Financing India's urban infrastructure needs

Constraints to commercial financing and prospects for policy action

Sohaib Athar, Roland White, Harsh Goyal

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1818 H Street NW, Washington, DC 20433, USA

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Acknowledgements

This report was prepared by a World Bank team comprising Sohaib Athar (Senior Urban Specialist), Roland White (Global Lead for City Management, Governance and Finance), and Harsh Goyal (Urban Specialist). The team also benefitted from the technical contributions of S.R. Ramanujam and Ankush Sharma (municipal finance and governance consultants). A team from CRISIL Risk and Infrastructure Solutions Limited provided technical assistance to the World Bank team for this report, including extensive data collection and analysis, and prepared three separate technical reports as background material. Administrative support was provided by Binny Verma and Roderick Babijes. Cover and production design was done by WeAreZephyr.

The work was conducted under the leadership and overall guidance of Junaid Kamal Ahmad (World Bank Group's India Country Director) and the supervision of Catalina Marulanda and Meskerem Brhane (former and current Practice Managers for the World Bank's South Asia Urban development & Land unit, respectively).

The report was peer reviewed by Augustin Maria (Senior Urban Specialist and Program Manager, City Climate Finance Gap Fund), Jeffrey Delmon (Senior Infrastructure Finance Specialist), Pavel Kochanov (Senior Municipal Finance Specialist, International Finance Corporation (IFC)), Matthew Glasser (Director for Municipal Law and Finance at the Centre for Urban Law and Finance in Africa), and Ravikant Joshi (municipal finance and urban governance expert).

The team gratefully acknowledges the support and guidance of all relevant government officials and counterparts at the national, state and city levels, especially Kunal Kumar (Joint Secretary and Mission Director for Smart Cities Mission, Ministry of Housing and Urban Affairs, Government of India) and his team, as well as officials from the Governments of Gujarat and Tamil Nadu, Ahmedabad Municipal Corporation and Greater Chennai Corporation.

The team is also grateful for the financial contribution of the United Kingdom Foreign, Commonwealth & Development Office to prepare this report and conduct its associated activities.

Executive Summary

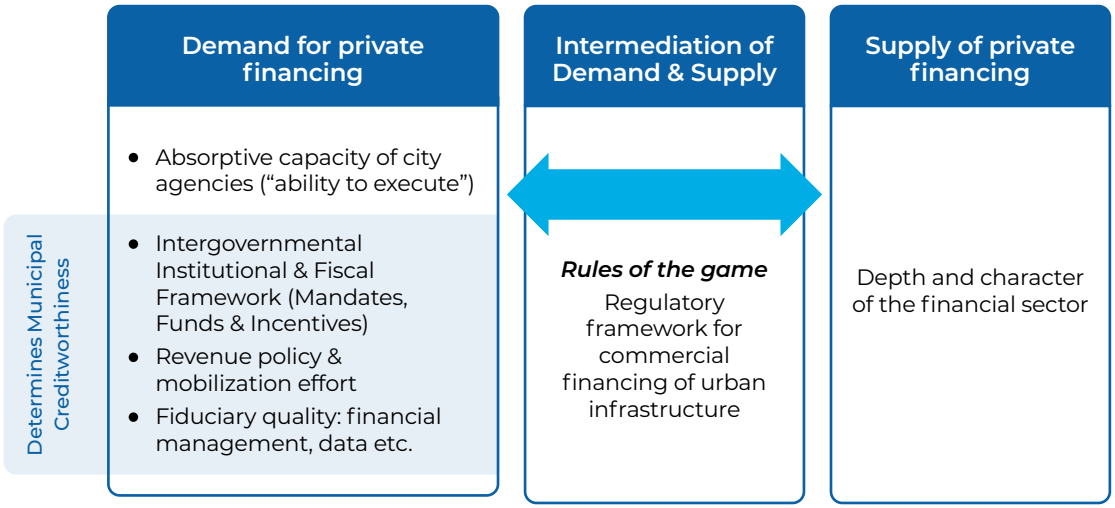
India is rapidly urbanizing, and the financing needs of cities are expanding proportionately. A sustained increase in urban infrastructure investment is needed to enable economic growth, improve quality of living and livability, and build resilience to the expected impacts of climate change. However, cities face significant challenges. Despite a substantial increase in fiscal transfers to cities in the last decade, there is a large shortfall of resources relative to needs. Government of India (GoI) has previously estimated the urban infrastructure financing deficit to be 80% of needs[1] and has underscored the potential for financing from private sources to bridge this gap, including through municipal borrowing and public-private partnerships (PPPs). GoI and several states have taken measures to enable commercial financing, but its use remains extremely limited even in financially strong cities. Systemic constraints seem to constrain larger volumes of private financing from flowing to the urban sector.

This report aims to identify these key constraints and provide policy proposals for GoI, states and cities to address them. It presents updated estimates of infrastructure investment needs and analyses recent trends in capital investment and commercial financing for urban infrastructure. The scope of private financing considered here includes two primary sources: municipal borrowing/debt financing and municipal PPPs.

Conceptual framework and its relevance to India's urban finance system

There are six key factors that impact the demand for, and supply of, private commercial financing for urban infrastructure which collectively determine the flow, size, and scope of this financing (see Figure 1).

Figure 1. *Factors determining demand for and supply of private commercial financing for urban infrastructure*



The existing relationship between state governments and Urban Local Bodies (ULBs)/city agencies underpins and influences all aspects of infrastructure financing. State governments have the primary responsibility to regulate the mandates, scope, and financial activities of all ULBs, city agencies and utilities in their territory, including all aspects pertaining to accessing (private or public) commercial sources of finance and determining the "rules of the game" which intermediate the demand and supply of financing. Beyond this, and within limits imposed by state governments, ULBs also have control over certain factors that impact demand for financing (see Table 1).

[1] Source: 2011 report of the Government's Working Group on financing urban infrastructure.

Table 1. *Level of government in India with primary responsibility of various factors impacting private financing*

	Factors impacting private financing	Level of government with primary responsibility
	Demand for private financing	
1	Absorptive capacity of city agencies ("ability to execute")	ULBs, within regulatory limits imposed by state govts.
2	Intergovernmental Institutional & Fiscal Framework (Mandates, Funds & Incentives)	state govts., with GoI secondary
3	Revenue policy & revenue mobilization effort	ULBs + state govts
4	Fiduciary quality: financial management, data etc.	ULBs, within regulatory limits imposed by state govts.
	Supply of private financing	
5	Depth and character of the financial sector	GoI
	Intermediation of Demand & Supply	
6	Rules of the game - Regulatory framework for commercial financing of urban infrastructure	GoI & state govts.

With some exceptions, state governments are responsible for the authorizing environment which determines the base, scope, and levels of most types of major local own-source revenues (OSR), the full set of ex-ante rules, regulations and procedures determining access to, and origination of, all sources of finance, and dealing with ex-post situations in case of municipal/city default, reorganization, and debt work-out arrangements. The national government plays the key role in determining the supply of private finance for urban infrastructure through its role as the primary regulator and facilitator of financial markets and financial institutions (FIs) countrywide.

Conceptually, the difference between "funding" and "financing" as two separate but related aspects of commercial financing is important. "Financing" refers to the raising of money for investment needs, whereas "funding" refers to the payment for the funds raised including financing costs. Financing raised on a repayable basis, such as debt or PPP investment, needs recurrent revenue streams to pay the costs of raising such financing (interest and principal for debt and return on equity for PPPs). These future revenue streams are how such financing is *funded*. The more commercial financing raised, the higher recurrent revenue needs to be to pay future obligations due to this financing. Thus, commercial financing does not add to the total resource base of cities but is simply one of the tools available to cities to raise resources for capital expenditure. Fiscal transfers and OSR, if stable and recurring, increase the funding base available to raise more commercial financing.

The lay of the land: recent trends in financing and funding urban infrastructure

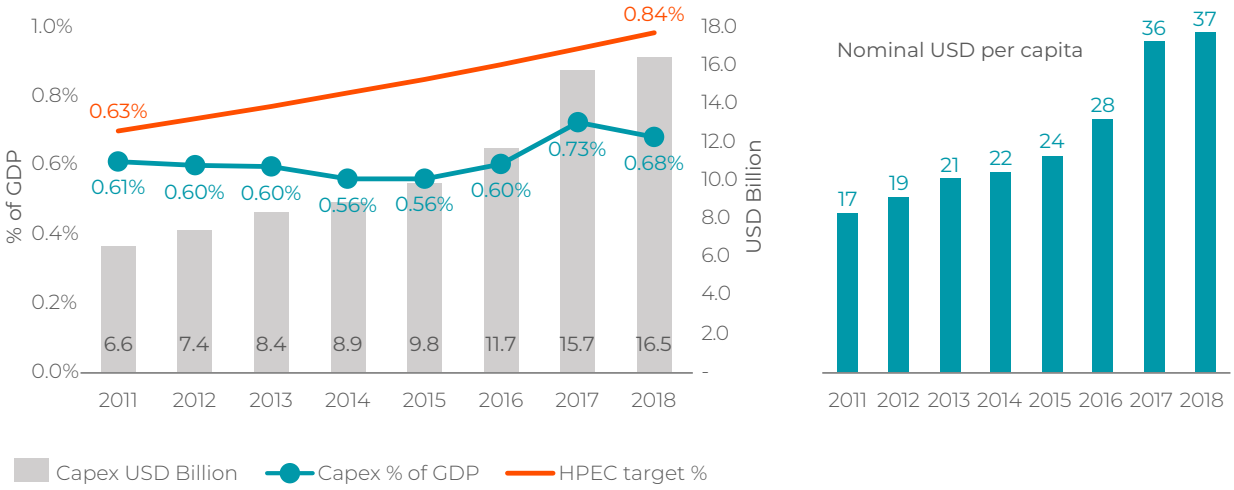
How much investment is needed and how large is the financing gap

India's cities require an estimated capital investment of USD 840 billion in urban infrastructure and municipal services in the 15 years till 2036 (in 2020 prices), equivalent to 1.18% of estimated Gross Domestic Product (GDP) over this period. This is equivalent to USD 108 per capita per year.[2] Over half of these investment needs–almost USD 450 billion–are in basic municipal services (i.e., water supply, sewerage, municipal solid waste management (SWM), storm water drainage, urban roads and streetlighting), while

[2] Urban infrastructure and municipal services included in this estimate are urban transport (primarily mass transit / metro rail); basic municipal services such a s water supply, sewerage, municipal solid waste management, storm water drainage, urban roads and streetlighting; and social and community infrastructure but excludes housing and slum upgrading.

the rest–USD 300 billion-are for mass transit. These needs are significantly higher than current levels of investment. Total capital expenditure in urban infrastructure averaged only 0.6% of GDP in roughly the past decade (2011-18) or USD 26 in per capita terms which, while growing steadily in recent years, is still four times less than the per capita estimated needs (see Figure 2). While most investment in this period has been in basic municipal services (around 0.48% of GDP), investment in metro-rail infrastructure has witnessed stronger growth. Current levels of spending also appear to be below international comparators, with China's investment in urban infrastructure averaging 2.8% of GDP during the period 2000-14[3] and USD 116 per capita in 2010 (McKinsey Global Institute 2010). Data on investment needs and the existing financing gap in some large and highly urbanized states such as Gujarat and Tamil Nadu are in line with these all-India data.

Figure 2. *Investment in urban infrastructure in India has grown in nominal terms but is well below required needs*



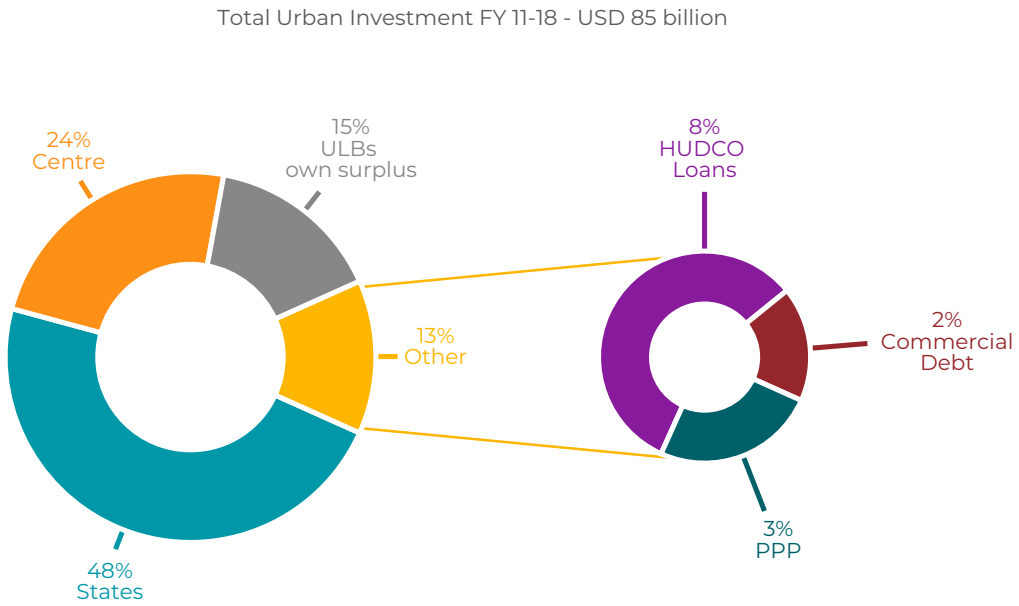
Source: CRIS analysis based on secondary research

How urban infrastructure is currently financed

Private commercial financing plays a very minor role in financing urban infrastructure in India, as most infrastructure is financed by intergovernmental fiscal transfers, especially in the shape of tied grants. Fiscal transfers from states have increased substantially over the period FY11-18. The share of ULBs' revenue surpluses utilized to fund capital expenditure on a "pay-as-you-go" basis has substantially declined, accounting for 15% of total capital expenditure and halving in share of GDP terms (see Figure 3). The relative decline – and small nominal increase - in contribution of ULBs own-funds to capital investment when compared to the substantial increase in fiscal transfers appears to reflect constraints in absorptive capacity to execute higher levels of spending. Non-guaranteed commercial financing accounted for only 5% of total capital expenditure in urban infrastructure in this period. This includes debt financing by ULBs (municipal bonds and loans) and PPPs. Commercial financing has been roughly equally split between PPPs and debt. Loans from the Housing and Urban Development Corporation Ltd (HUDCO) make up the rest of total capital expenditure (8%). Guaranteed by states, these are not considered commercial market-based financing.

[3] This included the following urban infrastructure sectors: local roads and bridges, mass transit (subway and light rail systems), water supply, wastewater treatment, municipal waste management, landscaping, flood control and city energy systems (which comprises of district heating and cooking gas supply and accounted for <10% of total investment in each of the years studied). Data from China's Ministry of Housing and Urban–Rural Development. Source: Kangkang Tong et al. (2019).

Figure 3. *Commercial financing plays minor role in financing urban infrastructure in India*



Source: Secondary research, CRIS analysis

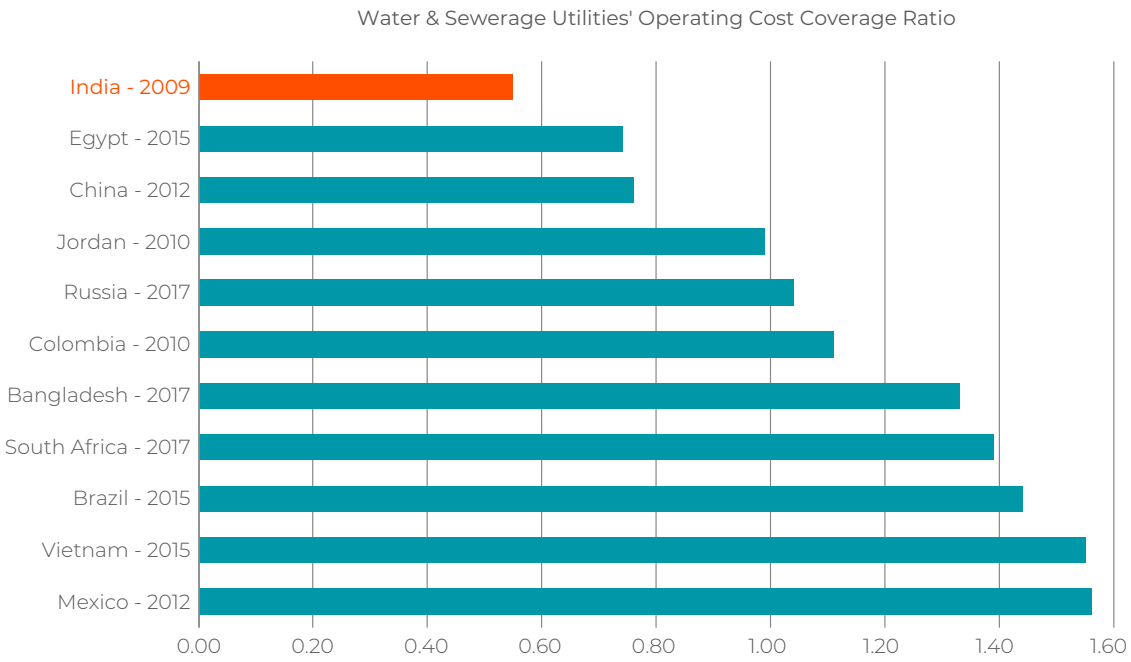
The state of municipal finance: understanding the funding base for urban infrastructure

The overall funding base to raise substantial commercial for urban infrastructure in India appears to be low at present, due to weak fiscal performance of cities (with low levels of OSR and service charges relative to economic base) and low absorptive capacity for execution.

OSR are low relative to economic base while fiscal transfers are rapidly increasing. The overall scale of finances at the city level is relatively modest. Total income of all ULBs nationwide from all sources remained flat at around 1% of GDP during the FY11-18 period. Relatively slow growth and low levels of OSR undermine future funding capacity. OSR as a share of total municipal revenue nationwide declined from three-quarters to two-thirds, caused by slow absolute growth in OSR relative to fiscal transfers from GoI and state governments. Total OSR of ULBs nationwide grew much slower than nominal GDP. Urban property tax is the largest OSR but remains miniscule relative to comparators, being only 0.15% of GDP in aggregate nationwide, compared to 0.3–0.6% of GDP for low- and middle-income countries on average (Kelly, White and Anand 2020).

Low service charges for municipal services undermine financial sustainability and viability. Policy decisions to keep tariffs and service charges below levels required for cost recovery and financial sustainability are contributing to low revenue. ULBs and utilities are generally unable to recover operations and maintenance (O&M) costs, let alone capital costs, of providing services such as water supply and sewerage. Data for 14 large and medium-sized cities (including some of the largest cities in the country) show that they recovered less than half of O&M costs pertaining to water supply on average in recent years. Cost recovery by Indian urban utilities on average also appears to be below many comparator countries including large federal countries (Brazil, Mexico) and other large middle-income countries (Colombia, China, Egypt, Jordan, Russia, South Africa, Vietnam) (see Figure 4).

Figure 4. *Indian utilities have lower cost recovery for urban water services relative to comparator countries*



Notes: Figures for each country were collected in different years (chart shows most recent data) and represent an aggregation of various utilities in that country. For India, figure is from 2009 and includes 30 utilities. Operating Cost Coverage Ratio is ratio of total annual operating revenue to operating cost, with both revenue and cost measured in US$ per m3 sold.

Source: International Benchmarking Network for Water and Sanitation Utilities (IBNET).

Absorptive and implementation capacity at ULBs for urban infrastructure delivery is low in ULBs. Large ULBs across India have generally not been able to fully spend their budgeted capital expenditure in recent years, with some large ULBs having extremely low capital budget execution rates. A review of 10 large ULBs from across the country shows that they were able to spend only two-thirds of their cumulative capital budget over the three recent FYs. Slow implementation performance by ULBs on several recent flagship GoI Urban Missions further points to constraints on implementation capacity. ULBs across India have so far executed only about one-fifth of the cumulative cost of approved projects under Smart Cities Mission (SCM) and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) over the last six FYs.[4] This low implementation capacity in the context of increasing fiscal transfers is resulting in budget surpluses which are not being used to finance capex. ULBs' inability to invest their excess surplus points to constrained capacity and incentives for capital expenditure.

The existing funding base to leverage higher private financing is concentrated in a few states and large/metropolitan cities within them. Just four states (Gujarat, Karnataka, Maharashtra, and Tamil Nadu) account for over two-thirds of total OSR of all ULBs nationwide. Municipal corporations (MCs), being the ULBs in large cities, account for a bulk of total OSR and revenue surplus nationwide.

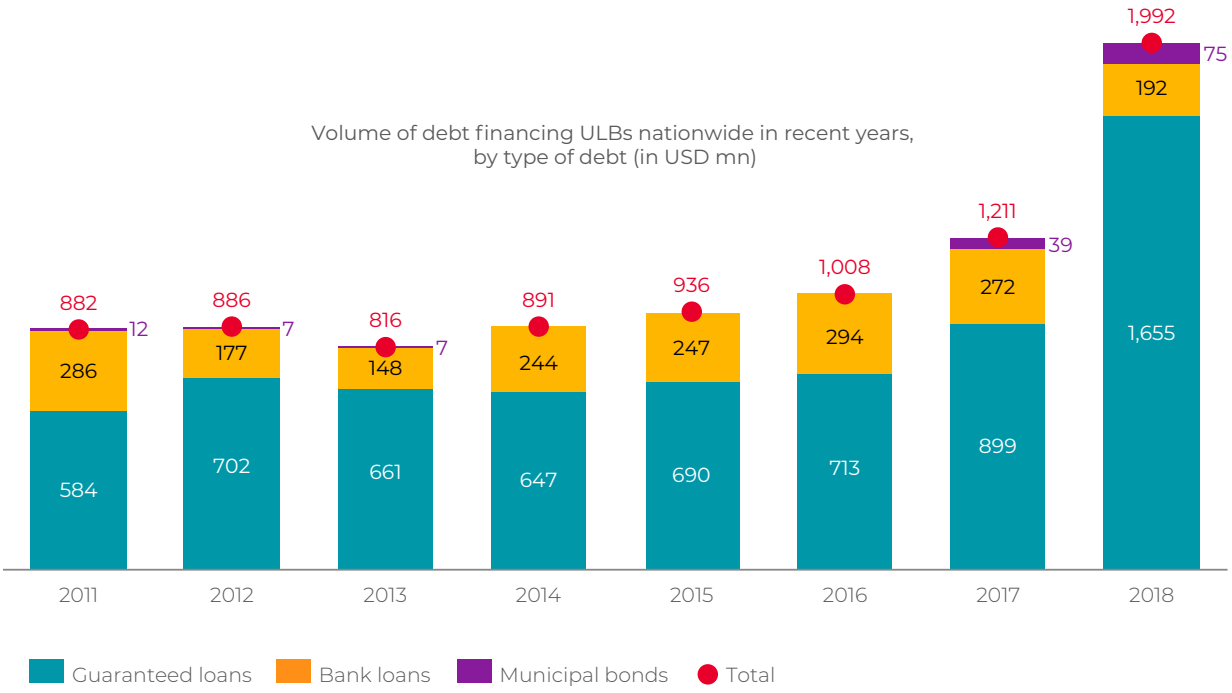
[4] The total cost of projects approved under these missions is USD 27 billion and USD 10 billion for SCM and AMRUT respectively, of which ULBs have been able to execute only 22% (SCM) and 18% (AMRUT) respectively so far.

The state of private financing for urban infrastructure: Debt and PPPs

The mirage of municipal debt financing

Total annual issuances of commercial debt financing for ULBs, including loans and bonds, was muted in the period FY11-18, ranging between USD 156–311 million of annual issuances. In comparison, loans from HUDCO, guaranteed by state governments, have accounted for a much larger share of capital expenditure. Municipal bonds are very small relative to commercial loans, being less than one-tenth of total commercial debt raised by ULBs in this period. Only five cities have issued bonds in the last 4 years, despite 28 MCs securing investment grade credit ratings under AMRUT and substantial incentives available from GoI. The market for municipal bonds is small relative to comparable countries. Total value of outstanding municipal bond debt is one-sixth of outstanding municipal bonds in South Africa which has a well-developed municipal bond market (see Figure 5).

Figure 5. *Municipal bonds comprise a small fraction of debt financing*



Source: Secondary research, CRIS analysis

Private debt financing has primarily been raised by a few large ULBs across the country, with cities from only 7 states accounting for all municipal bond issuances in India till date. Only a handful of large cities have accessed institutional/bank loans. In fact, the volume of "commercial debt financing" actually does not reflect true private financing provided on a market basis as it also includes loans from state government-controlled FIs which lend public funds and contribute a substantial share of debt financing for cities, especially in Tamil Nadu, where entities like the Tamil Nadu Urban Development Fund (TNUDF) and Tamil Nadu Urban Finance and Infrastructure Development Company (TUFIDCO) provide loans on concessional terms. These entities do not themselves leverage or raise private financing for their capital needs directly, thus this lending does not really represent additional finance leveraged from the private sector. Rather, these are fiscal resources which circulate within the public sector.

Having noted this, it is also important to identify a certain paradox relating to financing activities of larger cities in India: current level of debt financing in these cities is well below their existing debt servicing potential. 27 of the largest ULBs nationwide (excluding Mumbai) which received an investment grade credit rating under AMRUT can currently borrow an additional USD 7.7 – 8.4 billion in debt based on their existing financial indicators, which is more than 20 times their existing level of debt stock.

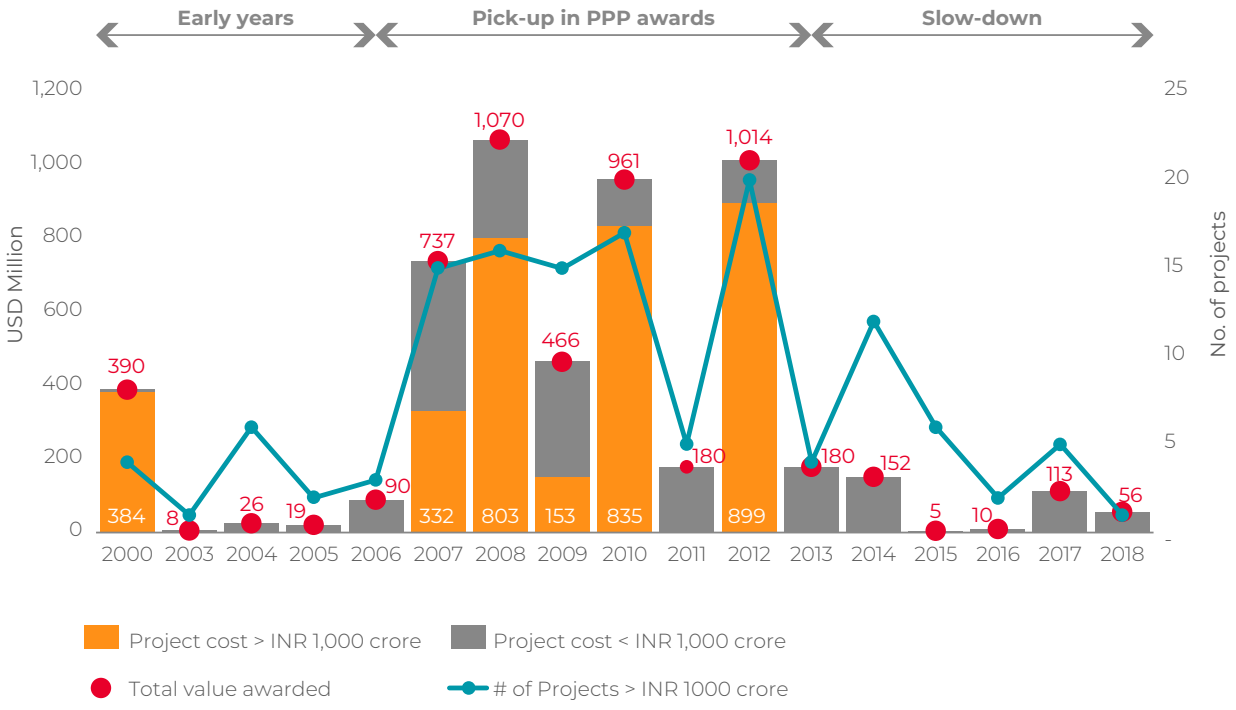
Mumbai alone can currently borrow an additional USD 5 billion given its current estimated debt servicing capacity. Such a large gap between intrinsic potential and existing levels points to a complex combination of constraints which inhibit these relatively capable cities from accessing higher levels of commercial finance. The additional debt potential beyond these few top-tier cities is low, however, on account of the concentration of the revenue base and operating surpluses in large cities. Even in the large cities, this estimated potential is certainly limited relative to total investment needs.

The existing narrow and non-buoyant OSR base can impair the total future debt carrying capacity of ULBs and presents a binding constraint to expand private financing even in larger cities. In Tamil Nadu for example, growth in revenue income and OSR of state-wide ULBs and Chennai agencies has substantially lagged growth in revenue expenditure, resulting in declining operating surpluses and limiting the potential debt servicing capacity. State governments there generally control most substantial aspects of commercial financing and investment decisions by ULBs and city agencies, approving transactions on a case-by-case basis and having a strong role in approval and appraisal of capital investment needs.

The unfulfilled promise of PPPs

PPP transactions for urban infrastructure have seen a marked decline in the last decade both in monetary value and transaction volume. Only one-third of all PPP investments awarded since 2000 came in the last decade (see Figure 6). Municipal SWM projects had the highest share (by volume and value) in the last decade, and ULBs accounted for almost two-thirds of PPPs by value in the last decade with the rest being awarded by parastatals. As in OSR performance and debt financing, the same set of four states accounted for a majority of PPP transaction value and volume in the last decade, with Maharashtra alone accounting for almost half of them by monetary value.

