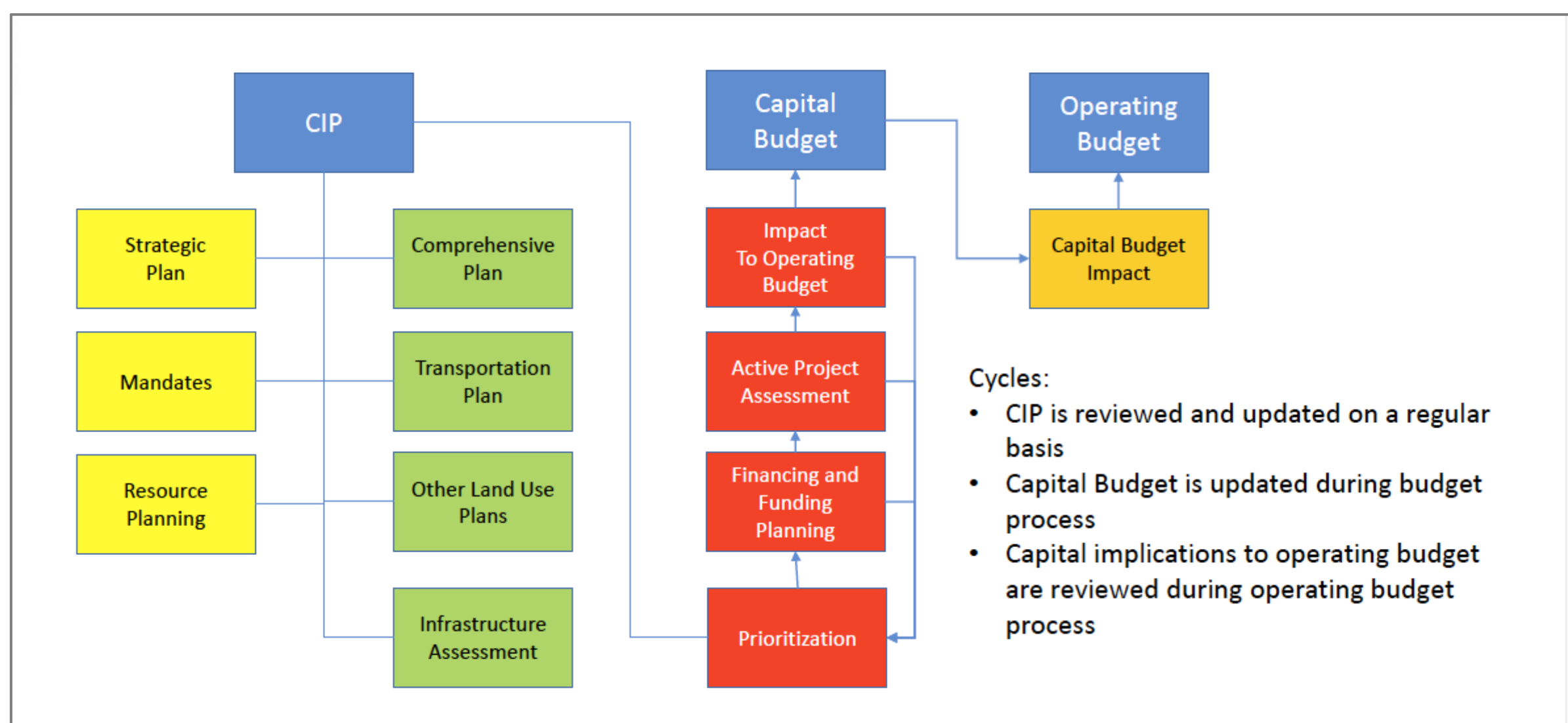
2. Financial criteria⁴¹ might focus on the costs and benefits to the LAO itself:

- Will these investments generate enough tax or fee revenue over time to warrant the expenditure?
- Will the infrastructure investment mainly serve residents, businesses, or other users? In what proportion? How much private construction or investment is likely to result? How much tax or fee revenue is this new construction or investment likely to generate?
- Will this infrastructure investment generate increased value for adjacent or served properties? Will the property tax system be able to capture these increases in the tax base?
- Over what time horizon are revenue projections expected to be realized?
- Is there a direct revenue opportunity through tolls or user fees?

3. Social utility considerations might focus on identifying the potential social benefits that will result from an investment:

- Does the project improve access to transportation for underserved communities?
- Will the project improve public health and safety, e.g., by improving water quality or storm water drainage?
- Will the project benefit the environment, resulting in cleaner air or water, energy savings, or generate benefits to reduce or mitigate climate change?
- Will the project benefit disadvantaged sections of the community, or neighborhoods that are currently underserved?
- Will the project support more compact, efficient, walkable urban development?
- Does the project align with agreed social policies, such as supporting aging populations, reducing economic inequality, protecting the environment, or preserving cultural assets?

⁴¹ PPPs are most likely to attract investors if a proposed project has strong financial prospects. However, a municipality might well decide to invest in a project which is not financially rewarding because of its economic or social benefits.

Figure 9. Capital planning process

Source: Diagram courtesy of Ken Rust, former CFO of Portland Oregon

City Development Corporations (CDCs). CDCs have emerged in Thailand as a new mechanism aimed at developing urban infrastructure. The Khon Kaen CDC was the first of these. The impetus seems to have risen out of a sense of frustration, on the part of businesspeople, that there was not much infrastructure investment in Khon Kaen from the public sector. The initial capital of the Khon Kaen CDC was contributed by the private sector, and the CDC's directors are private individuals. Five municipalities in Khon Kaen are shown as shareholders.⁴² There was initially a lot of enthusiasm for this model, and there are now 15–20 such CDCs in Thailand, but enthusiasm has cooled because the Khon Kaen light rail project has yet to begin construction. In the Khon Kaen CDC, a strong spirit of civic collaboration remains.

Municipalities are likely to need mentoring and technical assistance as they build their capacity to develop and manage capital investment programs and the associated debt obligations. On the capital side, they will want to be able to identify and prioritize investment needs, translate these needs into project proposals, and understand how to sequence and prioritize projects with respect to their financial capacity. On the operational side, they will need to prepare meaningful forecasts of revenue and expenditure in future years, so that they can manage revenue and expenditure, cash flow, and long-term financial obligations associated with borrowing or PPPs.

Sound capital planning and implementation involves communities. Capital infrastructure investment can be expensive. Much of it has a lasting impact on the built environment, as well as on the population and the business community. It is appropriate therefore that all parts of the community be given a voice in identifying investment needs and priorities. In several of these cities, it appears that the business community is taking an active role in advocating and organizing for needed investments. We have noted the low rate of capital budget execution in these cities and suggest that the business community may have valuable skills that might contribute to effective execution of capital investment plans. Each of these cities has a

⁴² Per the official shareholder list, Form Bor.Or.Jor 5, filed with the Department of Business Development, Ministry of Commerce.

university, and their faculty and students may be able to contribute valuable research and analytical skills to the capital planning effort. Between the LAO, universities, business community, and population – the collective capacity for sound capital planning would appear to be substantial.

National Level Capacity

A municipal finance policy unit in the Ministry of Finance or elsewhere could help to develop a national strategy White Paper to flesh out the details of how LAOs could access capital through municipal borrowing or PPPs. The unit could also, as and when there is demand, undertake a study of the revenue potential of various levels of subnational government, based on reasonable estimates of land and building values in each city, and reasonable assumptions about user charges and other local fees. The unit could also support any efforts necessary to revise legislation or regulations to better accommodate an enhanced role for LAOs in raising capital for local infrastructure. This could include substantive and procedural regulations on both borrowing and PPPs, and potentially enhanced authority over taxes, fees, and user charges. The policy unit could monitor policy implementation, analyze outcomes, and consider adjustments that might be advisable as Thailand gains more experience with increasingly self-reliant municipalities. It would also be useful to have a central and publicly available database on municipal finances, including municipal borrowing and PPPs.⁴³

This policy unit could also be the sponsor of ongoing dialogue between municipalities, the financial sector, and the various branches of government whose policies and implementation might need adjustment to reflect the increased role of LAOs in identifying and financing infrastructure. The municipal borrowing team in South Africa’s National Treasury publishes a quarterly Municipal Borrowing Bulletin⁴⁴ to inform all shareholders about developments in municipal infrastructure finance, and convenes a regular Urban Finance Working Group to discuss developments and hear views and concerns of municipalities, financial institutions, development partners, and other government agencies. As time goes on, this policy unit might also be asked to evaluate and make recommendations concerning intergovernmental fiscal and own-source revenue policies for municipalities.

A municipal infrastructure investment support unit could offer practical engineering, legal, and financial advice to LAOs as they engage in long-term capital and financial planning, develop projects to meet local needs, and assess various options for financing these projects. Such a unit could interface directly with LAOs and perform functions such as:

- Administering any project development fund that might be created
- Providing guidance, support, and oversight to LAOs in developing, planning, and implementing infrastructure projects, including reviewing project proposals and budgets
- Providing training and mentoring to municipalities, to build their capacity to properly manage infrastructure planning, budgeting, and implementation

⁴³ In 2020, Janaagraha, an Indian NGO, in collaboration with the Ministry of Housing and Urban Affairs (MoHUA), launched www.cityfinance.in, an online portal for municipal finance in India. It currently hosts 2,700 financial statements (comparative balance sheets and income statements) of 1,500 Urban Local Bodies (ULBs). It is anticipated to enable states and cities to benchmark financial performance indicators with peers, enhance own revenues, raise market financing, and adopt best practices.

