Financing Urban Infrastructure in India: A Review

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In most Indian cities, the problem of financing of urban infrastructure is acute and most of the challenges of financing are still unanswered. The condition is worse for the urban governance where many of the urban local bodies are heavily dependent on the higher tier of government in the shape of grants. The chronic fiscal ill health owing to continuous huge revenue deficit has hamstrung the functioning of the local governance resulting poor performance of civic services and infrastructure. The high rate of urbanization coupled with industrialization and economic development is exerting significant additional pressure on civic services and infrastructure across cities in India. In order to meet these growing challenges, the present scenario of the urban infrastructure financing needs overall reforms. The recent past has seen increased attention being given by the Central and State Governments to improve the delivery level of municipal civic services and infrastructure by providing adequate funds and financial support in their plan, policies, and programmes etc. The main purpose of this research article is to undertake a review of infrastructural finances in India and suggest possible way outs to make the urban local bodies with efficient and improved services and infrastructure. The reforms suggested by 12th and 13th Central Finance Commissions, JnNURM, 74th CAA, HPEC, etc are considered in the paper. All these can collectively equip urban local bodies better for averting risk in the face of rapid urbanization and urban growth.

Keywords: urban infrastructure, municipal bonds, investors, public private participation.

1. Background

India is the second largest country in the world with a population of over 1.21 billion accounting for 17.5 percent of the world population (Census of India, 2011). The urban population grew at a rate of 31.16 percent during the last decade to 377 million (Table 1). Number of towns has also increased from 5161 to 7935 during the last decade 2001-2011. The report of Technical Group on Population projections of National Commission on Population, 2006 shows that the Indian population is expected to increase from 1029 million to 1400 million during 2001-2026 with an increase of 36 percent at the rate of 1.2 percent annually. The rate of urbanization in India has remained comparatively higher that its South Asian counterparts. The report of working group on Urban Governance prepared by Planning Commission has mentioned that the urban areas have become areas of intense mobility, socio-economic activity and hope for a large number of the population.

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Table 1: Population of India during 1951-2011

Year	Total Population (in million)	Urban Population (In million)	Level of Urbanization
1951	361.1	62.4	17.3
1961	439.2	78.9	18.0
1971	548.2	109.1	19.9
1981	683.3	159.4	23.3
1991	846.3	217.6	25.7
2001	1028.0	287.6	28.0
2011	1210.1	377.1	31.2

Source: Census of India

The Report of the Sub-Committee on Financing Urban Infrastructure (2012) prepared by MoUD, Government of India reveals that States with higher Gross Domestic Product (GDP) have higher levels of urban population namely, Gujarat, Maharashtra, Tamil Nadu, Karnataka are significantly more urbanized than Uttar Pradesh, Bihar and Orissa. The high rate of urbanization, industrialization and economic development is exerting significant additional pressure on civic services and infrastructure across cities in India. The demographic pressure on urban infrastructure and services has mounted and is expected to scale further in the future years. The report of High Powered Expert Committee (HPEC-2011) has mentioned that the ability to manage urbanization and prepare cities for their new role is one of the biggest challenges facing India's planners.

Urban Local Bodies (ULBs) in India are among the weakest in the world both in terms of capacity to raise resource and financial autonomy. Many of them are not able to raise adequate resources from their internal resources to meet increasing expenditure on services. Hence, they are heavily dependent on the higher tiers of the government for funds towards services and infrastructure. However, the capital requirements of ULBs are enormous and the flow of government grants is not sufficient to meet the needs for their future requirements. Further, the chronic fiscal ill health owing to continuous huge revenue deficit has hamstrung the functioning of the local governance resulting poor performance of basic services. Most ULBs are under pressure to extend municipal services to rapidly growing populations. Much of the backlogs and inefficiency in services and management are attributable to insufficient investment in both creating new facilities and maintenance of the existing systems.

