

Innovative Approaches to Municipal Infrastructure Financing

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Introduction

The twin dilemma of what constitutes adequate local government financing and how to mobilise it has confounded academics and practitioners alike. Typically, only immobile tax bases, such as property taxes, are assigned to local jurisdictions. Borrowing at the local level has not found favour, especially in developing countries, as the traditional thesis of capital financing professed that local government borrowing is irresponsible and should be subject to considerable restrictions.

However, these conventional theories have been challenged by the recent trends of urbanisation and globalisation, which have heightened pressure on cities' growth and infrastructure. Simultaneously, political decentralisation strategies have pushed downwards the responsibility for coping with the explosive demand for urban services. Given that immobile local revenues cannot be expanded infinitely, strengthening conventional sources of municipal income promises, at best, to cover the revenue expenditures of local governments or to provide an insignificant surplus for capital expenses. In this scenario of growing vertical fiscal imbalance between function and finance, government grants and donor funds have proved inadequate to meet local capital spending. Hence, central governments are gradually embracing the idea of local governments accessing private finance for investments in public infrastructure and services. Since private equity, encumbered by dividend expectations, is generally more expensive and difficult to raise, debt is preferred to bridge the fiscal gap.

The typical options for infrastructure debt financing are borrowing from financial institutions and development banks, accessing capital markets or soliciting private sector participation through contracts, leases and concessions. However, basic urban services like water supply and sanitation, sewerage and solid waste management are unattractive to private financiers, given their characteristics of time and space externalities, limited cost recovery, high risk and long gestation. Also, in the context of developing countries, typically only limited liquidity and financial products are available. In addition, loans from banks and financial institutions are usually of shorter tenure – 5–7 years – and may require sovereign guarantees. Hence, many developing countries are trying to develop domestic and international capital markets to mobilise private savings for urban infrastructure involving lengthier payback periods.

India, with its large capital markets, is also experimenting with sub-national debt in some states. The southern state of Tamil Nadu has been hailed as a forerunner in innovative market-based financing of urban infrastructure (IADF, 2004: 3; Kehew *et al.*, 2005). This chapter aims to evaluate the urban financing techniques adopted in Tamil Nadu, with a view to examining whether and to what extent they have facilitated 'municipal debt market development'. A few isolated instances of capital market access do not constitute a credit market, which involves the development of a long-term viable option for capital financing. A municipal debt market is a system with a variety of local borrowers and lenders, where credit allocations are based on pricing decisions that balance demand and supply factors. As an economy grows and financial needs increase, these markets serve to integrate sub-national demand for investment capital with the supply of funds (Freire *et al.*, 2004).

This chapter is divided into four sections. The next section is a brief summary of international experiences in market-based local borrowing. The following two sections describe the innovative urban financing approaches adopted in Tamil Nadu, and assess whether these innovations facilitate long-term market development. Finally, the chapter concludes that Tamil Nadu has spearheaded the advance of municipal debt instruments and stimulated nascent sub-national debt markets in India. But in order for these financial accomplishments to be translated into enduring local bond markets, they need to be complemented by corresponding project development capabilities in urban local governments, without which the funds borrowed cannot be fruitfully invested.

International experiences

While most developing and transition countries are intensifying their thrust to develop vigorous local credit markets to support decentralisation initiatives, sub-national governments in North America and Western Europe have a long history of harnessing private debt to build urban infrastructure. However, the credit models championed in these regions are instructive in their diversity: while North America relies mainly on municipal bonds, Western Europe has developed home-grown development banks, and emerging markets are attempting to establish one of these models or a hybrid, either directly or through specialised financial intermediaries (Peterson, 2003).

The US municipal bond market was created to cater for the urban boom of the 1850s. Today it is the most sophisticated in terms of its depth and ability to finance the long-term cash flow needs of municipalities across different sectors of urban development (Temel, 2001: 49; Johnson, 2004). Specific purpose revenue bonds have matured into the primary source of funding for capital projects, but general obligation bonds issued against the surety of local government revenues are also prevalent. The Federal Government has endorsed decentralised financing by conferring tax-free status on municipal bonds, and contributing to state revolving funds and bond banks. These intermediaries pool the borrowing needs of marginal local entities that are unable to access capital markets on their own (El-Daher, 1997: 1–3). A mature federal system comprising

strong sub-national governments, matched with an enabling investment environment, has promoted the growth of US municipal debt markets.