⁴⁴ http://mfma.treasury.gov.za/Media_Releases/Municipal%20Borrowing%20Bulletin/Pages/default.aspx

- Coordinating with other government agencies that support local infrastructure, such as line ministries in the various sectors
- Promoting and guiding municipal borrowing and PPPs for municipal infrastructure development
- Conducting research and collecting data to inform municipal infrastructure planning and financing
- Advising on policies and legislation related to municipal infrastructure investment and service delivery
- Reporting regularly to government and the public on the performance of municipal infrastructure projects.

Incentives of elected officials. Elected councilors and mayors have dual accountability. On the one hand, they are directly elected by citizens. On the other hand, they are still under the control of provincial governors, district officers, and the Ministry of the Interior, who have the authority to approve annual budgets and local regulations, to dissolve councils, and to dismiss councilors.⁴⁵ This puts a high premium on collaboration between provincial and municipal officials.

2.3 Lessons from Elsewhere

Table 3. Country Comparisons

	INDIA	CHINA	USA	SOUTH AFRICA	INDONESIA	PHILIPPINES	THAILAND
Population	1.4 bn	1.4 bn	332 mn	59 mn	274 mn	114 mn	72 mn
GDP/capita (USD)	\$2,257	\$12,556	\$70,249	\$7,055	\$4,333	\$3,461	\$7,066
Structure	Federal	Unitary	Federal	Unitary	Unitary	Unitary	Unitary
Municipalities	Limited autonomy and OSR, states are in control	Party-state control, but performance is rewarded	Broad powers, substantial autonomy	Broad powers, troubled finances	Some autonomy, financially dependent	Meaningful autonomy, financially dependent	Limited autonomy, financially dependent

Source: World Bank Study Team

Caution is warranted in comparing examples from countries with dramatic contrasts in size, wealth, and structure. India and China have the largest populations, with over 1.4 billion people. This is twenty times the population of Thailand. The United States is a high-income country, with a per capita GDP of US\$70,249, about ten times the economic level of Thailand.

⁴⁵ OECD Regional Policy Profile for Thailand 2016, retrieved July 8, 2023.
<https://www.oecd.org/regional/regional-policy/profile-Thailand.pdf>

South Africa appears superficially similar, with a per capita GDP close to that of Thailand, and a slightly smaller population. However, many South African municipalities are in deep financial crisis, and have not managed their budgets responsibly. India, like Thailand, has relatively weak local governments, but in India this is because the state governments take on most of the responsibility for urban planning and infrastructure construction. Thailand is richer than its Asian neighbors Indonesia and the Philippines. On the other hand, its municipalities have substantially fewer responsibilities than those in neighboring countries. All three countries tend to be financially conservative, and a bit wary of municipalities taking on debt for infrastructure.

It can be difficult to disaggregate the influence of formal structures from that of the countries' different histories, legal frameworks, politics, economies, and cultures.

2.3.1 Lessons from USA

Almost all local infrastructure in the US has been built with borrowed capital. The US municipal bond market today stands at about US\$4.8 trillion – that is over US\$14,000 for every man, woman, and child in the US. Americans come into the world owing money, but having a share in the infrastructure that has been built over the past two centuries with borrowed money, most of it through the issuance of municipal bonds.⁴⁶ Other countries sometimes look at the US municipal bond market and ask how they can emulate it.

One of the first things people notice about the municipal bond market is that interest on most municipal bonds is free of federal tax, and often free of state tax for taxpayers in that state. There is significant debate about how important this tax exemption is. Other countries have tried using similar exemptions to spur the development of a local municipal bond market, but that has not been successful. The tax-exempt status of municipal bond interest in the US is largely an accident of history. The original rationale was that the federal government should not tax state and local debt instruments as a matter of federalism, since state governments have sovereignty over their own financing. This rationale has been criticized, but the tax exemption is now deeply embedded and attempts to change the status quo have met stiff opposition from state and local political leaders.

One aspect of the US municipal bond market that is less frequently highlighted is its venerable age. In 1812, New York City issued the first general obligation (GO) municipal bond to finance the building of a canal. In the more than 200 years since, the municipal bond market largely developed without explicit policy support, and with remarkably little regulation. Prior to the 'New Deal' reforms in the wake of the Great Depression, municipal bonds were unregulated at the federal level. States had various legislative and regulatory requirements, but the market largely developed organically in response to municipalities' constant striving to build more infrastructure, and thus attract more commerce, industry, and private sector investment.

⁴⁶ It should be noted that the term 'municipal bond' in the United States is typically used, and is used here, to include all subnational borrowings. Municipalities are the largest borrowers, but much borrowing is also done by states, special districts, and other quasi-governmental agencies.

The final thing to mention about the US model for local infrastructure finance is the strong and sustained demand for capital from local governments themselves. The US is a federal country, and state legislation therefore determines the powers, functions, and finances of local government units. US municipalities are generally autonomous to an extent that is without many parallels in the world. There are over 90,000 local governments in the US,⁴⁷ including cities, counties, school districts, water districts, fire protection districts and other special districts and institutions. Most of these have locally elected councils or boards, significant locally determined revenues and expenditures, and the ability to borrow for capital investment – and most do want to borrow. Mayors and city councils naturally vary in their perspectives, but most are strongly motivated to invest in infrastructure to attract private sector commercial and industrial investment that creates jobs, increases local tax revenues, and brings prestige. This grass-roots demand for investment capital, driven by local politicians, interfaces with the world’s largest capital market, and that supply-demand function is at the core of the American model.

A lesson from the American experience is that, given sufficient autonomy, accountability, and time for capital markets to evolve, municipalities can and will find the investment capital they need to invest in infrastructure.

2.3.2 Lessons from China

The demand side for infrastructure finance is also important in China, which is not as decentralized as the US, although Mayors do have discretion in how they achieve their centrally established performance targets. Mayors are appointed by the Party based on loyalty and performance. Major decisions over city budgets, land use, and large infrastructure projects need approval from other levels of government. At the same time, mayors have been meaningfully accountable to the Party for performance objectives, including GDP performance. Mayors who have helped deliver strong GDP performance may be promoted within Party structures, and those who do not deliver may be removed from office. Economic performance has long been paramount in China, though today there is a growing focus on balancing growth with sustainability. The Mayors’ motivation to increase GDP or meet other performance targets has created a strong demand side for borrowing, even as interest rates have increased.

China has built an astonishing amount of urban infrastructure over the past several decades. One important factor in this success has been the generation of investment capital through land sales (which in reality are usually long-term leases of land). All land in China was nationalized, which means private use is authorized through sale/lease arrangements in which all of the payment for the land is typically provided up-front. A city that sells plots for development gets a ready source of capital for investment in public infrastructure. That model may be reaching a practical limit for two reasons. First, much of the desirable land in China’s cities has already been allocated, and demand for new parcels is not growing fast enough to sustain the desired level of investment. Second, most cities in China do not have a property

⁴⁷ US Census Bureau, “From Municipalities to Special Districts, Official Count of Every Type of Local Government in 2017 Census of Governments”.

https://www.census.gov/content/dam/Census/library/visualizations/2019/econ/from_municipalities_to_special_districts_america_counts_october_2019.pdf

tax, and from the perspective of ‘buyers’ who paid all of their leases up front, any attempt to impose a tax after the lease has been agreed appears to be double charging. This is important because the operation and maintenance of China’s massive urban infrastructure is expensive. As a result, property tax is still being debated. Some cities have started pilot property tax programs, but there is political resistance.

Municipal debt in China is complicated. There is borrowing for infrastructure, but most of this is not debt of the municipality itself. Instead, there is widespread use of local government financing vehicles (LGFVs) and SPVs. These corporations may be established and owned by a municipality, but their debt is ‘off-balance sheet’. The national government is concerned about excessive borrowing through LGFVs and SPVs and has moved to restrict this type of borrowing. This tightening has made it more difficult for LGFVs to obtain new loans. However, many are already heavily invested in long-term projects, and bankers tend to see little risk in lending to these entities, which they perceive to be guaranteed by local authorities, and ultimately by central government.⁴⁸

The total outstanding municipal and quasi-municipal debt in China is difficult to pin down. Estimates vary significantly. Debt associated with LGFVs alone has been estimated at about US\$8.25 trillion.⁴⁹ That is almost twice the size of the US municipal borrowing, but because of China’s large population, represents only about US\$5,900 per capita. Given China’s per capital GDP, about less than 20 percent of the US figure, this is a heavy burden. On the other hand, this investment is part of what accounts for China’s rapid economic growth trajectory.

Like the US, the Chinese model illustrates the importance of local demand for investment capital in building a system for financing local infrastructure. The Chinese experience with municipal borrowing is much newer than the American experience, is still evolving, and its size causes some nervousness among investors.⁵⁰

2.3.3 Lessons from South Africa

A fundamental break with the past. In 1994, South Africa held its first democratic elections, which brought the African National Congress (ANC) to power. The ANC began as a liberation movement fighting against the apartheid system of institutionalized racism. When the ANC took power, South Africa had world class infrastructure that served its white citizens (about 12 percent of the population), but not those of the majority. The Government had a clear and urgent mandate to create infrastructure that improved access for the historically disadvantaged majority population. Under the 1996 Constitution, most of the burden for meeting these needs was placed on local government. That Constitution also provided a

⁴⁸ Guofeng, S. 2019. “China’s Shadow Banking: Banks’ Shadow and Traditional Shadow Banking,” BIS Working Papers No 822, Bank for International Settlements.