A study conducted by the Twelfth Finance Commission reveals that ULBs' share in own taxes is around 3 percent and their total revenue is less than 0.75 percent of Gross Domestic Product (GDP) for several years now leaving little room for capital expenditure. Research documents show that there are wide differences among various ULBs in tax jurisdiction, degree of control exercised by the State Governments in fixing the tax base, tax rate and tax exemption.

In order to meet these growing challenges, financing urban infrastructure through market-based financing and PPP would be a viable alternative to improve the financial health of the ULBs in

India. Urban infrastructure financing enables ULBs to extend and improve municipal services. ULBs in India have been their infrastructure financed mainly through budgetary allocations, grants from state and central governments, and other financial institutions like Housing and Urban Development Corporation (HUDCO) and Life Insurance Corporation (LIC) and with limited investments by the ULBs themselves through their internal resources. Financial resources from all these sources however, fall far short of the urban sectors estimated investment requirements. Urban infrastructure and services in India are grossly inadequate and of poor quality. Most infrastructural services are grossly underpriced, with no incentives with institutions responsible for their provision to link the cost of service provision with price or tariff. Hence, the present scenario of the urban infrastructure financing needs reforms and innovations across states and local governments.

With the above background, an attempt has been made to provide a comprehensive review of the financing perspective of urban infrastructure in India and suggest possible ways to make the urban local bodies more efficient with improved infrastructural Service.

2. Financing Urban Infrastructure in India

As discussed above, local governance in urban areas suffers from various financial and institutional constraints that affect adversely its service delivery efficiency. The 12th Finance Commission reveals that there are vertical and horizontal imbalances related to fiscal transfers from central government to state government and allocation of transfers among the state governments. Literature shows that vertical imbalance is constitutionally in-built and correction to the same needs to be achieved through reforms in the structure of fiscal federalism, including revenue assignment and inter-governmental transfers. The financial support from the State Governments is insufficient as most of the State Governments have not been in a position to provide sufficient funds to their ULBs as per the recommendations of the State Finance Commissions. The worsening fiscal position of the State Governments affects the ULBs adversely.

The Committee on Indian Infrastructure and Services estimates the total investment requirements of Rs. 39.2 lakh crore for urban infrastructure over the twenty year period i.e. 2012 to 2031. Of this, Rs. 17.3 lakh crore (or 44 percent) is accounted for by urban roads. The backlog for this sector is very large, ranging from 50 percent to 80 percent across the cities of India. Sectors delivery urban services such as water supply, sewerage, solid waste management and storm water drains will require Rs. 8 lakh crore (or 20 percent). Further, the Committee has made provision of Rs. 4 lakh crore towards investment in renewal and redevelopment including slums and Rs. 1 lakh crore for capacity building. The O&M requirements for new and old assets are also projected at Rs. 19.9 lakh crore over the 20 year period of which Rs. 18.1 lakh crore will require for 8 core services i.e. water supply, sewerage, solid waste management, storm water drains, urban roads, urban transport, street lighting and traffic. The Jawaharlal Nehru National Urban Renewal Mission (JnNURM) estimates the investment requirements of Rs. 1.2 trillion over the next seven years (Wadadekar, 2011). Currently, the grants from JnNURM remain the main funding source for urban infrastructure projects in India. The Steering Committee on Urban Development for Eleventh Five Year Plan of India estimates the fund requirement at Rs.12,702 billion for the implementation of plan target in respect of water supply and sanitation, sewerage, drainage and solid waste management. Since a large investment is required for financing of urban infrastructure, the municipal authorities have to look for viable alternative sources for financing their infrastructure costs. Due to huge capital requirements associated with infrastructure provision and the limitations with Government finance, various market based financing instruments such as municipal bonds (taxable and tax free), pooled bond financing, and public private partnership.

3. Market-Based Financing for Urban Infrastructure

The most important option for ULBs in India is to access the market-based financing for their infrastructure which includes various type of financing alternatives i.e. municipal bonds, municipal credit rating, and pooled financing. Several municipalities and utility organizations have issued bonds that so far have mobilized over Rs.12,316 million through various infrastructure instruments. All these alternatives for financing infrastructure investment have been discussed in the subsequent sections.