Western Europe, on the other hand, leveraged its historic preferential access to long-term saving deposits and government contributions to establish municipal banks and financial institutions. Development municipal banks like *Crédit Local de France*, BNG of the Netherlands, *Banco de Credito* of Spain, and *Crédit Communal Belgique* of Belgium handle various bundled services such as credit evaluation and project monitoring for municipal infrastructure projects prepared by local governments. With financial deregulation, these banks are also converging into the competitive capital markets to raise funds (Peterson, 1996: 32–34; El-Daher, 2000: 2).

Despite the backing of international agencies and national authorities in creating municipal development funds in emerging markets, developing self-sustaining local credit markets has proved challenging. The pioneering MDF in Brazil provides loans to municipalities and special utility companies and has enjoyed over 30 years of commendable loan recovery rates and less than 5 per cent non-performing loans (Peterson, 2003: 12). South African local governments have a legacy of self-reliance and sophisticated municipal bond markets. The *Infrastructure Finance Corporation Limited* in South Africa also provides loans to municipalities and other statutory boards and utilities. Similarly, Vietnam has recently established provincial local development investment funds under state ownership, in order to develop infrastructure and enable the mobilisation of private capital and its participation in local government projects.

Zimbabwe has chosen the safe path of issuing municipal bonds with sovereign guarantees, thereby not relying on the prudence of local borrowers (Phelps, 1997: 99). Low domestic savings have motivated some cities like Sofia in Bulgaria, and Moscow and St Petersburg in Russia, to float foreign bonds (Marfitsin *et al.*, 1997: 80; Epstein *et al.*, 2000: 89).

The other successful model has been that of a contingent financier, which provides products such as guarantees or insurance that are contingent to the main project financing. *FINDETER* in Colombia, established in 1989 as a second tier government financial intermediary, rediscounts bank loans to local borrowers. It has motivated commercial banks to be responsible for municipal credit risks across sectors such as transportation, water and sewerage, and education. *FINDETER* is financially and institutionally viable, and has recently diversified its client portfolio to include departmental and municipal service companies. The latest development in its active municipal credit system is the graduation of larger cities like Bogotá from bank loans to bonds (Kehew *et al.*, 2005: 20–26; Peterson, 2000: 33). The Czech Republic presents another example of a diversified municipal debt market, characterised by a mix of municipal bonds issued by almost all the country's large cities and commercial bank loans with extended tenure. Such competitive lengthening of loan periods from 8 to 15 years is made feasible by the *Municipal Infrastructure Finance Program (MUFIS)*, an MDF that

provides long duration loans to banks for on-lending to local governments (Matoušková *et al.*, 1997: 7–16). The third such example is the Local Government Unit Guarantee Corporation (LGUGC) in the Philippines. Initiated as the brain-child of the Department of Finance in 1997, LGUGC provides insurance to municipal investors. It is uniquely structured as a jointly owned public-private entity, supplemented by a 30 per cent USAID-backed credit guarantee. It has also instituted a proprietary credit rating system to identify creditworthy issuers. Injecting liquidity into the dormant municipal bond market, it has offered local bodies a cheaper alternative to loans from government financial institutions (USAID, 1997: 5; Oriol, 2003: 405–410).

The above summary indicates that no decentralised municipal system is dependent on a single borrowing option for all its infrastructure needs. While many governments have instituted MDFs to front-end inexperienced local borrowers, the more successful cases, like Colombia and the Czech Republic, have matured into a multitiered municipal credit system. Larger creditworthy local entities access cheaper bond finances against their own balance sheet, while small and medium entities continue to leverage financial intermediaries, development banks and government grants. Nevertheless, as has been experienced in some countries with success in bond financing, the preference for bonds for debt financing is chiefly because of their longer tenure and lower cost, where a high credit rating can be secured. Most often, a line of credit from international financial institutions has proved instrumental in extending the maturities of local debt instruments. However, the key to financial independence is to move gradually from donor support to own or market-raised funds, which demands capable local units that can attract private investors.