⁴⁹ See “China’s hidden local government debt soars to over \$8tn,” Nikkei Asia, June 15, 2023. <https://asia.nikkei.com/Business/Markets/China-debt-crunch/China-s-hidden-local-government-debt-soars-to-over-8tn>

⁵⁰ See “China’s \$23 trillion local debt mess is about to get worse,” Bloomberg, May 22, 2023. <https://www.japantimes.co.jp/news/2023/05/22/asia-pacific/china-local-debt-problem/#:~:text=In%202021%2C%20a%20remote%20coal,undergo%20an%20unprecedented%20financial%20restructuring>

robust system of own-source revenues – primarily property tax, and water and electric tariffs – at the disposal of local government.

Financial discipline through private sector diligence. A 1998 White Paper on Local Government set out a strategy for delivering infrastructure and services through local government. The White Paper included specific principles for local government finance. The goal was to leverage private-sector infrastructure investment and expand municipal borrowing powers so that municipalities could access capital markets. The Government would define the basic “rules of the game”, but would rely on “decentralized market relationships (between borrower and lender)” to achieve financial discipline, rather than “direct centralized control of the local government.” This meant that lenders would have to do their due diligence and satisfy themselves that municipal borrowers would be able and willing to pay their financial obligations. It explained that this stance was “in line with the fiscally decentralized orientation of the Constitution.”⁵¹ Note that this White Paper was roughly contemporaneous with Thailand’s own decentralization policy development.

A changed environment for lenders and investors. The White Paper’s vision of a vibrant market in the new South Africa was ambitious. Municipal borrowing from the private sector had largely frozen with the advent of democracy. The scale of infrastructure investment needs, together with the poverty of the new utility customers and taxpayers, increased the risk to potential investors. Though the country had not finalized its new municipal boundaries, it was clear that the former white and black local authorities would be amalgamated with their rural hinterlands to harness the economic vitality of the cities for the benefit of all South Africans. In this context, financial institutions would face greater risks and uncertainties when lending to municipalities. Municipal tax bases would be stretched to the limit to extend infrastructure and services to those who had been excluded. Moreover, the new Constitution specifically provided that national and provincial governments could not guarantee local government debt.

Building and maintaining consensus. It took more than three years to draft the necessary legislation and get it adopted by Parliament. The process of drafting, tabling, and enacting legislation was done in the context of continual consultation, testing, dialogue, and discussion. Throughout the policy and legislative process, National Treasury worked on five parallel streams of activity, which converged and interacted to generate results. These were:

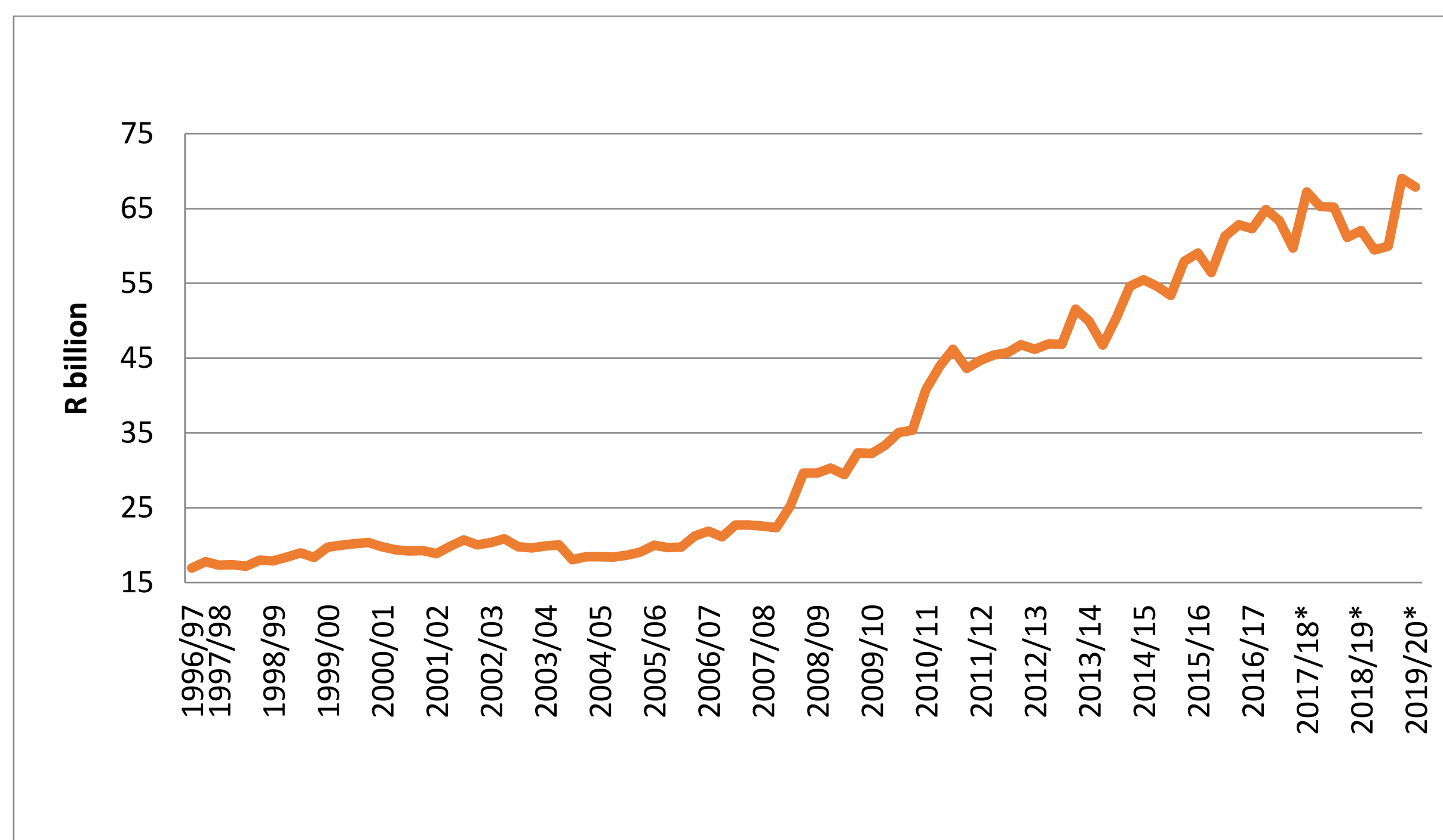
- 1) Drafting, tabling, and advocating for detailed legislation
- 2) Encouraging the supply side, i.e., involving potential investors in policy development to ensure the policies would attract their investment
- 3) Developing the demand side, i.e., ensuring that municipal borrowers would be creditworthy, with stable revenue streams and developed capital improvement plans
- 4) Engaging with market institutions, including the Bond Exchange, the Johannesburg Stock Exchange, and ratings agencies
- 5) Working through the media to make the case for borrowing as an important tool for municipalities prepared to use it responsibly.

⁵¹ White Paper on Local Government. 9 March 1998. https://www.cogta.gov.za/cgta_2016/wp-content/uploads/2016/06/whitepaper_on_Local-Gov_1998.pdf

Extensive stakeholder consultation. This coordinated, iterative interaction with stakeholders was a key to National Treasury’s success. In addition to individual municipalities, National Treasury engaged with the South African Local Government Association (SALGA) and consulted regularly with individual financial institutions and the Banking Council. Legal approaches were tested with leading constitutional lawyers and seasoned legislative drafters.

Municipal borrowing as part of municipal financial management. The Government also garnered private sector confidence by addressing the challenges holistically, along several fronts. The municipal borrowing and financial emergency provisions became parts of a larger Municipal Finance and Management Act (MFMA). The narrative around municipal infrastructure finance therefore included related reforms, including changes to property tax laws, increased transparency and predictability in intergovernmental grant allocations, and improvements to national government monitoring of local budgets and budget execution. These reforms helped achieve investors’ and the Government’s shared goal of ensuring that regular and reliable financial and accounting data was available.

Figure 10. Growth in long-term outstanding debt



MFMA legislation leads to bond issues. Shortly after adoption of the MFMA, The City of Johannesburg issued R 2 billion in bonds. By 2014, Johannesburg had issued another R 7.4 billion, Cape Town had issued R 4.2 billion, Tshwane had issued R 2.1 billion, and Ekurhuleni had issued R 3.6 billion in bonds. In addition to all of these bond issues, long-term municipal borrowing in the form of loans tripled over the ten-year period and stood at about R 30 billion by the end of 2014. Overall, the sustained effort over decades has generated hundreds of billions of rands of investment finance for municipal Infrastructure, roughly half from private sources and half from development finance institutions, including the Development Bank of Southern Africa. The total outstanding debt in South Africa’s municipal borrowing market today is about R 65 billion (US\$3.6 billion). That is about US\$1,000 per citizen. This is less than

a tenth of the size of the US market, but South Africa's GDP per capita is also about a tenth that of the US.

Municipal Borrowing Team. Part of the reason for South Africa's initial success was the establishment of a Municipal Borrowing Team within the National Treasury. This 10 to 12-person team included representatives from several different units within the Treasury,⁵² and became responsible for data, analytics, policy, and support to the market. However, the heavy lifting in terms of municipal borrowing must ultimately be done by the municipalities themselves, and by their lenders and investors. Continuous dialogue with and between potential borrowers and potential lenders has therefore been essential.