Figure 6. *Urban infrastructure PPP projects awarded since 2000, # of projects and cost (USD mn)*



Source: Secondary research, CRIS analysis

PPPs in urban infrastructure have needed sizable funding support, often in the shape of capital grants from state governments and GoI as viability gap funding and/or availability payments. City agencies have been unable to expand the resource and funding base to support private financing as user charges for water supply, sewerage networks, and bus services are particularly highly subsidized from general revenues, sourced from either OSR or fiscal transfers, and do not recover even O&M costs. These are also

the revenues which are used to fund debt service costs for municipal borrowing, and thus there is a zero-sum relationship between these two financing sources (borrowing and PPPs). Even in "attributable" urban services where the end-user/beneficiary is distinctly identifiable and can be charged for the service, PPP potential is constrained by the existing revenue structure which undermines their viability for private investors. Moreover, the design of PPPs has not fully accounted for risk-sharing or risk-transfer mechanisms for project risks, with several PPPs in Tamil Nadu facing operational issues due to unanticipated demand shocks and technical and legal challenges which resulted in them requiring restructuring and coming into public ownership.

Key factors impacting private financing for urban infrastructure

The primary constraints preventing higher volume of private financing for urban infrastructure in India are on the demand side. These are: the policy and political economy decisions impacting revenue levels and funding base for private financing; weak absorptive and implementation capacity of city agencies for capital expenditure; and the restrictive inter-governmental framework which reduces accountability and incentives for city agencies to invest more ambitiously in infrastructure. The next most critical constraint appears to be state-level regulatory and policy factors which intermediate demand and supply of finance. These are aggravated by a set of secondary constraints including factors related to the financial market that dampen supply of finance, and weak financial management and fiduciary performance. Table 2 summarizes these constraints.

Table 2. *Summary of key constraints impacting demand for, and supply of, private commercial financing for urban infrastructure in India*

	Factors impacting Private Financing	Key Findings
	Demand for Private Financing	
1	Revenue policy & revenue mobilization effort	Weak funding base for private financing due to policy decisions on low revenue levels for local taxes and service charges
2	Absorptive capacity of city agencies ("ability to execute")	Weak absorptive and implementation capacity limits overall infrastructure delivery even in large cities, driven by institutional weaknesses (e.g. weak strategic planning to develop pipeline of viable projects; low capacity to design and structure complex projects/PPP transactions and deal with private investors/FIs
3	Intergovernmental Institutional & Fiscal Framework (Mandates, Funds & Incentives)	Weak and fractured functional devolution for ULBs with weak accountability and perverse incentives facing ULBs. Reinforces dependence of ULBs
4	Fiduciary quality: financial management, data etc.	Weak fiduciary capacity, quality and data of city agencies undermines investor confidence and creditworthiness
	Supply of Private Financing	
5	Depth and character of the financial sector	Regulatory framework at national not prohibitive to private financing with improvements in last decade. But supply of financing from state FIs under non-level playing field crowding out private finance
	Intermediation of Demand & Supply	
6	Rules of the game - Regulatory framework for commercial financing of urban infrastructure	Highly centralized direct control framework by states over ULB financing, opposite of international best practice, not conducive to creating environment for private financing

In sum, the persistently low level of private financing in urban infrastructure is primarily a fiscal and institutional problem. Private financing will remain constrained until these fiscal and institutional realities shift, with cities developing the absorptive capacities and related incentives to invest more aggressively in urban infrastructure; and policy decisions are taken to increase taxes and user-charges to required levels so that the financing required for infrastructure can be funded and repaid. In other words the most fundamental reforms to increase private financing for urban infrastructure have little to do directly with such financing itself. Increasing private financing to a level that makes a substantial contribution to urban infrastructure needs depends on improving the revenue base, creditworthiness, and institutional capacity of ULBs and city agencies.

It should also be stressed that, notwithstanding these system-wide constraints, there is nonetheless a group of larger, high-potential cities which are currently not leveraging private commercial financing commensurate with their debt servicing potential and which should be the target of focused efforts to expand commercial financing volumes to increase infrastructure investment. While the potential here is limited relative to the total investment needs – demonstrating that these cities, too, are subject to the broader fiscal and institutional realities of all ULBs in India – it is nonetheless significant relative to the existing low levels of commercial financing. These cities account for a fifth of India's urban population. This presents fertile ground for targeted incremental action, both to make a difference in these cities themselves and for its wider demonstration effects.

Proposals for policy actions along two pathways: structural reforms and incremental actions

The proposals for policy action are directed at the following two levels:

- **Structural reforms** required to address the systemic constraints to which all cities are subject – which are also the most difficult, not least because they require political decisions which have proven to be challenging in the Indian context;[5]
- **Targeted actions** aimed at increasing the mobilization of private commercial financing by high-potential cities in the short- and medium-term. These actions are arguably feasible immediately, at least in some cities and states.

Structural reforms to address core fiscal and institutional constraints:

The following reforms will address some of the core fiscal, institutional and revenue constraints that face and have a fundamental impact across the system on increasing private financing:

- **The fiscal transfer system (at both national and state levels) should move to a more stable, formula-based, and unconditional fiscal transfer regime.** About half of all fiscal transfers to ULBs currently are tied funds which creates accountability and incentive issues. The 15th Finance Commission report also recommends an increase in unconditional transfers to ULBs to 0.32% of GDP by FY25. Well-designed conditional transfers can also improve outcomes.
- **Cities' fiscal base and creditworthiness will be improved by addressing revenue constraints** through increasing property taxes, user fees and service charges from the current low bases substantially in real terms. Doubling the OSR of key ULBs and parastatal agencies every five years can support a funding base sufficient enough to mobilize substantial commercial financing to contribute to meeting investment needs.
- **Gradually increasing the service delivery mandates of city agencies will improve their accountability and incentives** consistent with principles of the 74th Constitutional Amendment Act. Devolution of water and sewerage functions may be a starting point.

[5] The fact that these reforms are outlined here does not imply that it is believed these reforms are likely. As noted, the areas to be addressed may not be tractable in the short-medium term. The point, however, is that the scope for mobilizing private commercial finance into urban infrastructure will always be limited to the extent that these constraints are not addressed.

Targeted actions to provide incremental progress in selected high potential cities:

A group of large, financially endowed cities are ready for focused support to catalyze financing as they have a relatively strong revenue base which is not currently being fully leveraged relative to potential. States have a primary role in creating the enabling conditions for this and supporting necessary city actions, while GoI can provide additional technical assistance using its position as regulator, convener, and facilitator. Specific actions are proposed as follows:

state-level actions to address constraints on demand for financing and the regulatory environment

- **Improving cities' absorptive capacity**
  - **Supporting specific large cities with strategic multi-year capital investment and financial planning,** building a pipeline of investment projects, and helping operationalize these plans.
  - **Improving capacity of ULBs and city agencies in large cities to develop and implement bankable projects and complex PPP transactions.** This should be done through technical assistance and advisory to strengthen institutional capacity and creditworthiness of ULBs and parastatals to position them as credible counterparties for private investors and FIs.
  - **Program of performance-based fiscal transfers** to improve absorptive and institutional capacity of ULBs across a range of required aspects. Such a program can link performance-based fiscal transfers to institutional results rather than tied to specific projects.
- **Improving cities' fiduciary & public financial management quality and OSR performance:** implementing accounting, auditing, and financial disclosure standards for ULBs and availability and consistency of reliable financial data; improving capacity of ULBs to collect revenue from assigned sources. This provides confidence to investors on the overall quality of financial management and revenue systems.
- **Revising regulatory environment to create more conducive conditions for municipal borrowing and PPP activity:**
  - **Revising ex-ante rules and procedures governing ULB access to private finance especially borrowing.** States should transition to a rules-based process instead of a direct control system whereby every transaction is approved on a case-by-case basis
  - **Clarifying and improving ex-post procedures** to provide dispute resolution with investors and deal with potential defaults by ULB on borrowing. Systematic support is needed for dispute resolution between city agencies and investors/creditors, for both borrowing and PPPs, to reduce investors' risk perception.
  - **Reforming state-controlled FIs** to transition from concessional financiers to more sophisticated entities which facilitate private financing. These institutions could eventually become financial support facilities which provide technical support and/or financing to city agencies for project/transaction preparation and financing or credit enhancement through limited underwriting designed crowd-in private financing.

Central Government-level actions to support ambitious reform agenda and incremental progress

- **Facilitation, technical assistance, capacity building and removing market frictions**
  - **Establish a dedicated structure – such as a Cities Investment Support Unit** - within an appropriate Ministry to focus on infrastructure finance to assist specific states and cities with regulatory reform, transaction preparation and implementation for private financing including borrowing and PPP transactions. This Unit can nurture partnerships between stakeholders, support states, ULBs and other borrowers with technical assistance in financial plans, interacting with financial markets, provision of expertise to design transactions for private financing and engage with investors.
- **Information dissemination, convening, "building the case"**
  - **Sharing strategies with prospective financiers** through dialogues/workshops for various lender and investor groups and selected borrowing states and ULBs to build relationship between investors and borrowers based on long term infrastructure and financial plans

- **Building the business case for urban investment through dialogues,** possibly via an urban finance working group, to expose FIs/investors to the market potential for financing urban infrastructure, GoI's policy and available revenue streams to support infrastructure financing. This can also help states and GoI formulate appropriate polices and expectations.
- **Building and expanding data systems and information disclosures on urban financing,** in collaboration with financial sector regulators and states, to support the development of an ecosystem of private investment which includes credible and publicly available data, analysis and research on municipal finance trends. This will include readily accessible data on municipal finance and investment needs.

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Abbreviations

AMC	Ahmedabad Municipal Corporation
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
AP	Andhra Pradesh
BRTS	Bus Rapid Transit System
CISU	Cities Investment Support Unit
DRT	Debt Recovery Tribunal
FI	financial institution
FPI	foreign portfolio investors
GCC	Greater Chennai Corporation
GDP	Gross Domestic Product
GMFB	Gujarat Municipal Finance Board
GoI	Government of India
GoTN	Government of Tamil Nadu
GSDP	Gross State Domestic Product
GSFS	Gujarat state Financial Services Limited
HPEC	High-Powered Expert Committee
HUDCO	Housing and Urban Development Corporation Ltd
IBC	Insolvency and Bankruptcy Code
IBNET	International Benchmarking Network for Water and Sanitation Utilities
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KUIDFC	Karnataka Urban Infrastructure Development Finance Corporation
MC	Municipal corporation
MGI	McKinsey Global Institute
MoHUA	Ministry of Housing and Urban Affairs
MP	Madhya Pradesh
MSW	Municipal Solid Waste
NCLT	National Company Law Tribunal
O&M	operations and maintenance
OSR	own-source revenues
PCIC	Per capita Investment Cost
PHED	Public Health and Engineering Departments
PMAY	Pradhan Mantri Awas Yojana
PPP	public-private partnership
RBI	Reserve Bank of India
SARFAESI	Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest Act
SBM	Swachh Bharat Mission
SCB	scheduled commercial banks
SCM	Smart Cities Mission
SDL	state Development Loans
SEBI	Securities Exchange Board of India
SWM	solid waste management
TNUDF	Tamil Nadu Urban Development Fund
TNUICL	Tamil Nadu Urban Infrastructure Company Ltd
TNUIFSL	Tamil Nadu Urban Infrastructure Financial Services Ltd
TUFIDCO	Tamil Nadu Urban Finance and Infrastructure Development Company
ULB	Urban local body
UP	Uttar Pradesh
WB	West Bengal
WSPF	Water and Sanitation Pooled Fund trust

Chapter 1.
Introduction: Rationale, Scope, and Approach

1.1. Problem statement & rationale for this report

India is rapidly urbanizing, and the financing needs of cities are expanding proportionately. India's urban population is estimated to increase by 140 million over the next 15 years, from 470 million in 2021 to 600 million by 2036. This will be 40% of the total national population, up from 31% in 2011.[6] Population growth in urban areas will account for three quarters of the total national population increase in the 25-year period from 2011 to 2036. This rapid urbanization, along with existing service delivery gaps, is putting substantial pressure on infrastructure and livability in cities. A sustained increase in capital investment is needed in cities to enable economic growth, improve quality of living and livability, and build resilience to the expected impacts of climate change.

Cities face significant challenges to mobilize the needed finance for these needs, and the financing gap is large. Government of India (GoI) had previously estimated that US$560 billion in capital investment will be required for urban infrastructure and services for the 20-year period 2012-32 (HPEC 2011)[7], equivalent to an annual financing requirement of US$42 billion on average. GoI's 12th Five Year Plan had also estimated the urban infrastructure financing deficit to be 80% of investment needs[8] and had underscored the potential for financing from private sources to bridge this gap – including municipal borrowing and public-private partnerships (PPPs).

Despite a substantial increase in inter-governmental fiscal transfers to cities in the last decade, cities still face a large shortfall of resources relative to investment needs and will require financing from additional sources – especially private commercial financing. To bridge this financing gap, GoI and several states and cities have taken measures to enable commercial financing, but its use remains very limited. Despite GoI having introduced several policy measures and incentive mechanisms to create an enabling environment at the national level, cities – even financially strong ones - have not substantially mobilized private financing to invest in urban infrastructure. Clearly, systemic constraints exist which prevent cities from tapping much larger volumes of private financing for their infrastructure needs.

This report aims to identify these key constraints to bridging the urban infrastructure financing gap in India, especially through potential private financing. To this end, it presents updated estimates of urban infrastructure investment needs and analyses recent and historic trends in capital investment and commercial financing for urban infrastructure. It provides policy proposals on how the identified constraints can be addressed by GoI, states and cities. The scope of private financing considered in this report includes two primary sources: borrowing/debt financing and PPPs.

This report is part of a larger analytical and technical assistance activity undertaken by the World Bank and synthesizes the analysis and findings of three detailed background reports prepared under this activity. These background reports including the following: (a) a national-level diagnostic of the use of commercial financing instruments for urban infrastructure in India, which presents the policy and regulatory landscape at the national level and captures key trends on the use of various financing instruments for urban investment; and (b) two state-level deep dive reports, one each for Gujarat and Tamil Nadu, which review in detail each state's trends and needs for urban infrastructure investment, and the prevailing regulatory framework and constraints for various commercial financing instruments. These state-level reports also provide detailed assessments for the largest city in each state, i.e., Ahmedabad (Gujarat) and Chennai (Tamil Nadu).[9]

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[6] Population projections are from National Commission on Population, Ministry of Health & Family Welfare.
[7] Report issued by the "High Powered Expert Committee for Estimating the Investment Requirements for Urban Infrastructure Services" (HPEC) in 2011. HPEC was convened by the Ministry of Urban Development.
[8] 2011 report of the Government's Working Group on financing urban infrastructure.
[9] The World Bank contracted CRISIL to produce the three background reports. This current report consolidates the key findings of these background reports.

1.2. How this report is organized

Chapter 2 presents a conceptual framework for assessing the key factors that influence the mobilization of commercial finance for investment in urban infrastructure. It also describes India's inter-governmental fiscal and institutional system for urban governance and financing considering the conceptual framework, including the role of the central government as regulator and facilitator of financial markets and the role of state governments and their relationship with Urban Local Bodies (ULBs) and other city agencies such as utilities.

Chapter 3 provides the lay of the land on recent trends in financing and funding for urban infrastructure in India. It provides estimates on the quantum of financing needed over the next decade and the existing and estimated financing gap, comparing needs relative to existing levels of investment. It shows the sources of financing for capital investment on urban infrastructure and the types of agencies executing these investments. This chapter also describes the current state of municipal finance in India, aiming to understand the size of the funding base for urban infrastructure by looking at fiscal performance of cities.

Chapter 4 describes the state of commercial financing for urban infrastructure by focusing on two types of financing: debt / borrowing, and PPPs. It shows the recent trends for both these types and makes key observations to explain these trends. It also provides an estimation of the potential size of debt that can be incurred by large, creditworthy cities over the next decade based on existing fiscal indicators.

Chapter 5 applies the conceptual framework to empirically analyze the key factors impacting the potential mobilization of commercial finance for urban infrastructure investment in India. It describes the specific constraints and assesses their relative importance.

Chapter 6 follows this analysis to provide proposals for policy actions to address the identified constraints. Proposals are divided between those which are the responsibility of the central and state governments and include shorter-term actions which can provide incremental progress as well as more fundamental reforms needed for more substantial impact on increasing private financing.

1.3. Methodology and Approach

This report, and its associated background reports, have been prepared primarily using secondary research, data, and information available in the public domain, especially that pertaining to urban investment, municipal finance indicators, and commercial financing for urban infrastructure with a focus on debt financing and PPPs. In some instances, primary data and information have been collected from Government counterparts in the states of Tamil Nadu and Gujarat, including in the cities of Chennai (Tamil Nadu) and Ahmedabad (Gujarat).[10]

The review of trends in urban capital expenditure and estimated needs involved looking at all-India data in urban capex and finances of ULBs and state governments. Urban capex was estimated based on reported expenditure of state governments and ULBs and triangulation with reported capex under GoI flagship schemes and reported information on commercial financing. Annual urban capex figures for the last decade were arrived at through careful triangulation from these sources. Normative investment needs for the upcoming 15 years (from FY21 to FY36) were based on a review of earlier studies and additional inputs in the urban transport category, using and calibrating existing models and estimations by other sources as needed. These future investment estimates are based on a review of past estimates with a focus on building scenarios for assessing the scale of commercial financing needed. While due care has been taken to cross-reference and validate information reviewed and analyzed, the report recognizes limitations in information and the multiplicity of datasets on urban financial performance. The analyses were also constrained by limited information on aggregate financial and investment data for parastatal agencies. Several analyses of aggregates are based on finances of ULBs, although many of the conclusions apply to parastatals too.

[10] The World Bank contracted CRISIL to collect and analyze most of the data used in this report.

Data and analyses on municipal debt/borrowing are primarily for ULBs and selected city agencies such as utilities – especially in the cases of detailed data from Gujarat and Tamil Nadu. Data and analyses on urban infrastructure PPPs, however, is more comprehensive and aims to include all urban PPPs regardless of type of executing agency, including ULBs, utilities, parastatals, and other city agencies. It is recognized that many other agencies besides ULBs also deliver urban infrastructure (e.g. state departments; state-owned urban entities such as water utilities; Urban Development Authorities), but these are predominantly part of state governments, or are owned by state governments, and the borrowing activities of such entities would be more accurately understood as lying in the broad realm of state borrowing. Thus, they are not included in the data and analysis on debt/borrowing in this report. They are, however, included in analysis of PPPs to the extent such information was available.

For some instances where more granular data and analyses are presented for Gujarat and Tamil Nadu states – and the cities of Ahmedabad and Chennai - urban investment needs were estimated using normative assumptions, priority projects and programs identified by the respective city agencies. Financial projections for income, expenditure, and source-wise financing were projected for a 15-year period to establish financing gaps under various scenarios.

1.4. Potential impact of Covid-19 pandemic

The economic impact of the Covid-19 pandemic has increased uncertainty in the level and growth of urban finances at the state and city levels and may impact investment capacity and private financing potential in the short to medium term. It is possible that urban capital expenditure could fall in the ongoing FY22 from an already low base. A fall in Gross Domestic Product (GDP) growth at the national level is likely to impact revenues at all levels of government. The pandemic has also increased pressure on expenses for city agencies. As shown in this report, there is substantial variation across the country in the immediate impact of the pandemic on city finances, with large cities in some states seeing declines in revenue while others have fared far better. In general, there has been pressure to increase fiscal transfers to meet additional urgent expenditures relating to the pandemic. Lower revenues and higher expenditures for ULBs may affect their credit ratings and debt carrying capacity, making it even more challenging to accessing debt. The pandemic may also impact investor appetite in general which will add uncertainty.

For the analyses and policy recommendations in this report, while the impact of Covid-19 has been factored in forward-looking projections and scenarios by incorporating a drop in economic output and associated decline in revenue in the immediate term along with a follow-up stabilization and recovery period, a specific analysis of the same is beyond the scope of this report, given the pandemic's evolving nature. It should be noted that all historical data shown in this report are for periods prior to the onset of the pandemic.

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Chapter 2.
Conceptual Framework and its Relevance to India's Urban Governance and Finance Structure

This Chapter presents a conceptual framework for assessing key factors that influence the mobilization of commercial finance for urban infrastructure and how it applies to India's inter-governmental fiscal and institutional system including the role of the central government as regulator and facilitator of financial markets and the role of state governments and their relationship with ULBs and other city agencies. A glossary of terms used in this report related to types of (commercial) financing is provided in Box 1.

Box 1. *Glossary of terms used for types of commercial financing*

Commercial financing: This refers to any financing provided on a repayable basis. This includes all such financing regardless of its terms (i.e. whether it is provided on a subsidized/concessional basis or not; or supported by any guarantees or other credit enhancement features). It is also regardless of the source of financing (i.e. either any private sector or public sector financial institutions (FIs)/ investor). It includes all types of debt such as loans and proceeds from municipal bonds, including financing from public sector entities such as national or state-controlled FIs which lend public funds and contribute a substantial share of debt financing for cities. This type of financing also includes all types of public-private partnership (PPP) arrangements where private investor(s) provide equity and debt financing (or any other financial contribution) and receive monetary benefits such as returns on their equity/financing or other monetary payments as consideration for its investment. Repayable basis implies the repayment of principal and the associated financing costs such as interest (in the case of borrowing) and returns on equity/investment in case of PPPs.

Market based financing: This refers to commercial (repayable) financing which is provided without subsidy or concession, and is thus market based, regardless of financing source. This can be in the shape of non-concessional bank loans, investment in financial instruments such as municipal bonds, or equity for PPP transactions. It includes financing from financial markets, scheduled commercial banks (SCBs, including public sector banks, either nationalized or owned by a government agency, which provide financing on market basis), and specialized infrastructure finance entities that are privately owned or have only partial or indirect public ownership (and provide financing on market basis).

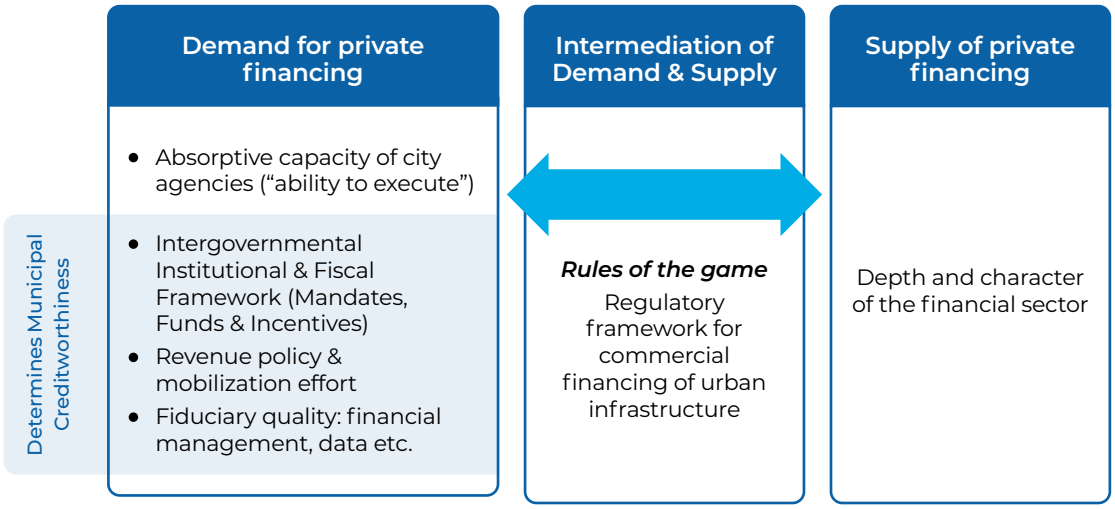
Private commercial financing, or **private financing,** is such market-based financing which is providing by private sector FIs/investors (including such publicly owned FIs/banks which operate on market basis, e.g. government-owned SCBs or other institutions listed on stock exchanges etc.). This category is the core focus of this report, as a material improvement in the status quo of urban infrastructure investment is likely to require substantially higher private financing on market basis.

Private financing is different from **public commercial financing** in a subtle but important manner. Public commercial financing is provided by public sector FIs (either on market or concessional basis, such as various state government FIs who lend to urban projects without any explicit guarantees by state governments). This distinction is made because, in principle, public sector FIs can also provide financing to city agencies on market basis. But in general, such FIs (at the national and state levels) provide financing on a non-market basis, including loans supported by guarantees (such as HUDCO loans guaranteed by state governments). Another aspect distinguishing this from private financing is that it generally such financing circulates within the public sector – from the public sector FI to the implementing agency – without leveraging any private sector financing.

2.1. Conceptual framework for demand and supply of commercial financing for urban infrastructure

This report modifies an existing conceptual framework, previously applied to India and other emerging and developing economies, which describes the key factors determining the potential flow, size, and scope of private financing for urban infrastructure.[11] There are six key factors that determine the demand for, and supply of, private commercial financing for urban infrastructure (see Figure 7). These factors apply to any country and subnational context, including national and state levels in India.

Figure 7. *Factors determining demand for and supply of private commercial financing for urban infrastructure*



Updated and adapted from World Bank (2011) and White and Wahba (2019)[12]

2.1.1. Demand for private finance

Demand for private financing is determined by the absorptive capacity of city agencies and municipal creditworthiness. Municipal creditworthiness is in turn determined as a combination of several factors, including the inter-governmental fiscal and institutional framework, policy decisions on revenue levels, and fiduciary quality and performance. Municipal creditworthiness relies on the availability of predictable revenue streams (including recurrent fiscal transfers and own-source revenues (OSR)) as well as quality and performance of municipal financial management. Each of the factors affecting demand for private financed is described below:

Absorptive capacity of city governments and agencies. Absorptive capacity refers to the ability (and capacity) of city governments (ULBs in the case of India) and other city agencies to plan and spend the financing currently or potentially available to them for capital infrastructure investment needs, regardless of source. It also includes their capabilities (internal or externally sourced) to engage effectively with private sector investors/financiers and design the financial and commercial structures for private financing of urban infrastructure projects.

There are several indicators of absorptive capacity, which include the following: the existence of medium-term strategic development plans listing clear investment and expenditure prioritization; a pipeline of technically and operationally viable projects based on such strategic plans; the ability to design, prepare, appraise and implement high quality projects having strong feasibility, viability or strong economic and social returns; high execution and implementation rates of previous and ongoing capital

[11] This framework was introduced in World Bank (2011) and further developed in White and Wahba (2019).
[12] ibid.

expenditures and investment projects; and capacity, skills, expertise and experience in dealing with more sophisticated sources of finance, including commercial lenders and/or private investors, along with ability to develop sophisticated commercial financing and risk-sharing mechanisms for urban infrastructure projects especially PPPs. ULBs and city agencies in India can influence this factor to some degree, within institutional and regulatory limits imposed by state governments.

Inter-governmental fiscal and institutional framework. The existing fiscal framework at the national and state levels - including fiscal transfers, revenue and expenditure assignments and mandates for ULBs - directly influences their ability to generate operational surpluses that are used for debt service, public investment expenditures and PPP transactions. The scope of institutional responsibility for the provision of infrastructure also directly influences demand for financing – a ULB or city agency will obviously only be able to invest in those services for which it has legal mandates. The ability of cities to attract private finance depends in part on sources of revenue available to them to help pay various financing costs – such as interest (for debt financing), return on equity (for PPP financing), etc. These sources of revenue may include both OSR and inter-governmental fiscal transfers from higher levels of government (i.e. national and state). Fiscal transfers, especially those made on a stable, predictable, and recurrent basis, enhance the total funding capacity of ULBs since they are made on a non-repayable basis and do not have any financing cost. Due to this, they are the preferred (and often default) source of investment financing for ULBs. Their predictable nature also enhances ULBs' creditworthiness by providing a stable stream of recurrent revenue. Larger assignments for OSR also enhance the potential total funding capacity of ULBs since they can contribute to higher operational surpluses which the ULB can utilize for capital expenditure or future financing costs of commercial financing. These aspects collectively impact the size and scope of financing required by and available to cities. ULBs have limited to no control over this factor, with primary responsibility resting with national and state governments.

Policy decisions on revenue levels. A related but somewhat distinct aspect of the inter-governmental framework is the policy decisions on the local revenues relative to costs of service provision and infrastructure. If policy decisions are taken to keep revenues (local taxes such as property tax as well as service charges for municipal services) below the levels required to provide urban services, then other revenue sources – such as fiscal transfers or other receipts - are needed to fill this fiscal gap. Local tax revenues and service charges at appropriate levels contribute to higher operational surpluses which the ULB can utilize for capital expenditure or future financing costs of commercial financing. Tax revenue and service charges well below the required levels for financial sustainability undermine the viability of engaging private sector partners in infrastructure without substantial fiscal support. This is especially the case for PPPs which often require adequate levels of service charges to ensure viability, absent which substantial fiscal support is required.

Besides revenue policy, ULBs' performance in collecting/mobilizing revenue from their assigned sources–regardless of decisions on rates/levels–determines the size of their operating surpluses to pay future financing. Thus, ULBs' ability and capacity to collect revenue from these assigned sources impacts how much financing they can raise. In India, both ULBs and states have control over this factor, depending on the specific policy context in each state, with ULBs having more influence over revenue mobilization effort.

Quality of municipal financial management, financial data, and other fiduciary aspects. Demand for private financing depends on the fiduciary, institutional and management capacity of ULBs. This includes quality of municipal accounting and financial management systems, availability and consistency of reliable financial data and human resources responsible for running ULBs. These provide confidence to investors/financiers on the overall quality of financial management and fiduciary systems. As noted elsewhere, "in order to make sensible credit and investment decisions investors need to be able to understand municipal accounts and balance sheets and have confidence in the overall quality of financial management systems." (White and Wahba 2019) This factor is also dependent on the quality of their fiduciary systems, human resources, and information technology tools, among others. ULBs have relatively strong influence and control over this factor – and can improve it through specific actions.