Innovative municipal financing in Tamil Nadu

The need for capital market financing

India's constitution ordains that it is a union of states and union territories, with residual legislative powers vested in the central government. Despite the existence of urban local bodies (ULBs) even prior to British colonisation, the status of 'democratic institutions of self government' was not formally conferred on them until 1992, with the passing of the Constitution (Seventy-fourth Amendment) Act. This landmark amendment provided for direct elections to the three types of municipalities: town *panchayats* in communities in transition from rural to urban areas; municipal councils for small urban areas; and municipal corporations for larger urban areas. It also proposed the formation of state finance commissions (SFCs) every five years, to recommend principles to strengthen municipal finances through assigned taxes, devolved taxes and grants in aid from the state.¹

Prior to the 1990s, Tamil Nadu oscillated between decentralisation and recentralisation of power over ULBs, with irregular municipal elections and wide fluctuations in fiscal devolution (Guhan, 1986: 34). However, after the 1992 Amendment, Tamil Nadu has

led India's decentralisation efforts. It passed the conformity legislation in 1994, conducted two rounds of local government elections, and constituted and implemented the recommendations of the SFCs in 1996 and 2001 (Mukundan, 2005: 2).

The state ULBs comprise six municipal corporations and 151 municipalities, including 49 town *panchayats* which were upgraded to third grade municipalities in June 2004.² Urban areas with a population over 500,000 and an average annual income for the last three years of over Rs 300 million are classified as municipal corporations, and those with populations of over 30,000 and income over Rs 5 million as municipalities.³

Tamil Nadu is the one of most urbanised states of India with an urban population of 27.5 million, about 44 per cent of the state population.⁴ The average annual growth rate of the urban population from 1991 to 2001 was approximately 4.2 per cent. While Tamil Nadu's capital, Chennai, is its largest city (with a population of 4.4 million), unlike other Indian states, its urban population is distributed over various types of urban agglomerations and towns.⁵

Such rapid urbanisation has imposed an added strain on existing infrastructure deficiencies in the state. However, the Government of Tamil Nadu (GoTN) has substantially increased financial devolution to local bodies on the recommendation of the SFCs. This has allowed the ULBs to maintain operating surpluses on their revenue account (Table 5.1). In addition, capital investments post-devolution have grown substantially year on year, with the exception of 2000–2002, when the state government faced severe fiscal deficits (Table 5.2).⁶

Table 5.1. Revenue accounts of all ULBs, 1998–2003 (Rs million)

Category	1998–99	1999–2000	2000–01	2001–02	2002–03
Own and other revenues	7,037	8,537	10,944	10,646	11,758
Assigned revenue and devolutions	5,590	6,423	6,109	4,429	8,953
Total revenues	12,627	14,960	17,053	15,174	20,711
Total revenue expenditure	8,914	10,405	11,808	11,892	14,896
Revenue surplus/deficit	3,713	4,555	5,245	3,282	5,815

Source: *Twelfth Finance Commission Report 2005–10*, p. 443

Table 5.2. Capital investments across ULBs in Tamil Nadu, 1995–2003 (Rs million)

All ULBs	Pre-devolution				Post-devolution			
	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03
Capital investments	2,073	2,380	4,056	5,570	6,337	6,163	4,985	6,598

Source: *Twelfth Finance Commission Report 2005–10*, p. 443; *Second State Finance Commission Report 2001*, p. 44

Despite such heartening fiscal developments, Tamil Nadu still falls far short of its requisite capital investment. The capital financing estimates of the second SFC indicate that the total infrastructure needs of ULBs projected for the period 2002–2007 are over *three times* in excess of the optimum investment capability from self-raised revenues and devolutions (Table 5.3). An analysis of infrastructure requirements by sector indicates that water supply and sanitation, roads and storm water drains are the areas most in need of investment.⁷

Table 5.3. Financing gap for infrastructure investments in Tamil Nadu (Rs million)

Category	2002–2007	
	Investment required as per norms	Optimum investment capability
Municipal corporations	22.55	9.75
Municipalities	26.79	6.50
Town <i>panchayats</i> ^a	29.70	8.03
Total	79.04	24.28

^aIncludes the 611 former town *panchayats* before the 2004 Government Order
Source: *Second State Finance Commission Report 2001*, pp. 52–63

The shortfall in essential infrastructure financing provides a strong motivation for the state to explore alternative sources of capital to supplement existing local revenues. A range of financial innovations have been pursued, including the mobilisation of funds through a unique private-public financial intermediary model, capital market access using customised credit enhancements and ingenious pooled financing of a project portfolio of smaller local bodies. These have been accompanied by far-reaching reforms in municipal accounting, automation and e-governance, and performance management systems.