Serious financial problems. Over the past several years, many of South Africa's municipalities have gotten into serious financial problems, despite a good legal and regulatory regime. Perhaps the biggest reason is that many local political leaders and officials owe their positions primarily to their loyalty to the governing political party.⁵³ Whereas China requires loyalty to the party, it also rewards competence and results. In South Africa, it is party loyalty above all else, and this includes a willingness to divert public resources for the use of political parties in their campaigns.

Lessons from South Africa. South Africa's experience offers at least four important lessons:

- 1) Developing a municipal borrowing market takes time. It took five years between the 1998 White Paper on Local Government and Johannesburg's first municipal bond issue
- 2) Developing municipal demand depends on clear signaling from national government, as to what is expected from municipalities in terms of financing infrastructure
- 3) The National Government needs capacity, perhaps in the Ministry of Finance, to monitor and analyze outcomes and trends, and to support local government in accessing capital markets
- 4) When political loyalty is valued over competence, municipal performance will suffer.

2.3.4 Lessons from India

Decentralization thinking in India. As in Thailand and South Africa, India began a decentralization effort in the 1990s. In 1992, this led to the 74th Amendment to the Indian Constitution, which recognized for the first time, and attempted to empower, urban local bodies (ULBs). However, the 74th Amendment left it to each state to enact enabling legislation and to provide for ULB finances. Within India's federal structure, it had always been up to the states to determine the powers, functions, and revenues of ULBs. In the three decades since the 74th Amendment, most Indian states have failed to devolve significant authority and revenues to ULBs. The lack of a stable and reliable financial base has naturally constrained borrowing by ULBs, despite the national government's episodic policy enthusiasm for

⁵² Most of the Borrowing Team members are part of the Intergovernmental Relations Division of the National Treasury, which has about 100 staff members.

⁵³ See Michael Evans, "Cadre deployment sends us headlong towards kakistocracy," June 11, 2023, Daily Maverick. <https://www.dailymaverick.co.za/opinionista/2023-06-11-cadre-deployment-sends-us-headlong-towards-kakistocracy/>

municipal bonds. Today, most urban infrastructure is installed through state-controlled channels,⁵⁴ and most subnational borrowing in India is state-level borrowing.⁵⁵

States retain control. India has over 4,000 ULBs that might theoretically borrow for infrastructure, as well as a large number of state-created development authorities, water and sewerage boards, and other entities responsible for investment in urban infrastructure. A 2011 World Bank study undertook a detailed review of the laws in four states, and concluded that in these states, ULB borrowing requires the approval of the state government, usually on a case-by-case basis, and this can often take six months or more.⁵⁶ The fact is that most state governments in India are not interested in turning responsibility for urban development over to elected local councils.

ULB revenues are not stable, predictable, and adequate. The power to borrow for infrastructure is meaningless without stable, predictable, and adequate revenues that can be used for repayment. ULBs' power to levy taxes and fees also requires specific state legislation. Local autonomy to formulate tax policy is severely limited, and there are many rebates and exemptions, including a Constitutional prohibition on taxing property of the Union Government. As a result, property tax collections in India, amounting to 0.14 percent of GDP, are significantly lower than in other developing countries, let alone OECD countries. Most states have failed to provide ULBs with stable, predictable, and adequate revenues.

Weak ULBs generate weak demand. India's weak ULBs are unlikely to develop substantial demand. The lack of demand for long-term credit is logical given that most ULBs have limited powers and functions, as well as limited and unpredictable revenues. While there is state to state variation, no Indian state has given ULBs a large degree of autonomy, especially in comparison to municipalities in South Africa and the US. Residents of Indian cities seem to have little expectation or confidence that their local government will provide modern infrastructure or reliable services.

Factors contributing to weak demand. There are many factors contributing to weak ULB demand. Among these are: 1) commercial and subsidized loans (including loans from state-level intermediaries) that are often available to ULBs at equivalent or better interest rates, and with less effort than it takes to issue a municipal bond; and 2) central and state government transfer schemes that have crowded out the demand for municipal bonds. Recognizing the need to invest more in urban development, to lay a foundation for continued economic growth, a variety of national and state schemes have provided infrastructure grants to ULBs, especially since the US\$20 billion JNNURM scheme was launched in 2005. By providing generous grants for local infrastructure, these well-intentioned schemes have weakened the incentive for ULBs to borrow money for infrastructure.

⁵⁴ These channels include city-specific urban development and water authorities, appointed, and controlled at the state level, which undertake urban planning, infrastructure development, and other local functions. See Glasser, M. 2021. "Institutional Models for Governance of Urban Services," World Bank. <https://doi.org/10.1596/38281>

⁵⁵ This description is adapted from Glasser, M. 2020. "Municipal Bonds in Three Countries: India, South Africa and the United States," *Journal of Comparative Urban Law and Policy*: Vol. 4: Issue 1, Article 15, 96-132. <https://readingroom.law.gsu.edu/jculp/vol4/iss1/15>

⁵⁶ World Bank. "Developing a regulatory framework for municipal borrowing in India," Washington, D.C. <http://documents.worldbank.org/curated/en/132101468281673152/Main-report>

Development authorities. Rather than empower strong ULBs, states have created parallel financing channels, using state-controlled entities that have planning and investment powers within ULB boundaries. These include development authorities, industrial development and investment corporations, water and sanitation enterprises, and urban rail and transport authorities, and others. These authorities typically receive financial support from the state, and many have their own revenue instruments. Indeed, the biggest ‘municipal bond’ in India was not issued by a municipality at all, but rather by the Andhra Pradesh Capital Region Development Authority, to support the development of Amaravati, the State’s new capital.

Lessons from India. One lesson from India is that without meaningful autonomy and accountability at the local level, municipalities are unlikely to engage in significant borrowing for infrastructure. While many Indian states have, on paper, devolved significant powers and functions to local authorities, they have not provided the revenues or revenue instruments that would allow them to raise their own capital. In addition, most urban land use planning is done at the state level, which would prevent local authorities from effectively coordinating infrastructure investment with spatial and economic planning. These and other issues are described in a recent World Bank report, “Financing India’s Urban Infrastructure Needs: Constraints to Commercial Financing and Prospects for Policy Action,”⁵⁷ which argues that financing from private and commercial sources, such as through municipal borrowing and PPPs, can play a substantial role in supporting urban investment, but notes that the use of these tools is limited even in financially strong cities. This report analyzes demand- and supply-side constraints and suggests policy changes to address these.

⁵⁷ Athar, S., R. White, H. Goyal. 2022. Financing India’s Urban Infrastructure Needs: Constraints to Commercial Financing and Prospects for Policy Action, Washington, D.C.: World Bank.

3. Next Steps

The Khon Kaen Model is likely to have limited application. It is understandable to wish and hope that the Khon Kaen Model would help solve secondary cities' need for infrastructure investment. It would be ideal if the private sector would bear the cost of necessary investments in each of these cities at no cost to the public. Some limited set of infrastructure investments in some of these cities may align with private firms' needs and self-interest. It is not, however, a reliable strategy to finance the significant public investments needed for economic development, jobs, and competitiveness.

Municipal borrowing and PPPs offer a reliable path to urban infrastructure investment. Both PPPs and municipal borrowing are aligned with Thailand's decentralization strategy. They allow LAOs to take the lead in identifying local needs, conceptualizing projects to meet those needs, and attracting the capital investment needed to realize those projects. Relying on municipal initiative to carry out capital investment programs is a long-term strategy. It will not happen overnight. There will need to be a fuller process of policy development, implementation, monitoring, and adjustment. With clear commitment from government to such a path, it is entirely reasonable to believe that Thai municipalities can build for their future using these tools, as many municipalities around the world are doing.

3.1 Conceptualizing and Coalescing National Policy

A pragmatic national effort is needed, aimed at attracting private sector capital to invest in urban infrastructure. The two proven ways to achieve this are: the municipal borrowing model, that has largely financed American and Chinese urban development; and the PPP model, that has been useful in both developed and developing countries. For either of these models to provide significant capital investment, municipalities will need greater authority and fiscal autonomy than they now have – and this authority and autonomy naturally go hand in hand with increased local responsibility and accountability for infrastructure. The central government will most likely continue to play a leading role in urban infrastructure investments which may be too large and/or complex for municipalities to design and execute. Examples include projects that go beyond municipal boundaries, and where coordination across municipalities becomes complex.

Elements of the effort. A national strategy for increasing the role of municipalities in infrastructure investment implies a variety of institutional and conceptual adjustments. It will be necessary to reconsider how local revenues are collected, and what additional revenue instruments might be needed.⁵⁸ Fees and charges for services may need more attention. It may be important to take a look at intergovernmental transfers and see how they could offer more predictability and less top-down management. It would be important to simplify and clarify roles and responsibilities for spatial and economic planning. Both municipal borrowing and PPPs will require significant management capacity at the municipal level. Mentoring and capacity building can help municipalities learn to coordinate spatial planning, infrastructure

⁵⁸ Possible new revenue instruments for municipalities might include capital contribution charges, betterment levies/special assessments, tax increment financing, land value capture, climate finance, e.g., carbon offset sales.

planning, and financial planning across sectors, and can assist them as they identify, plan, and manage projects. Finally, coordinated communications and messaging about these efforts will be essential to build and maintain support.