2.1.2. Supply of private finance

Depth and character of the financial sector. The supply of private commercial finance is primarily determined by the size, sophistication, and regulatory environment of the domestic financial market as it pertains to private commercial financing for ULBs and capital for urban infrastructure; as well as the nature and behavior of investors and financial institutions (FIs) who are the suppliers of private finance. In India, the national government regulates all aspects of financial markets, directly impacting the supply of financing. These include central bank regulations, tax treatment of investments in urban infrastructure, municipal bond listing requirements issued by SEBI, and regulations pertaining to investments made by large institutional investors such as insurance and provident funds. Investors – either large institutional investors or other private sector entities – respond to this regulatory environment and the incentives and constraints imposed by it. State governments also play a role in determining supply, albeit a limited one, due to the existence of state government-owned FIs in several states which finance urban infrastructure spending. ULBs in India have almost no role in determining this factor.

2.1.3. Intermediation of demand and supply

Regulatory framework for private financing of urban infrastructure. Considered the "rules of the game", the regulatory framework for private financing intermediates the supply and demand for at the level of every investment and transaction. This includes matters such as whether, and how much, ULBs and city agencies (and which agencies in particular cities) are authorized to access financing; the types of collateral such ULBs may pledge; currency restrictions; rights of ULBs to enter long-term PPP contracts and determine tariffs for urban services; etc. ULBs in India have almost no control over establishing the rules of the game, with primary responsibility resting with national and state governments. In general, these rules of the game comprise several inter-related aspects such as: the full set of ex-ante rules, regulations and procedures governing all aspects of ULB/agency access to, and origination of, all types of commercial finance; regulations pertaining to investors in municipal risk; information on, and monitoring of, municipal debt; and procedures to deal with instances of default (or other distress) on financing obligations.

2.2. Understanding the difference between funding and financing

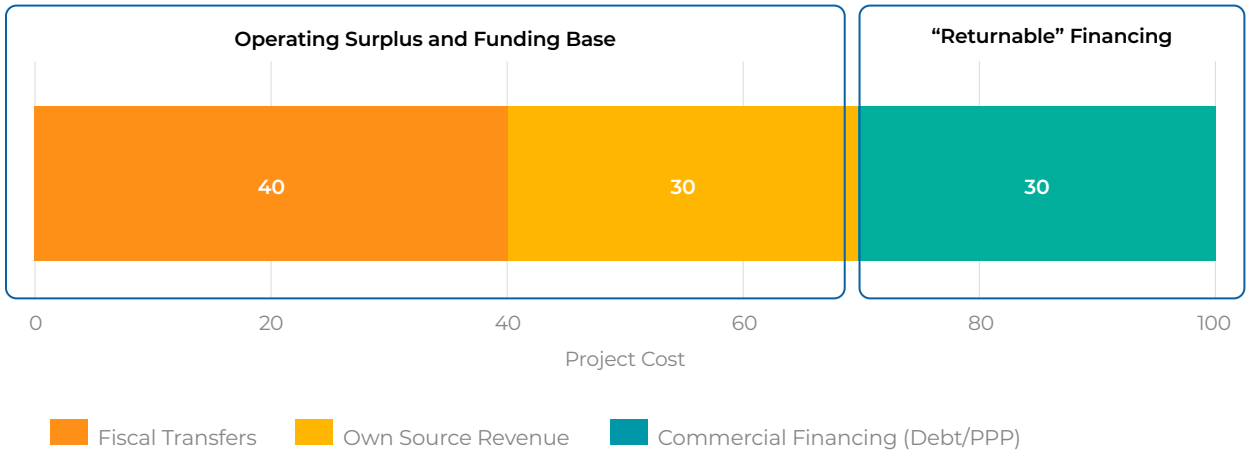
It is important to highlight the difference between "funding" and "financing" as two separate but related conceptual aspects of discussions on commercial financing of urban infrastructure. **Financing** refers to the raising of money for investment needs, whereas **funding** refers to the payment for the investment, including the financing costs, over the long term. Any financing raised on a repayable basis - such as loans (from any source), municipal bonds issuances, private investment financing through PPPs etc. - needs stable and recurrent future revenue streams to be able to pay the costs of raising such financing – which is interest in the case of debt (municipal bonds or loans from banks and other FIs), besides the repayment of principal, and return on equity in the case of private investment through PPPs and similar transactions. These future revenue streams to pay the financing costs are how such financing is *funded*.

Therefore, there is a necessarily direct and positive relationship between increased (private) financing and the need for increased future recurrent revenue streams to fund and repay this increased financing. The more a city agency taps any commercial financing, the more recurrent revenue it needs in the future to pay the obligations due to this financing. For ULBs to mobilize more finance, there is a need to demonstrate the ability and commitment to pay for that finance with recurrent revenues - either local (own source) revenues (taxes, service charges etc.) or inter-governmental fiscal transfers from higher levels of government (national and state). The only type of financing which does not create funding obligations is one that does not require to be repaid – such as inter-governmental fiscal transfers (usually made on grant basis) or a city's own operating surplus derived from excess of recurrent revenues over expenses.

Commercial financing does not add to the total resource base available to pay for infrastructure investment in the long term – it is not additional revenue. The rationale for commercial financing thus does not derive from expanding the overall resource base to fund such investments but from imperatives related to financing efficiency, inter-generational equity and so on. Such financing should be sought only in proportion to the future expansion of the fiscal resources which are available to fund the financing costs.

Commercial financing is simply one of the tools available to city agencies to raise sufficient resources for capital investment/expenditure. Figure 8 illustrates with an example: if the total cost of a given project is 100% (any monetary unit), part of it can be financed through two sources: first, operating surpluses of the city which result from the excess of revenue/recurrent income (usually comprised of fiscal transfers and OSR) over revenue/recurrent expenditure – this is zero-cost financing as it does not need to be repaid and also comprises the "funding base" to the extent that this revenue is recurrent or predictable. The second source is commercial financing raised from external sources on returnable basis.

Figure 8. *Illustrative example of sources of funds for any given capital investment project*



Inter-governmental fiscal transfers and OSR impact commercial financing in the following way: Stable and recurring fiscal transfers – those which are formula-based, predictable and unconditional – and OSR form part of the funding base available to raise more commercial financing. The higher such reliable fiscal transfers and OSR are, the higher operating surpluses can potentially be, and the more financing can be raised since the underlying base of recurrent revenues permits the leveraging of this financing.

2.3. India's inter-governmental framework for urban governance and financing for infrastructure and service delivery

2.3.1. Role of state governments and relationship between state and city levels

Constitutional mandate of ULBs and its varied implementation: state Governments have full powers to regulate all activities of ULBs in their territory, including all municipal finance activity, as per the Constitution of India. Although the 74th Constitutional Amendment Act of 1992 formally recognized local governments (ULBs for urban areas) as the third-tier of government after national and state levels, and identified several municipal functions (including urban planning, land-use regulation, water supply, sanitation, wastewater, solid waste management (SWM), roads and transport infrastructure, housing etc.), the implementation and scope of this remit was assigned to the discretion of state governments under the 12th schedule of the Constitution. Further, while the 74th Amendment also defined the range of expenditures to be assigned to ULBs from the state level, again the scope and implementation of this mandate – as well as local revenue assignments – was assigned to the discretion of states. Consequently, there is variation between states in the prevalent institutional framework for urban service delivery and the functions and mandates of ULBs.

Paramount role of state governments in urban service delivery and infrastructure: While there is diversity in the mandates of ULBs among states, very often there is a fractured functional devolution of urban service delivery mandates (with associated expenditure and revenue assignment) to ULBs and urban agencies in most states. The functional mandates of many municipal/urban services and infrastructure lies with state government departments and state-controlled or -owned agencies and parastatals, barring a few states such as Maharashtra and Gujarat. Even in cases where city-level parastatal agencies (e.g., water boards

and city bus transport corporations) have been created with the intention of building specific expertise, these are rarely empowered with commensurate delegation of powers, mandates, and accountability for service delivery. Thus, relative to state-level agencies, ULBs and utilities generally have limited expenditure assignments and scope of institutional responsibility for the provision of infrastructure and services. Further, in several states including highly urbanized ones such as Tamil Nadu, revenue collected from most land-based revenue instruments goes directly into the state government budget and, even in instances where it is collected by city-level agencies, is not retained by such agencies. In some cases, a portion of such revenue is re-allocated back to city-level agencies and ULBs.

This relationship between state governments and ULBs/city agencies underpins and influences all aspects of infrastructure financing regardless of source of financing – commercial (public or private) or otherwise. State governments have the primary responsibility to regulate the mandates, scope, and financial activities of all ULBs, city agencies and utilities in their territory, including all aspects pertaining to accessing (private or public) commercial sources of finance and determining the "rules of the game" which intermediate the demand and supply of financing. Beyond this, and within limits imposed by state governments, ULBs also have control over certain factors that impact demand for financing, including absorptive capacity, policy and mobilization efforts for those revenue sources assigned to them, and fiduciary quality (see Table 3).

Table 3. *Level of government in India with primary responsibility of various factors impacting private financing*

	Factors impacting Private Financing	Level of government with primary responsibility
	Demand for Private Financing	
1	Absorptive capacity of city agencies ("ability to execute")	ULBs, within regulatory limits imposed by state govts.
2	Intergovernmental Institutional & Fiscal Framework (Mandates, Funds & Incentives)	State govts., with GoI secondary
3	Revenue policy & revenue mobilization effort	ULBs + state govts
4	Fiduciary quality: financial management, data etc.	ULBs, within regulatory limits imposed by state govts.
	Supply of Private Financing	
5	Depth and character of the financial sector	GoI
	Intermediation of Demand & Supply	
6	Rules of the game - Regulatory framework for commercial financing of urban infrastructure	GoI & state govts.

With some exceptions, state governments are responsible for the following:

- **The authorizing environment which determines the base, scope, and levels of most types of major local OSR** (e.g. property taxes, service fees/charges and other rates and tariffs), and therefore determines the level of "funding" potentially available to cover the costs of any commercial financing to be raised. As noted above, the level of funding determines the sustainable level of commercial financing potentially available to any city agency, and thus places an indirect cap on total financing which can be raised.

- **The full set of ex-ante rules, regulations and procedures determining access to, and origination of, all sources of finance.** This includes regulations and procedures pertaining to the purpose, authorization, limits, financial characteristics, tenor, types of securities offered, sources of repayment and accounting, reporting and disclosures related to borrowing or bond issues, and similar aspects for PPP transactions especially rates and levels of tariffs, service charges etc.
- **Dealing with ex-post situations** including potential state intervention in case of municipal/city default, reorganization, and debt work-out arrangements. State governments have considerable powers to intervene in such cases and municipal legislation in most states provides substantial authority to allow the state government to attach all monies of the ULB for this purpose. However, in general these ex-post regulations are weak and there are limited to no institutionalized frameworks or procedures to implement such an intervention. As "public bodies", the applicability of national-level debt recovery statutes including the recent Insolvency and Bankruptcy Code (IBC) and the National Company Law Tribunal (NCLT) is not clear.

There is variation across states in the level of decentralization and empowerment of ULBs, with some states providing more autonomy to ULBs than others. Gujarat and Tamil Nadu illustrate this variation well:

- **Gujarat seems to have a progressive policy and de facto regulatory framework for empowerment of ULBs.** A key feature is the extensive functional decentralization to ULBs, with all 18 functions in the 12th Schedule of Constitution of India recommended for transfer having been devolved to ULBs. Gujarat is among the few states in the country (along with Maharashtra) that provides wide-ranging powers to Municipal Corporations (MCs), which are ULBs in urban areas having population of more than one million) with respect to capital expenditure, with a strong delegation of financial powers where the elected council and standing committees are empowered to take decisions on capital expenditure from their own funds without seeking approvals from the state government. Once the elected body approves projects to be financed from own funds, the ULB's standing committee can approve tendering for the same. Fiduciary capacity and public financial management are also stronger, with accrual accounting standards having been implemented universally across all ULBs.
- **In Tamil Nadu, on the other hand,** the state government has a strong decision-making role in approving individual projects for ULB execution. Delegation of powers to ULBs is low relative to the scale of capital expenditure, even in large MCs. Further, key municipal functions are undertaken by state government agencies (i.e., Departments, Authorities, agencies, etc.). The situation in Tamil Nadu is generally reflective of most states, regardless of levels of urbanization and economic growth.

2.3.2. Role of National government as regulator and facilitator of financial markets

The national government plays the key role in determining the supply of private finance for urban infrastructure, through its role as the primary regulator and facilitator of financial markets and FIs countrywide. GoI has the power to regulate lenders and lending instruments through the Reserve Bank of India (RBI), and financial markets through the Securities Exchange Board of India (SEBI), the tax regime surrounding investment/financing for urban infrastructure through the Ministry of Finance (e.g. guidelines for tax-free bonds), and the issuance of government securities. In addition, several GoI laws and regulations, some of which have state-specific regulations, possibly impact municipal borrowing too, the most notable of which pertain to procurement and anti-corruption (Central Vigilance Commission) and debt recovery (SARFAESI, DRT and the recently introduced IBC and NCLT mechanisms)[13]. Four forms of GoI regulation have an impact on the willingness and ability of FIs and private investors to engage the urban finance (and especially municipal debt) market: (i) RBI regulations; (ii) Tax treatment; (iii) Insurance and pension regulations; and (iv) SEBI listing requirements. Subsequent chapters of this report provide observations on the key developments for these regulations and their implications on the supply of finance for urban infrastructure.

[13] 1) SARFAESI: Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest Act, 2002; 2) IBC: Insolvency and Bankruptcy Code, 2016; 3) DRT: Debt Recovery Tribunal, and 4) NCLT: National Company Law Tribunal.

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Chapter 3.
The Lay of the Land: Recent Trends in Financing and Funding Urban Infrastructure

This chapter provides estimates on the quantum of financing needed over the next fifteen years and the existing and estimated financing gap, comparing needs relative to existing levels of investment. It shows the sources of financing for capital investment on urban infrastructure and the types of agencies executing these investments. It also describes the current state of municipal finance in India, aiming to understand the size of the funding base for urban infrastructure by looking at fiscal performance of cities.

3.1. How much financing is needed and how large is the financing gap? Urban capital investment needs relative to existing investment level

This section presents updated estimates of India's urban infrastructure investment needs based on previous estimates, and the estimated financing gap. GoI's High-Powered Expert Committee (HPEC) report and the McKinsey Global Institute (MGI) have previously quantified India's urban investment needs in 2011 and 2010 respectively. Background work for this report has updated and calibrated these estimates (see Box 2 for assumptions).

India's cities require an estimated capital investment of USD 840 billion in urban infrastructure and municipal services in the 15 years till 2036 (in 2020 prices), equivalent to 1.18% of estimated GDP over this period, to address these service delivery and infrastructure gaps and keep pace with the pressures of rapid urbanization. This is equivalent to USD 108 per capita per year over this period. This need for a sharp increase in investments in India's cities has already been well recognized (HPEC 2011 and MGI 2010). Urban infrastructure and municipal services included in this estimate are urban transport (primarily mass transit / metro rail); core urban services such as water supply, sewerage, municipal SWM, storm water drainage, urban roads and streetlighting; and social and community infrastructure but excludes housing and slum upgrading.

Over half of these investment needs – almost USD 450 billion over the next 15 years – are in sectors which can be classified as basic urban/municipal services (including water supply, sewerage, municipal SWM, storm water drainage, urban roads and streetlighting, but excluding slum rehabilitation and public housing). Most of the rest – around USD 300 billion - are for urban transport needs.

These future investment needs are significantly higher than current levels of capital investment in urban infrastructure. Total capital expenditure in urban infrastructure (from all sources) was only USD 85 billion over roughly the past decade (2011-18) and averaged only 0.6% of GDP in this period. This is well below the intermediate target of 0.84% of GDP for 2018 which was envisioned in HPEC 2011[14], and exactly half the requirement of 1.18% of GDP estimated by latest projections. The volume of total capital investment has averaged only USD 10.6 billion per year in the past decade. This is only USD 26 in per capita terms, or four times less than the USD 108 per capita of estimated needs over the next 15 years (see Table 4 and Table 5). This very large gap between future investment needs and current levels of capital expenditure – an overwhelming share of which is from public fiscal resources as shown subsequently – necessitates the need to increase revenues and mobilize substantially higher private financing to help fill this gap.

[14] Adjusted to remove urban housing which was about 10% of the investment considered in HPEC 2011.

Table 4. *Urban investment needs (FY 21 to FY 36) and recent investment trends (FY 11 to FY 18)*

USD Billion	**Capex needs** FY 21-36 - 2020 prices			**Actual annual capex** FY 11-18 ** - current prices		
	MGI 2010*	**HPEC 2011***	**Calibrated estimate**	**FY 11**	**FY 18**	**Avg. FY 11-18**
Basic municipal services	400	496	448	5.6	12.4	8.2
Urban transport	397	107	306	1	4.1	2.4
Others	-	80	87	-	-	-
Total *USD Billion*	**797**	**683**	**841**	**6.6**	**16.5**	**10.6**
Share of GDP %	**1.12%**	**0.96%**	**1.18%**	**0.61%**	**0.68%**	**0.63%**
USD per capita	**102**	**87**	**108**	**17**	**37**	**26**
Basic services	51	63	57	14	28	20
Urban transport	51	14	39	3	9	6
Others	-	10	11	-	-	-

*Source: MGI (2010), HPEC (2011), CRISIL analysis. *Adjusted estimates for 15-year period and 2020 prices for better comparison. Excludes investment in housing. **Figures for FY 11-18 are at current prices and urban transport covers only metro-rail investment.*

Table 5. *Future urban capex needs and past capex estimates, Annual Average*

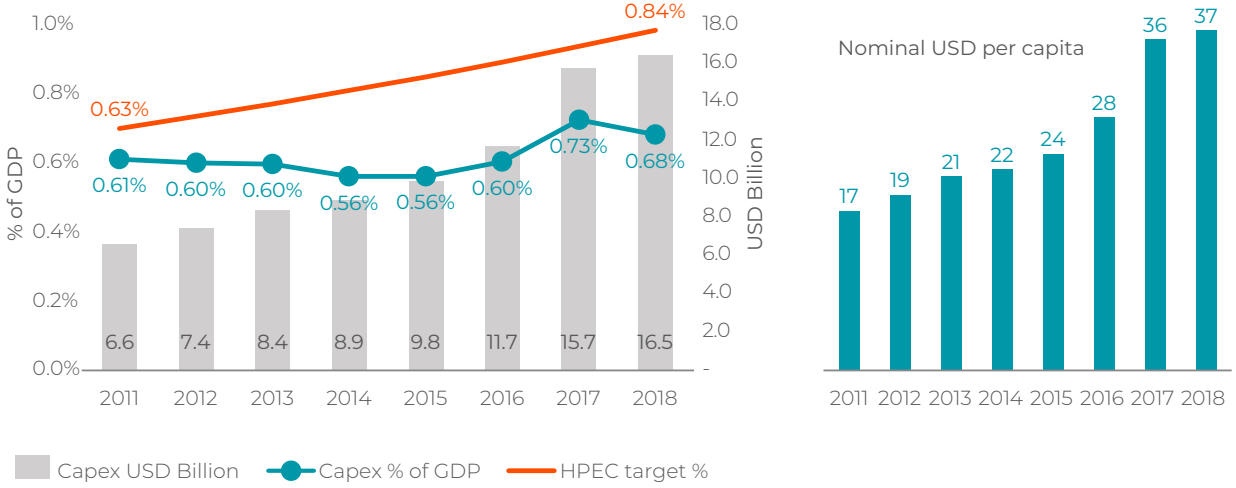
	Future capex need FY 21-36*	**Past investment trend** FY 11-18**
Basic municipal services USD Bn	30	8.2
Urban transport *USD Bn*	20	2.4**
Others *USD Bn*	6	-
Total *USD Bn*	56	**10.6**
Share of GDP %	**1.18%**	**0.63%**
USD per capita	**108**	**26**

*Source: CRISIL analysis. *at 2020 prices. **At current prices. ***Estimate covers only metro-rail*

A positive development is that capital investment in urban infrastructure has grown every year in this period, reaching USD 16.5 billion in 2018, equivalent to USD 37 per capita or 0.68% of GDP, and averaging USD 10.6 billion annually. Cumulative investment in this period is USD 85 billion. This is partly due to higher allocations and fiscal transfers under GoI's flagship programs namely Smart Cities and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) missions. In nominal per capita terms, investments grew from USD 17 in FY 11 to USD 37 in FY 18[15] (see Figure 9).

[15] Per capita estimates made based on year-wise urban population projections (2011-36) by the National Commission on Population, Ministry of Health & Family Welfare.

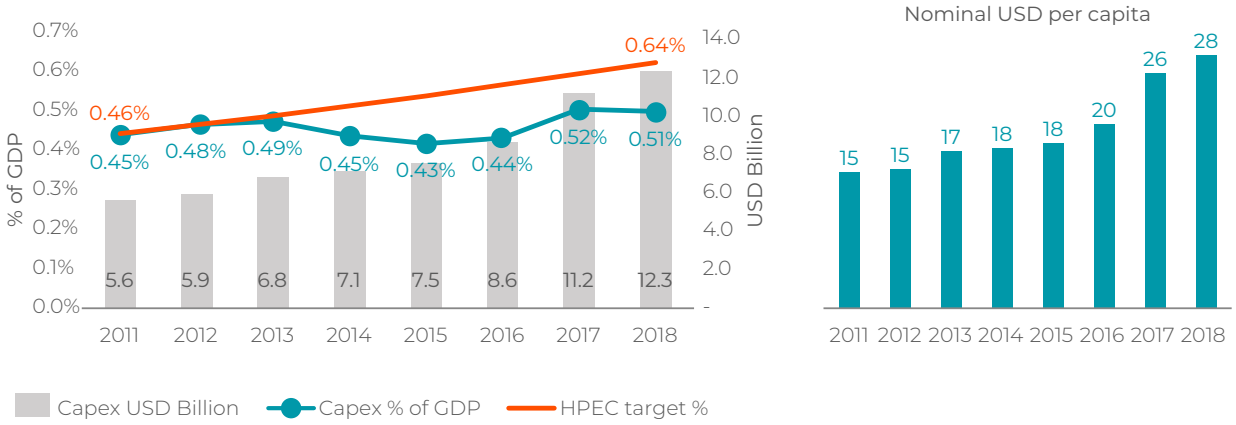
Figure 9. *India's urban capex trends FY 11 to FY 18, all urban sectors*



Source: CRISIL analysis based on secondary research

Most of the urban capital investment in this past period has been in basic municipal services[16], growing from USD 5.6 billion in FY 11 to USD 12.3 billion in FY 18, totaling USD 65 billion. This translates to 0.48% of GDP in this period, and 0.51% of GDP in FY18 which is below the HPEC target of 0.64% for this category for that year. On a (nominal) per capita basis, this investment grew from USD 15 to USD 28 in this period (see Figure 10).

Figure 10. *Trends in all-India investment in basic municipal services FY 11 to FY 18*

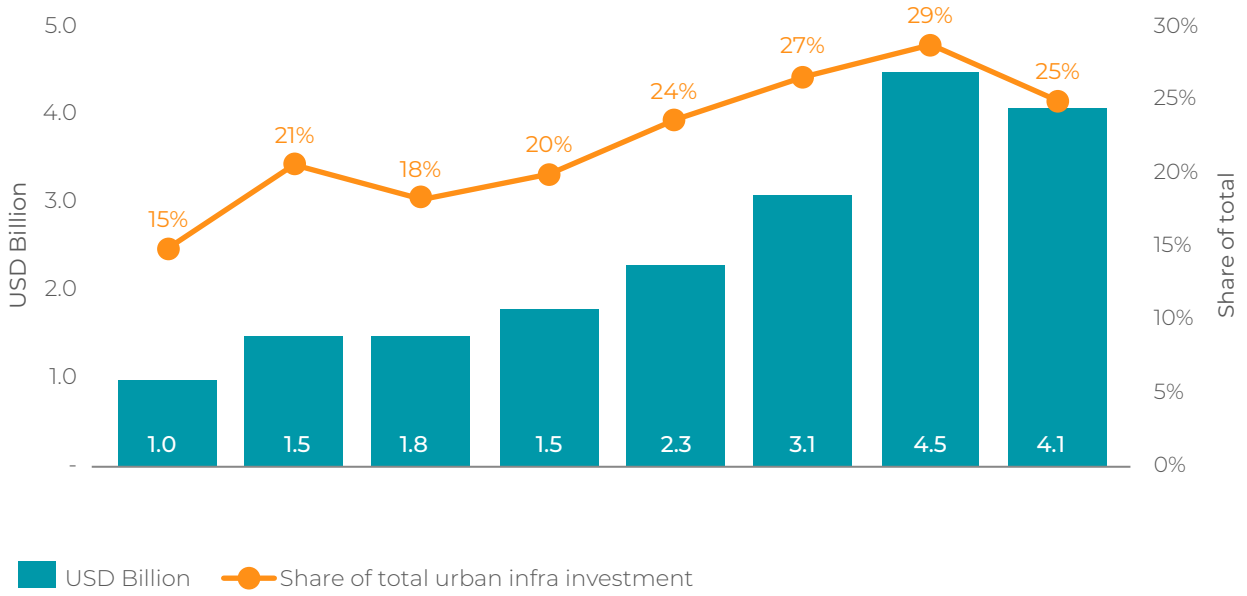


Source: CRISIL analysis based on secondary research

Investment in metro-rail infrastructure (urban transport) has witnessed stronger growth, from USD 978 million in FY 11 to USD 4.1 billion in FY 18, with cumulative investments estimated at USD 20 billion during this period. The share of metro-rail investment in overall urban infrastructure investment went up from 15% in FY 11 to 25% in FY 18. Apart from the Delhi metro which led with about USD 8.5 billion addition to its asset block during this period, other cities including Bengaluru, Chennai and Hyderabad added extensive metro-rail networks as well (see Figure 11).

[16] Basic municipal services include water supply, sewerage, municipal SWM, storm water drainage, urban roads and streetlighting, but excludes slum rehabilitation and public housing.

Figure 11. *Trends in all-India investment in urban mass transit FY11 to FY18*



Source: CRISIL analysis based on secondary research

The current levels of spending also appear to be well below international comparators. As a comparison, China's investment in urban infrastructure averaged 2.8% of GDP during the period 2000-14 according to one estimate[17] and USD 116 per capita in 2010 (MGI 2010). The World Bank has also separately estimated that 4% of GDP needs to be invested in serving urban infrastructure needs in other countries with similar levels of urbanization, though this includes infrastructure such as ICT infrastructure which is not included in the scope of what is considered in this report (World Bank 2019). Another World Bank estimate from Africa looking at broader infrastructure needs for future growth (including power and energy, urban roads, urban information technology networks, and water and sanitation) shows that as much as one-third of total infrastructure investment in a country in these sectors needs to be invested in urban areas (to service urban residents and firms) to meet infrastructure needs for future economic growth.[18] It is important to caveat the comparison of India's urban infrastructure investment profile with these other comparators due to the variation in the types of infrastructure sectors assessed in each example and the widely varying functional mandates of implementing agencies responsible for urban infrastructure in each country. Despite these caveats, it appears to be the case that India's current level of investment in urban infrastructure as a share of its GDP is at least below benchmarks and middle-income comparators.

[17] This included the following urban infrastructure sectors: local roads and bridges, mass transit (subway and light rail systems), water supply, wastewater treatment, municipal waste management, landscaping, flood control and city energy systems (which comprises of district heating and cooking gas supply and accounted for <10% of total investment in each of the years studied). Data from China's Ministry of Housing and Urban–Rural Development. Source: Kangkang Tong et al. 2019.

[18] This included the following infrastructure sectors: power & energy, urban roads, urban information technology networks, and water and sanitation infrastructure. Source: Foster, Vivien; Briceno-Garmendia, Cecilia. 2010.

Box 2. *Description of assumptions for estimating investment needs*

The urban investment estimates for the fifteen-year period FY 21-FY 36 has been arrived largely based on the framework used in the GoI High-Powered Expert Committee (HPEC) report on estimating investment requirements for urban infrastructure and services (HPEC 2011). The investments have been estimated for the same set of sectors that were covered in the HPEC report, namely, Water, Sewerage, Municipal Solid Waste (MSW), Roads and Bridges, and Urban Transport. The investments are estimated at 2020 prices. Population projections till 2036 are from the National Commission on Population's 2019 *"Report of Technical Group on population projections"* which provides updated urban population projection.

For basic services including water, sewerage, MSW, Roads, the Per capita Investment Cost (PCIC) norm used in the HPEC report was inflation adjusted for 2020 costs and applied to the population projections the latest Census projections to arrive at the updated investment estimate. Sewerage investment has been estimated at 80% of investments in water supply. In case of street lighting, the investment requirement has been kept at HPEC levels, given the sharp fall in LED lighting prices.

For urban transport investment, instead of using PCIC estimates for rail and bus services, the capital investment has been arrived at in three parts, namely (1) Metro-rail, (2) Bus Rapid Transit System (BRTS) and Bus procurement and (3) Allied facilities and services.