Tamil Nadu Urban Development Fund

The Tamil Nadu Urban Development Fund (TNUDF) was promoted in 1996, essentially a make-over of the previous state-owned and operated municipal urban development fund (MUDF) created in 1988. All assets and liabilities of the MUDF were transferred to the TNUDF, which was incorporated as a trust by GoTN with a Rs 1.2 billion capital contribution. By 2000–2001, the fund had grown to Rs 2 billion, with 29 per cent of its capital invested by three leading all-India financial institutions – the Industrial Credit and Investment Corporation of India, Housing Development Finance Corporation and Infrastructure Leasing and Financial Services, and a reduced 71 per cent equity participation by GoTN. Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) was established as the fund’s asset management company. It had a majority private stake, with the same three financial institutions holding 51 per

cent equity and GoTN contributing 49 per cent. The TNUDF was thus India's first public-private financial intermediary managed by a predominantly private fund manager, geared to mobilising long-term debt for municipal infrastructure (Pradhan 2003: 131).⁸ In a little over a year of operation, the TNUDF approved municipal loans worth Rs 1.5 billion, compared to MUDF's sanction of Rs 2 billion over eight years (World Bank, 2005: 3).

In addition to equity, the fund had access to a line of credit of about Rs 3.7 billion (US\$80 million) from the World Bank, on-lent by GoTN (World Bank, 1999: 25). Leveraging its public-private capital base, the TNUDF ventured to raise cheaper debt funds by floating five years non-convertible bonds in November 2000. The issue of Rs 1000 million was offered on private placement. Despite being the maiden non-guaranteed bond issue by an MDF in India,⁹ it reaped an oversubscription of Rs 1,100.5 million. Various commercial banks purchased 70.5 per cent of the bonds, TNUDF contributors 12 per cent, regional rural banks 9.5 per cent and insurance companies 8 per cent (Kehew *et al.*, 2005: 29).

Designed as neither a general obligation (pledged on overall municipality revenues) nor a revenue bond (pledged on specific project revenues) as evolved in the USA, the credit instrument was indigenously conceptualised as a structured debt obligation, with a dedicated escrow of reliable income sources. A bond service fund (BSF), equivalent to one year's principal and interest, was maintained as collateral until expiry of the bonds. These proceeds were safely invested in best-rated liquid securities like Government of India Treasury bills. The debt obligation was accorded seniority status and ranked first in the pecking order for repayment. In the eventuality of drawing down the BSF, the TNUDF provided the additional cushion of an escrow on its own current account, which would be frozen for withdrawals until the BSF was replenished. Such an elaborate credit enhancement mechanism was intended to protect the debt from adverse political factors and duly obtained a 'high credit quality/low credit risk' rating from the Indian Credit Rating Agency.¹⁰ The high safety rating enabled a competitive coupon rate of 11.85 per cent per annum, less than 1 per cent premium over the comparable government security rate of 11 per cent.¹¹

The TNUDF spearheaded significant growth in fresh asset creation across ULBs. As of 31 March 2001, its total assets were worth Rs 6.6 billion, comprised chiefly of loans to ULBs (71 per cent); the remainder included investments and current assets.¹² The core beneficiaries were smaller municipalities and town *panchayats* facing a sizeable backlog of essential infrastructure investments. Over 175 projects were sanctioned by March 2002, primarily for roads and bridges, sewerage and sanitation, and water supply, but also some commercial projects. By March 2004, the portfolio consisted of a larger proportion of sewerage and water supply projects, resulting from TNUDF assistance to the National River Conservation Project, which preserved state waterways from being polluted by the overflow of sewage (Table 5.4).¹³

Table 5.4. TNUDF project portfolio by sector – loans sanctioned

Sector	March 2002		March 2004	
	Amount (Rs million)	%	Amount (Rs million)	%
Bridges and roads	2,853.40	65	2,929.7	48
Sewerage and sanitation	971.40	22	2,285.1	38
Water supply	267.00	6	506.5	8
Bus stations and commercial complexes	215.70	5	215.7	4
Storm water drains	56.30	1	56.3	1
Miscellaneous	54.70	1	54.9	1
Total	4,418.50	100	6,048.2	100