Consider a White Paper that lays out a strategy and clear policies. We propose the drafting of a strategic White Paper outlining policies to attract private capital for local infrastructure through borrowing and PPPs. This paper could synthesize inputs from key stakeholders such as national and provincial governments, municipalities, and the private sector. Any team working on the White Paper should ideally include representatives from each of these stakeholder groups. The paper would delineate actions required from each group to implement this model. The stakeholders could consider whether legislative or regulatory changes are needed, and if so, identify what must be done. Preparations for a White Paper could include a comprehensive evaluation of current intergovernmental transfers and own-source revenues. This information would help as strategies are formulated to leverage these streams for capital investment. Crucially, the discussion and development of such a White Paper could catalyze and support a transformational shift towards holding municipalities more accountable for assessing and articulating their infrastructure investment requirements and granting them greater control over investment decisions.

Review opportunities and barriers. Our research to date suggests that there are significant administrative delays and processes involved in both municipal borrowing and PPPs. We have not undertaken a detailed analysis of all the relevant legislation, nor have we considered what changes might be necessary. If the aim is to empower municipalities to take on more responsibility for infrastructure investment, then it would be appropriate as part of the White Paper process to review:

- The sources and extent of municipal powers and functions regarding infrastructure, service delivery, and spatial and economic planning; and the degree to which these may overlap or conflict with the powers and functions of other agencies and entities
- The sources and structure of intergovernmental finance, including the role of grants, transfers, subsidies, and own-source revenues
- Legislation and regulation governing municipal borrowing, PPPs, and other arrangements imposing long-term financial obligations on municipalities in exchange for infrastructure investment
- Legislation and regulations governing financial problems and emergencies in municipalities
- Legislation and regulations governing what obligations of local government would be eligible for investment by insurers, pension funds, mutual funds, and other investors.

Engage continuously with LAOs and financial sector representatives to develop, test, and build ownership for the strategy. The municipal capital market will depend on competent, visionary local leaders engaging with their communities and with the financial sector, including banks, insurers, pension funds, mutual funds, as well as the governmental bodies that regulate these investors and the securities and exchange market. The Securities and Exchange Commission of Thailand may be especially important if it is to regulate the listing of municipal bonds.

Develop or improve databases covering municipal borrowing and PPPs. As a starting point, it would be important to establish whether existing financial accounting practices meet the needs of potential investors and lenders, and to consider what adjustments in timing, content, or analysis would help support the development of the market for municipal borrowing and PPPs. A further step would be to compile and keep current information, on at least a quarterly basis, on new and outstanding borrowing by municipalities, as well as new and existing PPPs.

A municipal finance policy unit. A strong policy unit in the Ministry of Finance (or elsewhere) could be created to: manage and monitor municipal finance policy implementation; manage a database of municipal infrastructure projects, financing arrangements, and PPPs; conduct research and analysis on local infrastructure projects and financing; support the market by regularly convening shareholders to discuss policies and projects; and to coordinate local infrastructure policy across national government. Some of this work is already being done, or is anticipated by law to be done, by the Public Debt Management Office in the Ministry of Finance. It is important to keep in mind that the responsibilities of the Ministry of Finance, Ministry of Interior, and sectoral ministries would shift as and if responsibility for local infrastructure investment is assumed by the municipalities. The various departments of national government will need to embrace new roles as regulators, enablers, and facilitators to help municipalities access financing, especially from private/commercial sources. This unit could monitor the impact of reforms and suggest ways to streamline reviews and eliminate bottlenecks at the provincial or national level.

3.2 Practical Support for Cities

Weak demand for capital investment is a global problem. In many countries, the effort to unlock private sector financing for urban infrastructure has failed because of weak demand from municipal authorities. Even where investors are actively looking for projects to invest in, there are few takers. Today, there is a great deal of liquidity in the financial markets. Portfolio managers are looking for sound investments. The actual need on the ground is significant, as in these five secondary cities. In many or most countries, the capacity to translate local needs into sound capital planning and ‘bankable’ projects has been the bottleneck. Many municipalities lack the capacity to develop long-term capital planning and project pipelines. Poor collection of user fees and local taxes can deter private investment. Municipalities have not engaged with the capital markets or rating agencies to gain a realistic understanding of their creditworthiness and borrowing capacity.

Support for cities like these can help translate need into effective demand. In the ‘Institutional Capacity’ section of this paper, we have discussed the importance of synchronizing city spatial planning with capital planning. It is important to understand what infrastructure investments are needed to unlock private investment and economic development. We have proposed that the government considers establishing a municipal infrastructure investment support unit to offer engineering, legal, and financial advice to LAOs as they engage in long-term capital and financial planning, develop projects to meet local needs, and assess various options for financing these projects.

A municipal infrastructure investment support unit in the Ministry of the Interior (or elsewhere) could provide experts in engineering, finance, planning, and law to directly

support and mentor local officials as they develop their capital planning skills and seek investment capital, whether through municipal borrowing or PPPs. This would ideally be a relatively autonomous unit that would be seen as trustworthy in championing and supporting municipal infrastructure products. Its work would be practical, helping guide municipalities in how best to prepare long-term plans and specific project proposals, how to seek municipal bond credit ratings if appropriate, and how to engage with prospective lenders, investors, and partners. As more local infrastructure is created, it could support municipalities in implementing and operating the new projects or PPPs.

Differentiated functions. Note that we preliminarily suggest two different units at the national level – a policy unit and an investment support unit:

- The municipal finance policy unit would focus on ensuring a supportive policy environment as municipalities take on expanded responsibility for planning and financing infrastructure
- The investment support unit would provide active, hands-on support, as well as mentoring and advice to local officials taking on these new planning and financing challenges.

On balance, our perspective is that these two jobs are sufficiently separate and challenging to suggest the need for separate focus and discipline in achieving their different objectives. However, if it is felt that the separate tasks can be performed by a single unit, there could be advantages in that approach e.g., more direct feedback from experience with municipalities to inform policy adjustments. In any event, it is probably premature to make any concrete decision on such institutional arrangements at this stage. It may be sensible to begin with the White Paper process described above.

A project development fund, managed by the infrastructure investment support unit, could provide resources to fund the necessary advice, mentoring, and professional services to assist municipalities interested in borrowing or in developing PPP projects. Experts in engineering, finance, planning, and law could be made available to directly support and mentor local officials as they develop their capital planning skills and seek investment capital, whether through municipal borrowing or PPPs. This would ideally be a relatively autonomous unit that would be seen as trustworthy in championing and supporting municipal infrastructure efforts. Its work would be practical, helping guide municipalities in how best to prepare long-term plans and specific project proposals, how to seek municipal bond credit ratings if appropriate, and how to engage with prospective lenders, investors, and partners. As more local infrastructure is created, this unit could also support municipalities in implementing and operating the new projects or PPPs.

3.3 Promoting the Narrative

Effective communication is a must. A shift to greater municipal responsibility for infrastructure investment would represent a significant change in organizational culture. Therefore, continued and consistent messaging about the change and its implications is critical, as is gathering regular feedback from stakeholders and others affected by the shift. It will be important to use formal and informal channels to clearly communicate the reasons for the shift; to explain the consequences of under-investment in municipal infrastructure; and to

outline the hope that the strategy will enable more rapid and impactful development, creating jobs and opportunities outside of the Bangkok metropolitan area.

The core messages should be conveyed through as many channels as possible, such as ministerial announcements, press releases, social media, mainstream media, and government websites. It is also important to be proactive in addressing concerns, misconceptions, or confusion about strategy. It is important to frame the municipal infrastructure investment policies in a positive light, ensuring that Thailand remains regionally and globally competitive, and that it attracts the private sector investment needed to grow the economy. The key is to communicate clearly, consistently, and persistently.

ANNEX A: Probable PPP Projects

Rayong TOD Project

Formerly known as the Municipal Bus Terminal and Entertainment Complex, this project involves 9 rai (1.44 hectares) of land owned by Rayong City Municipality. This land is in the city center, which is characterized by high population density, nearby schools, and high potential customer traffic.⁵⁹ The land is currently occupied by rental market stalls and shops. The municipality plans to re-develop the land into an in-city public commute/interchange depot connecting sub-districts point-to-point; a TOD mixed-use with low rise rental apartments (mainly for municipal staff); a cinema; innovative digital facilities attractive for Gen-Alpha local students and Gen-Z workers who inhabit Rayong; a tourism information center; and a car park. Rayong is the center of the new S-Curve industries that focus on new technologies and innovation, such as robotic system factories and the use of smart grids for electricity distribution in industrial parks. The Rayong City Municipality is in the vicinity of large industrial estates, teeming with private sector investors and companies, both Thai and foreign-owned. The redevelopment of this 9-rai land will aim to create co-working spaces, nurture an innovation ecosystem in the area, and ultimately attract more high-skilled labor for long-term stays in Rayong.

An early-stage pre-feasibility study has been completed but needs to be updated. It projected that the TOD could service potential customers within a 1.6 km radius (Rayong City Municipality's center core) and be used for at least 18 hours a day, with a total investment of B 350.7 million (US\$10 million). The mission team suggested the municipality to further review the redevelopment plan and pre-feasibility study, to incorporate a 'land value capture' concept and different scenarios of mixed-use activities to achieve the investment economy of scale and enhance future revenue streams of the project. The Deputy Mayor of Rayong is open to revisiting the plan. He also shared with the team that the original investment plan of US\$10 million was within the remit of the municipality. However, with the World Bank support (through this RAS) to mobilize financing, the redevelopment plan could be more ambitious with a potential investment of around B 2 billion or US\$55 million, depending on differing scenarios which could include high-rise mixed-use development.