- For metro rail investment, 2500 km of metro-rail investment has been considered for the 15-year period factoring that over 965 km is under construction and another 1000 km is under development and the typical development cycle of at least 7-10 years for a full cycle of development. The cost per km has been taken at Rs. 650 crore per km based on benchmarks from of Rs. 521 crore per km for Chennai Metro Rail phase II, and Mumbai metro rail at Rs. 821 crore per km.
- For bus services, the norm of 600 buses per million population has been applied to arrive at the total number of buses and cost per bus has been assumed at Rs. 1 crore per bus. 1000 km of BRTS network has been considered at Rs. 200 crore per km.
- Traffic support and allied investment has been assumed at 10% of overall urban transport investment

The aggregate investment needs estimate is calculated at **INR 61.4 lakh crores** (equivalent to about USD 841 bn at exchange rate of US$1=INR73), arrived based on these assumptions. If the HPEC 2011 and MGI 2010 estimates are inflation adjusted to 2020 prices and adjusted for 15 years, they come out to INR 50 and 58 lakh crores respectively. The difference from the HPEC inflation adjusted estimate is largely on account of higher investment envisaged in Urban transport (INR 23 lakh crore instead of INR 8 lakh crore in HPEC report). Values in Rs. Have been converted to USD at the exchange rate of INR 73.

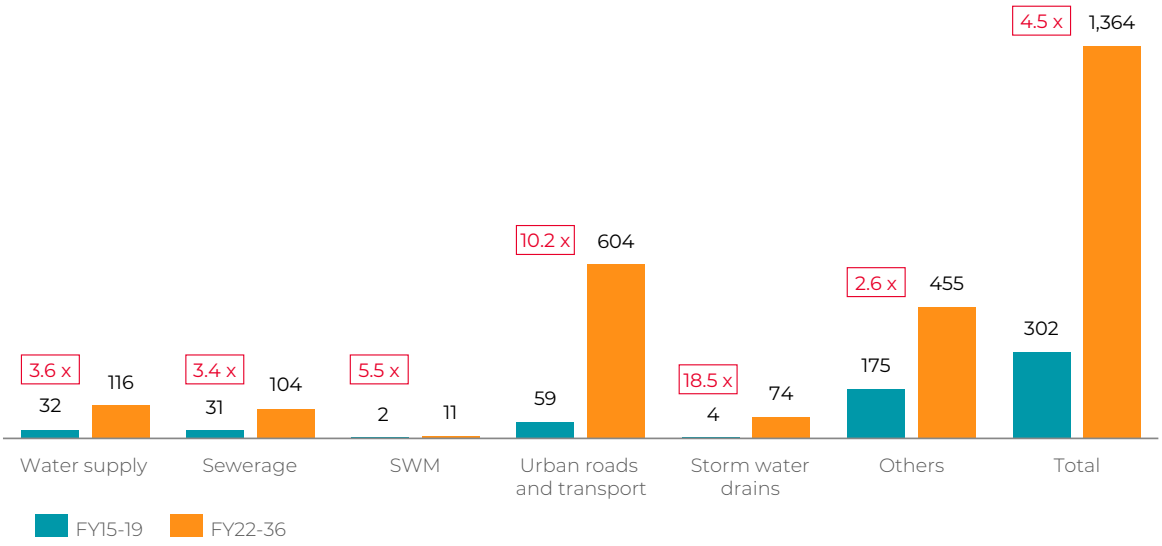
All-India trends are also mirrored in some large and highly urbanized states - including Tamil Nadu and Gujarat - and the large cities therein.

Gujarat ULBs require total capital investment of about USD 5 billion in basic urban services per year over the next 15 years[19], equivalent to 0.83% of Gross state Domestic Product (GSDP) and 4 times the average annual level of capital expenditure by all its ULBs over the period FY15-19. The current level of capital expenditure on basic urban services in the state is relatively high as a share of GSDP (estimated at 1.1% of GSDP in this period and above the estimated needs of 0.83% of GSDP) but will need to keep pace with the expected strong growth of GSDP over the coming period. Ahmedabad city requires investment of about USD 1.36 billion per year over the next 15 years in urban infrastructure and services (basic services and urban transport) – equivalent to 0.22% of Gujarat GSDP per year – while its investment in FY15-19 has been

[19] The estimated capital investment requirement at state level (for Gujarat and Tamil Nadu) is for basic urban services within the mandates of ULBs in each respective state. The estimate (as share of GSDP) is higher for Gujarat compared to Tamil Nadu because ULBs in Gujarat handle more functions relative to ULBs in Tamil Nadu, including bus transport.

around 0.18% of GSDP and only USD 300 million per year, which is 4.5 times lower in absolute terms than future requirements (see Figure 12 for a sector-wise breakdown for Ahmedabad).

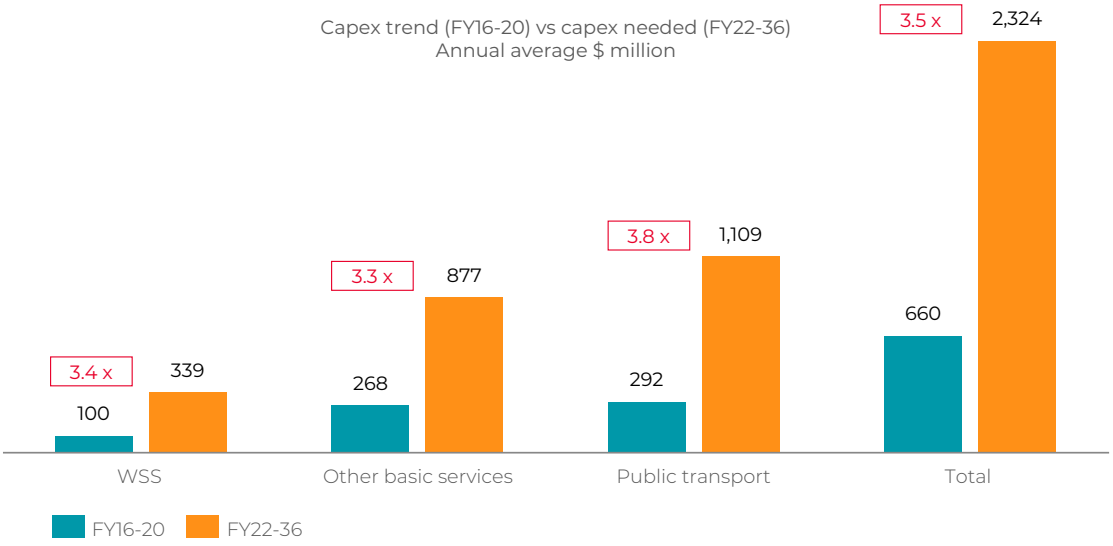
Figure 12. *Ahmedabad Capex trend (FY15-FY19) and needs (FY22-FY36) – annual average (USD Mn)*



Source: CRISIL analysis

Tamil Nadu ULBs require total capital investment of about USD 2.8 billion in basic urban services per year over the next 15 years, equivalent to 0.61% of GSDP[20] and 3.3 times the average annual level of capital expenditure by all its ULBs over the period FY16-20. Chennai metropolitan area requires investment in urban infrastructure (including basic services provided by ULBs and urban transport provided by parastatals) of about USD 2.3 billion per year over the next 15 years (equivalent to 0.4% of Tamil Nadu GSDP over this period). This is 3.5 times more than the annual average levels of investment in these sectors in FY16-20 (see Figure 13 for a sector-wise breakdown for Chennai).

Figure 13. *Chennai Capex trend and needs*



Source: CRISIL analysis

[20] Assuming a nominal GSDP growth of 11%.

3.2. How urban infrastructure is currently financed: Sources of financing for capital expenditure

Box 3. *Typology of commercial and non-commercial financing available to city agencies*

The following broad types of financing are available to city agencies in India (including ULBs, utilities and parastatals):

- **Fiscal transfers** from higher levels of government (national and state) usually made in the shape of grants and non-repayable financing
- **Agencies' own operating surpluses** from previous years, reflecting the surplus of receipts and revenues over total expenditure across previous years
- **Various types of public and private commercial financing,** including debt (municipal bonds and loans from scheduled commercial banks (SCBs) and various other FIs) and PPPs.

Types of fiscal transfers: Fiscal transfers are either tied to specific expenditures (such as for specific projects or initiatives) or untied - in which case they form part of general revenue income of the agency/entity). Fiscal transfers are either from state governments (either through some sort of formula-based arrangements such as state Finance Commissions or revenue sharing; or in the shape of discretionary grant transfers), or from the national government for the purpose of specific national-level missions and programs (e.g. AMRUT, Smart Cities) which are either routed through state governments or directly transferred to city-level agencies.

Types of debt financing: Debt financing for urban infrastructure has been accessed by ULBs and city agencies in two forms:

- **Commercial debt:** Commercial debt that is tapped either as institutional loans from banks and FIs or through issuance of municipal bonds. This includes the following sources:
  - **Private commercial debt – issued on market basis:**
    - SCBs (public sector banks, either nationalized or owned by a government agency, Indian privately-owned banks, foreign banks licensed in India)
    - Specialized infrastructure finance entities that are privately owned or have only partial or indirect public ownership (IIFCL, IDFC, IL & FS)
    - Capital markets for municipal bonds
  - **Public commercial debt:**
    - state government FIs, who also lend to urban projects without an explicit guarantee by state governments. These include state Finance Corporations and FIs such as Tamil Nadu Urban Finance and Infrastructure Development Company (TUFIDCO), Tamil Nadu Urban Development Fund (TNUDF), Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC), Gujarat state Financial Services Limited (GSFS) etc.
- **Guaranteed lending,** typically from multi-lateral agencies with a sovereign guarantee or loans from public FIs with state support in the form of an explicit guarantee. Such lending is generally not provided on commercial basis.
  - Government institutions established, owned, and overseen by the public sector (e.g. HUDCO) which generally lend on non-market basis. HUDCO loans are guaranteed by state governments, which transfers risk from the lender to the state government, and are therefore not considered to be made on market-driven basis for the purpose of this report.
  - Multi-lateral agencies with a sovereign guarantee, and funds usually channeled through state governments

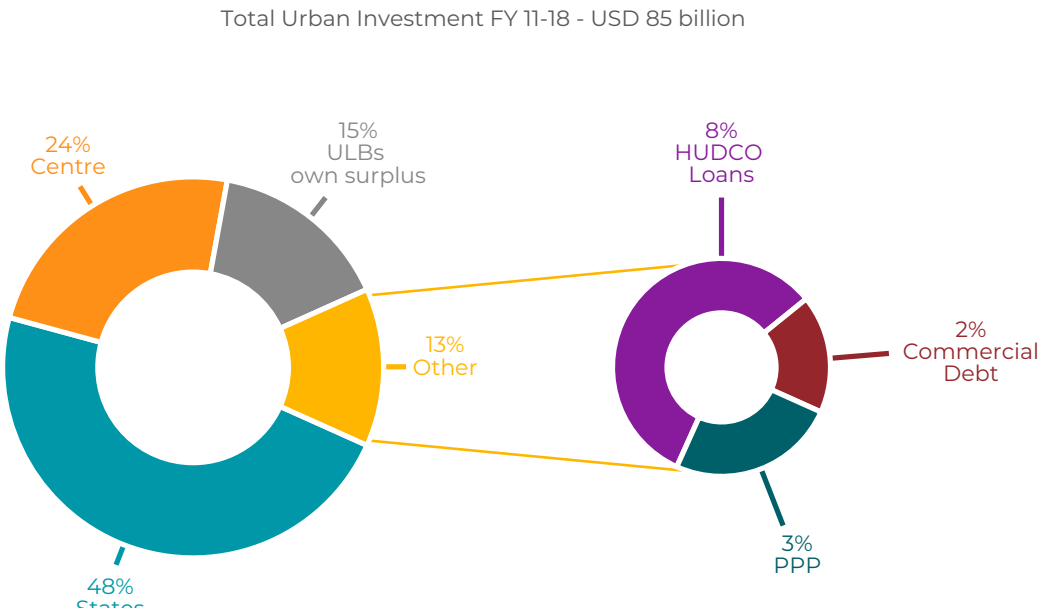
It is worth noting that the above typology may not be fully exhaustive and may not fully account for some types of overlap between categories in some contexts.

3.2.1. All-India level

Private commercial financing plays a very minor role in financing urban infrastructure in India, as most infrastructure is financed by intergovernmental fiscal transfers. Fiscal transfers from state governments and GoI to ULBs and parastatal agencies, especially tied grants to specific capital projects, are the largest source of finance for investment in urban infrastructure, accounting for as much as three-quarters of capital investment in the period FY11-18. Of this, tied fiscal transfers from state governments are the primary source of finance, accounting for almost half of all financing for urban infrastructure in this period.[21] In fact, fiscal transfers from state governments have substantially increased over this period (at an average annual growth rate of 19%) and are now almost twice the size of tied fiscal transfers from GoI (see Figure 14). This increase is driven by a step-up in outlays to complement GoI schemes and launch of state-level capital grant schemes for urban development. Growth of GoI transfers has been driven by flagship Urban missions and metro-rail funding.

The share of ULBs' revenue surpluses in the sources of funds used for urban infrastructure investment has substantially declined in this period relative to other sources. It accounted for only 15% of total capital expenditure on urban infrastructure on a "pay-as-you-go" basis in this period, halved in share of GDP terms, and grew at a paltry 3.4% per year on average in nominal terms. As a result, growth in capital investment has been weak as the increase in tied fiscal transfers has been largely offset by a sharp decline in ULB-led financing (see Figure 15). HPEC 2011 had considered a reduction of the share of tied transfers to 31% by FY 21 in favor of a higher share of expenditure from ULBs' aggregate revenue surpluses. This envisaged shift to higher spending by ULBs has not materialized and dependence on fiscal transfers has grown sharply. The relative decline, and only marginal nominal increase, in contribution of ULBs own-funds to urban capital investment over this period, when compared to the substantial increase in fiscal transfers, appears to reflect absorptive capacity constraints to execute higher spending.

Figure 14. *Share of various sources of funding for total capital expenditure for urban infrastructure, FY 11-18*

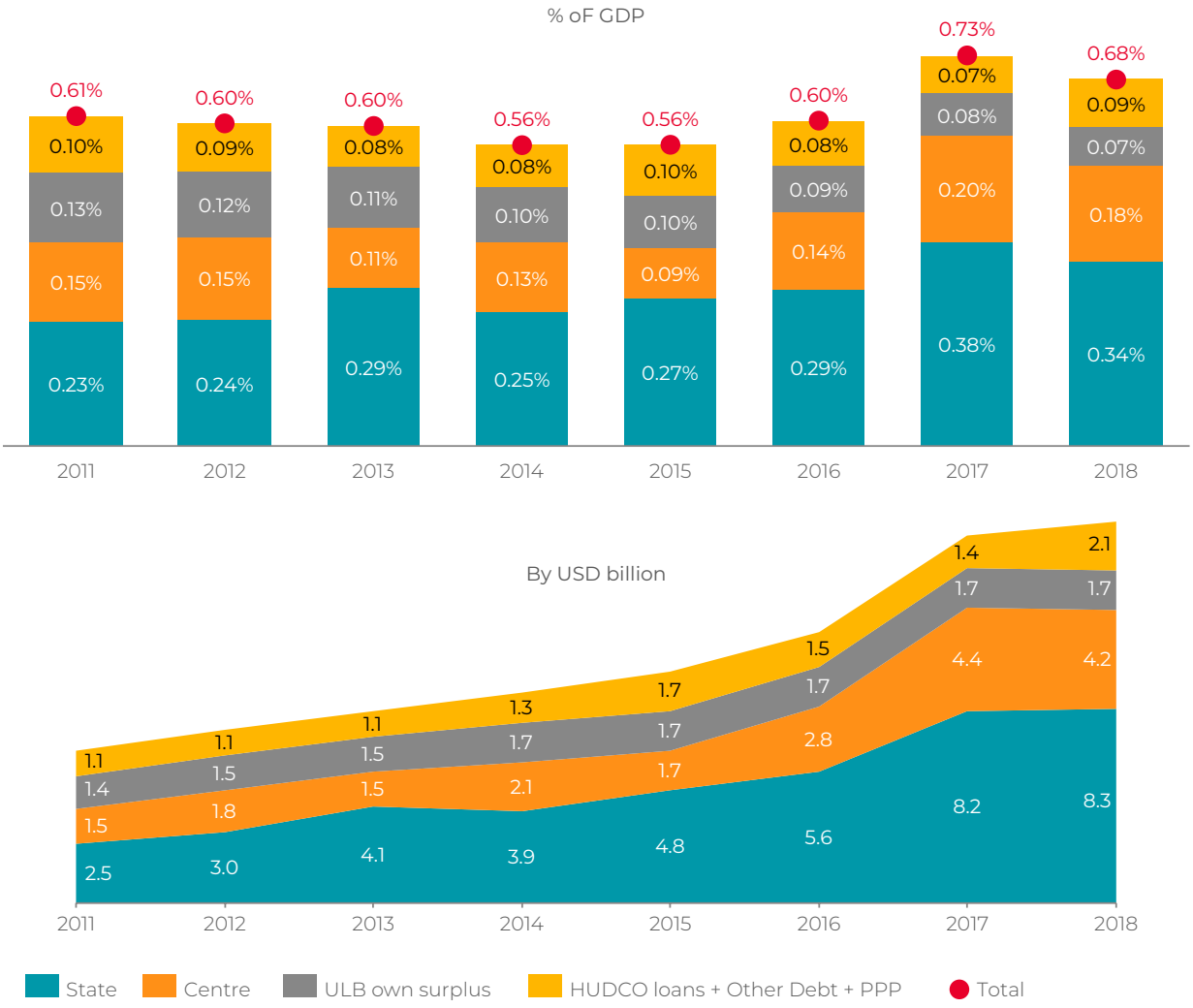


Source: Secondary research, CRISIL analysis

[21] GoI and state government transfers were estimated based on information from RBI state finances database and GoI budgets respectively. Financing through parastatals is grouped with state outlays for the purpose of this analysis. Commercial financing was estimated based on secondary research and includes municipal bond issuances, bank loans and private investment in PPPs. Guaranteed loans were estimated from lending to urban infrastructure reported by HUDCO.

Non-guaranteed commercial financing accounted for only 5% of total capital investment in urban infrastructure in this period. This includes debt financing by ULBs (such as municipal bond issuances and loans/borrowing from various banks and FIs) and private financing for PPPs. Commercial financing has been roughly equally split between PPPs and commercial debt. Commercial debt, despite an increase in issuance of municipal bonds in recent years, has financed only a paltry 2% of total capital investment in this period. PPPs have financed 3%, of which metro rail investment was the largest sub-sector accounting for around 70% of the total PPP volume. Loans from Housing and Urban Development Corporation Ltd (HUDCO) have accounted for the rest of total capital expenditure at 8%. These are guaranteed by state governments and are not considered as market based.

Figure 15. *Total Capital expenditure on urban infrastructure by source of funds, FY11-18*



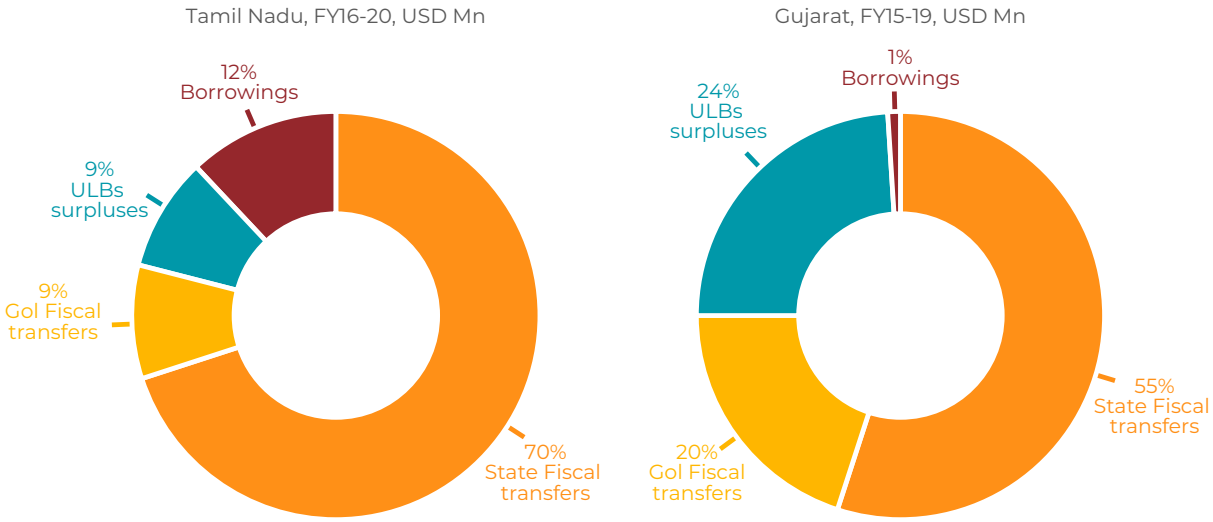
Source: Secondary research, CRISIL analysis

3.2.2. At the level of selected large and urbanized states

The financing mix for urban infrastructure in two large states, Tamil Nadu and Gujarat, broadly reflects all-India trends. At the consolidated state level, fiscal transfers from GoI and state governments financed more than three-quarters of total ULB-level urban capital expenditure in each of these states in the last five years. State government transfers were again dominant, financing 70% of ULB-level capital expenditure in Tamil Nadu and 55% in Gujarat. ULB own operating surpluses contributed a relatively healthy 24% share of total ULB capex in Gujarat, but only 9% in Tamil Nadu – which is consistent with the difference in functional

assignments of ULBs in these states. Commercial financing was negligible in Gujarat, contributing only 1% of total ULB capex state-wide. ULBs in Tamil Nadu, on the other hand, raised as much as 12% of their total capex from commercial financing – primarily loans from state-controlled FIs (see Figure 16). However, as shown in the subsequent chapter, this financing has had minimal private sector involvement and is essentially public funding. There have also been no loans from HUDCO in either of these two states in this period, likely due to the presence of state-controlled FIs.

Figure 16. *Share of various sources of financing for capex on infrastructure executed by ULBs in Tamil Nadu & Gujarat*



Source: CRISIL analysis

Large cities in these two states, however, are less reliant on fiscal transfers to finance their urban infrastructure needs. MCs in Gujarat (representing large cities) financed 35% of their capital expenditure through their own sources in this period, with Ahmedabad Municipal Corporation (AMC) financing as much as half of its capital expenditure using its own operating surplus. In contrast, small towns in Gujarat – governed as municipalities – have essentially fully relied on fiscal transfers and have had no other financing source for their capital expenditure. MCs also account for the bulk of capital investment in the state – having spent 70% of total capital expenditure on urban infrastructure in this period.

In Tamil Nadu, Greater Chennai Corporation (GCC) has a similar financing mix and self-reliance as Ahmedabad in Gujarat, with a sizable operating surplus which has funded 28% of its total capital expenditure in this period – with tied fiscal transfers accounting for only 43%. Most importantly, GCC has also received sizable debt financing in this period from the state government and state-controlled FIs, which have covered almost 30% of its investment needs. Subsequent chapters of this report describe this debt financing in more detail. In contrast to GCC, other agencies providing services in the Chennai metropolitan area (such as the water utility, selected Government of Tamil Nadu (GoTN) departments, and other parastatal agencies)[22] are heavily reliant on fiscal transfers.

3.2.3. Relative roles of ULBs and parastatal agencies in implementing urban infrastructure

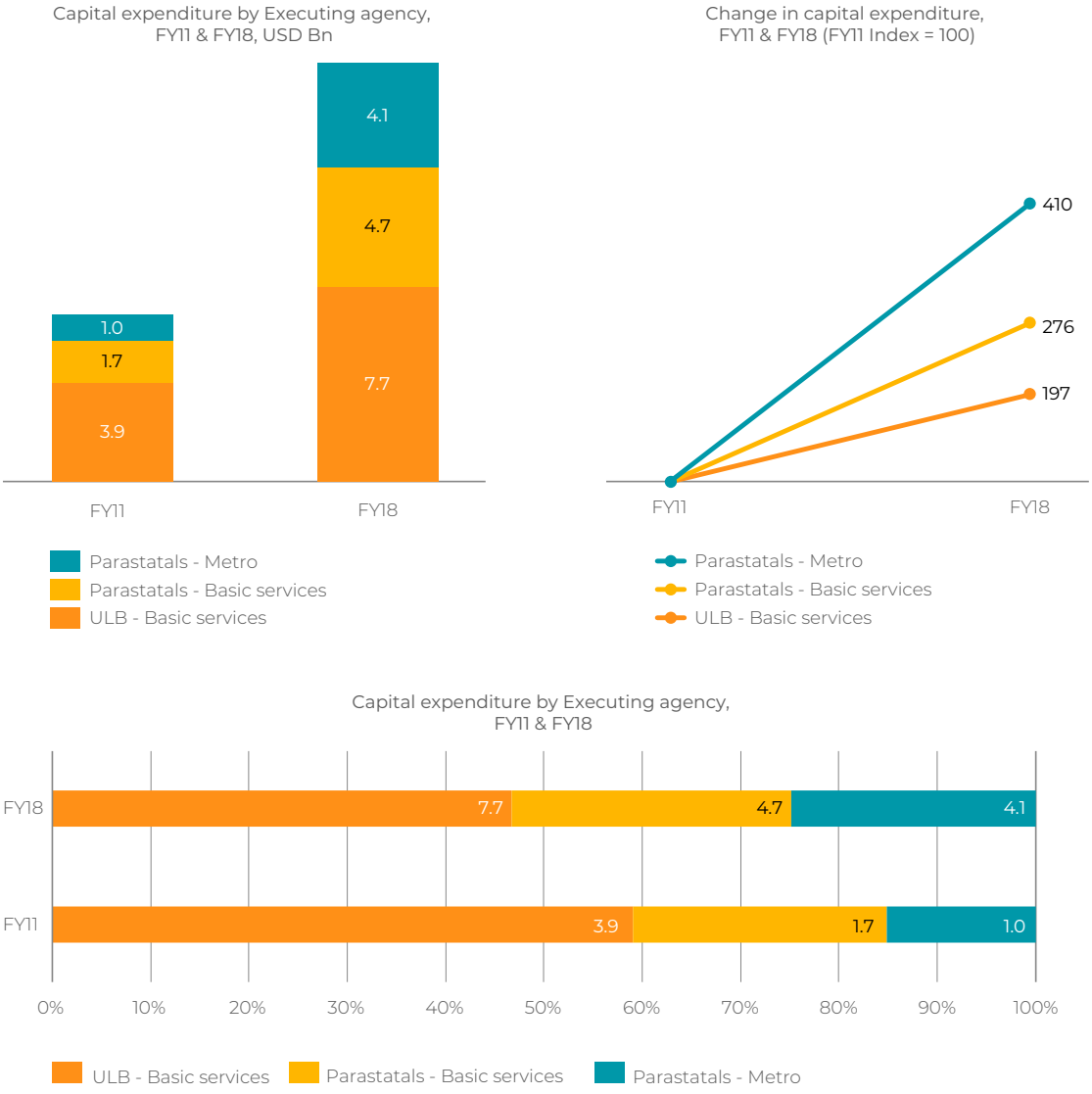
As noted earlier, this report has primarily focused on ULBs for the analysis of municipal debt/borrowing, as they have been primary recipients of such loans; while the analysis on PPPs has aimed to include all PPPs regardless of type of executing agency, including ULBs, utilities, parastatals, etc. It is important to note that agencies other than ULBs (e.g., state Departments, state-controlled special purpose vehicles, utilities; Development Authorities etc.), are active in delivering urban infrastructure but many of these are part of state governments, and their borrowing activities may be more accurately understood as lying in the realm of state borrowing. Such state-level entities are referred to as parastatal agencies in this report

[22] These include: i) other ULBs in the Chennai metro area besides GCC; ii) parastatal agencies including CMWSSB, CMRL, MTC and CMDA, and iii) select GoTN Departments including highways and WRD.

and include all non-ULB entities such as specialized entities for metro rail investment and operations (e.g. Mumbai Metropolitan Regional Development Authority) and state-controlled municipal utilities (e.g., water and sewerage services in Chennai, Bengaluru, and Hyderabad) and state-level Public Health and Engineering Departments (PHED) (e.g. Uttar Pradesh, Odisha, Rajasthan, and Punjab).

Parastatal agencies responsible for urban service delivery have a large and increasing share of capital investment in urban infrastructure relative to ULBs. Driven by substantial investments by parastatal agencies in metro rail infrastructure but also in basic municipal services, parastatal agencies executed just over half (53%) of total urban capital expenditure across India in FY18, which is mostly outside the scope of ULBs, and up from 41% in FY11 (see Figure 17). On the other hand, the share of total urban capital expenditure executed by all ULBs nationwide (which is primarily spent on basic municipal services) fell from 59% in 2011 to under half in 2018. Note that most of the data on commercial financing trends presented in this report do not include parastatals in scope and pertain mostly to ULBs, except for data PPPs transactions which covers urban utilities as well. An effort has been made to present data covering all ULBs as well as city-level agencies, including utilities and dedicated service providers/operations. However, state government departments (such as PHED) are not included in the scope. Thus, data on total volume of commercial financing for urban infrastructure may be under-reported in this report.

Figure 17. *Composition of capital expenditure, by type of executing agency, FY 11 and FY 18*



Source: 15 FC 2019, World Bank and CRISIL analysis

3.3. The state of municipal finance in India: Understanding the funding base for urban infrastructure

3.3.1. Low own-source revenues coupled with rapidly increasing fiscal transfers

The overall scale of finances at the city and local level is relatively modest. Total income of all ULBs nationwide from all sources – including untied fiscal transfers, OSR and tied fiscal transfers for specific capital investments – remained flat at around 1% of GDP during the FY11-18 period, despite growing 13% per annum on average in nominal terms. The report of the 15th Finance Commission (2019) notes that urban local government income as a share of GDP is well below peer countries such as South Africa (6% of GDP) and Brazil (7.4% of GDP), although it is important to caveat such comparisons due to the widely varying fiscal and functional mandates of subnational and urban local governments across countries.[23] Total revenue income – which includes income from untied fiscal transfers and OSR and is primarily spent on recurrent expenditures – has been 0.70% of GDP, again below peer countries, even though it grew somewhat in this period from 0.63% of GDP.[24]

Relatively slow growth and low levels of OSR undermine future funding capacity. OSR as a share of total municipal revenue nationwide declined substantially in the FY11-18 period, from three-quarters to two-thirds, caused by slow absolute growth in OSR (at an average annual 10%). In per capita terms, OSR grew even slower at about 8% per annum from USD 14 to USD 23 during this period. Slow growth in OSR also undermines the funding base for any future private financing. Total OSR of all ULBs nationwide has grown much slower than nominal GDP growth.