Source: *TNUDF Activity Reports, 2001–2002 and 2003–2004*

The TNUDF resourcefully bagged a series of ‘firsts’ through the inventive structuring of projects financed, notably for the smaller and infrastructurally backward local bodies. The Fund facilitated the first toll bridge on a build-operate-transfer contract in Karur Municipality at an estimated cost of Rs 160 million. This mandated a regulatory amendment of the Tamil Nadu State Toll Act to authorise a ULB to sign a BOT contract. Another first was a build-own-operate-transfer sewerage network for Alandur Municipality designed to meet future projections of a population of 300,000 persons in 2027, at a cost of Rs 480 million. The municipality had only waterborne sanitation facilities decanting into open storm water drains, precipitating unsanitary conditions. The debt burden for the sewerage system was resourcefully mitigated through one-time connection deposits paid by beneficiaries. The deposit amount was collectively determined through detailed consultations with the local population over many months. These finally concluded in a tiered contribution structure with households paying Rs 5,000 per connection, cross-subsidised by industrial and commercial establishments which contributed Rs 10,000 (Mathur, 2002: 226–28).¹⁴ Willing deposit payments for public infrastructure had no precedent in India and laid the foundation for a commercial mind-set to such projects. A third project was the construction of bus stands for Tirunelveli Municipal Corporation, where the TNUDF loan was fully repaid with cash payments from potential users. The complex recouped an annual saving of Rs 2.5 million by outsourcing operation and maintenance to a private contractor (World Bank, 2005: 8).

The TNUDF also built a financial track record of timely loan recovery. For loans appraised by the TNUDF, the terms of agreement established escrows of ULB tax and non-tax collections. In addition to these safeguards, TNUIFSL, the fund manager, initiated constant follow-up of undue delays in repayment. Periodic reviews of the arrears portfolio ensured record recovery rates, consistently above 99 per cent.¹⁵

The strong loan portfolio held by the TNUDF was the result of emphasis on stringent qualification criteria for both the project and the borrower. These included sector specification, borrower eligibility criteria, minimum financial and economic rates of return, and environmental and social safeguards (Sood, 2004: 430–31).

Once selected, ULBs were eligible not only for TNUDF loans but also two grant funds from GoTN for poverty alleviation and technical assistance for project development/preparation, also operated and managed by the TNUIFSL.

These initiatives were also instrumental in sparking sustained reforms in the overall administration and management of ULBs. Tamil Nadu is the first and only state in India to have moved from cash-based accounting to double entry accrual accounting across all municipal corporations and municipalities by April 2000. The ULBs have also computerised all their accounts and registration records, improving efficiency of collections and increasing information transparency (Joshi, 2004: 344–46). Tamil Nadu has developed a state-wide urban performance indicators system to compare service levels, operational and management efficiency, and financial performance across ULBs. The first such comparative assessment of ULB performance was undertaken with the data collected by the first SFC, and informed planning and policy-making in the state (FIRE, 1999a: 1–3).

Water and Sanitation Pooled Fund

In order to ensure the inclusion of weaker ULBs and relatively small but essential projects, GoTN instituted a special purpose vehicle called the Water and Sanitation Pooled Fund (WSPF) in August 2002. Incorporated as a trust with a contribution of only Rs 10,000 from GoTN, the idea was to reduce the transaction costs of market access for the smaller local entities. The WSPF was a thinly funded, leveraged structure that would not impose high dividend costs on beneficiaries.¹⁶ This fund was also managed by the TNUIFSL (see Figure 5.1).

Pooling the water and sanitation requirements of 13 municipalities and town *panchayats*, the WSPF mobilised capital market finances through an unsecured structured debt obligation for Rs 304.1 million in December 2002. Based on the principle of credit aggregation, this was the first successful pooled market financing outside the USA. It proposed to upgrade the bond rating of a judicious mix of financially strong and weak ULBs and achieve economies of scale for small city projects which could not individually access capital markets (Johnson, 2004). Issued for 15 years tenure, it is the only truly long-term municipal infrastructure bond in India.¹⁷ Beyond a plain vanilla issue, the structured financing was enriched with put and call options after ten years. The options provide a safety net to investors who may wish to divest their holding before maturity, thereby increasing bond liquidity (Leigland, 1997: 8).