Khon Kaen Municipal Offices

An older, small municipal office building is situated on a 7 rai (1.12 hectares) parcel. The building is inadequate for servicing the public and administrative functions. This was a newly proposed project during the second World Bank mission, which has potential for PPP. During the first World Bank mission in June, the Mayor mentioned that it is difficult to use the municipality's own savings to redevelop/renovate the office space since the regulations only allow for the money to be used for 'providing services to citizens' and office renovation was interpreted otherwise.

The plan is to redevelop the land into a mixed-use development including municipal uses, with a 25,000 sq. meter new municipal building, possibly through a PPP.⁶⁰ The total appraised land value is B 500 million (US\$13million), while the real commercial value is estimated to be much

⁵⁹ The land is located near three large schools, with more than 30,000 students.

⁶⁰ Municipalities have no experience with PPPs and more accustomed to concessions.

higher. The land and municipal office building are in Khon Kaen's busy downtown and within walking distance to the new 26-storey Innovation Center, Srichan area (planned to be refurbished to become Khon Kaen's creative/innovation district), main shopping malls, and hotels, restaurants, and entertainment venues. The municipality is keen to use the land for mix-used development, with the developer to provide new municipal office space. The Mayor's vision is to make the redevelopment into green and smart energy buildings and would welcome WBG advice on land value capture scenarios and next steps. The Mayor's thinking is to use a rental concession (free rent) for a period of 20–25 years for an interested developer. Note that City Council is dominated by the opposition (17:7), which may result in some challenges in getting approvals.

Phuket-Patong Cable Car Project

The proposed B 5.0 billion (US\$143 million) 10 km cable car project from Karon to Patong Beach would link with the light rail transit (LRT) route in Phuket. It would reduce travel time from Karon to Patong to 25 minutes and provide greater public safety from road accidents – a pain point for local commuters – with less environmental impact than a road or rail link. The Andaman City Development Co., Ltd and private sector partners are leading the initiative with support from the municipality and the Prince Songkhla University (PSU) Phuket Campus. A feasibility study was completed by DVDH-EGIS-AREP, but this is considered outdated. A new feasibility study will be commissioned by the Andaman City Development Co., Ltd. Key outstanding issues include land ownership, where cable car posts and stations will be located, the height of the posts given recently issued cable car regulations, and whether the project would meet PPP requirements. Currently, the project's ownership seems to be with Andaman City Development Co., Ltd. Further consultation with the PPP unit of the Ministry of Finance and the Office of Transport Policy and Planning (OTP) is needed.

ANNEX B: Potential PPP Projects Needing Additional Work

Rayong City Municipality Office

An old low rise building with limited usable space is situated on 6 rais of municipality-owned land in the city center. It has potential for redevelopment into a mixed-use income-generating property while providing larger, refurbished office space for the municipality. The mission team suggested further planning and internal municipal clearances. Possibly WBG experts can share knowledge and experience on incorporating 'land value capture' concepts and scenarios.

Nakhon Sawan City Municipality Expansion of Piped Water System

This is a project at the Nan River to meet increasing needs due to city expansion. The estimated cost is B 300 million (US\$8 million) to double the capacity of the current system (Ping River Plant) to 3,000 cubic liters/hour, improvements to buildings and install a new system. The municipality needs investment funds, does not want to borrow money, and is interested in exploring a PPP. The Bank team informed the municipality of an ongoing dialogue between the Bank and the Office of the National Water Resources (ONWR) which is the main planning agency for the water sector and that the government is interested in Bank financing for investments in potable, piped water systems in cities, small towns, and rural areas. The municipality welcomed the update as officials believe serious investments are needed in this area. Possible WBG guided consultation with the PPP unit of the Ministry of Finance and Ministry of Interior could be explored.

Khon Kaen City Municipality Wastewater Treatment Plant (Phase 2)

This project would expand the current wastewater treatment plant's capacity to support the city's growth. The existing plant treats wastewater not only from within Khon Kaen City municipality but also from other nearby municipalities, and the plant is reaching its limits. This is adversely affecting fisheries and agriculture in the area. The World Bank team updated the Mayor about the ongoing dialogue with ONWR, where wastewater management is being discussed as part of the World Bank and Thai government partnership on water resource management. The mission team noted an opportunity to increase economies of scale and efficiency by designing wastewater investments collaboratively at various levels of government. The municipality currently bears the cost of running the wastewater treatment plant and has been unable to collect fees for this service, due to a lack of cooperation from the Provincial Water Authority (PWA), which could collect wastewater fees together with potable water fees. Clarity on these inter-agency dynamics and coordination with other municipalities and central government would be necessary to further work on this project as a PPP.

Tram System and 'Khon Kaen Eye'

Rajamangala University of Technology Isan Khon Kaen Campus presented a B 1.5 billion (US\$40 million) investment to build a cantilevered observation wheel similar to the London Eye and a 4.4 km tram system with 11 stations around Bueng Kaen Nakhon Lake area, and to develop adjacent areas into a railway knowledge sharing center, Khon Kaen old town areas, an organic market, a floating solar farm to support tram power, and lakeside communal areas. At first, the project appeared promising, with potential for land/commercial value capture.

However, the land parcels surrounding the lake are privately owned and the university's investment plan has not considered this land issue. Secondly, no discussion has taken place with relevant central government agencies to gain approval for the project. This tram system was supposed to be built after the main Khon Kaen LRT of the Khon Kaen Transit System (KKTS), which links with the national high-speed rail and dual-track train networks. The idea was to use revenues from the LRT to build this tram system around the lake as a knowledge sharing exhibit with various types of tracks along this 4.4 km. In the end, it was noted that the project feasibility might fail as a standalone project.

Karon Sub-District (Phuket) Municipality Sport Complex

This is a proposal to re-develop an existing stadium into a sport complex with multi-sport facilities. The land belongs to the municipality and is situated by the seaside with potentially high commercial value. Based on WBG experience, a sport complex and facilities are high-risk investment, and income streams are difficult to predict and generate on a regular/recurring basis. More work is needed on the public service to be provided and the nature of asset use/revenue generation to justify its development as a PPP.

Phase 2 Investment for Chiang Mai University (CMU) Science and Technology Park (STeP)

The STeP's mission is to provide inclusive platforms which connect the academic sector, private sector, government sector, and community sector (Quadruple Helix Model) to develop products, processes, and services using science, technology, and innovation. It enhances technology commercialization and provides a Total Innovation Solutions service for technology business development with quality infrastructure. STeP also provides a smart business incubation system for tech startups and innovative entrepreneurs. It focuses on six activity groups including Bio Med (Biopolis), Food Valley Innovation, Agritech, Creative Lanna, Waste Management, and Value-Added Tourism. Project activities are supported by a B 6.4 billion government budget and own-source income from R&D and licensing under the Northern Economic Corridor – Bio Circular Green Economy (NEC-BCG) initiative. The STeP management team is not keen on the PPP concept at this stage and would rather rely on public funds for the Phase 2 investment.

Chiang Mai Smart City

This is a project planned by Thailand's Digital Economy Promotion Agency (DEPA) to extend and join the old city moat area with the Chiang Mail University (CMU) campus through installation of free public wi-fi, CCTV, street lighting, and electric public school buses along the 1.3 km route. The project is at a conceptual stage. The plan is to leverage private sector telecommunication operations, with facilitation support from Chiang Mai Municipality. It is unclear whether the city is better served with a PPP or with a simple outsourcing to the private sector.

Chiang Mai Provincial Administrative Organization Land

There is a 116 rais (18.5 hectares) land parcel situated in a prime location of Chiang Mai. The municipality briefly discussed a rough plan to build a hospital but offered no specific details.

Chiang Mai Smart Mobility

The World Bank team met with a company called LoMo, which provides technologies on electric vehicles and digital platforms for smart mobility of local communities. It started off with development of an app for local EV transport and evolved into promoting the conversion of 'songthaews' (pick-up truck taxis or buses) and motorbike taxis in Chiang Mai to EVs. The main pain point they face is affordable commercial finance for conversion or EV take-up at scale. Given the potential for emissions reduction, there could be ways for the public sector to provide support and help lower the cost of borrowing for beneficiaries.

ANNEX C: Proposals Not Yet Suitable for PPP

Chiang Mai

- **Mae Hia Municipality Landfill:** The proposed area is in the center of the Mae Hia Municipality with an area of about 70 rais (11.2 hectares). It was once a landfill for the Chiang Mai City Municipality. After the landfill was relocated by Chiang Mai City, the area became a dilapidated wasteland. Mae Hia municipality would like to improve the area so that it could be utilized more efficiently and could generate an economic return. However, most of the land (65 rais) belongs to the Chiang Mai City Municipality, and there is no agreement between the two municipalities as to land use.
- **Mae Hia Cultural Market:** Mae Hia Municipality proposed a piece of land with the area of 7 rais (1.12 hectare) to develop a new cultural market to increase the livability of the city as well as to attract tourists, and increase revenue generated from tourism. The land was re-acquired by the municipality following a court ruling. It has been occupied by a branch of the central government agency with some office facilities built on the land. The government agency is requesting central budget to demolish the office facilities and buildings after vacating the land and it may take a couple of years to complete. Until this is done, the project cannot move forward.