Municipal Bonds

Since the municipal bonds hold good potential in urban infrastructural development and financing, it becomes an attractive source of income for local governments for urban infrastructure projects. Municipal bonds may be general obligations of the issuer or secured by specified revenues. Municipal bonds are visibly in only a small portion of the capital market in India. In India, two types of municipal bonds are generally issued by ULBs i.e. taxable bonds and tax exempted bonds with or without state guarantee to raise funds. Taxable bonds are one of the highest yielding debt instruments for the Government whereas the cost of borrowing of the issuer is lowest in case of tax exempted municipal bonds.

Taxable Municipal Bonds

The first Indian ULB to access the capital market was Ahmedabad Municipal Corporation (AMC) which raised `1000 million through municipal bonds issued without state guarantee in January 1998. Several other cities have also accessed the capital markets through taxable municipal bonds without state guarantee to finance water and sewerage schemes or road projects including Nashik, Nagpur, Ludhiana, Madurai and Visakhapatnam (Table 2). India's city governments have mobilized about Rs. 4,450 million from the domestic capital market through taxable municipal bonds (Vaidya and Vaidya-2008).

It is significant to note that most of the municipal bonds issued so far have been without a government guarantee. The success of these issues demonstrated that ULBs can assess the capital market to finance the efficient delivery of basic services. The ability of ULBs to take advantage of these opportunities, however, depends on their presenting themselves as viable financial entities. Another prerequisite for issuing municipal bonds is development of commercially viable projects, projects that can never full costs, including the cost of debt services (Vaidya and Vaidya, 2008). Only financially healthy ULBs are in a position to directly access capital markets whereas financially weak ULBs can be assisted by providing the pooled financing funds.

Table 2: Taxable Municipal Bonds in India

City	Year of Issue	Amount (in Rs. million)	Placement	Annual Interest Rate	Purpose	Rating
Without State Guarantee						
Ahmedabad	1998	1000	Public & Private	14%	WS&S project	AA-(SO)
Ludhiana	1999	100	Private	13.5% to 14%	WS&S project	LAA-(SO)
Nagpur	2001	500	Private	13%	WS project	LAA-(SO)
Nashik	1999	1000	Private	14.75%	WS&S	AA-(SO)
Madurai	2001	300	Private	12.25%	City road project	LA+(SO)
Vishkhapatnam	2004	200	Private	7.75%	Water supply project	AA-(SO)
With State Guarantee						
Bangalore	1997	1250	Private	13%	City roads/ street drains	A- (SO)
Indore	2000	100	Private	13%	Improvement of city roads	LA+ (SO)
Total	-	4450	-	-	-	-

Source: Vaidya and Vaidya, 2008

Tax-Free Municipal Bonds

Tax-Free municipal bonds attract many investors because the interest income is exempted from income tax under a new clause (vii) inserted in section 10(15) of the Income Tax Act, 1961. The Act provides tax preferences for investments in infrastructure projects. However, these provisions have not been generally available for financing municipal infrastructure. The urban development ministry issued guidelines for tax-free municipal bonds in February 2001. These guidelines stipulate eligible issuers, use of funds, essential pre-conditions, maturing period, buy-back, nature of issue and tax benefits, ceiling amount for a project, compulsory credit rating and external monitoring of the tax-free municipal bond. It provides an incentive to ULBs to improve their fiscal management. In April 2002, Ahmedabad Municipal Corporation issued first tax exempted municipal bond in India with an annual interest rate of 9 percent for 10 years to complete its water and sewerage plan, extending these services to all its 4.5 million residents, followed the Hyderabad Municipal Corporation issued a tax-free seven year bond with a rate of interest of 8.50 percent for providing urban infrastructure in the city especially in slums in May 2002 and became the second city in this context. The details of other cities which had issued tax-free municipal bonds in India are given in Table 3.