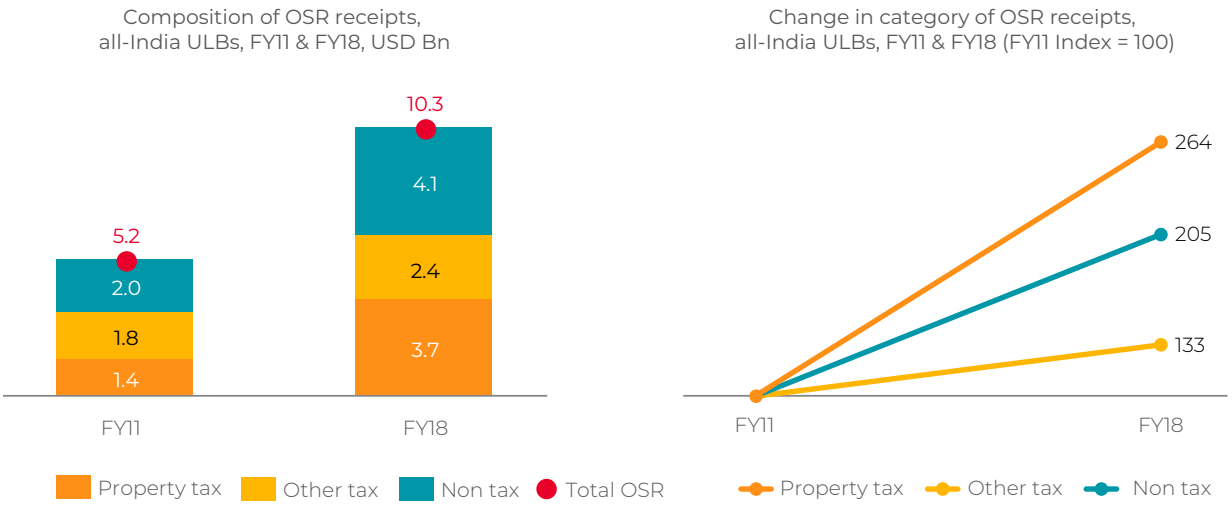
In comparison, untied fiscal transfers from GoI and state governments increased substantially in this period, growing at an average annual rate of 18%. Such untied fiscal transfers along with large and increasing tied/conditional fiscal transfers for investments, are increasing the reliance of ULBs on this source of financing at the expense of others, including their own revenue base and operating surpluses. Given the limits of absorptive capacity at city agencies, this constrains total demand for financing.

Urban property tax is the largest OSR but remains miniscule relative to comparators, being only 0.15% of GDP in aggregate nationwide. In comparison, property tax generates 0.3–0.6% of GDP for low- and middle-income countries on average, and as much as 1.1% in OECD countries (Kelly, White and Anand 2020). In US, Canada and UK, property taxes account for 2-3% of GDP. This is despite property tax revenue increasing at a much faster rate than other tax and non-tax sources of OSR for ULBs in this period (see Figure 18). Total OSR was only marginally higher than aggregate revenue expenditure nationwide. Given a concentration of OSR in large cities, this implies that a vast majority of ULBs – the ones outside a handful metropolitan cities - are dependent on fiscal transfers to meet their revenue expenditures. While this is not unusual compared to other countries, it shows that the potential of these smaller ULBs to raise financing for capital needs is limited given the relatively small funding base. Policy decisions on property valuation – specifically, valuation for property tax purposes being well below market values – as well as policy decisions on tax rates and exemptions are a key factor contributing to low levels of revenue from this tax.

[23] For example, electricity revenue account for the largest source of OSR for South African local governments, while Indian ULBs do not have this mandate. Peer comparison source: reports of 15th Finance Commission (15FC 2019)

[24] This section builds on data on ULB finances in the "State of Municipal Finances in India" report prepared on behalf of the 15th Finance Commission (15FC 2019). Being an aggregate analysis, it may not fully reflect some classification differences at state level. For e.g., Punjab and Madhya Pradesh classify some revenue (fiscal) transfers as OSR as they are in lieu of revenue powers that were withdrawn from ULBs.

Figure 18. *Property Tax has been the fastest growing OSR for India ULBs*



Source: 15 FC 2019, World Bank and CRISIL analysis

3.3.2. Low service charges for municipal services undermining financial sustainability and viability

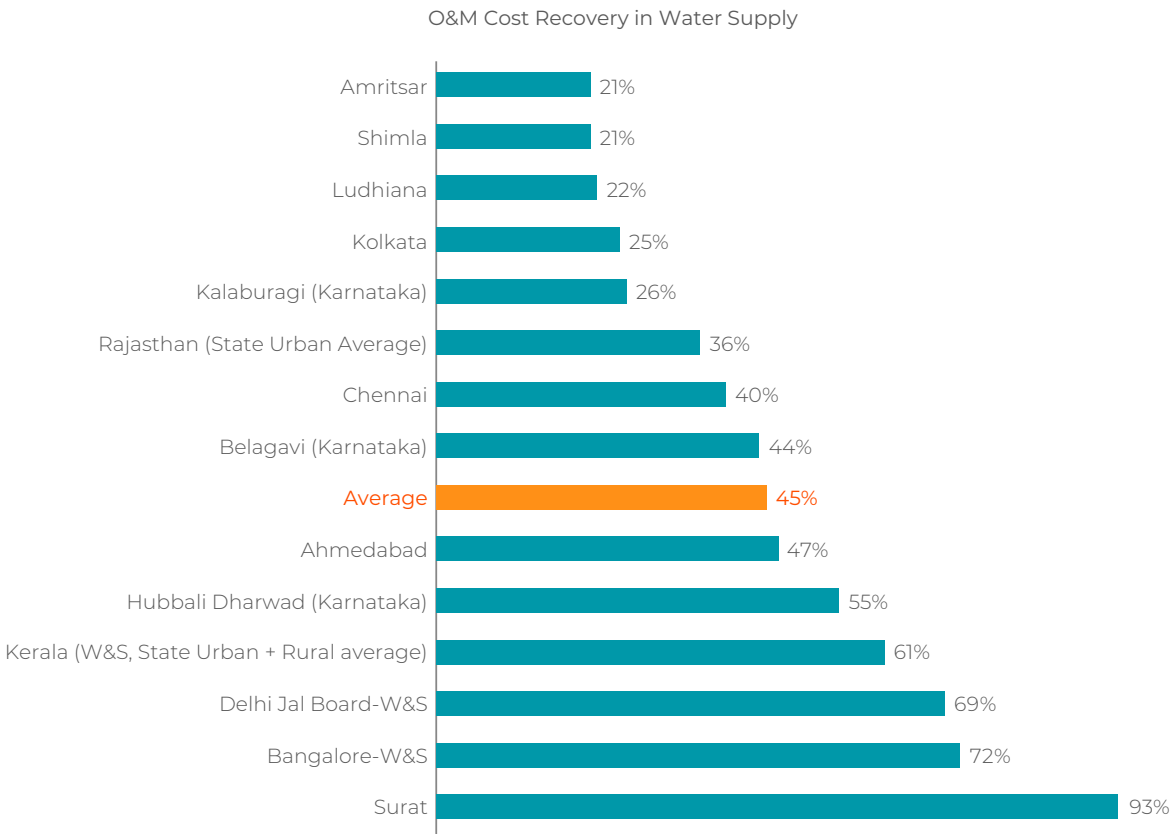
A noteworthy trend is the relatively slow growth in non-property tax OSR, which includes all other taxes as well as non-tax revenues such as tariffs, service charges, fees, revenues from land sales and leases and various instruments related to land development[25]. Here again, policy decisions to keep various tariffs and fees below economic costs and levels required for financial sustainability are a key factor contributing to low revenue from these sources.

Data collected for several large and medium-sized cities across India show that ULBs and municipal service providing utilities are generally unable to recover the operations and maintenance (O&M) costs, let alone capital costs, of providing municipal services such as water supply and sewerage. Data for 14 cities (including some state-level averages) show that they recovered less than half (45%) of O&M costs pertaining to water supply on average in recent years (see Figure 19). While some cities such as Surat (Gujarat), Bangalore and Delhi appear to be exceptionally high performing, several other large and medium-sized cities are only recovering one-quarter or less of their O&M costs for water supply (e.g., Amritsar, Ludhiana, Shimla, Kolkata and Kalaburagi (Karnataka)). Even Ahmedabad, which has relatively strong institutional capacity is performing just at average on this indicator. Such low O&M cost recovery rates clearly point to service charges well below the required levels for financial sustainability, and thus undermine the viability of engaging private sector partners in service delivery and capital infrastructure without substantial fiscal support or revision of service charges.

In fact, operating cost recovery for municipal water services by Indian utilities on average appears to be below many comparator countries. Data from the International Benchmarking Network for Water and Sanitation Utilities (IBNET) show that water and sewerage utilities in Indian cities recovered only 55% of their operating costs on average, which is below the levels from utilities across a spectrum of comparator countries. This includes large federal countries (Brazil, Mexico), large middle-income countries (Colombia, China, Egypt, Jordan, Russia, South Africa, Vietnam) and neighboring Bangladesh (see Figure 20).

[25] These include, among others, development charges, betterment charges, development rights, Premium FSI, etc.

Figure 19. *Several Indian cities have very low O&M cost recovery for municipal water supply services*

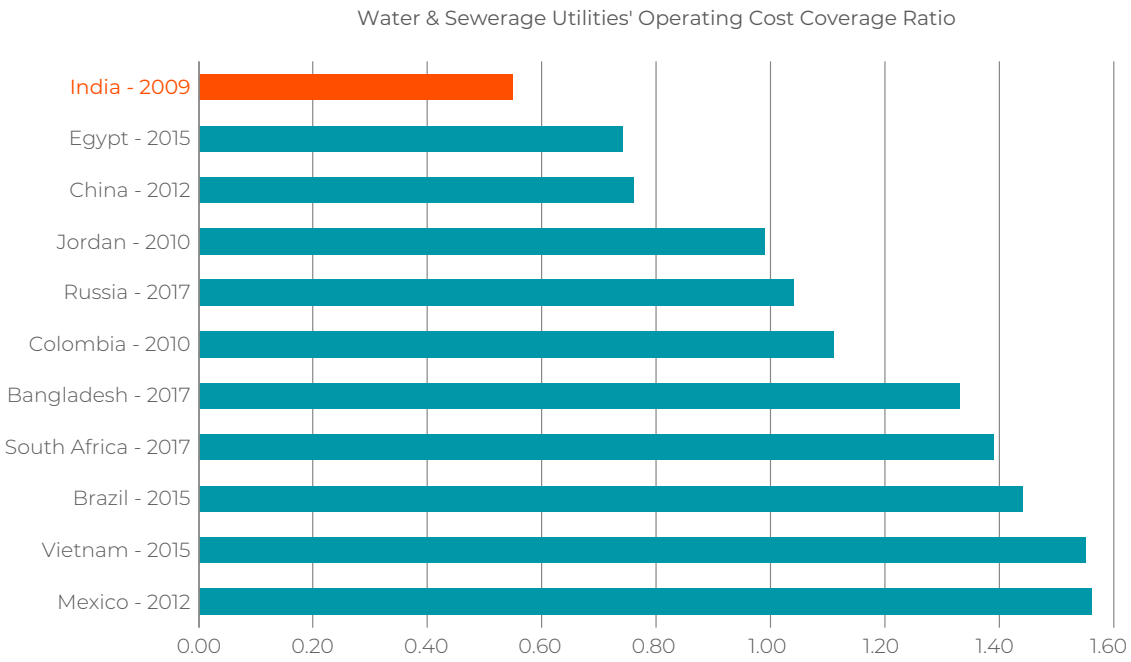


Notes: Data shown are for water supply services unless otherwise indicated as W&S (water & sewerage). This is because cost recovery data for municipal services other than water (e.g. sewerage, SWM etc.) is generally not reliable since there is no pattern of user charges for these services. Average is simple average for these 14.

Years of data: Ahmedabad and Surat are average from FYs 15 to 19. Chennai data are average from FYs 16 to 19. For all others, data are for one FY only, ranging from 2017-18 to the ongoing FY based on availability.

Sources: For Ahmedabad, Surat and Chennai, data have been collected and estimated by CRISIL on behalf of World Bank from ULB budget documents. For other cities/states, sources include state government benchmarking data available online (Kolkata, Delhi Jal Board, Bangalore, Rajasthan, Kerala); World Bank Project Appraisal Documents for municipal services projects (Amritsar, Ludhiana, Shimla) and consultants' reports prepared for World Bank-financed municipal services projects (others).

Figure 20. *Indian utilities have lower cost recovery for urban water services relative to comparator countries*



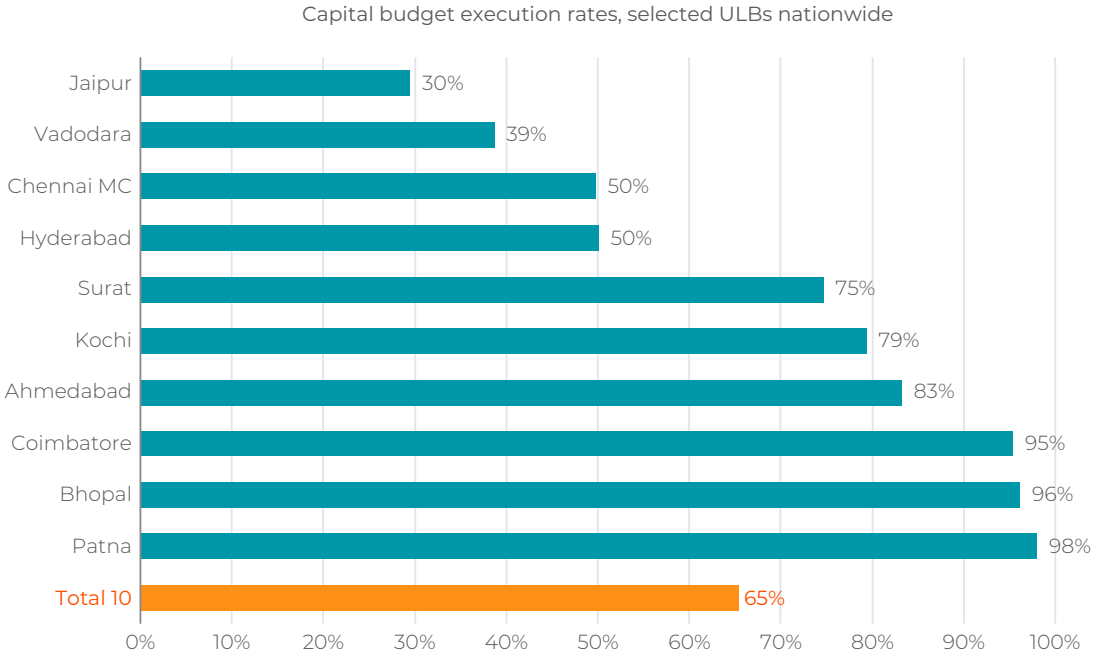
Notes: Figures for each country were collected in different years (chart shows most recent data) and represent an aggregation of various utilities in that country. For India, figure is from 2009 and includes 30 utilities. Operating Cost Coverage Ratio is ratio of total annual operating revenue to operating cost, with both revenue and cost measured in US$ per m3 sold.

Source: International Benchmarking Network for Water and Sanitation Utilities (IBNET).

3.3.3. Weak absorptive and implementation capacity at ULBs for urban infrastructure delivery

Large ULBs across India have generally not been able to fully spend their budgeted capital expenditure in recent years, with some large ULBs having extremely low capital budget execution rates. A review of 10 large ULBs from across the country shows that, in total, they were able to spend only two-thirds of their cumulative capital budget over the three FYs 2017-18 to 2019-20 (see Figure 21). For example, Jaipur (Rajasthan), Vadodara (Gujarat), Chennai and Hyderabad were able spent only between one-third and one-half of their respective capital budgets in this period. On the other hand, some ULBs have had very high rates of capital budget execution (Patna, Bhopal, Coimbatore and to some extent Ahmedabad). Low capital budget execution rates can result from several factors, including realized capital income during the year being much lower than budgeted forecast which may be beyond ULBs' controls, but also weak absorptive capacity which prevents full implementation of budgeted and approved capital expenditure during the year.

Figure 21. *Some large ULBs were unable to spend their budgeted capital expenditure in recent years*



Notes: Graph shows cumulative budget and actual expenditure for each ULB across recent FYs, to smooth variation across individual years. Aggregate data are for 3 FYs except Jaipur which does not include data for 2017-18.

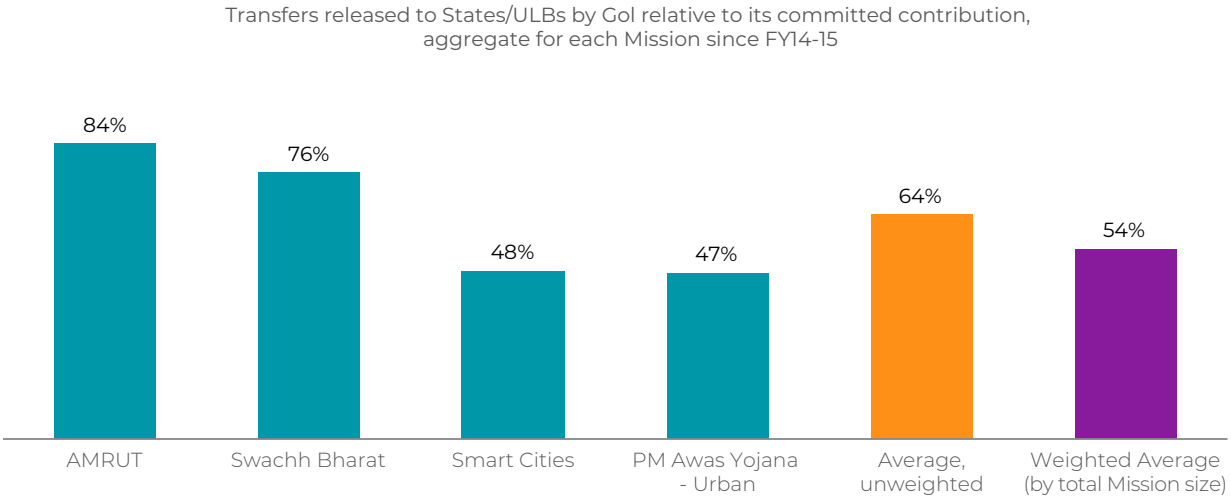
Source: ULB budget documents

Slow implementation performance by states and ULBs on several recent flagship GoI Urban Missions further points to constraints on implementation capacity at the city level. Data are available for the following GoI missions: i) Smart Cities Mission (SCM); ii) AMRUT; iii) Swachh Bharat Mission (SBM, or Clean India Mission); and iv) Pradhan Mantri Awas Yojana (PMAY, Prime Minister's Housing Scheme). Data show that ULBs across India have so far executed only about one-fifth of the cumulative cost/outlay of approved projects under SCM and AMRUT over the last six FYs (from FY2015-16 to FY2020-21). The total cost of projects approved under these missions is USD 27 billion and USD 10 billion for SCM and AMRUT respectively, of which ULBs have been able to execute only 22% (SCM) and 18% (AMRUT) respectively so far.[26]

Given this low execution rate, GoI has not fully transferred/released its committed contribution to these projects to states/ULBs. Cumulative transfers by GoI to states/ULBs over this period have been only half of their committed contribution for both SCM and PMAY. GoI transfers under AMRUT and SBM have been higher (84% and 76% respectively) as a share of the committed contribution over this period. (see Figure 22) Under most of these programs only the first release is made upfront by GoI while subsequent releases to states/ULBs are contingent on implementation progress at the project level which has clearly lagged.

[26] Data as of March 2021. GoI data for SCM and AMRUT show total expenditure by ULBs on Mission project across all financing sources (GoI funds, state funds, own share etc.) which allows calculation of total execution rate. It is not possible to provide comparable figures for PMAY and SBM. In case of PMAY, available figures show utilization/ expenditure by ULBs only against the GOI contribution released, not the total expenditure by ULBs for these projects/ Mission across all financing sources. Utilization/expenditure data for SBM not available.

Figure 22. *Slow project implementation by ULBs under flagship GoI Urban Missions points to weak implementation capacity*

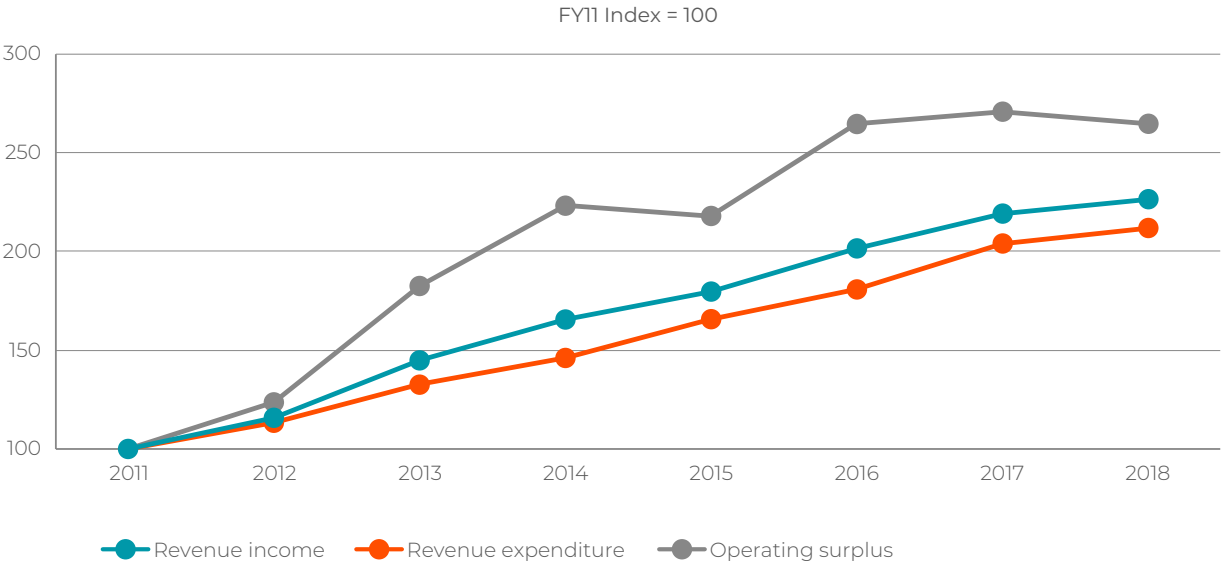


Notes: Aggregated data from last six FYs (from FY2015-16 to FY2020-21), except SBM which also includes FY2014-15. PM Awas Yojana data includes the Mission's Urban component only, not Rural.

Source: Annual reports of Ministry of Housing and Urban Affairs and Urban Mission. AMRUT = Atal Mission for Rejuvenation and Urban Transformation.

This low implementation capacity in the context of increasing tied fiscal transfers to ULBs is resulting in budget surpluses which are not being used to finance capex. As shown earlier, the share of total urban capital expenditure coming from ULBs' own surpluses has halved in the last decade and its nominal value has grown only marginally. This is despite a steady increase in the aggregate size of operating surpluses in this period. ULBs' inability to invest their excess surplus points to constrained capacity for capital expenditure (see Figure 23 for relative increase in operating surplus).

Figure 23. *All-India ULBs operating income, expenditure & surplus 2011-18*



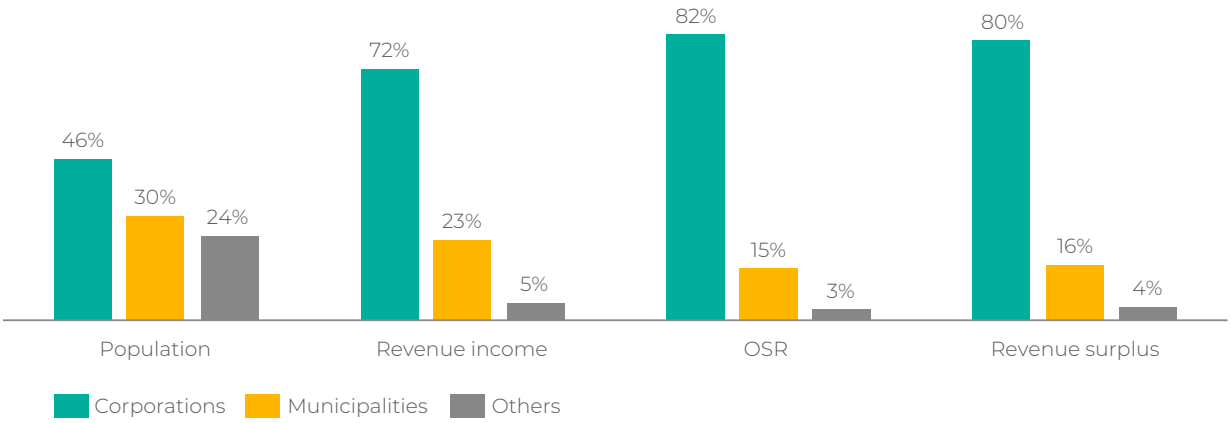
Source: 15 FC 2019, World Bank and CRISIL analysis

However, the gap between future investment needs and current levels of capital expenditure is so large that, once these absorptive capacity constraints begin to resolve, the existing high levels of public fiscal resources will clearly not be sufficient to address the needs. This will necessitate the need to mobilize substantially higher private commercial financing to help fill this gap.

3.3.4. Concentration of fiscal base in metropolitan cities and selected states

The existing funding base to leverage higher private financing is concentrated in a few states and large/metropolitan cities within them. Just five states (namely Gujarat, Karnataka, Madhya Pradesh, Maharashtra, and Tamil Nadu) – with 40% of the country's urban population - accounted for three-quarters of total OSR and two-thirds of total revenue income of all ULBs nationwide in the last decade. Of these five states, four (all above excluding Madhya Pradesh) account for 36% of the country's urban population, 58% of total revenue of all ULBs nationwide and 68% of total OSR in FY18 (see Table 6). MCs, being the ULBs in large/metropolitan cities, accounted for 82% of total OSR and 80% of the revenue surplus nationwide across all ULBs in FY18 (see Figure 24). MCs in just these four states (i.e., Gujarat, Karnataka, Maharashtra, and Tamil Nadu) accounted for 44% of total revenue receipts and 61% of total OSR across all ULBs nationwide in FY18. Across all MCs nationwide, those in these four states accounted for as much as two-thirds of total revenue receipts and three-quarters of total OSR in FY18 (see Table 6).

Figure 24. *Municipal Corporations' shares relative to all ULBs, FY 18*



Source: 15 FC 2019, CRISIL analysis

Table 6. *Revenue and OSR distribution in ULBs across various states, FY18*

ULBs in states	USD Bn (% of Total within each category)		Urban Population 2018 Mn.
	Municipal Corporations	Total All ULBs	
Aggregate Revenue receipts			
Gujarat, Karnataka, Maharashtra, Tamil Nadu	10.7 (66%)	13.9 (58%)	157 (36%)
Andhra Pradesh, Kerala, Madhya Pradesh, Rajasthan, Telangana, Uttar Pradesh, West Bengal	4.3 (26%)	7.7 (32%)	181 (41%)
Other states*	1.4 (8%)	2.5 (10%)	103 (23%)
TOTAL	**16.4 (100%)**	**24.1 (100%)**	**442**
Aggregate OSR			
Gujarat, Karnataka, Maharashtra, Tamil Nadu	6.3 (74%)	7.0 (68%)	157
Andhra Pradesh, Kerala, Madhya Pradesh, Rajasthan, Telangana, Uttar Pradesh, West Bengal	1.6 (19%)	2.4 (24%)	181
Other states*	0.6 (7%)	0.9 (8%)	103
Total	**8.5 (100%)**	**10.3**	**442**

*Source: 15 FC 2019 and CRISIL analysis. *Others include 18 states; does not include Delhi, union territories*

There are also important variations in municipal finance indicators across these four large states. Gujarat and Maharashtra collect higher OSR per capita relative to the national average whereas Tamil Nadu and Karnataka are below the average, pointing to the potential to improve OSR performance specifically in these two large and urbanized states. Karnataka also underspends on urban capital expenditure per capita relatively to the other 3 states which spend higher than the national average. On the other hand, despite their relatively low revenues, Tamil Nadu ULBs spend as much as half of their revenue on capital investment to address infrastructure gaps – well above the national average – while the other 3 of these states have a substantial portion of their revenues consumed by recurrent expenditure (see Table 7).