Rayong

- **Holistic Waste Management System:** Rayong City Municipality has reconsidered their approach for this project, now taking a modular approach by focusing on food waste first. This may be partly due to the need for approval by the Interior Ministry.⁶¹ There are some MoU arrangements across different municipalities to centralize waste collection to feed into a waste-to-energy project. The Rayong Provincial Administrative Organization is working on a different waste-to-energy project, and this could be a factor for Rayong City Municipality's reconsideration. The Rayong City Municipality plans to use its own resources to develop the food waste management module.
- **Revitalization of Old Landfill:** Rayong City Municipality plans to mine the waste from the former landfill to allow for redevelopment. This project has clear environmental risks, arising from the disposal of the waste and any contamination of the land. The amount of waste that is required to be mined is significant. The landfill was also to be used as the site

⁶¹ The Mayor of Nakhon Sawan City Municipality mentioned the process for establishing a waste-to-energy project by his municipality. It entails: a 14-step approval from developing cooperation with network municipalities to centralize waste collection; deliberations and approvals by local councils of each of the network municipalities participating in waste collection; consideration and approval by the DOLA and Minister of Interior on the suitability of the project; ToR development and tendering process (including bid evaluation) by the project owner municipality; bid evaluation and draft contract review by DOLA and to be approved by the Minister of Interior; contract award and signing with the private sector company by the project owner municipality; and reporting to the State Enterprise Policy Office, Ministry of Finance by the project owner municipality within 60 days after the contract signing date. It was reported that Nakhon Sawan City Municipality took seven years to complete this process.

for the holistic waste management system and given the reconsideration of waste management as described above, revitalization of the old landfill is on hold.

- **Rayong City Municipality Digital Transformation/Low Carbon Project:** The project aims to create a low carbon city, a learning/knowledge and youth space, and digital society in-line with Thailand's 4.0 economic model. It is still at the conceptual stage. The concept has potential in innovative digital development, urban planning, and service delivery, and could benefit from further sharing knowledge by the WBG on urban development and digital transformation from other countries. However, the municipality acknowledged that this initiative would mostly be process-driven and less about mobilizing financing. The municipality is keen to engage in the anticipated WBG-supported Thailand Partnership for Marker Implementation (PMI) on carbon pricing and emission trading system at the local level.

Nakhon Sawan

- **Bio-Hub Project:** The project is proposed by Kaset Thai, a publicly listed company, engaging in a fully integrated sugar business as well as by-product businesses, including ethanol, bio soil conditioner, bio fertilizer and bleached paper pulp production and biomass power generation. The project is a private sector investment but has a public value in generating employment and growth opportunities for the city. In 2019, the company jointly invested with Global Green Chemical PCL, a subsidiary of PTTGC, in the Nakhonsawan Biocomplex (NBC) Project Phase I, located in Takhli district, to engage in eco-friendly sugarcane-related business. The investment consists of the construction of a sugarcane crushing site, the construction of an ethanol plant, and electricity generation. The sugarcane crushing site commenced commercial operation in December 2021, and other facilities are expected to proceed as planned. The company plans to invest in utilities to produce polylactic acid (PLA) bioplastics as part of the NBC Phase II Project. The company is also looking for opportunities to sustainably grow, by additional investment in the NBC Project and plans further discussions for potential collaboration.
- **Wellness Hub Project:** This project was proposed by Sri Sawan Hospital, but they were not available to meet. It was agreed that follow up with the developers will be needed before this project can be assessed.

Khon Kaen

- **Equity Investment in KKTS:** KKTS requires a further equity investment to be mobilized of US\$125 million. Investors would need to understand the full detail of the project and would likely want the opportunity to comment and influence the design and structure. KKTS suggested a non-disclosure agreement so that WBG would be able to assist in connecting KKTS with private equity firms and investors.
- **Smart City in Srichan District with IoT/Smart Poles:** This project was proposed by Mitr Phol, a publicly listed company, engaging in sugar and bio-based industries. A Khon Kaen regional team of Khon Kaen Mitr Phol presented the area development of Srichan Innovation District in partnership with the National Innovation Agency. The project is a

private sector investment that has a substantial public value. It consists of: (i) Khon Kaen Innovation Centre, which contains business ecosystem such as co-working area, offices, hotel accommodation, incubation center and exhibition halls to serve local startups, small and medium-sized enterprises (SMEs), and large businesses, with a focus on innovation, creative and technology industries; and (ii) innovative support infrastructure, incorporating smart city technologies such as smart building and charging infrastructure to support electric vehicles. The company is working in collaboration with Khon Kaen City and a Taiwanese state-owned supplier, Chunghwa Telecom, on a pilot project to install 100 smart poles along a 3 km main road in Khon Kaen City. The poles incorporate features including intelligent lighting, video surveillance, IoT capability, and information display – which enable data collection and utilization among local institutions for public security and other purposes. Given the limited initial investment volume and the social contribution that the project provides, the investment is funded entirely by Chunghwa Telecom and the company through allocation from the parent entity. Further clarity on potential revenue streams, as well as the need for further scale-up in other city areas will be assessed during implementation.

- **Revitalization of Old Bus Central Station:** The municipality has proposed a plan to renovate and modernize the old central station to stimulate economic activities in the area. However, the plan has now been reduced to improving home and shop facades to make the area more modern-looking. The reason for the change was the fact that the Mayor had to deal with a large group of street hawkers who were instructed by a court ruling not to use the disputed land area where they normally operate. The Mayor has decided to use the old bus station to accommodate these street hawkers and vendors, and any large redevelopment is being put on hold.
- **Low Carbon City (LCC) Project:** This project is based on a study which included five activities focusing on reduced waste, increased energy efficiency, alternative energy, and a green area in the city, as well as developing a public transportation system (i.e., Light Rail Transit). The municipality also expressed interest in waste management in the form of a waste-to-energy project. Khon Kaen municipality already has a waste-to-energy power plant, and the construction of the second plant is about to begin. Given the rapid expansion of the city and the consequent increase in waste, there is a need for a third waste-to-energy power plant. However, there is an unresolved issue regarding the power purchase arrangement for this third plant. Hence, the plan is on hold, pending resolution of this issue.

Phuket

- **Pak Bang Canal Rehabilitation:** Karon Sub-District Municipality proposed a rehabilitation project, to turn the 1.3 km canal into pedestrian walkways and the outlet into a beachfront road. The legal land ownership of the canal and adjacent areas is an issue, and the operability of the water treatment facilities upstream, which needs to be effective to not pollute downstream water and the ocean, had not been factored in. This proposed project does not seem feasible given the location and limited usage of the canal. The World Bank team noticed a grave need for Phuket to strategically address the wastewater treatment

situation and develop a concrete plan to resolve the issue. The WBG can possibly assist in studies and assessment of the wastewater situation and help Phuket to formulate a strategic plan.

- **Karon Wellness Smart City:** During the first mission, the Andaman City Development Company proposed a project for investment in the Karon Wellness Smart City, to include a wellness center, smart market (the Beach Plaza), sports cities route line, hospitality and tourism businesses, and landmark of a digital art museum along the canal stations. However, the discussion during the second mission focused more on the broader scope of the Andaman Wellness Corridor (AWC), including the provinces of Phuket, Krabi, and Pang-Nga. The initiative is anchored around the new development of a B 5.1 billion (US\$135 million) Andaman International Wellness Center which is a partnership between Prince Songkhla University (PSU) Phuket Campus and the private sector to build health and dental facilities, including a Thai Traditional Medicine Center. The Vice President of PSU expressed interest to partner with the World Bank through a Reimbursable Advisory Service (RAS) to conduct analytical work to help the Andaman Wellness Corridor position itself in the global wellness industry and value chain. The PSU Vice President has been mandated to make the Andaman International Wellness Center a world-class wellness center. Any such RAS should also look at the potential socio-economic impact and benefits of AWC, including access to tertiary healthcare by local residents and those in nearby provinces.
- **Kata-Karon Cable Car Project (connecting with the Big Buddha):** This is one of the three sub-projects under the integrated transport system in Phuket. It is a B 1.5 billion investment project that would situate cable car stations on privately-owned land. This is a private investment project that would not require WBG involvement.

ANNEX D: Revenue and Expenditure Data for Four Secondary Cities

1. Chiang Mai Municipality

Year	2018	2019	2020	2021	2022(p)	
Population	129,536	127,240	122,627	N/A	N/A	Unit: Person
Budget	1,598,000,000	1,700,000,000	1,663,000,000	1,620,000,000	1,400,000,000	Unit: THB
Revenue						
Locally-generated revenue	433,271,498	454,985,406	178,532,575	166,197,993	254,334,700	
Local tax revenue	336,174,792	349,350,872	73,202,516	81,937,735	155,351,700	
Fees, license fees, and fines	40,074,675	44,771,922	48,709,675	37,462,991	42,980,500	
Passive income	31,895,514	34,563,514	30,536,064	22,608,183	28,602,500	
Utilities and commerce	18,343,090	19,311,660	18,843,074	18,364,569	20,000,000	
Capital gains	1,366,500	1,660,800	181,000	317,500	200,000	
Other	5,416,926	5,326,637	7,060,246	5,507,015	7,200,000	
Shared revenue	745,593,105	749,397,606	628,749,319	606,468,307	660,780,000	
Shared tax revenue	745,593,105	749,397,606	628,749,319	606,468,307	660,780,000	
Subsidy	480,556,105	515,783,006	514,024,819	503,392,900	484,885,300	
General subsidy	480,556,105	515,783,006	514,024,819	503,392,900	484,885,300	
Total revenue	1,659,420,707	1,720,166,017	1,321,306,713	1,276,059,200	1,400,000,000	
Expenditure						
Central budget expenditure	284,663,690	262,385,437	255,582,388	275,100,666	300,336,200	
Staff expenditure	460,332,766	454,645,338	424,729,987	400,826,641	496,208,800	
Operational expenditure	606,621,318	663,470,333	516,126,816	437,223,360	507,930,610	
Investment	210,841,029	245,158,477	88,856,497	132,914,588	62,340,990	
Subsidy	32,189,725	32,743,067	29,958,786	30,100,313	33,183,400	
Other	60,250	30,250	30,250	40,000	-	
Total expenditure	1,594,708,777	1,658,432,903	1,315,284,723	1,276,205,568	1,400,000,000	
Balance	64,711,930	61,733,115	6,021,991	(146,368)	-	
% of budget	4%	4%	0%	0%	0%	
Per population	499.57	485.17	49.11			
Saving	1,186,037,526	1,262,041,188	1,109,232,147	950,238,196	1,086,743,102	Unit: THB
% of Revenue	71%	73%	84%	74%	78%	
Reserve	680,250,355	804,829,933	869,275,661	1,600,667,705	1,699,164,047	
% of Revenue	41%	47%	66%	125%	121%	
Municipal Promotion Asset Fund	290,451,273	306,629,255	315,982,596	328,150,465	327,617,345	
% of Revenue	18%	18%	24%	26%	23%	