Table 3: Tax-Free Municipal Bonds in India

City Government	Year of Issue	Project	Amount (Rs.million)
Ahmedabad, MC	2002	Water supply and sewerage project	1000
Hyderabad, MC	2002	Road construction and widening	825
Nashik, MC	2002	Underground sewerage scheme and storm water drainage system	500
Hyderabad Metropolitan Water Supply and Sewerage Board	2003	Drinking water project	500
Chennai Metropolitan Water Supply and Sewerage Board	2003	Chennai water supply augmentation project	420
Ahmedabad, MC	2004	Water supply project, storm water drainage project, road project, bridge and flyovers	580
Visakhapatnam, MC	2004	Water supply system	500
Ahmedabad, MC	2005	Roads and water supply	1000
Chennai, MC	2005	Road	458
Chennai Metropolitan Water Supply and Sewerage Board	2005	Chennai water supply project	500
Nagpur, MC	2007	Nagpur water supply and sewerage project	212
Total			6495

Source: Vaidya and Vaidya (2008)

Issues and Constraints of Municipal Bonds

The accessibility of municipal bonds depends on the size of the municipalities. Only financially strong larger municipalities especially Municipal Corporations can directly access the capital markets whereas small and medium sized municipalities do not have enough financial resources to access the capital markets. The report of World Bank on Developing a Regulatory Framework for Municipal Borrowing in India stated that there have been some unsuccessful attempts at bond issuances. Nagpur attempted a bond issuance in 2007 worth Rs. 1.28 billion but was able to obtain commitments only for Rs. 210 million, primarily on account of poor market timing, due to which the potential investors were unable to utilize the tax free benefits. Similarly, Indore attempted bond issuance in 2002-03 for Rs. 500 million, but could receive commitments only for

Rs. 37.2 million due to concerns on credit quality, despite the rating. Financially sound larger municipalities in India lack the confidence of the capital market investors.

Constraints of Municipal Bonds

1. Institutional investors with long term funds face regulatory constraints on purchasing municipal bonds;

2. Due to lack of credit enhancement and credit information, the Investors generally perceive that the municipal bonds are very risky;

3. The fixed cap on tax exempted interest from municipal bonds does not respond to market conditions. It becomes unattractive;

4. There are few financially viable projects seeking more funds through bonds;

5. There is a lack of intermediation support to help bond issuers that respond to investors while issuing bonds with low interest rate and lowest possible cost of issuance;

6. Other constraints in this category are managerial and administrative which discourage potential issuers of municipal bonds; and

7. The administrative and legal reforms to streamline the capital bond market are slow and facing political resistance at local level.

Municipal Credit Rating

Municipal credit rating is a key element in enabling ULBs to issue municipal bonds to mobilize debt capital for their infrastructure projects. The rating process increases the transparency of ULB finances to both investors and citizen. Credit rating is expected to improve quality consciousness in the market and establish a more meaningful relationship between the quality of debt and yield from it. Credit rating is also a valuable input in establishing business relationship of various types (Mohd, 2011). A number of credit agencies are involved in the credit rating process, namely, CRISIL, ICRA and CARE which provide investors with an independent third party evaluation of the credit strength or weakness of a particular bond issue. The role of financing and insurance companies has been significant in funding and financing urban infrastructure projects. Their lending for urban infrastructure and services have been characterized by the directed credit regime where under different financial institutions were mandated to invest in specific priority sectors. Rating of local governments establishes a transparent credit record and a reference framework for current and future performance of local finances and debt management. In addition to providing an initial rating of a bond offering, agencies continue to monitor the capacity of the issuer to make timely payments of principal and interest throughout the term of bond. The process of credit rating of municipalities has gained wide acceptance with more than 40 towns and cities seeking credit rating from one of the accredited credit rating agencies in India. Ahmedabad was the first city received India’s first credit rating in February 1996. CRISIL, an independent rating agency, first assigned a credit rating of “A+” to Ahmedabad Municipal bonds. The Pune Municipal Corporation approached CARE for a credit rating of its proposed Rs.2000 million General Obligation Bond issue and was rated CARE AA (Wadadekar, 2011). The Urban Development Ministry initiated to develop the institutional credit rating of 47 ULBs by the Security and Exchange Board of India (SEBI). Under JnNURM, the urban development ministry commissioned the credit rating agencies namely FITCH, CRISIL, ICRA, CARE to rate the Mission cities and about 62 ULBs have been credit rated till January 2010 and out of them, 50 have received investment grade rating (Vaidya and Vaidya, 2010). Following Table 4 summarizes the key credit factors across the rating spectrum for the 43 Mission cities.