In order to bolster market confidence in India's maiden pooled bond, the debt nestled in multiple layers of credit enhancements such as a no-lien escrow account established by the 13 ULBs on all their revenues, a BSF of Rs 69 million, invested in low-risk liquid securities, and guarantees from the USAID development credit authority guarantee and GoTN.¹⁸ The enhanced pooled debt instrument secured a dual 'high safety' credit rating from Fitch Ratings and the Indian Credit Rating Agency. Privately placed at a competitive rate of 9.2 per cent,¹⁹ it was immediately subscribed for by commercial banks and provident funds (FIRE, 2003:2–3).

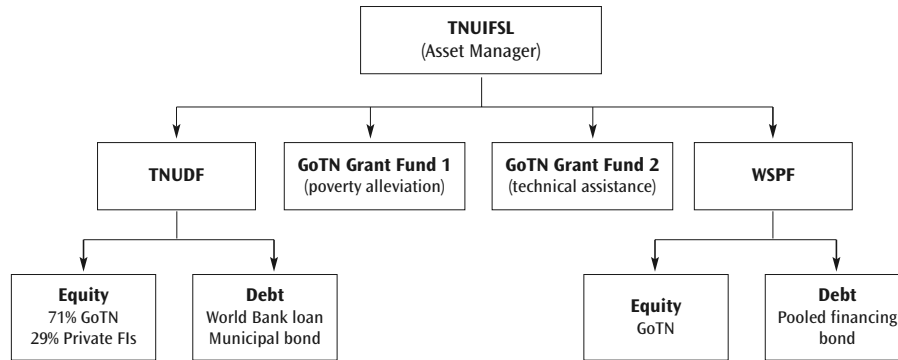
The bond proceeds were lent back-to-back to the 13 ULBs in the pool at 9.2 per cent per annum, resulting in substantial savings versus their individual borrowing rate of 12 per cent (Ghodke, 2004: 145). The shortlisted portfolio included water supply augmentation schemes for eight municipalities and town *panchayats* adjacent to Chennai plus five other municipalities, and an underground drainage project for Madurai Corporation (Table 5.5). A special characteristic of these projects was that they were all fully or nearly completed and most of them were already financed by the TNUDF. Structurally, the credit enhancement mechanisms aimed to overcome liquidity and political risks, and the project completion aspect surmounted development risk so that the funds could be deployed immediately.²⁰

Table 5.5. Pooled finance bond projects

S. No.	Urban local body	Proceeds of bond	
		Rs million	%
Water supply schemes			
1	Ambattur Municipality	6.7	2
2	Tambaram Municipality	10.9	4
3	Madhavaram Municipality	19.4	6
4	Rajapalayam Municipality	5.1	2
Adjacent urban areas (AUA)			
5	(i) Alandur Municipality	40.3	13
6	(ii) Pammal Town <i>Panchayat</i>	35.7	12
7	(iii) Ankapathur Town <i>Panchayat</i>	17.8	6
8	(iv) Ullagaram Town <i>Panchayat</i>	28.1	9
9	(v) Porur Town <i>Panchayat</i>	54.7	18
10	(vi) Maduravoyal Town <i>Panchayat</i>	13.8	5
11	(vii) Valsaravakkam Town <i>Panchayat</i>	17.9	6
12	(viii) Meenambakkam Town <i>Panchayat</i>	1.6	1
Underground drainage			
13	Madurai Corporation	52.0	17
	Total	304.1	100

Source: Memorandum of private placement for non-convertible redeemable bonds issued by WSPF, 2002

Figure 5.1. Municipal development funds framework in Tamil Nadu



Following these successful bond issues spearheaded by the municipal funds TNUDF and WSPF, there have been several other instances of successful capital market access by municipalities and infrastructure entities in the state.