Table 7. *ULB finances: Selected states and India average FY 16-18, USD per capita*

	Tamil Nadu	Karnataka	Maharashtra	Gujarat	India
Aggregate municipal receipts	51	71	123	87	**61**
Own source revenue	15	19	91	35	**27**
Revenue Expenditure	27	22	72	31	**28**
Capital Expenditure	25	20	34	32	**20**
Total expenditure to receipts ratio	102%	59%	86%	72%	**78%**
Capital expenditure to Aggregate Receipts ratio	49%	28%	28%	37%	**33%**

Good **Moderate** **Weak** relative to India average

Sources: CRISIL analysis and ICRIER (2019) "state of urban finances in India"

3.3.5. Potential impact of Covid-19 pandemic on municipal finances

A look at three cases in India, namely, Chennai, Ahmedabad, and Surat (Gujarat), shows substantially variation in municipal finances since the onset of the pandemic. Ahmedabad and Chennai saw revenues increase immediately after the pandemic due to higher fiscal transfers support from national and state governments', while Surat saw a drop in revenues in the first year of the pandemic. Current revenues increased 20% in Chennai in FY21 compared to FY20 (with the state government provided higher fiscal transfers to support the city in responding to the large number of COVID-19 cases) and 12% in Ahmedabad in this period, with increases in both OSR and fiscal transfers (the latter due to a higher health grant for pandemic management as well as grants related to state elections). In contrast, Surat saw a decline in current revenue of 18% in the first year of the pandemic. Ahmedabad and Surat are expected to see increasing trends in revenue in FY22, with their current revenues estimated to increase by 14% and 31% respectively over the preceding FY. In contrast, Chennai is estimated to see an 8% decline in current revenue in FY22 from the preceding FY, mainly because of the state government's downward adjustment of fiscal transfers from the record high in the previous year.[27]

Chennai and Surat experienced sharp in OSR by 15% and 22% respectively in the first year of the pandemic, partly due to the tax forgiveness program and deep economic contraction due to the high number of COVID cases (in Chennai especially), with property tax revenue declining by almost half in Chennai and a quarter in Surat. Ahmedabad, in contrast, saw a remarkable increase in OSR of 23% in that year, driven by a substantial property tax collection effort in early 2021. Surat is also estimated to see a sizable recovery in OSR in FY22, when property tax collection is estimated to return to pre-COVID levels.[28] Thus, there is significant uncertainty on the medium-term impact of the pandemic on revenues.

[27] All data from World Bank's 2021 report on impact of the COVID-19 pandemic on municipal finance.
[28] Ibid.

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Chapter 4.
The State of Private Financing for Urban Infrastructure in India: Debt and PPPs

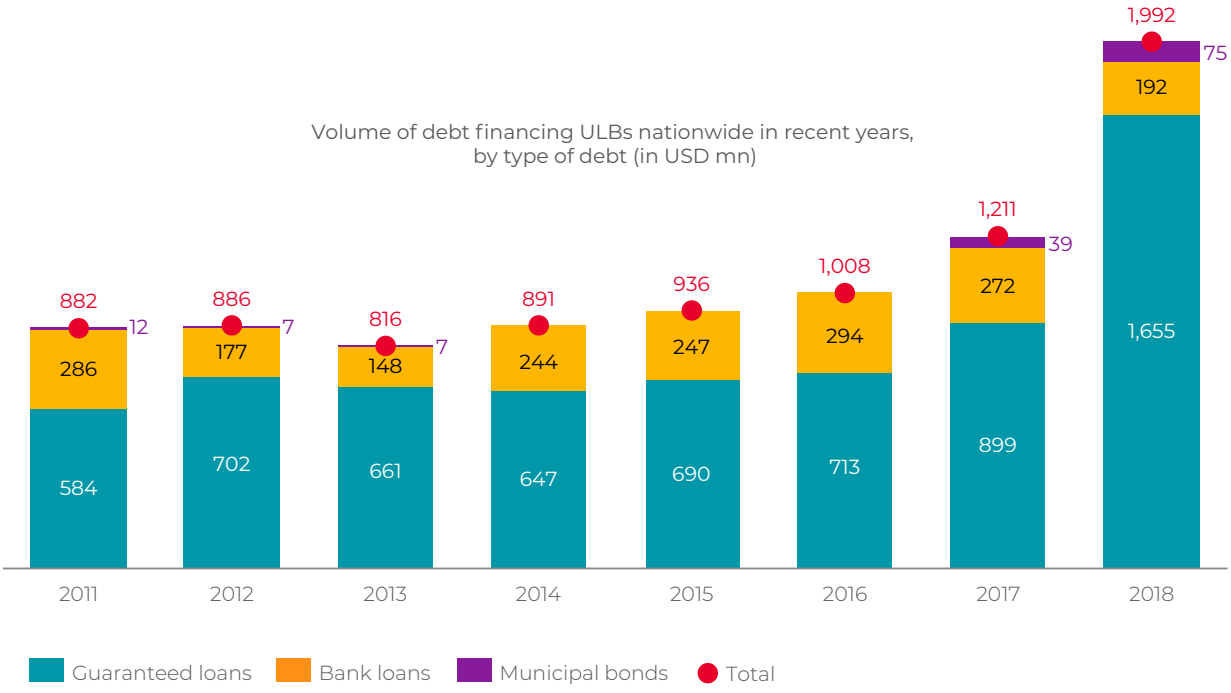
4.1. The mirage of municipal debt financing: Trends and observations

4.1.1. Trends in Debt financing

Debt financing on a private commercial basis, not guaranteed by state governments (in which case it would really be state financing), is estimated to have accounted for only about 2% of capital expenditure on urban infrastructure made by ULBs and parastatals nationwide in the period FY11 to 18, amounting to about USD 2.0 billion. This includes debt from two sources, namely borrowing from public and private FIs and proceeds from municipal bonds. Total annual issuances of commercial debt financing for ULBs, including loans and bonds, was muted in this period, and ranged between USD 156–311 million of annual issuances. In comparison, loans from HUDCO, guaranteed by state governments, have accounted for a much larger share of capital expenditure in this period, being 8% or USD 6.4 billion of expenditure. In fact, the volume of loan issuances from HUDCO to ULBs grew every year in this period, from USD 585 million in 2011 to USD 1.6 billion in 2018.

The share of municipal bonds is very small in relation to commercial loans, being less than one-tenth of total commercial debt raised by ULBs in the last decade. Over 90% of commercial debt financing raised by ULBs has been through loans from scheduled commercial banks (SCBs) and other FIs in this period, being around USD 1.9 billion. Municipal bond issues have raised USD 141 million in this period, of which 80% percent were issued only during FY 17 and FY 18 (see Figure 25).

Figure 25. *Volume of debt financing by ULBs nationwide in recent years, by type of debt (in USD mn)*



Source: Secondary research, CRISIL analysis

The market for municipal bonds in particular, and municipal debt in general, is extremely small in India relative to state-level borrowing and other countries. The total value of outstanding debt issued under municipal bonds in India is estimated to be less than two-thousandth of the total outstanding state

government debt (state Development Loans (SDL)) in 2019. Outstanding municipal bond debt in South Africa, which has a well-developed and thriving municipal bond market, is over 6 times higher in value than the outstanding municipal bond debt in India.[29] However, South African municipal bonds constitute a relatively much higher share of the total debt securities market in the country compared to Indian municipal bonds, pointing to the relative maturity of the South African municipal bond market. These ratios improve slightly when considering total municipal debt, including commercial loans and non-commercial guaranteed loans. Total Indian municipal debt outstanding is estimated to be about 0.3% of GDP, 0.5% of the total outstanding debt securities market of India, and 1/50th of total outstanding state government debt.

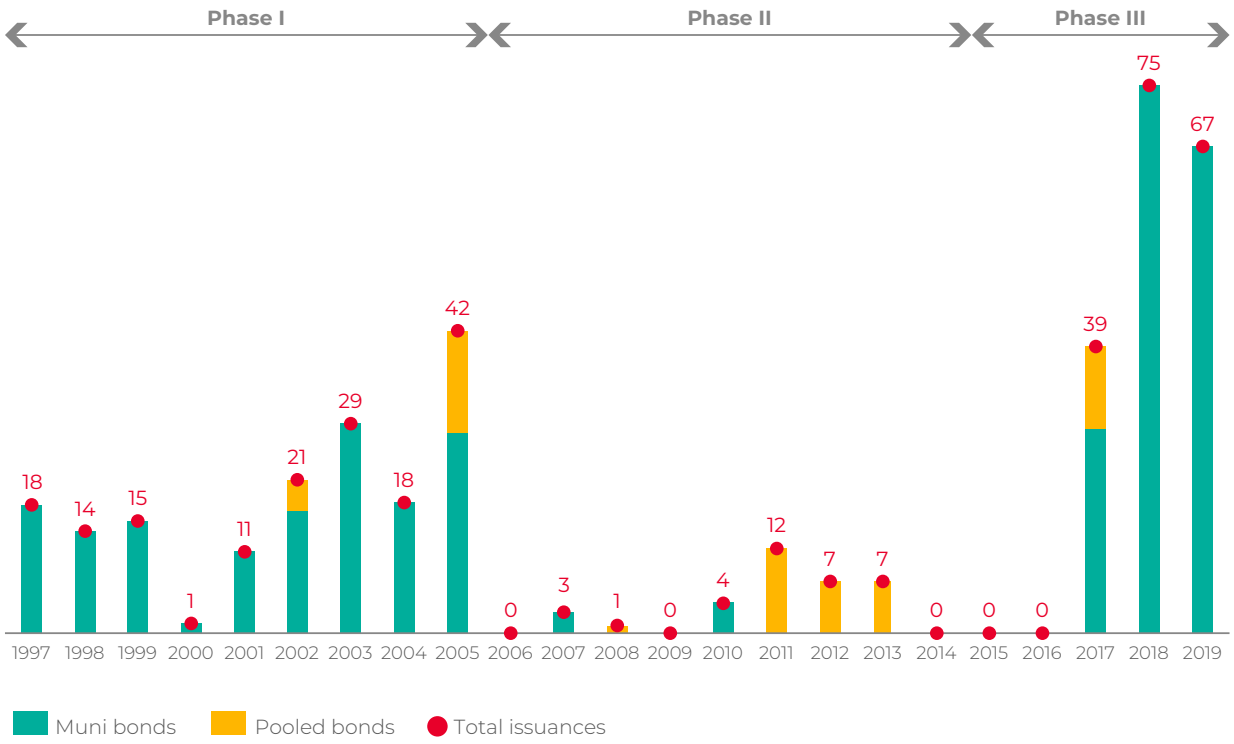
The comparison with state governments also reflects the substantial amount of debt raised by states, which makes India one of the world's largest markets for subnational debt. Total outstanding state Government debt securities have been previously estimated to be around 15% of GDP and a quarter of the total debt securities market in India. As a share of GDP, state-level debt in India is equivalent to the total outstanding municipal bond market in the United states, which is also estimated to be 15% of GDP, and includes in "municipal bonds" debt from state and local governments, urban infrastructure authorities and several other subnational/local entities. This is more than 10 times the level of outstanding municipal/subnational debt (as share of GDP) in South Africa. State debt is clearly the most significant subnational phenomenon in India, with municipal debt being miniscule in comparison. This has implications for growing the municipal debt market: to the extent that municipal and state debt may rely primarily on certain overlapping underlying economic bases for repayment, there may be a limit as to how much the municipal debt market for any given state's ULBs could be expanded without a concomitant reduction in the state's own long-term debt. However, given the very low levels of municipal debt currently, such limits are far off. Further, given the increasing role of state-controlled agencies (parastatals, departments, etc.) in delivering urban infrastructure as shown previously, these state governments agencies will be candidates for raising commercial financing. However, the scope of this report does not include an assessment of debt and other private financing at the state government level, beyond the recent use of PPP transactions for certain urban infrastructure projects.

Private debt financing has primarily been raised by a few large ULBs across the country. Cities from only 7 states have accounted for all municipal bond issuances in India till date, with five states, namely Maharashtra, Tamil Nadu, Gujarat, Karnataka, and Madhya Pradesh contributing more than two-thirds of value of issuance. Only a handful of large cities (Chennai, Bangalore, Indore, Pune, Nagpur, and Vijayawada) have accessed institutional/bank loans. There has been an increase in municipal bond issuance in the last few years, with a concerted push by GoI starting with the issuance of credit ratings of ULBs in 500 cities under the AMRUT mission – where only 35 cities were rated A- and above (28 of which are large cities), fiscal incentives for ULBs for bond issuance, and issuance of SEBI regulations for listing of municipal debt securities on financial exchanges. Despite these initiatives, only five cities have issued bonds in the last 4 years. There has been a total of only 30 municipal bond issuances in India, starting from the mid-1990s, which have raised a total of USD 380 million (see Figure 26). The recent issuances have had the following key aspects:

- *Structured issuance with good credit ratings:* India's bond market is heavily skewed towards higher rated papers. Pune and Ahmedabad municipal bond issues were backed by AA+ ratings, while Bhopal and Indore issues received AA credit rating. Hyderabad raised the highest volume but had a AA- credit rating.
- *Coupon rates and tenor:* All issues except Ahmedabad had a 10-year tenor. The coupon rates reflect the credit rating strength of each city/ULB.
- *Financial covenants and credit enhancement:* Financial covenants related to escrow accounts and debt service coverage ratios were part of the financial instrument structure. All issues required creation of escrow accounts for interest payment, debt service reserves and sinking funds, and well-defined mechanisms for their operation.
- *Private placement:* All bonds were sold through private placement and listed in National Stock Exchange of India / Bombay Stock Exchange.

[29] These estimates are derived from Glasser (2020).

Figure 26. *Annual value of municipal bond issuances since 1997, USD mn*



Source: Secondary CRIS Analysis. Includes resources raised by ULBs, Water boards and State pooled finance entities

A high reliance on guaranteed lending reflects difficulties in authentic debt issuance which is secured by revenue streams of the issuing entity. Institutional/bank loans on market basis have been tapped by a few large cites mainly from SCBs. Loan sizes have ranged between USD 28 million (Pune) and 134 million (Bengaluru) and loan tenors have ranged between 3 and 15 years. Escrow of property taxes and other receivables is the most common payment security mechanism. Hypothecation of assets (such as commercial properties, land, hospitals etc.) has been seen in a few larger size loans but does not appear to be a necessary requirement.

The volume of "commercial debt financing" shown above does not reflect true private financing on market basis as it also includes loans from state government-controlled FIs which lend public funds and contribute a substantial share of debt financing for cities. The case of Tamil Nadu is illustrative: loans made by GoTN-owned FIs (namely Tamil Nadu Urban Development Fund (TNUDF) & Tamil Nadu Urban Finance and Infrastructure Development Company (TUFIDCO))[30] accounted for majority of all debt accessed by Tamil Nadu cities in the last five years (82% of debt of all Tamil Nadu ULBs and 71% of debt by Chennai city agencies). The size of these loans from TNUDF and TUFIDCO is substantial for Chennai: they accounted for one-fifth of all capital investment made by GCC in the past five years. Private commercial debt was accessed only through two transactions during this period, namely a pooled bond issuance under the Water and Sanitation Pooled Fund trust (WSPF) and a SCB loan for GCC. In all, private commercial debt was marginal at around 2% share of total capital investment by Tamil Nadu ULBs and Chennai city agencies (see Table 8).

[30] TNUDF-Tamil Nadu Urban Development Fund, TUFIDCO-Tamil Nadu Urban Finance and Infrastructure Development Corporation.

Table 8. *Financing mix underlying urban capex in Tamil Nadu and Chennai, FY16-20*

Particulars	TN ULBs	Chennai agencies	GCC
Cum. capex FY 16 - FY 20 $ million	**4321**	**3337**	**1030**
Financing mix (% of total)			
Tied fiscal transfers	**79%**	**82%***	**43%**
GoTN	70%	72%	38%
GoI	9.2%	9.8%	4.4%
Own funds	**8.4%**	**9.3%**	**28%**
Debt (Total)	**12%**	**9%**	**29%**
Debt (Public) – TNUDF + TUFIDCO + GOTN	10%	6%	21%
Debt (Private) – Pooled bond by WSPF + Bank loan by GCC**	2.2%	2.6%	8.3%

*Source: CRISIL analysis. * Incl CMRL JICA loan guaranteed by GoTN, **Pooled Bonds – 1 issuance of Rs. 80 crores in FY 18 by WSPF. Bank loan of Rs. Rs. 696 crores accessed by GCC from state Bank of India. WSPF=Water and Sanitation Pooled Fund, TNUDF=Tamil Nadu Urban Development Fund, TUFIDCO=Tamil Nadu Urban Finance and Infrastructure Development Corporation*

These loans cannot really be considered to have been made to ULBs on a private commercial market basis. First, existing financing raised and utilized by TNUDF is solely from loans from international multilateral and bilateral development finance institutions which are channeled through GoTN. These loans are guaranteed by the sovereign and taken by the state government as part of their overall liabilities, and then passed on to TNUDF. TNUDF has raised funds from financial markets only once, more than twenty years ago in 2000. Thus, TNUDF financing is essentially multilateral lending to cities, channeled through state governments and the FI, guaranteed by a higher level of government. Second, most investment projects financed by TNUDF are supplemented by grant funding by the state (as part of the same arrangements which operate TNUDF), reducing the effective cost of project financing for ULBs to below the cost of financing paid by TNUDF (see Box 4). Third, a substantial share of financing provided by TUFIDCO to city agencies (70% in the last five years) is also subsidized below the cost of financing as concessional loans, as it mostly includes revolving grants, own funds, and ring-fenced programs of the state and national governments. In sum, financing from TNUDF and TUFIDCO is not really market driven and involves practically no gearing from the private sector.

Box 4. *TNUDF – creating a market for urban infrastructure finance or recycling public funds?*

TNUDF was set up in as a Trust in 1996 under the Indian Trust Act 1882 by Government of Tamil Nadu(GoTN), with Trust Unit capital / equity contributions by GoTN and three large FIs (ICICI, IL&FS and HDFC). It was setup as the first entity in the country providing long-term finance for urban and civic infrastructure on a non-guarantee mode. It is managed by a Corporate Trustee – Tamil Nadu Urban Infrastructure Company Ltd. (TNUICL) which is managed by a Board of Directors nominated by GoTN and the other three unitholders. TNUDF is operated by Tamil Nadu Urban Infrastructure Financial Services Ltd. (TNUIFSL) as its fund manager.

Funds raised from market: Till date, TNUDF has raised funds from the financial market only once in 2000. This was done to meet a covenant of the World Bank under a Bank-supported financing project (TNUDP-III). This is the only market issuance / borrowing by TNUDF. Its liability side is otherwise fully met by guaranteed financing (lines of credit) from multilateral development finance institutions (World Bank, ADB, KfW and JICA), which flows through GoTN.

Cost of borrowing: GoTN passes these funds from multilaterals at a rate pegged to 10-year government securities. TNUDF makes a margin by charging a higher interest rate to ULBs in its on-lending relative to the interest rate it pays on its borrowing / liabilities.

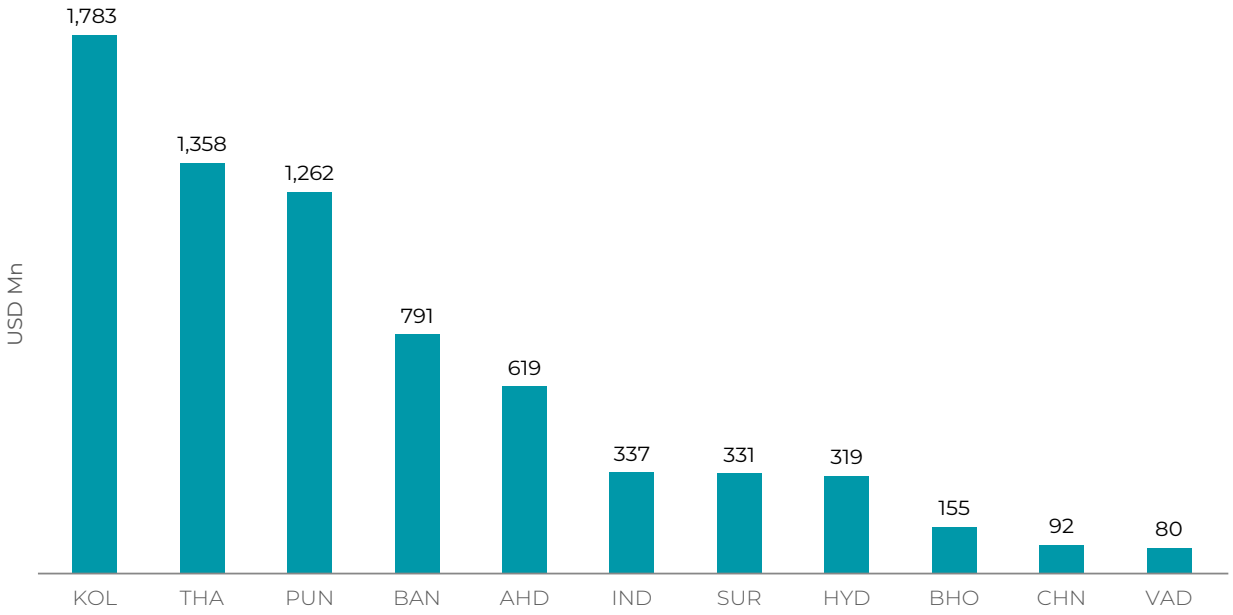
Process of fund flow between GoTN and TNUDF: GoTN passes the raised multilateral funds to ULBs / city agencies in two parts – a borrowing component which flows to TNUDF and a grant component which goes to a grant fund called Project Sustainability Grant Fund (PSGF) also managed by TNUIFSL. This allows TNUIFSL to fund projects in a blended manner with grants from PSGF and loans from TNUDF. The loans from TNUDF are priced close to market interest rates. However, most projects financed through this arrangement also get a capital grant from PSGF, typically between 30% to 50% of project cost based on loan appraisal by TNUIFSL, which is non-returnable and interest-free. Effective cost of project financing to ULB is therefore lower than the interest paid on TNUDF loans.

4.1.2. Observations on Debt financing

Notwithstanding the highly constrained financing volumes outlined above it is important to note that the current level of debt financing in many large metropolitan cities is well below their existing debt servicing potential. It is estimated that 27 of the largest ULBs (excluding Mumbai) which received an investment grade credit rating under AMRUT can currently borrow and service an additional USD 7.7 to 8.4 billion in debt based on their prevailing financial indicators (see Figure 27 for a set of large cities). This is more than 20 times their existing level of debt stock, which was USD 352 million as of FY18. Mumbai alone can currently borrow an additional USD 5 billion given its current estimated debt servicing capacity.[31] It is worth noting that this potential is certainly limited relative to total investment needs – for instance, this additional debt carrying potential for AMC is one-quarter of its total estimated investment needs for the next five years, while for GCC it is only 13% of its annual estimated investment needs over the next five years. This demonstrates that these cities, too, are subject to the broader fiscal and institutional realities of all ULBs in India. However, it is nonetheless significant relative to the existing low levels of commercial financing. These cities account for a fifth of India's urban population. This presents fertile ground for targeted incremental action, both to make a difference in these cities themselves and for its wider demonstration effects.

[31] Estimates are based on existing operating surpluses of ULBs to fund debt servicing costs using conservative assumptions on business-as-usual growth over the next 10 years. It is assumed that operating surpluses will increase by 8% per annum over 10 years (which is conservative relative to 10% average annual increase in 2011-18), and that 50% of these surpluses will be available for debt service costs. Debt potential is calculated as the NPV of these surpluses over 10 years with 10% discount rate.

Figure 27. *Estimated additional debt carrying capacity (in USD Mn) of selected large cities based on existing financial indicators*



Source: CRISIL Analysis. PUN=Pune, AHD=Ahmedabad, BAN=Bengaluru, KOL=Kolkata, HYD=Hyderabad, SUR=Surat, CHN=Chennai, THA=Thane, IND=Indore, VAD=Vadodara, NAG=Nagpur, BHO=Bhopal, VIZ=Vizag, RAJ=Rajkot, JAI=Jaipur.

In this regard, it should be noted that the existing narrow and non-buoyant OSR base impairs the total future debt carrying capacity of ULBs and presents a binding constraint to expand private financing even in larger cities. In Tamil Nadu for example, growth in revenue income (and OSR) of state-wide ULBs and Chennai agencies has substantially lagged growth in revenue expenditure, resulting in declining operating surpluses and limiting the potential debt servicing capacity. Estimates of Tamil Nadu ULBs show that if OSR continues to grow at the existing slow pace of, say, 5% over the next 15 years, ULBs will be able to fund only an additional USD 2 billion of capex from own sources or commercial financing – equivalent to a marginal 4% of the investment volumes needed over this period. This implies that they will need to rely on fiscal transfers for additional investment if OSR do not increase substantially. In Gujarat, despite an empowered local government framework with strong devolution of functional responsibilities to ULBs, property tax revenue for AMC grew at a relatively slow pace of 4% per annum on average between FY15 to FY20, while current expenditure outpaced income. This resulted in a decline in operating surplus which has reduced the ability to borrow by decreasing funding available to repay debt and interest.

state governments generally control most substantial aspects of commercial financing and investment decisions by ULBs and city agencies. They approve transactions on a case-by-case basis, with ULBs undertaking all commercial financing transactions (borrowing or PPPs) with approval from the state. State governments also have a strong and centralized role in approval and appraisal of projects and capital investment needs. In Tamil Nadu, delegation of powers to ULBs for decisions involving capital expenditure is low relative to the scale of investment even in larger cities. This centralization of capex decision-making is reflected in the high share of tied fiscal transfers from state governments in capital expenditure, as well as the large share of GoTN-controlled FIs in ULB debt financing, as shown in the preceding discussion. The two states where this factor is less salient are Gujarat and Maharashtra, where ULBs have higher decision-making remits over spending from own source revenue and untied grants - but not for tied funds which are provided by the state for specific projects.

Even in more devolved states like Gujarat the scale of borrowing is very low. The quantum of borrowing by Gujarat MCs in large cities has been only 1.3% of their total capex in the last 5 years, which is very small given the context of strong devolution of functional and financial powers (see Table 9). Municipal bonds have been largely in the form of one-off issuances by AMC. AMC did not issue any municipal bonds for

twelve years prior to 2018. Lending from other windows including Gujarat state Financial Services Limited (GSFS) and the Shri Nidhi scheme is not truly market based, as it is provided at a discount to market financing and does not present scalable options to expand municipal borrowing or gear in financing from the private sector. This is similar to the case of TNUDF and TUFIDCO discussed in the preceding chapter.

Table 9. *Financing mix underlying urban capex in Gujarat and Ahmedabad*

Particulars	Gujarat ULBs	Corporations	Municipalities	AMC
Total capex base FY15-FY19 (USD million)	6,167	4,301	1,865	1,511
Financing mix (% of total)				
Fiscal transfers	**75%**	**64%**	**100%**	**43%**
state government	55%	52%	62%	35%
GoI	20%	12%	37%	8%
Own funds	**25%**	**35%**	**0%**	**53%**
Debt (Total)	**0.9%**	**1.3%**	**0.0%**	**4.1%**
Municipal bonds	0.9%	1.3%	0.0%	1.9%
Public loan – Gujarat Municipal Finance Board (GMFB), GSFS	0.0%	0.0%	0.0%	2.2%

Source: CRISIL analysis, GMFB and UD&UHD websites

A limited amount of credit is extended based on true credit risk taken by the lender/investor on the credit quality of the borrowing ULB. Bond issuances have been occasional and sporadic and represent negotiated agreements between the state and the city. Overall, notwithstanding an uptick in debt financing in 2016-2019, the current situation is far from the development of a privately financed municipal debt market, with occasional transactions being entered into among a small group of city agencies.

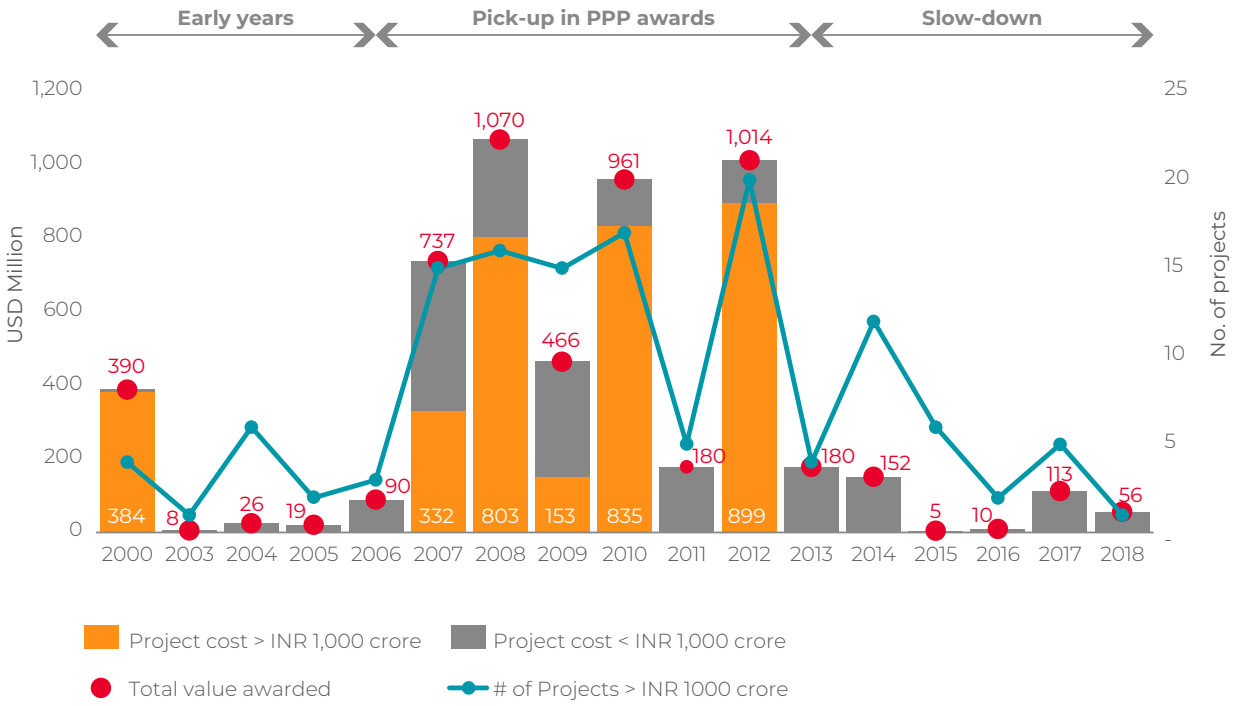
4.2. The unfulfilled promise of PPPs in urban infrastructure: trends and observations

This chapter looks at trends and the potential of PPPs as a means of financing urban infrastructure needs in India. This financing could be in (1) **greenfield projects,** involving financing, construction, management, and transfers of assets (e.g., water treatment plants, processing facility for municipal solid waste (MSW)), and (2) **brownfield projects** involving financing, rehabilitation, management, and transfer of existing assets handed over to private partner (e.g., upgradation of distribution network to 24x7 supply).