Table 4: Municipal Credit Rating under JnNURM

Rating Category	Number of Cities	City	Key Credit Factors
AAA	NIL		
AA	6	Greater Mumbai, Navi Mumbai, Nashik, Surat, Pune and Thane	Cities exhibit robust debt coverage ratios, strong finances, adequate managerial, technical and institutional abilities, healthy economic base and generate consistent revenue surpluses.
A	8	Nagpur, Kalyan, Rajkot, Vadodara, Mira Bhayanadar, Ahmedabad, Kolkata and Chandigarh	Cities in this category generally have comfortable financial risk and favourable economic base.
BBB	15	Panaji, Indore, Dehradun, Faridabad, Nanded, Bhopal, Cochin, Ajmer, Ludhiana, Trivandrum, Jaipur, Chennai, Coimbatore, Madurai and Mysore	Cities in this category have a weak financial profile, high dependence on government grants/transfers and weak project implementation abilities.
BB	10	Meerut, Asansol, Guwahati, Ujjain, Shimla, Howrah, Ranchi, Jammu, Jabalpur and Amritsar	Cities possess marginal/negative operating surpluses thereby limiting ability to borrow and service additional debt.
B	4	Bodhgaya, Jamshedpur, Varanasi, and Haridwar	Cities have inadequate and volatile grant support from State Government; poor economic base and adverse financial profile marked by poor collection efficiencies.

Source: Sujatha Srikumar, “Municipal Credit Rating-Evolution and Implications for Urban Sector Financing (Draft) prepared for NIUA, March 2010.

Continue expansion of municipalities and bond issues with credit rating mechanism will definitely increase the revenues of the Country. However the small and medium towns cannot receive credit rating due to poor budgetary condition and low revenue generating capacity due to weak economic base.

Pooled Financing

Although the accessibility of municipal bonds is available only for the larger and financial strong municipalities, small and medium sized ULBs particularly in those states that have abolished '*octroi*' do not have the ability to direct access domestic capital markets. To help small and medium ULBs to access the capital market, the Government of India introduced the concept of pooled financing under which municipal bonds can be issued for the small projects of multiple local bodies under one umbrella. Based on this model, the State Governments of Tamil Nadu and Karnataka issued municipal bonds by pooling municipalities.

Tamil Nadu was the first Indian ULBs to access the capital market through municipal pooled bond in 2003. In this year, the Tamil Nadu Urban Development Fund (TNUDF) issued a bond of Rs.30.41 crore by pooling 14 municipalities in the Chennai Metro Area with USAID Development Credit Authority guarantee for commercially viable water and sewerage infrastructure projects for 15 years with an annual interest rate of 9.20 percent. A special purpose vehicle in the form of a trust called the Water and Sanitation Pooled Fund was set up under the Pooled Finance Development Fund to issue tax exempted municipal bonds for the sewerage project in six towns namely, Virudhunagar, Ambattur, Pallavaram, Kancheepuram, Ramanathapuram, Namakkal and for water supply scheme in Salem (in addition to six cities) with the total cost of `187.53 crores. Subsequently, Karnataka state government had also issued similar kind of bonds to the small and medium sized ULBs. The FIRE (D) project supported the Government of Karnataka in the financial structuring of Rs. 659 crore for Greater Bangalore Water and Sewerage project that utilizes the pooled finance mechanism. A debt fund called the Karnataka Water and Sanitation Pooled Fund (KWSPF) was established under the Indian Trust Act to access the capital market by issuing a bond on behalf of the participating ULBs. During 2005, the KWSPF successfully floated `1,000 million tax free municipal bonds at an annual interest rate of 5.95 percent (Vaidya and Vaidya, 2010).