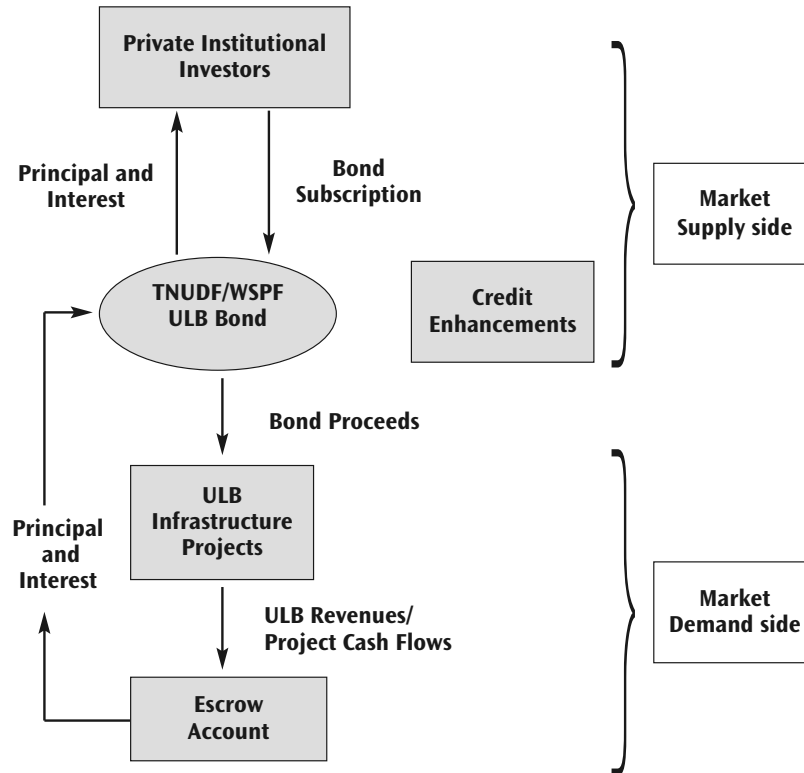
Assessment of municipal bond ‘market development’

The moot question is whether the instances of innovative financing arrangements and capital market relationships described here have been successful in developing long-term municipal bond markets in Tamil Nadu. Whereas in developed markets, the introduction of new financing instruments such as municipal bonds may demand research, marketing and perhaps legislative changes, their establishment in emerging markets may necessitate the development of elements of the market itself, on both the demand and supply sides (Phelps, 1997: 5). The demand side represents the financial, technical and administrative capabilities of ULBs as borrowers, and the supply side denotes capital market or lenders’ characteristics. To create lasting credit markets, these twin forces need to be developed in parallel, so that the finances borrowed can be optimally utilised.

Tamil Nadu has certainly achieved many supply-side successes through its financial innovations. However, as already mentioned, the foundation of municipal bond markets requires robust supply- and demand-side elements, and financial structuring represents only supply-side improvements (Figure 5.2).

As the USA is the pioneer and leader in municipal infrastructure bonds, its characteristics have become the yardstick for donors and governments evaluating emerging market funds (Leigland, 1997: 2). Yet the US model may not prove ideal for the assessment of municipal credit markets in developing countries. As witnessed in most coun-

Figure 5.2. Illustrative municipal bond model in Tamil Nadu



tries, despite strong financial indicators, the MDFs did not succeed in developing private debt markets owing to low investor confidence in ULB performance. On the contrary, local governments in the USA have strong financial, technical and administrative capabilities. Additionally, there is a retail pull from private savers to invest in municipal growth (Ghodke, 2004: 145). Hence, the role of a US financial intermediary is restricted to sourcing the cheapest capital funds on best possible terms (Peterson, 1996: 18). Imposing the US prototype with its robust demand-side factors onto developing countries leads to an excessive preoccupation with the financial aspects of market development at the cost of insufficient investment in local government capacities.

In developing countries, demand-side strengthening involves building the financial viability of local bodies, as well as their skills in project development and execution. As expressed by Peterson (1998: 1), 'creditworthiness of municipalities is at the heart of borrowing'. Justifiably, there has been enormous focus on fortifying the revenue base of ULBs in Tamil Nadu through streamlining their tax and non-tax revenues, increasing financial devolution and obtaining state government guarantees where possible.

The weak link in Tamil Nadu's market development pursuits is the demand-side capability of preparation and structuring of capital investment programmes. Temporal synchronisation between a fund's mobilisation and its productive deployment is often overlooked in debt financing. Nonetheless, if a timelag ensues between the bond issue and project readiness, the costs of capital market financing can outweigh the potential benefits. Municipal bonds in Tamil Nadu were all issued at or above market yields and most of them were taxed. In a decreasing interest rate regime, if project preparation is tardy, investment of idle bond proceeds presents negative arbitrage opportunities. This was also evinced in the debt financing of Ahmedabad Municipal Corporation in Gujarat, the first ULB in India to float a non-guaranteed public bond. Lack of specialised project preparation support and delays in the approval process led to bond funds remaining unused for two years. Worse still, because of falling interest rates, the returns earned on investing these unused funds were lower than the interest payable on the bonds (FIRE, 2001: 3–4).