4.2.1. Trends in PPPs

PPP transactions for urban infrastructure in India have seen a marked decline in the last decade both in monetary value and transaction volume. 134 PPP projects have been awarded in the urban sector since 2000, having a total cost of USD 5.5 billion. PPP project awards have declined substantially after a brief but substantial spike between 2007 and 2012, where most of these projects were awarded. Only one-third of all PPP investments awarded since 2000 came in the last decade – including 55 projects worth USD 1.7 billion (see Figure 28).

Figure 28. *Urban infrastructure PPP projects awarded since 2000, # of projects and cost (USD mn)*



Source: Secondary research, CRIS analysis

Sectoral and institutional distribution: MSW projects had the highest share (by volume and value) of project awards in the last decade, followed by water and waste-water projects. ULBs accounted for almost two-thirds of PPPs by value in the last decade, with the rest being awarded by parastatals. All metro rail projects have been executed by parastatal agencies while all MSW projects have been executed by ULBs. Water and wastewater projects are split between ULBs and parastatals (see Table 10).

Table 10. *Sector-wise breakup of urban infrastructure PPP projects awarded since 2000 and in FY11-18*

Sector	All projects compiled				Awarded during FY 11-FY 18			
	Nos.	%	USD Mn.	%	Nos.	%	USD Mn.	%
Municipal solid waste	**53**	**40%**	**1,013**	**18%**	**24**	**44%**	**695**	**41%**
Water and Waste Water	**35**	**26%**	**851**	**16%**	**20**	**36%**	**474**	**28%**
Transport facilities and services	**46**	**34%**	**3,612**	**66%**	**11**	**20%**	**540**	**31%**
Terminals and parking	22	16%	307	6%	6	11%	36	2%
Roads and bridges	12	9%	922	17%	1	2%	139	8%
Bus services	7	5%	111	2%	3	5%	64	4%
Metro rail	5	4%	2,273	42%	1	2%	302	17%
Grand Total	**134**	**100%**	**5,475**	**100%**	**55**	**100%**	**1,709**	**100%**

Source: Secondary research, CRISIL analysis

Geographic concentration in Maharashtra and other large states: As in OSR performance and debt financing, the same 5 states (Gujarat, Karnataka, Madhya Pradesh, Maharashtra, and Tamil Nadu) accounted for almost three-quarters of PPP transaction value and two thirds of volume in the last decade, with Maharashtra alone accounting for almost half of them by monetary value. These five states will likely be the key drivers of any momentum in private financing for urban infrastructure, given their concentration of funding base (OSR performance and potential), relatively sophisticated urban institutional frameworks and high rates of economic activity and urbanization.

However, in several of these states recent trends in PPPs are not promising. Despite a long history with urban sector PPPs, Tamil Nadu has seen new project starts shrink since 2010, with only 2 projects awarded in the last 10 years, and previously awarded ones facing substantial legal, operational and sustainability issues. In Gujarat, the level of private financing in basic urban services has been very modest with most PPPs being simple O&M outsourcing contracts or implemented with sizable fiscal support.

PPPs in urban infrastructure have needed sizable funding support, in the shape of capital grants from state governments and GoI. PPP projects in MSW in Hyderabad and Coimbatore under GoI's Jawaharlal Nehru National Urban Renewal Mission (JNNURM) scheme received grant funding of 35% and 70% of project cost respectively, while metro-rail projects in Mumbai and Hyderabad received viability gap financing support of 27% and 10% of project cost respectively. Water distribution projects were financed with 90% public funds in Khandwa and Shivpuri, and 70% in Nagpur with grant from GoI's JNNURM scheme. The share of private financing in PPP project costs has generally varied between 40% and 70% of project cost, while some recent PPP contracts (e.g., Coimbatore and Malviya Nagar) have only 20%-30% of private financing. City agencies have been unable to expand the resource and funding base to support private financing as user charges in urban services viz., water supply, sewerage networks, and bus services rarely recover even O&M costs. PPP investments have therefore needed sizable viability gap funding and/or availability payments that are largely met either from intergovernmental fiscal transfers or general tax revenues at the national, state, or local levels.

4.2.2. Observations on PPPs

The low prevalence of PPP transactions for urban infrastructure can be attributed to the following inter-related factors.

PPP projects rely on availability payments or viability funding for bankability. This is due to low user fees, weak recurrent revenue performance and the absence of project-specific revenues based on true economic cost. Project-specific revenues (i.e., revenue streams specifically tied to, and deriving from, a particular infrastructure project) in India's urban sector are insufficient to support returns on investment in full. For instance, user charges, tariffs, and fees in several sectors (such as municipal SWM, water & wastewater services etc.) do not even cover O&M costs and are not reflective of the economic and financial costs of service provision. Most PPPs needed sizable upfront and continued fiscal support in the form of availability payments and viability gap financing, with the share of user charges in the funding base being relatively minor (Table 11 from Tamil Nadu illustrates the point). The fiscal gaps have been exacerbated over time due to the lack of, or slow, growth of project-specific revenues and a very weak regime for tariffs and user charges, which has undermined the continued viability of PPP projects. Without drastic changes to reflect higher levels of cost recovery, PPP projects will continue to require availability payments or fiscal support.

Table 11. *Urban infrastructure PPP projects awarded in Tamil Nadu since 2000: high level of fiscal support and modest risk transfer*

	Year	City	Sector and Project	Term, Years	Capex $ mn	Private financing $ mn	Funding streams for PPP	Status
1	2000	Alandur	Sewage treatment	14	1	1	AP, partly user charges	Litigated, completed
2	2000	Chennai	Waste collection & transport I	7	6.8	6.8	AP	Completed
3	2000	Tiruppur	Water Supply distribution	28	137	137	User charges	Restructured
4	2005	Chennai	Water supply desalination	25	68.5	68.5	GoTN grants	Litigated, Operational
5	2000	Chennai	Waste collection & transport II	7	6.8	6.8	AP	Completed
6	2007	Coimbatore	Waste processing & landfill	20	13.7	4.1	VGF + AP	Operational
7	2008	Madurai	Waste processing & landfill	20	13.7	4.1	VGF + AP	Operational
8	2009	Pallavaram	Waste processing & landfill	20	7.5	7.5	AP	Terminated
9	2018	Coimbatore	24x7 water supply	25	68.5	27.4	AP, partly user charges	Operational
10	2020	Chennai	Waste collection & transport III	7	13.7	13.7	AP	Awarded
			Projects with higher complexity, higher risk transfer and higher private financing have faced greater challenges (legal, operational, termination.)					

Source: Secondary research, CRISIL analysis. Projects with capex > Rs. 50 crores. AP=Availability payment, VGF=Viability gap financing. In Tiruppur project, GoTN is a shareholder in the SPV.

Along with viability and funding gaps, the design of urban infrastructure PPPs has not adequately accounted for risk-sharing and risk-transfer mechanisms for project risks. As a result, several urban infrastructure PPPs in Tamil Nadu since 2000 have faced operational issues due to unanticipated demand shocks and various technical and legal challenges, with some needing to be restructured and coming into public ownership. Commitments which were made by state governments and ULBs at the time of transaction awards to revise fee structures and align them with cost recovery principles have not materialized. Projects which have had revenue models dependent on user charges and transfer of demand risk to private investor have faltered. For example, water supply concessions in the cities of Tiruppur (Tamil Nadu) and Haldia (West Bengal) struggled when demand risks transferred to the private concessionaire unraveled and public entities took over operations of the project's special purpose vehicle to keep it operational, while projects in the cities of Khandwa and Shivpuri (both Madhya Pradesh) faced user resistance owing to tariff increases. In some recent PPPs, including in Coimbatore (Tamil Nadu) and Malviya Nagar (Delhi), demand and tariff risks have been largely retained by the public authority.

Given these fiscal gaps and persistently weak OSR performance of most large ULBs and parastatal agencies nationwide, PPPs are currently subsidized by inter-governmental fiscal transfers, the local recurrent revenue base, and other sources of budgetary surplus, which are also the funding source for municipal borrowing. ULBs thus face an implicit tradeoff between debt/borrowing and PPPs as two sources of private commercial financing – given the common funding base for both types of financing they effectively compete with one another. The low funding and resource base limits the utility of PPPs as a financing instrument based on available budgetary surpluses. Weak financial positions of ULBs and city agencies thus appears to be a key binding constraint. Finally, these entities have extremely low capacity to design and structure complex PPP transactions with sophisticated risk-sharing mechanisms and deal with private investors.

To overcome some of these challenges and mobilize private investment, GoI has recently supported the development of certain municipal infrastructure on a hybrid annuity model. GoI is supporting the development of Sewage Treatment Plants in large cities along the Ganges river on this model under its National Mission for Clean Ganga, with plants in three cities (Varanasi, Mathura (both Uttar Pradesh) and Haridwar (Uttarakhand)) having been awarded. The contract is for 15 years entered between state-level water utilities and private operators to design, construct and operate these plans, with 40% of capex funded

upfront by the government and the remaining 60% to be paid over the life of the project as a performance-linked annuity secured through intercept mechanisms at the central government level to provide revenue security to the private sector. However, while the model has significant potential for being used in many cities to improve operational efficiencies, it does not address the core financial and institutional constraints which hinder the long-term scalability of PPP transactions. By relying on a recurrent annuity payment, the model essentially transfers the payment responsibility on to the implementing agency's income statement, to be paid from its general revenue sources. These annuity payments can thus cannibalize debt service capacity and funding capacity for other sources of financing.

The potential for increased PPP transactions in urban infrastructure will remain limited unless substantial reforms are undertaken to improve the funding base. Even in "attributable" urban services where the end-user/beneficiary is distinctly identifiable and can be charged for the service, PPP potential is constrained by the existing revenue structure (i.e. low cost recovery) for these services as well as varying affordability and access levels among beneficiary groups, which undermines the viability of PPP projects for private investors and requires fiscal support to overcome these risks. Such "attributable" services that are generally within the mandate of ULBs and/or parastatal city agencies in India include the following: MSW (processing, landfill facility management, collection, and transfer contracts); water supply (distribution); water and wastewater treatment; transport facilities (bus terminals, parking); urban roads and bridges; and selected public transport services such as bus operations (where parastatal agencies tend to have a larger role). The existing regime undermines viability of PPP transactions without the presence of availability payments and other forms of fiscal support which shift project costs and risks to the public sector.

The low levels of local revenue exacerbate the situation by reducing the fiscal capacity of ULBs and parastatal city agencies to fund these availability payments, thus requiring additional interventions from state governments. ULBs and parastatal city agencies may not have enough operating surpluses and fiscal balances at current levels to support these payments. The regular involvement of state governments to resolve issues with PPP transactions, or to restructure them, is thus not surprising. Finally, the potential for PPP financing is even lower in other major municipal services which are considered "non-attributable", such as storm water drainage networks, where the end-user/beneficiary is not distinctly identifiable, and the service benefits extend to the entire community. Such services are typically financed through general revenues and fiscal resources rather than project-specific revenue streams. They also constitute a large share of infrastructure investments and needs in any given city. For these reasons these services are not strong candidates for PPP transactions.

4.3. Clustering states and cities to determine private financing potential

Given the heterogeneity of the urban financing landscape among states, it is useful to categorize the large states and cities within them to establish a basis for prioritizing them for enabling private financing. There are 11 states in India which each have urban population greater than 15 million, collectively hold three-quarters of the country's total estimated urban population and 90% of the country's total ULB revenues and OSR. These 11 states can be further divided into the following clusters:

1. **Cluster 1** – Gujarat, Karnataka, Maharashtra, Tamil Nadu. These states account for 36% of national urban population, 58% of the country's total ULB revenue, and two-third of total OSR. They have high levels of urbanization, GSDP per capita, and local revenue and expenditure in per capita terms. They also have higher levels of devolution and fiscal transfers relative to other states. Cities in these four states are relatively better placed to access private financing.
2. **Cluster 2** – Andhra Pradesh (AP), Kerala, Rajasthan, Telangana, Madhya Pradesh (MP), Uttar Pradesh (UP), West Bengal (WB). These states account for 40% of national urban population, one-third of the country's total ULB revenue, and a quarter of total OSR. Cities in these states have low OSR per capita relative to Cluster 1 barring Andhra Pradesh and Madhya Pradesh; and low GSDP per capita barring Kerala and West Bengal, which will make it somewhat challenging for cities in these states to tap private capital financing.
3. All other states can be considered as Cluster 3, which while accounting for nearly a quarter of national urban population have only about one-tenth of the country's total ULB revenue and OSR.

Combining these state clusters with the typology of cities discussed earlier enables the categorization of each city based on its potential for accessing private financing. This typology includes large/ metropolitan cities governed by MCs; and smaller cities having other types of governing bodies (such as municipalities and Town Panchayats). Credit ratings of 500+ ULBs conducted under the AMRUT program are also factored in to determine their categorization of MCs. The following categorization of cities is proposed based on these factors:

- **"High potential" cities** include all MCs in Cluster 1 states and those MCs in Cluster 2 and 3 states having A- and above credit rating. This is a total of 71 cities covering an estimated 29% of the total national urban population.
- **Within this group of "high potential" cities, there is a further subset where the existing potential has already been demonstrated.** 28 MCs nationwide received an investment grade credit rating of A- under AMRUT and should be the primary focus of early policy action. These 28 cities cover an estimated 18% of the total national urban population (see Table 12).
- **"Medium potential" cities** include all MCs in Cluster 2 states other than those rated A- and above, and all municipalities in Cluster 1 states. This set of cities covers an estimated 19% of the total national urban population.
- **"Low potential" cities** include all other cities not included in High and medium potential and cover 52% of the total national urban population.

Past private financing transactions confirm the basis for this clustering approach. Cities from states in Clusters 1 and 2 have accounted for almost all debt issues by value in India, and 83% of the value of urban infrastructure PPP projects. The remainder of the national urban population can be considered as "low potential" cities from the perspective of accessing private finance. This primarily include municipalities in Cluster 2 states and other ULBs such as Town Panchayats etc.

Table 12. *Categorization of cities based on private financing potential*

	All High potential MCs		High potential MCs with investment grade credit rating via AMRUT	
state Cluster	% of National Urban Pop	# of MCs	% of National Urban Pop	# of MCs
1: Gujarat, Karnataka, Maharashtra, Tamil Nadu	21%	58	10%	15
2: AP, Kerala, MP, Rajasthan, Telangana, UP, WB	7%	11	7%	11
3: All other states	1%	2	1%	2
Total	**29%**	**71**	**18%**	**28**

Source: CRISIL analysis, Census 2011.

This categorization shows the challenge of scaling private financing in India. Cities that are classified as having high potential house only about a fifth of the urban population. Even these high potential cities with intrinsic potential (along with capacity and creditworthiness) to scale private financing are not currently accessing any such financing in a material quantum. The following chapter aims to understand the key factors impacting this dilemma.

References

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Chapter 5.
Analysis of Key Factors Impacting Private Commercial Financing for Urban Infrastructure

This chapter uses the conceptual framework described in Chapter 2 to explain the key factors impacting the demand for, and supply of, private financing for urban infrastructure in India. It shows that while the enabling environment for private financing has improved substantially at the national level in the last decade, the low demand for financing is a fundamental constraint and is also heavily influenced by state-level regulatory factors which prohibit this demand from materializing. Each of the key factors are assessed below, following by a summary assessment.

5.1. Factors impacting demand for private financing

5.1.1. Policy and political economy factors impacting revenue levels and funding base for private financing

The persistent general policy orientation across ULBs and the state level to tax and charge for urban infrastructure and services at rates well below those required to cover the costs of providing such services is a key constraint on the ability to raise more commercial financing. This limits the level of funding available to cover the costs of commercial financing, and thus places an indirect cap on the volume of commercial financing that can be raised. In other words, the commercial financing constraint basically reflects a funding constraint. This true across all types of ULB and parastatal agencies providing urban services. Earlier chapters have shown that urban property tax revenue is very low relative to comparators, being only 0.15% of GDP compared to 0.3–0.6% of GDP on average for low- and middle-income countries; while several large cities are recovering less than half the O&M costs of providing certain municipal services, which is well below many comparator middle income countries. Weak OSR performance is a constraint on demand as it impairs the ability of ULBs and city agencies to service higher debt and PPPs. The level of recurrent revenue determines the volume of debt that can be raised and the viability of PPP transactions for ULBs. Without a reformed OSR structure for taxes and fees, many PPP projects – even in sectors and services where cost recovery is possible – will face viability concerns.

In many cases ULBs are not fully utilizing the scope and potential of local OSR assigned to them, due to this general policy orientation. The typical set of revenue assignments to ULBs by states in India is not much different from, or weaker than, other countries at similar levels of income. In most states, property taxes are assigned to ULBs along with the ability to levy service charges for those municipal services which are functionally assigned to them (e.g., MSW, water & sanitation etc.), although the latter is limited by variation in functional/expenditure assignments across states. In several states some municipal services are not devolved to ULBs and are instead provided by state-controlled entities. While most states provide substantial direction to ULBs on the base, scope, and levels of OSR assigned to ULBs (i.e., property taxes and service charges for devolved services), such direction is often at the level of determining the overall parameters of these revenues. This includes setting upper limits on property tax rates and allowing ULBs to set specific rates within these limits. ULBs, however, invariably set rates well below these authorized limits or establish service charge structures which below optimal levels. This occurs even in large ULBs including Ahmedabad and Chennai.

Until ULB revenues perform at higher levels, and fiscal transfers are sufficient and structured in such a way as to provide sufficient funding to pay for commercial financing, such financing will be highly constrained and can only be raised in proportion to funding performance, which is relatively low currently. Previous chapters have also shown that this is the case even for the bigger and better performing cities, as even these cities will be able to leverage limited incremental private financing, relative to investment needs, even if they were to maximize their current borrowing potential.

5.1.2. Low absorptive capacity, driven by weaknesses in urban institutional capacity

Weak absorptive capacity at implementing agencies systematically hinders higher infrastructure investment overall, regardless of source of funds, as shown in previous chapters. Previous chapters show that large ULBs across India have generally not been able to fully spend their budgeted capital expenditure in recent years, with some large ULBs having extremely low capital budget execution rates. Further, slow implementation performance by states and ULBs on several recent flagship GoI Urban Missions has pointed to constraints on implementation capacity at the city level, with ULBs having so far executed only 22% and 18% for SCM and AMRUT respectively and transfers by GoI to ULBs being only half of their committed contribution for both SCM and PMAY. Slow implementation progress coupled with increasing leftover aggregate budget surpluses indicates capacity limitations at implementing agencies which constrain the absorption of additional financial resources regardless of source.

This is the case even in large cities with higher creditworthiness, larger economic and revenue bases and relatively stronger institutional autonomy and mandates. MCs in large cities are under-investing in infrastructure relative to smaller cities, their own intrinsic capacity and investment needs, despite better financial indicators. When adjusted for fiscal position, MCs spend less on capital expenditure than other ULBs: despite having 3 times higher OSR per capita relative to municipalities and 15 times higher than other smaller ULBs, their capital expenditure per capita is only 1.5 times higher than municipalities and 5 times higher than other ULBs. MCs have the lowest capital expenditure to operating surplus and revenue ratios among all classes of ULBs (see Table 13).

Table 13. *ULB performance on revenue and capex FY18, by category of ULB*

Per capita USD – FY 18	Municipal Corporations	Municipalities	Others
Revenue Income	55	31	9
OSR	42	14	3
Revenue Expenditure	37	24	7
Revenue surplus	18	6	1
Capital Expenditure	26	17	5
Ratios			
Revenue Surplus / Rev Income	32%	18%	15%
Capex / Revenue Income	**47%**	55%	57%
Capex / Revenue Surplus	**145%**	298%	390%
Revenue Expenditure / OSR	74%	178%	248%
OSR/Rev Income	76%	44%	33%

Source: 15 FC 2019 and CRISIL analysis.

The case of Gujarat may be illustrative: the scale of borrowing by Gujarat ULBs at 0.9% of capital investment needs is miniscule given the context of strong devolution of functional and financial powers to Gujarat ULBs, especially corporations. Municipal bonds have been largely in the form of one-off issuances by AMC. The absence of bond issuances by AMC for twelve years prior to 2018, and the very negligible efforts to tap other financing sources – are reflective of low demand for such financing.

These absorptive and implementation capacity constraints are driven by longstanding financial and institutional weaknesses which constrain the ability of city agencies to meet the infrastructure needs. There are several inter-related reasons for this, some of which are as follows:

- **Weak strategic capital planning to develop a pipeline of viable and feasible projects:** ULBs generally do not prepare multi-year investment plans with a pipeline of investment-ready projects. Even where such plans are prepared, they do not translate into the statutory requirement of annual budgets with capex planning on an annual basis with (at best) notional allocations for medium-term expenditures. This leads to piecemeal project planning and capital investment prioritization being determined by availability of funding. Project preparation focuses more on technical scoping/

specifications and securing investment approvals from state (and, where relevant, national) governments rather than on service delivery, sustainability, and viability. These constraints exist in larger MCs with higher financial capacity (like AMC) which have tapped capital markets in the past. This limits demand for financing and the realization of even existing debt financing potential.

- **Weak project implementation/execution capacity:** Even if projects are prepared, ULBs have limited technical capacity to fully appraise and implement them in a timely and cost-effective manner while also mitigating the substantial risks associated with urban infrastructure projects. Slow progress in implementation of projects under GoI Missions also appears to be because of difficulty in coming up with required matching funds, which further underlines the importance of revenue constraints.
- **Weak capacity to design, prepare and structure complex projects and transactions, and deal with private sector investors:** This weak capacity in project structuring (risk allocation/sharing) adversely impacts projects' risk profile especially for PPPs, with inadequate risk-sharing or risk-transfer mechanisms. There is limited experience in dealing with private lenders and investors, and lack of exposure at the city level to municipal borrowing and designing complex PPP transactions. PPPs especially require tighter developer-concessionaire coordination, which gets hampered due to limited delegation of powers for city agencies and weak institutional and technical capacity for investment planning and stakeholder engagement. This weakness in counterparty capacity has led to persistent state government support for several PPP transactions, as shown in earlier chapters.

In the presence of absorptive capacity constraints despite substantial unmet investment needs, it is not surprising that higher fiscal transfers are ULBs' preferred source to finance capex with limited demand for private financing. Until absorptive capacity of ULBs increases, other actions to stimulate private commercial financing may have limited effects.

5.1.3. Inter-governmental fiscal and institutional framework preventing higher demand from emerging

Besides the policy decisions at the state and city levels to keep revenue levels below optimal levels, the inter-governmental framework for urban governance in India is characterized by weak and fractured functional devolution for ULBs coupled with weak accountability and perverse incentives facing ULBs.

ULBs generally do not have strong mandates for urban infrastructure due to weak and fractured functional devolution. State governments - especially departments, state-controlled agencies, and parastatals - have the primary role in urban service delivery and infrastructure except in a few states such as Maharashtra and Gujarat. ULBs generally have limited institutional scope for provision of infrastructure and services. Even within the functional mandates provided to ULBs, state governments exercise strong operational control. The case of Tamil Nadu is illustrative and reflects the situation in most other states, despite it being a highly urbanized state with ULBs of high capacity in large cities. Here, the state government has a strong decision-making role in approving individual projects for ULB execution. Delegation of powers to ULBs is low relative to the scale of capital expenditure even in large MCs. The centralization of decision making on capital expenditure is reflected in the high share of tied fiscal transfers in urban investment and an outsized share of state-owned FIs (TNUDF and TUFIDCO) in ULB borrowing. This weak authorizing environment and low expenditure assignment for service provision directly influences demand for investment funds, which translates into low demand for all commercial finance.

The institutional and fiscal framework reinforces the dependence of ULBs on state governments and reduces their incentives to deliver urban infrastructure in a coordinated manner or to strengthen their institutional capacity and creditworthiness. This has several inter-related aspects:

- **City managers are generally accountable to higher levels of government** – especially state – with limited accountability to citizens. City managers take guidance from state governments with a limited role for elected councils. A vital link between urban citizens and urban management is thus weak or missing in Indian cities. Although there are some positive developments in some cities, citizen participation in capital planning, budgeting, and other urban development issues is quite low in most cities. Accountability and participation are weak, and so service needs are not translated through local engagement into actionable demands.

- **The high volume of tied fiscal transfers reduce incentives of ULBs towards investment planning and resource mobilization;** and leads to fund utilization becoming a primary target rather than prioritizing service delivery improvement and diversifying sources of finance, even in credit-worthy cities. As shown in earlier chapters, as the salience and importance of urban development and existing urban infrastructure gaps has increased in recognition over recent decades, state governments and even GoI has substantially increased its investment in urban infrastructure, with GoI having several Urban Missions. Over half of fiscal transfers to ULBs are tied to specific projects and ULBs utilize these transfers as the primary (and in many cases only) financing source. This increase in fiscal transfers has two consequences:
  - first, it reduces incentives to generate own revenues for additional surpluses or to build capacity for service delivery improvement.
  - second, it re-orients the attention of urban managers from actual needs of their city to the requirements and processes that need to be in place to access grant funds.
- **The fiscal transfer system in India is often characterized by a relatively soft performance orientation, in practice if not always as a matter of policy, in areas such as** robust service level improvement targets, required outcomes or OSR performance accountability.

5.1.4. Weak financial management and fiduciary performance with poor quality financial data

Weak fiduciary capacity, seen in weak accounting, auditing and disclosure of financial information by ULBs and city agencies, undermines investor confidence and thus reduces the likelihood of successful private financing. Reporting and auditing of financial accounts is an area of weakness despite substantial reform efforts. Very few ULBs report their complete financial statements online, except for Gujarat where accrual-based accounting has been introduced. Financial disclosure by parastatal agencies is even poorer. There is no mandatory requirement for ULBs to prepare medium-term budgetary frameworks or even capital investment plans in a standardized manner. Except for some states having performance-based transfer mechanisms, there are limited requirements for ULBs pertaining to budgetary management and financial responsibility.

These aspects limit the ability of investors to undertake an appraisal of potential financing opportunities. Municipal bonds compete with corporate sector bonds for investments, without comparable levels of information disclosure, resulting in low investor interest. The prevalence of extensive credit enhancements and structuring requirements for municipal bonds relative to corporate bonds with similar rating profiles is likely due to such constraints.

5.2. Factors impacting supply of private financing: national-level regulatory and policy environment

The supply of private finance is primarily determined by the size, sophistication, and regulatory environment of the domestic financial market. This is especially applicable to debt financing – including term loans and municipal bonds. In India, GoI regulates all aspects of financial markets and the financial sector, thus directly impacting the supply of private financing for urban infrastructure. This includes prudential regulations, tax treatment of investments, municipal bond listing requirements issued by SEBI, and regulations pertaining to investments made by large institutional investors such as insurance and provident funds. State governments play a limited role, except in the case of state government-controlled FIs in some states which finance urban infrastructure spending.

The regulatory framework at the national level impacting the supply of financing is not prohibitive to a higher volume of private financing. It allows private financing for urban infrastructure, and in the last decade has been further improved to facilitate this. While this factor does not appear to impose an absolute constraint, it has limited impact on the volume of financing transacted as the key policy and regulatory powers which intermediate supply and demand of financing are at state government level and are not conducive, as shown in previous and subsequent sections.

The national-level regulatory framework for municipal borrowing especially municipal bonds has become clearer with facilitating actions by GoI, SEBI and RBI to address the supply of finance. The World

Bank provided an assessment of GoI and state-level factors impacting supply of financing for municipal borrowing in 2011 which assessed constraints pertaining to the financial sector and various types of institutional investors/lenders and provided proposals to address them (World Bank 2011). There have been several regulatory changes since then which have addressed some of these constraints. For example:

- foreign portfolio investors (FPIs) have been permitted to invest in municipal bonds since 2019, within the limits on SDL, and RBI has eased norms allowing them to invest in such bonds under prescribed limits to broaden access of non–resident investors to debt instruments in India.
- SEBI has also issued regulations for issuance and listing of municipal debt securities (in 2015 and updated in 2019), along compliance requirements, which provide guidance for ULBs to access capital markets, covers eligibility conditions, requirements for public issue and private placement, and for listing/trading of municipal bonds. SEBI has been proactive in making changes to streamline regulations further and has an advisory committee for enhancing the municipal debt securities in India. Recent revisions in 2019 revised the rules for continuing post-issuance disclosure regulations. However, it is worth noting that these recent regulations on disclosure do impose a compliance burden on ULBs, as the objective of these regulations is investor protection. While they may indeed help private investors these disclosure regulations are likely to be more useful when a secondary market for municipal bonds emerges. Further, any SEBI requirements for disclosure do not apply in the case of bank loans (or unlisted private placement of bond issues), so ULBs have an incentive to prefer bank loans over bond issuances to avoid the compliance burden and associated expenses and potential legal liabilities.
- GoI has also moved away from providing tax-free status to municipal bonds and has instead provided an incentive scheme under the Ministry of Housing and Urban Affairs (MoHUA).