Research documents show that due to the success of these two pooled finance model, the National Government created a central fund that enables capital investment to be pooled under one state borrowing umbrella to provide a cost-effective and efficient approach for small and medium ULBs and to reduce the cost of borrowing. Subsequently the Urban Development Ministry formulated the Pooled Finance Development Fund Guidelines to help the small and medium ULBs in accessing market funds for their infrastructure projects. State Government is required to increase the competence of the ULBs, to meet the pre-conditions of a bond issue.

Constraints of Pooled Bond Financing

- The expansion of municipal bond market has been the lack of investor interest in long term debt because a longer term bonds are more risky and prices are too high for municipalities to afford;

- The cost of transaction is also another barrier; and
- Limited success of pooled financing mechanism is far reaching in small and medium cities/towns.

4. Public Private Partnership (PPP)

As many ULBs in India have insufficient provision of basic services, lack of access to finance and other resources, Public Private Partnership (PPP) is a suitable option for the infrastructure sector since it supplements scare resources, creates a competitive environment, improve efficiencies and reduce costs. The main purpose of the PPP approach is to attract private investments for infrastructure projects, to leverage limited budget resources, and improve efficiency in service delivery. A study on private sector participation in infrastructure database conducted by the World Bank, India is second to China in terms of number of PPP projects and investment. The private participation is expected to augment resource availability as well as improve efficiency of infrastructure service delivery (Chakrabarti, 2011). The RBI study stated that the private sector has to complement the government's efforts in financing the development of infrastructure in India. Under PPP in infrastructure, the World Bank Institute provides capacity building learning events in various aspects of PPP project cycle such as prioritization and selection of PPP projects, institutional structuring, legal and contractual framework, project financing, risk management, economic management and regulation and competition. Even though, there are a number of variations in PPP model, the main models for undertaking and implementation of PPP projects are contract licensing (outsourcing), build own and operate (BOO), build operate and transfer (BOT), build own operate and transfer (BOOT), buy-build- operate (BBO) and lease agreement. Among these models, BOT model has emerged as the model of choice for most of the infrastructure projects involving private operators. For debt market financing, contracts are also important to define the terms of lending. It is also limited to financial gap funding and providing institutional commitment to project.

To boost the PPP system, the Government of India (GoI) provided the guidelines for PPP to sensitize state governments and ULBs to the policy and procedural issues including water supply and sewerage issues. Under JnNURM, all ULBs have to implement obligatory reforms, one of which is to encourage PPPs in municipal services. The Mission covers a substantive portion of the capital expenditure and enables leveraging of budgetary resources to fund balance through PPP thereby expanding the capacity of ULBs to fund projects. *The Government of India has also proposed to set up the National Investment Board in the form of the Cabinet Committee on Infrastructure for accelerating the investment cycle in India (Indian Express, 11 January 2013)***.**