2. Phuket Municipality

Year	2018	2019	2020	2021	2022(p)	
Population	79,755	79,308	77,778	N/A	N/A	Unit: Person
Budget	1,136,782,000	1,168,471,420	1,223,753,140	1,180,769,750	1,146,924,690	Unit: THB
Revenue						
Locally-generated revenue	313,807,242	328,717,759	227,876,117	179,290,014	259,462,050	
Local tax revenue	88,025,730	89,618,448	16,878,456	20,723,691	75,754,000	
Fees, license fees, and fines	178,384,655	187,610,378	164,847,218	122,201,653	138,522,700	
Passive income	35,642,525	39,642,081	31,290,942	34,030,166	32,381,850	
Utilities and commerce	10,261,877	9,904,752	9,506,766	-	10,500,000	
Capital gains	37,915	35,000	3,284,497	561,000	100,000	
Other	1,454,540	1,907,101	2,068,238	1,773,504	2,203,500	
Shared revenue	461,474,957	458,724,053	420,806,444	411,382,083	437,600,000	
Shared tax revenue	461,474,957	458,724,053	420,806,444	411,382,083	437,600,000	
Subsidy	446,813,756	412,656,519	421,253,492	405,365,500	449,863,600	
General subsidy	446,813,756	412,656,519	421,253,492	405,365,500	449,863,600	
Total revenue	1,222,095,954	1,200,098,331	1,069,936,053	996,037,597	1,146,925,650	
Expenditure						
Central budget expenditure	109,886,961	117,010,308	117,513,297	132,577,541	141,293,400	
Staff expenditure	349,907,764	354,407,084	331,812,349	364,217,842	432,089,900	
Operational expenditure	438,459,461	417,087,658	429,322,784	355,045,526	492,372,340	
Investment	24,451,216	43,317,027	56,215,294	29,726,110	66,105,850	
Subsidy	13,966,240	13,956,822	13,218,676	12,032,654	15,063,200	
Other	3,400,000	3,573,873	3,508,143	5,232,980	-	
Total expenditure	940,071,642	949,352,772	951,590,543	898,832,653	1,146,924,690	
Balance	282,024,313	250,745,559	118,345,510	97,204,943	960	
% of budget	25%	21%	10%	8%	0%	
Per population (THB)	3,536.13	3,161.67	1,521.58			
Saving	951,999,845	1,046,760,665	950,353,799	979,947,457	1,119,793,174	
% of Revenue	78%	87%	89%	98%	98%	
Reserve	907,545,297	750,382,116	757,675,833	783,404,875	1,013,913,966	
% of Revenue	74%	63%	71%	79%	88%	
Municipal Promotion Asset Fund	315,715,869	338,973,399	344,553,710	348,034,935	369,650,988	
% of Revenue	26%	28%	32%	35%	32%	

3. Rayong Municipality

Year	2018	2019	2020	2021	2022(p)	
Population		63,565	62,384	61,613	N/A	Unit: Person
Budget	716,430,000	757,100,000	812,800,000	720,000,000	722,000,000	Unit: THB
Revenue						
Locally-generated revenue	126,874,351	134,223,295	63,163,472	71,561,506	79,237,700	
Local tax revenue	87,278,270	89,246,190	25,017,560	30,317,737	43,573,800	
Fees, license fees, and fines	15,838,114	21,158,378	14,382,907	14,909,155	15,008,700	
Passive income	11,692,958	14,246,672	14,941,895	16,569,319	12,336,500	
Utilities and commerce	6,338,027	6,762,772	6,599,097	-	5,800,000	
Capital gains	195,800	772,200	408,100	1,166,000	200,000	
Other	5,531,182	2,037,082	1,813,912	8,599,295	2,318,700	
Shared revenue	372,499,324	336,013,944	303,413,708	297,694,103	315,150,000	
Shared tax revenue	372,499,324	336,013,944	303,413,708	297,694,103	315,150,000	
Subsidy	302,490,636	315,551,284	329,641,847	327,699,400	327,612,300	
General subsidy	302,490,636	315,551,284	329,641,847	327,699,400	327,612,300	
Total revenue	801,864,311	785,788,523	696,219,027	696,955,008	722,000,000	
Expenditure						
Central budget expenditure	69,380,982	75,709,983	82,785,656	93,093,436	99,049,600	
Staff expenditure	265,417,711	278,302,592	286,930,889	291,481,737	328,162,410	
Operational expenditure	180,694,205	181,302,244	184,224,255	164,178,223	202,673,620	
Investment	9,756,346	17,441,800	7,115,275	8,684,088	73,323,170	
Subsidy	19,776,000	18,736,080	32,825,501	17,376,000	18,791,200	
Other	-	-	-	500,000	-	
Total expenditure	545,025,244	571,492,699	593,881,577	575,313,484	722,000,000	
Balance	256,839,067	214,295,824	102,337,451	121,641,524	-	
% of budget	36%	28%	13%	17%	0%	
Per population (THB)	#DIV/0!	3,371.29	1,640.44	1,974.28	#VALUE!	
Saving	879,181,691	1,006,069,764	985,180,683	969,096,924	1,010,978,219	
% of Revenue	110%	128%	142%	139%	140%	
Reserve	400,328,647	452,325,225	550,243,792	1,107,380,546	993,317,997	
% of Revenue	50%	58%	79%	159%	138%	
Municipal Promotion Asset Fund	137,771,788	151,342,603	156,892,477	204,391,061	214,655,487	
% of Revenue	17%	19%	23%	29%	30%	

4. Khon Kaen Municipality

Year	2018	2019	2020	2021	2022(p)	
Population	118,279	116,199	112,924	109,287	105,314	Unit: Person
Budget	1,350,983,050	1,392,442,390	1,471,461,791	1,355,876,760	1,368,297,610	Unit: THB
Revenue						
Locally-generated revenue	248,097,501	253,235,235	139,165,549	141,003,914	308,121,850	
Local tax revenue	144,267,636	149,908,124	46,398,152	51,323,825	212,756,000	
Fees, license fees, and fines	39,874,715	41,159,163	35,444,787	35,501,563	37,345,750	
Passive income	40,973,061	44,008,127	40,273,304	40,957,352	41,733,620	
Utilities and commerce	8,361,772	8,443,178	7,789,194	-	7,350,000	
Capital gains	11,110	112,590	449,312	267,745	80,000	
Other	14,609,208	9,604,052	8,810,799	12,953,429	8,856,480	
Shared revenue	539,724,928	517,876,062	454,508,409	453,318,103	499,000,000	
Shared tax revenue	539,724,928	517,876,062	454,508,409	453,318,103	499,000,000	
Subsidy	605,407,491	607,849,257	611,724,383	615,039,946	614,169,100	
General subsidy	605,407,491	607,849,257	611,724,383	615,039,946	614,169,100	
Total revenue	1,393,229,920	1,378,960,554	1,205,398,341	1,209,361,963	1,421,290,950	
Expenditure						
Central budget expenditure	154,502,071	155,479,999	158,487,956	210,675,857	183,605,070	
Staff expenditure	500,494,071	516,384,798	513,011,001	515,204,641	621,873,820	
Operational expenditure	353,712,819	367,959,312	366,791,422	341,205,538	388,863,540	
Investment	9,121,125	30,160,135	13,153,850	15,948,164	132,132,080	
Subsidy	50,646,584	52,386,011	55,093,898	55,076,990	41,823,100	
Other	-	120,400	24,000	6,100	-	
Total expenditure	1,068,476,671	1,112,490,655	1,106,562,128	1,138,117,290	1,368,297,610	
Balance	324,753,249	266,469,898	98,836,213	71,244,673	52,993,340	
% of budget	24%	19%	7%	5%	4%	
Per population (THB)	2,745.65	2,293.22	875.25	651.90	503.19	
Saving	1,492,149,795	1,734,809,853	1,677,893,182	1,672,509,212	1,620,198,283	
% of Revenue	107%	126%	139%	138%	114%	
Reserve	975,335,256	1,128,138,247	1,208,554,930	1,605,351,265	1,396,079,442	
% of Revenue	70%	82%	100%	133%	98%	
Municipal Promotion Asset Fund	445,465,318	488,397,295	505,839,092	535,824,314	535,967,279	
% of Revenue	32%	35%	42%	44%	38%	