Some gaps and constraints remain in the national-level framework, however, notably pertaining to guidelines for investment by pension funds and insurance companies, and national regulations pertaining to treatment of recovery and default for municipal debt, which put municipal debt at a competitive disadvantage relative to corporate borrowing or other forms of government borrowing.

Moreover, supply of debt financing from publicly owned FIs is also crowding out private finance in some states. This issue is prevalent in Tamil Nadu. Debt financing from state government controlled FIs (TNUDF and TUFIDCO) is crowding out borrowing from private sources, causing a trade-off between public and private commercial financing. This is due to a differentiated regime for public and private financing which privileges state-controlled FIs and implicitly disincentivizes and discourages ULBs from accessing private financing.

A differentiated set of rules, approval processes and loan terms in Tamil Nadu between private and state-controlled banks/FIs is driven by two factors which contribute to a non-level playing field for municipal debt and limit borrowing from private sector. First, institutions like TNUDF and TUFIDCO offer concessional terms relative to market borrowing. Such terms and accompanying grant funds are not available when city agencies seek to raise private financing. Second, loan approvals by these institutions are linked with infrastructure programs and schemes of GoTN. For instance, loans from TNUDF are often towards pre-identified projects selected for support under multi-lateral programs. Loan sanctions follow a well-laid out appraisal process guided by TNUDF's lending policy and its delegation of powers, compared to private financing which requires ULBs to seek case-by-case approval of GoTN.

5.3. Intermediation of Demand & Supply: state-level regulatory and policy factors

The regulatory framework at the state level is not conducive to creating an environment where regular borrowing and/or PPP transactions can happen for urban infrastructure, despite a relatively robust framework at the national level which facilitates the supply of private financing. This is because of poorly defined regulatory systems at the state government level, heavy reliance by city agencies on state government authorization and discretion at the level of each transaction, and weaknesses and lack of clarity in ex-post procedures to provide dispute resolution with investors and deal with potential defaults by ULB on borrowing, resulting in investors facing substantial risk.

The relationship between state governments and city agencies – and the regulatory and oversight role of state governments - underpins and influences all aspects of urban infrastructure financing regardless of source of financing. As shown in previous chapters, state governments have the paramount role in overseeing all affairs of ULBs and city agencies in their territory. This includes having primary responsibility to regulate the mandates, scope, and financial activities of all ULBs, city agencies and utilities, including all aspects pertaining to accessing (public or private) commercial sources of finance. This set of powers include most factors which determine the demand for all commercial financing by ULBs and city agencies as well as the intermediation of demand and supply of finance.

The state-level policy and regulatory framework is not in itself prohibitive of private financing, but the nature of this framework and the institutional and political relationship between states and ULBs involves a tightly controlled set of financing activities, covering both borrowing and PPPs. All financing transactions are mandated and authorized with state government support. This effectively means that ULBs are functioning more as agencies of the state government rather than as independent market players. This inevitably dampens financing activity and investor appetite, resulting in limited number and volume of transactions. In many cases, state governments are both the authorizer as well as the financer of transactions, as documented in the case of TNUDF and TUFIDCO in Tamil Nadu.

state governments are responsible for the full set of ex-ante rules, regulations and procedures determining access to, and origination of, all sources of finance. This includes regulations and procedures pertaining to the purpose, authorization, limits, financial characteristics, tenor, types of securities offered, sources of repayment and accounting, reporting and disclosures related to borrowing or bond issues, and similar aspects for PPP transactions especially rates and levels of tariffs, service charges etc. While the nature of specific regulations varies somewhat across states, key features of state- level regulations governing ex-ante aspects of financing are summarized below[32]:

- **Approval for municipal borrowing:** ULBs require the approval of state governments to borrow in all states, often on an individual case-by-case basis. In some cases (such as Tamil Nadu) a financial plan is approved whereafter ULBs are free to borrow within the limits contained in such a plan without further approval. However, the process to grant these approvals is not clearly defined to guide ULBs in most states. Most states allow ULBs to raise loans for specific purposes including project implementation, land acquisition etc. In a few states, short-term loans for bridging recurring expenditure (paying salaries and dues) are explicitly prohibited.
- **Loan limits and structures:** Most states stipulate borrowing limits and loan tenors in law (Gujarat being an exception) using a variety of standards such as the volume of total borrowing, value of ULB-owned property, size of potential tax base. Such limits are not tied to actual creditworthiness or borrowing capacity of ULBs, and data available to develop these indicators are poor. Thus, they are not an effective way to assess, manage or mitigate borrowing risks.
- **Security:** All states allow for pledging and escrow of local revenues as a form of security, and most loan transactions are characterized by such structures. Three states (Gujarat, Maharashtra and Andhra Pradesh provide for explicit support for hypothecation of municipal assets which provides additional clarity. Limits on mortgaging assets are generally restrictive in many states.
- **state guarantees:** The issuance of state guarantees for municipal loans has been impacted by introduction of Fiscal Responsibility legislation in several states. Issuance of such guarantees requires approval of finance departments of the state government. The criteria for issuance of guarantees, authorization process and timing are unclear.

There is also weakness and lack of clarity in ex-post procedures to provide dispute resolution with investors and deal with potential defaults by ULB on borrowing, which substantially increases the risk for investors. State governments are responsible for dealing with such situations, including potential intervention in case of municipal/city default, reorganization, and debt work-out arrangements. In general,

[32] This section draws on The World Bank 2011 report on municipal borrowing in India - with updates to reflect current practice – as there has not been substantial change since then in state-level rules and regulations pertaining to debt financing for municipalities, ULBs and city agencies. That report may be consulted for a detailed discussion of these regulatory constraints, which are re-stated here in brief.

the ex-post regulations are weak and there are limited to no institutionalized frameworks or procedures to implement ex-post interventions to deal with such situations. Further, as in ex-ante procedures, there has been very limited improvement in the last decade in clarifying and establishing procedures to deal with cases of default by city agencies on municipal borrowing, and clear dispute resolution mechanisms to deal with problems in PPP transactions and rights of investors. The World Bank's 2011 report on municipal borrowing in India provided an assessment of these issues and proposals to address them. As that report notes, "the prevailing regulatory regime for municipal borrowing dampens potential borrowing activity and makes the sector unattractive for investors relative to others. Both borrowers and lenders run substantial transaction risk."

This highly centralized direct control framework contrasts with international best practice, which primarily include market-based or rules-based systems. This includes well-established frameworks such as South Africa, Philippines, Poland, Hungary and Mexico among emerging economies, and the United states, United Kingdom and Austria among industrialized economies.

5.4. Summary and Implications

The discussion above has shown that the primary constraints preventing higher volume of private financing for urban infrastructure in India are on the demand side. These are: the policy and political economy decisions impacting revenue levels and funding base for private financing; weak absorptive and implementation capacity of city agencies for capital expenditure; and the restrictive inter-governmental framework which reduces accountability and incentives for city agencies. The demand side has a critical role as it needs to initiate the process – but these factors do not allow adequate demand to be developed and elicited. The next most critical constraint appears to be state-level regulatory and policy factors which intermediate demand and supply of finance. These are aggravated by a set of secondary constraints including factors related to the financial market that dampen supply of finance, and weak financial management and fiduciary performance. Table 14 summarizes these constraints considering this report's analytical framework.

This shows that the binding constraints are not primarily on the supply side but related to the demand side and the regulatory frameworks which intermediate demand and supply. Since supply tends to follow demand, there will not be an adequate supply-side response unless such demand-side and regulatory constraints are resolved. The case of South Africa is illustrative: municipal borrowing expanded significantly and rapidly (in nominal terms) once regulatory and demand side (or 'creditworthiness') issues were systematically addressed in the mid-2000s. Such borrowing – from both private and public sources of financing - had remained relatively stagnant for the decade prior to these reforms but grew almost 3.5 times in nominal terms in the period 2006/07 to 2020/21[33].

[33] See the Municipal Borrowing Bulletin periodically issued by the National Treasury of Republic of South Africa.

Table 14. *Summary of key constraints impacting demand for, and supply of, private commercial financing for urban infrastructure in India*

	Factors impacting Private Financing	Key Findings
	Demand for Private Financing	
1	Revenue policy & revenue mobilization effort	Weak funding base for private financing due to policy decisions on low revenue levels for local taxes and service charges
2	Absorptive capacity of city agencies ("ability to execute")	Weak absorptive and implementation capacity limits overall infrastructure delivery even in large cities, driven by institutional weaknesses (e.g. weak strategic planning to develop pipeline of viable projects; low capacity to design and structure complex projects/PPP transactions and deal with private investors/FIs
3	Intergovernmental Institutional & Fiscal Framework (Mandates, Funds & Incentives)	Weak and fractured functional devolution for ULBs with weak accountability and perverse incentives facing ULBs. Reinforces dependence of ULBs
4	Fiduciary quality: financial management, data etc.	Weak fiduciary capacity, quality and data of city agencies undermines investor confidence and creditworthiness
	Supply of Private Financing	
5	Depth and character of the financial sector	Regulatory framework at national not prohibitive to private financing with improvements in last decade. But supply of financing from state FIs under non-level playing field crowding out private finance
	Intermediation of Demand & Supply	
6	Rules of the game - Regulatory framework for commercial financing of urban infrastructure	Highly centralized direct control framework by states over ULB financing, opposite of international best practice, not conducive to creating environment for private financing

This report shows that low levels of private financing in urban infrastructure is primarily a fiscal and institutional problem. To a significant extent, India does not necessarily have a problem pertaining only to low private financing in urban infrastructure, since the low levels reflect these institutional and fiscal realities outlined above. Financing will remain constrained until the existing fiscal and institutional realities shift, with policy decisions to increase taxes and user-charges to economic levels so that the investment finance required for municipal infrastructure can be funded. Thus, it is worth stating that the most important reforms to increase private financing for urban infrastructure have little to do directly with such financing itself.

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Chapter 6.
Proposals for Policy Actions

6.1. Two pathways forward: structural reforms and targeted incremental actions

Investment in urban infrastructure and services remains significantly short of needs across India. A history of initiatives notwithstanding, private financing through borrowing and PPP has not attained anywhere near the desired scale and volume. The review of trends and constraints in this report shows that increasing private financing to a level that makes a substantial contribution to urban infrastructure needs depends on improving the revenue base, creditworthiness, and institutional capacity of ULBs and city agencies.

Despite these constraints, there is a set of large high potential cities which are currently not leveraging sufficient commercial financing relative to their current potential and thus should be the focus of immediate attention via targeted support to provide incremental progress. This report showed that 27 large MCs nationwide (excluding Mumbai) which received an investment grade credit rating under AMRUT have the financial capacity to currently borrow an additional USD 7.7 - 8.4 bn on commercial basis, which is more than 20 times their existing level of debt stock. Mumbai ULB alone can borrow an additional USD 5 billion. While this is still well below the required investment needs in these cities it also shows that they can borrow substantially more even at current or slightly higher levels of revenue growth. These 28 cities (including Mumbai) account for about a fifth of India's urban population. This pool of relatively high potential cities can be further expanded to include other MCs in the 4 states classified as Cluster 1 in earlier chapters (namely Gujarat, Karnataka, Maharashtra, Tamil Nadu). These cities did not receive investment-grade credit rating but can improve their creditworthiness with additional effort and technical assistance. This takes the total of high potential cities to around 70, covering an estimated 29% of the total national urban population, and provides the starting point for focused attention for incremental change in the short- to medium-term.

Policy actions to address this gap require a combination of structural reforms to address some of the core binding constraints as well as a set of incremental and targeted actions that facilitate private commercial financing flows in the short- to medium- term. This chapter proposes actions under both these broad categories.

6.1.1. Structural reforms to address core fiscal and institutional constraints

A set of reforms are needed to address the core fiscal, institutional and revenue constraints for all cities, which will have a fundamental impact across the system on increasing private financing for urban infrastructure. If actions on these areas are not taken, private financing will remain low in the medium to long term.[34] This wide-ranging reform agenda broadly covers the following aspects:

- **The inter-governmental fiscal transfer system (at both national and state levels) should move to a more stable, formula-based, and unconditional fiscal transfer regime.** About half of all fiscal transfers to ULBs currently are tied funds for specific projects which creates accountability and incentive issues as shown earlier. A reformed fiscal transfer system will address some of the identified long-standing issues across all types of cities. The report to the 15th Finance Commission also recommends an increase in unconditional transfers to ULBs to 0.32% of GDP by FY25. Well-designed conditional transfers, such as performance- or results-based financing, can also improve institutional outcomes, as seen in some states where such mechanisms are under implementation. Growth in fiscal transfers should be pegged with nominal GDP/GSDP growth with a phased increase in the share of untied devolution transfers.

[34] The fact that these reforms are outlined here does not imply that it is believed these reforms are all – or even mostly - likely. As noted, the areas to be addressed may not be tractable in the short-medium term. The point, however, is that the scope for mobilizing private commercial finance into urban infrastructure will always be limited to the extent that these constraints are not addressed.

- **Cities' fiscal base will be improved by addressing revenue constraints through buoyant revenue base and cost recovery of services.** The critical policy reform needed to improve the fiscal and revenue base and municipal creditworthiness is the need for a buoyant local revenue base and cost recovery of urban infrastructure investments, through revising property taxes, user fees and service charges and other specific revenue streams. Without drastic changes in the user charges regime directed at charging more economic rates, PPP projects will predominantly depend on fiscal support via availability payments for bankability. The goal should be to double OSR of key ULBs and parastatal agencies every five years, as that is the level of growth needed to support a funding base sufficient enough to raise commercial financing for estimated investment needs. States should also rationalize user charges to cover all O&M costs in municipal services for which tariffs can be levied. The 15th Finance Commission has already recommended steps in this direction by linking the devolution of fiscal transfers to ULBs to OSR improvement (specifically improvements in property tax revenue, through both revised rates and stronger collection performance) as well as fiduciary measures such as the conduct and disclosure independent audits of annual accounts. GoI is adopting these recommendations as eligibility criteria for fiscal transfers and as possible entry level conditionalities in future Urban Missions.
- **Gradually increasing the mandates of city agencies will improve their accountability and incentives.** As has been frequently argued elsewhere, states should aim to gradually transition urban service delivery functions to ULBs and city-level institutions consistent with principles of the 74th Constitutional Amendment Act[35]. As an example, state-level management of urban water and sewerage functions may be devolved in a time-bound manner. An improved urban legal framework that includes a stable and certain fiscal transfer regime, accords financial powers to ULBs along with attendant rules/regulations to operationalize commercial financing will resolve several of the identified institutional constraints. These reforms will improve creditworthiness for a larger set of cities and progress on these aspects, or lack thereof, will determine the medium- to long-term scale of investment flows for urban infrastructure.

The importance of increasing OSR performance to fill the urban investment gap and raise commercial financing for this purpose can be seen from the following estimate: If aggregate OSR for ULBs nationwide can be doubled every 5 years over the next 15 years (which requires OSR to increase by 16% per annum over this period), the capital expenditure capacity of ULBs can increase to about 90% of their investment needs over this period. Crucially, at such levels of OSR, as much as one-fifth of this investment can be met through raising commercial financing in this scenario (subject to certain assumptions). On the other hand, under a business-as-usual scenario where OSR increases at the historical growth rate of around 10% per annum over the next 15 years, the capital expenditure capacity of ULBs will cover only 70% of their infrastructure investment needs over this period, and only 8% of this investment can be met through commercial financing, as OSR levels will be too low to support higher commercial financing. These estimates highlight the importance of increasing the OSR base to expand urban investment capacity.

This list of policy actions is to address the existing structural issues with fiscal transfers and low ULB revenues to provide sufficient funding to pay for commercial financing, without which such financing will be highly constrained. These proposals also reflect long-standing political economy issues on which progress is likely going to be difficult. Given this, a set of targeted actions are also proposed to provide incremental progress in a set of high potential cities.

6.1.2. Targeted actions to provide incremental progress in medium term in selected high potential cities

Beyond the structural constraints which may be intractable in the shorter term, the situation varies across different types of ULB, with a group of large, better financially endowed cities ready for focused support. This can catalyze financing and demonstrate outcomes for wider replication. This set of 28 high potential ULBs already have a relatively stronger revenue base which is not being fully leveraged and better institutional capacity, and they are essentially creditworthy at this stage. The challenge is to enable them to reach their full potential of commercial finance. Previous flagship missions have tended to support a larger number of cities (e.g., 60+ under JNNURM, 100+ under SCM, and around 500 under AMRUT).

[35] See, for example, work done by O.P. Mathur and others, including: O.P. Mathur and G. Peterson (2006).

For this group of cities, institutional factors appear to be key constraints including absorptive and implementation capacity and muted incentives to perform at a high level of investment expenditure, as evidenced by unspent recurrent surpluses, slow implementation of projects including GoI Urban Missions, compounded by other factors such as weaknesses in the regulatory frameworks, as outlined in the previous chapter. In significant respects, these are also structural factors with a political economy basis and are not anticipated to see rapid change in circumstances. However, as evidenced by some transactions, such as the occasional municipal bond issues and PPPs, it is possible to get some traction on some of these issues, including expanding absorptive capacity of MCs within the current basic ULB-state structure, which is aligned with the incentives of state-level leaders. There are also a set of non-structural actions possible, outlined below, which are currently feasible and tractable, but would bear fruit as absorptive capacity constraints are addressed to provide higher demand for financing. This is where the short- and medium-term proposals of this report are focused.

The selected set of targeted actions which will provide incremental progress in the nearer term includes among others: actions to provide facilitation, technical assistance, institutional strengthening and capacity building for ULBs and municipal utilities to increase their absorptive capacity (investment planning and project design and execution) and their ability to interact with and conduct private financing transactions with investors; financial management; service delivery accountability at the city level; information dissemination, convening, and "building the case" among stakeholders for private investment in urban infrastructure; and removing specific market frictions in the supply of financing and the regulatory environment.

Increased commercial financing will also bring substantial additional benefits beyond helping bridge the large financing gap. GoI and state governments should also prioritize increasing market-based borrowing due to the potential role of commercial borrowing in inducing improved financial management practices in ULBs and city agencies. Commercial borrowing enforces a level of financial discipline in the borrowing agency, which improves overall fiduciary quality. This can be considered as "demand-driven improved creditworthiness" as opposed to the supply-driven improvements in creditworthiness which have generally been the norm in India due to municipal borrowing targets under GoI Urban Missions and top-down incentives by GoI for financial sector participants to increase municipal lending. Further, PPPs also play a substantial role in professionalizing the provision of key basic services and infrastructure, by introducing technical competence and discipline in these sectors. These non-monetary benefits of commercial financing are substantial. They help further improve both the absorptive capacity and creditworthiness of cities.

To implement these actions, state governments have a primary role to play in creating conditions that enable higher levels of private financing, given their position in overseeing all affairs of ULBs and city agencies as shown in this report. Thus, most of the needed reforms fall to state governments. GoI can provide additional technical assistance to states across this entire spectrum of substantial and incremental reforms. It can also use its primary position as regulator and facilitator to advance reforms, facilitate and convene stakeholders and help address specific constraints in the intermediation between demand and supply of private financing.

The following sections describe specific policy actions that GoI and state governments can undertake to address the identified constraints.

6.2. State-level actions to address constraints on demand for financing and the regulatory environment

6.2.1. Increasing demand for private financing in selected high potential cities

Improving cities' absorptive capacity: state governments should focus first on improving the absorptive capacity of large, financially endowed cities that will help improve demand for private financing. This can include the following actions:

- **Strategic capital investment planning and building a pipeline of investment projects in specific large cities.** States should support cities and monitor the preparation of prioritized multi-year investment and financing plans considering service gaps, identified sources of financing and visible fiscal transfers; and provide policy guidance to operationalize these investment and financing plans at ULB level.

- **Improving capacity of ULBs and city agencies in specific large cities to develop and implement bankable projects and complex PPP transactions.** This should be done through dedicated city-level technical assistance and advisory activities to the respective city agencies, and development of state-level frameworks & standards. States should aim to strengthen institutional capacity and creditworthiness of ULBs and parastatals to position them as credible counterparties for private investors and FIs.
  - Access to skills/people with the expertise to design commercial transactions for private financing and engage with private investors/financiers is also critical to the ability of cities to attract private capital and manage the process of accessing that capital. States should work with ULBs to have such capacity available, either internally or outsourced. States should improve the capacity of municipal staff for this work including their ability to interface with and manage private investors/financiers.
  - This is especially important for PPPs, where state governments need to work closely with city agencies to prepare specific projects (and a pipeline of projects) in high potential sectors and services, including MSW, bus services/terminals etc. and implementing threshold reforms required to improve bankability of these projects. State governments and the high-potential cities should have a strategic focus on prioritizing the development of a set of PPP-viable projects rather than one-off transactions.
- **A program of performance-based fiscal transfers can help improve absorptive and institutional capacity of ULBs** across a range of required aspects. Such a program can link these performance-based fiscal transfers to institutional results (related to investment planning, project execution capacity, service delivery outcomes, among others) rather than tied to specific investment projects. Such a program can supplement existing unconditional, formula-based fiscal transfers.

Demand for financing – and incentives of ULBs to access this financing - will also increase if state governments increase decentralization of capital expenditure decisions to ULBs, by delegating higher administrative sanction powers at ULB level, starting with larger Corporations, and mandating operational service delivery targets.

Improving cities' fiduciary & financial management quality and OSR performance: Municipal creditworthiness and funding capacity of ULBs and utilities will improve through better public financial management systems. State governments can undertake a wide set of actions to improve this aspect. This includes among others: developing (or implementing national-level) accounting standards for ULBs and standards for financial auditing and disclosures of financial statements; ensuring availability and consistency of reliable financial data; improving the ability and capacity of ULBs to collect recurrent revenue from their assigned sources, through better fiduciary systems, human resources, and information technology tools, among others; and improving the capacity of local human resources responsible for running ULBs and city agencies. These actions will collectively provide confidence to investors/financiers on the overall quality of financial management and revenue systems.

6.2.2. Improving state-level regulatory environment for private financing

state governments need to revise the regulatory environment to create more conducive conditions for municipal borrowing and PPP activity. Proposed actions include the following:

- **Revising ex-ante rules and procedures governing ULB access to private finance especially borrowing:** States should transition to a rules-based allocation/funding process instead of a direct control system whereby every individual transaction is approved on a case-by-case basis upon application of a ULB / city agency. Most of these policy actions were also recommended by the World Bank in its 2011 report on municipal borrowing in India, and there has not been any significant change in the status quo at the state level since then (World Bank 2011). That report may be consulted for a detailed treatment of each of these, which includes specific recommendations for regulations concerning transactional approval processes; purpose of borrowing; limits on long-term borrowing; terms pertaining to use of municipal assets as security and collateral; and, finally, provision of guarantees by the state government.
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- **Clarifying and improving ex-post procedures to provide dispute resolution with investors and deal with potential defaults by ULB on borrowing:** Similar to ex-ante procedures, there has been little improvement in the last decade in clarifying ex-post procedures to deal with cases of default on municipal borrowing, and clear dispute resolution mechanisms for problems in PPP transactions and rights of investors. Systematic support is needed for dispute resolution between city agencies and investors/creditors, for both borrowing and PPPs, to reduce investors' risk perception. A key element to success of PPPs is the presence of credible public counterparties that can hold the private partner accountable while honoring its contractual obligations; and the existence of a credible dispute resolution mechanism in case such obligations are not met. State governments should also create formal, institutionalized Administrators responsible for municipal insolvency resolution within existing laws, and over the long term, formally constituted Municipal Debt Tribunals. The 2011 report provides detailed assessment of these actions.

State governments should also aim to reform the state-controlled FIs to transition from concessional financiers to more sophisticated entities which facilitate private financing. As noted earlier, these FIs are crowding out private finance by providing debt to city agencies generally on non-market, concessional bases; and have not been able to raise financing themselves from the financial market. In large states like Tamil Nadu and Gujarat there is minimal debt financing on market basis, despite substantial potential, possibly due to the presence of such institutions. Over time, these institutions could transition to become financial support facilities which undertake the functions such as a) providing technical support and/or financing to ULBs and city agencies for project preparation and origination of transaction; and b) providing financing or credit enhancement facilities through limited underwriting designed to leverage and crowd-in private financing (e.g. partial risk guarantees routed through commercial banks) rather than fully financing loans to ULBs.

6.3. Central Government-level actions to support ambitious reform agenda and incremental progress

To help state governments achieve this ambitious and wide-ranging reform agenda, GoI can provide substantial assistance using its primary position as regulator and facilitator to advance reforms, facilitate and convene stakeholders, provide targeted technical assistance, and help address specific constraints in the supply of financing and its regulatory environment. It can undertake several incremental actions which can be readily implemented.

GoI can undertake these policy actions under two inter-related categories which will help develop the overall market for urban infrastructure finance and provide support to specific cities and transactions: First, it should provide facilitation, technical assistance and capacity building support to states and target cities and help remove specific market frictions. Second, it should use its position as regulator and facilitator for dissemination of information, convening stakeholders, and building the case for private financing for urban infrastructure.

6.3.1. Facilitation, technical assistance, capacity building and removing market frictions

Developing a Cities Investment Support Unit: GoI could establish a dedicated structure, such as a Cities Investment Support Unit, to focus on urban infrastructure finance within an appropriate Ministry to assist specific states and cities with regulatory reform, transaction preparation and implementation for private financing including borrowing and PPP transactions.

This Unit should focus its activities (either conducted on its own or in partnership with relevant Ministries, agencies, and other stakeholders) initially on the 28 large cities which are currently best placed to access private financing, followed soon after by focusing on the additional set of high potential cities in the 4 states classified as Cluster 1 in earlier chapters (namely Gujarat, Karnataka, Maharashtra, Tamil Nadu).

This unit can have the following activities:

- Nurturing partnerships between GoI agencies and regulators, states, selected ULBs, and financial sector organizations (such as potential lenders and institutional investors), including through

convening a working group of national and regional stakeholders to build and maintain consensus on means for increasing private finance for urban infrastructure.

- Supporting and mentoring states, ULBs, and other potential borrowers with technical assistance and training in developing long term financial strategies, interacting with financial markets, and related matters, including through provision of access to skills/people with the expertise to design commercial transactions for private financing and engage with private investors/financiers. This Unit should work with states and ULBs to have such capacity available, either internally or outsourced, including their ability to interface with and manage private investors/financiers. This can include a network of independent infrastructure finance advisors to work with potential borrowers in preparations for, and interactions with, the capital markets.
- Technical assistance to states on improving the fiscal and regulatory frameworks, including assistance on specific land value capture instruments to help finance infrastructure.
- Supporting states to remove specific hindrances, such as reforming processes for borrowing and transaction approvals – especially the differentiated processes for public or private commercial financing
- *Supporting states improve financial management of cities:* While there exists a national accounts manual used by GoI and state governments, the apparent absence of a standard chart of accounts for ULBs is a bottleneck to be readily addressed. GoI can advance this reform building on progress in several states on standardizing accounting standards for ULBs, in consultation with Accounting Standards Board and MoF.

6.3.2. Information dissemination, convening, "building the case"

A key role of the GoI will be to use its convening and regulatory powers to shape this agenda at scale. The ability to mobilize others through convening power will be important to building the market for private financing of urban infrastructure. This will be a leading role for GoI Ministries in collaboration with state Governments and the set of financial sector regulatory agencies. The following is a set of actions that can be taken:

- **Sharing strategies with prospective financiers through dialogues:** Working with interested state and city officials, GoI can convene workshops for various lender and investor groups and selected borrowing ULBs to build relationship between lenders/investors and borrowers based on long term infrastructure and financial plans. International experience shows that FIs often do not fully understand municipal finance while city officials are not acquainted with what is needed to provide comfort to prospective investors. Potential lenders and investors include banks, pension funds, insurance companies, fund managers etc. with each type of institution having its preferences, requirements, and investment appetite. Each type of FI / potential investor needs to be consulted to understand their appetites for various instruments and terms, governance and regulatory constraints, and their potential role in developing the municipal debt market.
- **Building the business case for urban investment:** Dialogues convened by GoI will also help expose FIs to the potential of the market for financing urban infrastructure, to GoI's policy toward such investments, and to revenue streams available to support infrastructure financing. Such dialogues can provide information about the potential size of the potential market and can help state governments and GoI formulate appropriate polices and expectations. It is suggested to create an Urban Finance Working Group to facilitate this. Experience from South Africa shows that such a working group, housed in its National Treasury, convenes stakeholders including public and private FIs, officials from cities that borrow for infrastructure, rating agencies, etc. It can provide an opportunity for GoI to disseminate data and signal and test policy initiatives and for cities and FIs to present needs and constraints.
- **Building and expanding data systems and information disclosures on urban financing:** A thriving ecosystem of private investment will include credible and publicly available data, and independent analysis and research on municipal finance trends. Building on MoHUA's new portal providing analytical inputs from audited financial statements of ULBs nationwide (www.cityfinance.in), investors will benefit from systems that provides readily accessible data on municipal finance and investment needs. This should be continuously updated and include data about borrowing,

maturities, structures etc. If possible, such data should be integrated into, or draw from, broader municipal finance database(s) that would also provide information on operating and capital budgets, quarterly statements of financial performance, and audited financial statements. GoI Ministries can work with financial sector regulators to support dissemination of information on borrowing of ULBs and urban parastatal bodies. While RBI can work with banks to publish information on borrowing, SEBI can facilitate a repository of information on municipal bond transactions (past and planned). RBI may also prepare periodic report on ULB finances along similar lines as its state Finances report. In addition, state Governments should be asked to disclose all approvals accorded for borrowing by ULBs and parastatals along with total loans sanctioned, disbursed and repayment track records.

References

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