As of now, a few water supply and sewerage projects are being implemented through PPP mode. In the context of water supply system, more emphasis has been given on the distribution and Improvement of water through PPP system. Some of the other projects have been focusing on upgradation and operation and maintenance of water supply in the cities of Latur, Chandrapur, Nagpur, Mysore, Madurai, Hubli-Dharwad, Gulbarga, Belgaum, Sonia Vihar and Navi Mumbai. Several municipal bodies have successfully implemented PPP system in solid waste management in the cities of Alandur, Haldia, Chennai, Coimbatore, Madurai and Faridabad etc., Urban Transport is the dominant PPP sector in India both by number of projects and investments. The transport projects have been followed in the cities of Indore, Bhopal, Jabalpur, Kota, Jodhpur, Jalandhar, Patiala etc., for the development of bus terminal and parking lots, foot-over-bridges and road signage, modernization of bus terminals, BRTS where infrastructure has been provided by the Government and rolling stock operation and maintenance is being providing through PPP participation, whereas, urban road projects have been developed on PPP basis in Mumbai Trans Harbour Sea Link Project, IT corridor project in Chennai, Chennai outer ring road, Trivandrum city road improvement, Hyderabad outer ring road, Delhi-Noida Toll Bridge, Delhi-Gurgaon Expressway etc. Till date, 49 projects are being implemented on PPP basis under JnNURM (MoUD, 2012). Some of the major PPP projects undertaken by private sectors are Delhi, Mumbai, Hyderabad and Bengaluru airport, 4 ultra mega power projects at Sasan (M.P.), Mundra (Gujarat), Krishnapatnam (Andhra Pradesh) and Tilaiya (Jharkhand), container terminals at Mumbai, Chennai and Tuticorin ports, 15 concessions for operation of container trains, Jhajjar power transmission project in Haryana and 298 national and state highway projects (Chakrabarti, 2011).

However, PPP in urban infrastructure financing is plagued by a number of constraints including lack of capacity of private operators and knowledge gap in developing PPP projects, absence of finance structuring and implementing projects etc. In addition to this, BOT based projects often have not addressed the problems of existing municipal services especially water supply and sanitation projects such as high unaccounted for water, high expenditure on energy and low cost recovery. The PPP projects in urban infrastructural services like water supply, sanitation and solid waste management have limited scope in India. Indian local bodies in urban areas do not have effective policy on the inclusion of private operators in the urban infrastructure and services.

5. Conclusion

Concluding Remarks

The preceding discussion on urban infrastructure financing shows that urban infrastructure in India is a critical requirement to fulfill the demand for infrastructural services. It is pertinent to note that the problem of financing urban infrastructure is acute and most of the challenges of financing are still unanswered. The condition is even worse for the urban governance where most city governments are unable to operate and maintain the existing civic services to their full capacity. Much of the backlog and inefficiency in service delivery and management are attributable to insufficient investment. Urban infrastructure and services are grossly inadequate and of poor quality. In this situation, capital market development is an important mechanism to accommodate the high financing needs. Market based infrastructure and PPP are becoming an important source of urban infrastructure financing in India.

Although the infrastructure financing instruments are widely accepted in India, the accessibility of these instruments depends on the size of the ULBs. Only financial healthy ULBs can directly access the capital market whereas small and medium sized municipalities are supported by pooled financing system where the funds are provided for the small projects of all multiple local governments into a single financing system. Moreover, the larger ULBs have to develop the confidence of investor and have to get credit rating to reduce the risk factors especially long term bonds whereas the small and medium sized ULBs can't get credit rating due to poor budgetary allocations, low revenue generating capacity due to weak economic base. Municipal bonds are not commonly used instrument in India because the investors generally perceive that the municipal bonds being risky and prices are too high for municipalities to afford. The success of pooled financing mechanism is far reaching in small and medium cities and towns of India.

As far as the public private partnership option is concerned, it becomes an important and frequently used instrument for the financing of urban infrastructure in this country. However, it is limited to financial gap funding and providing institutional commitment to project. This option has been plagued by a number of constraints like lack of professionalism and capacity in handling large scale PPP projects. In addition, it has a very limited scope in the area of water supply and sanitation and solid waste management.

Way Forward

- Disbursal of revenue grants to the municipal bodies should be continued according to their needs.
- Credit rating agencies should play a fair and pervasive role in providing the services.
- Pooled financing needs to be combined with project design and management expertise.
- There is need to encourage the public private partnership for financing and operation and maintenance of the urban infrastructural services.
- Regular coordination is required because various private operators are involved in the process of public private partnership.
- Need for regular monitoring and supervision for the sponsor to pursue project related activities to mitigate and minimum risks.

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