The other weak link is the limited municipal staff who may not possess the resources and talent to manage all aspects of asset creation and service delivery in the local area. Additionally, project development for private sector funding is more demanding than government grants. Besides the technical design aspect, financial project planning needs to match the rigour that capital market borrowing imposes. This necessitates projects that are commercially viable with suitable risk mitigation structures, such as having access to other dedicated revenue sources (FIRE, 1999b: 1). It is generally accepted, on poverty alleviation and affordability grounds, that grants or subsidies are required to reduce the loan burden for basic infrastructural investments. Nevertheless, the project should be structured to at least recover the debt component.

In sum, the real binding constraints in long-term municipal market development in Tamil Nadu are not financial bottlenecks, as popularly perceived, but ULB capacity to structure and execute viable projects and contain development risks. In order for ULBs to graduate from concessionary to market finance, they need to broaden their technical and financial skills and resources.

Conclusion

Many local governments have resorted to private financing of public infrastructure under the pressures of urbanisation and fiscal stress. Experiments have ranged from Western models of municipal bonds and development banks, to local municipal development funds, often assisted by donors. While most trials can claim success for some instances of capital market access, the overall track record in developing long-term municipal credit markets has proved rather dismal. Devoid of market development, the issue of bonds will remain sporadic and an unsustainable basis of capital financing.

The Indian state of Tamil Nadu has been lauded as a progressive example of capital market borrowing. Nevertheless, unless local governments develop demand-side capa-

bilities in project preparation and development, financial innovations will be unable to build durable municipal bond markets. The seeds sowed for market creation can grow only if both demand- and supply-side factors are developed in tandem, so that the debt funds mobilised are deployed promptly in productive projects.

Tamil Nadu has accomplished a series of financial innovations. It shored up nearly Rs 3000 million within five years through a series of pioneering issues such as India's first bond issued by a joint private-public municipal fund, India's first revenue bond, and the world's first pooled financing bond outside the USA. From a supply-side perspective, Tamil Nadu's ingenious financial engineering overcame potential credit risks and successfully secured private institutional finance, even for non-remunerative infrastructure in small towns.

However, credit enhancements do not cover development and construction risks, which depend on the demand-side strengths of local governments in structuring and executing projects on time. The cost of market financing will grow disproportionately if funds mobilised are forced into lower interest-bearing investments because of a time-lag in project readiness. In addition, in the absence of self-reliance in financial and project appraisal skills, ULBs will be unable to secure the best financial terms available in the market. As is held by theorists of decentralisation, devolution of functions should be followed by the devolution of finance and functionaries (Subrahmanyam and Choudhury, 2004: 20).

The financial experiments of Tamil Nadu are currently being extended across other states of India, as well as across other emerging markets. In the race to crowd in private funds, donors and governments should be careful that they do not crowd out vital local government capabilities.

Notes

- 1 The Constitution (Seventy-fourth Amendment) Act, 1992.
- 2 *Tamil Nadu Government Gazette*, No. 149/G.O. No. 270, June 2004; *Tamil Nadu Government Gazette*, No. 150/Ordinance No. 7, June 2004. Until June 2004, there were 611 town panchayats, of which 562 were reclassified as special village panchayats and 49 were upgraded to third grade municipalities by government order.
- 3 Tamil Nadu District Municipalities Act 1920, Section 4.
- 4 Census of India, 2001. The all-India average urban population (2001) is 26 per cent.
- 5 Census of Tamil Nadu, 2001.
- 6 *Twelfth Finance Commission Report 2005–2010*, p. 443; *Second State Finance Commission Report 2002–2007*, p. 44.
- 7 *Second State Finance Commission Report 2002–2007*, pp. 52–63.
- 8 *Financial Review of TNUDF*, 2005, pp. 3, 7.
- 9 Individual municipal corporations like Bangalore Corporation and Ahmedabad Corporation had issued bonds prior to 2000.
- 10 ICRA (2000). ICRA credit rating rationale on Tamil Nadu Urban Development Fund Bond issue.

- 11 TNUDF Annual Accounts, 31 March 2002; RBI (2000), 'Selected economic indicators', *Reserve Bank of India Bulletin*, November 2000.
- 12 TNUDF Annual Accounts, 31 March 2001.
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