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MUNICIPAL BONDS
FOR URBAN INFRASTRUCTURE
Potential and Policy Issues

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Meera Mehta

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1.0 INTRODUCTION

Most discussions on promotion and financing of infrastructure in India include only "economic" infrastructure such as power, telecommunications and transportation, especially roads, railways and airports. Urban infrastructure services such as water, sewerage and solid waste management have been generally relegated to the status of social services and, hence, have not been considered seriously in economic and fiscal liberalization policies. For example, the recent tax benefits announced in the 1995-96 annual budget for attracting private investments failed explicitly to include urban infrastructure. This is despite the fact that many recent events have generated considerable concern regarding the deplorable state of infrastructure services in most Indian cities and the possible negative impact on urban productivity. The recent suspected plague outbreak brought this point home with the estimated production losses running into millions of rupees.

On the whole, the quality of urban services and their coverage in Indian cities have failed to keep pace with the growth in urban population, economy and incomes. The available evidence indicates that at least one fifth of the urban population does not have access to safe drinking water and, for the rest, the quality and quantity of water are totally inadequate. Only 35 percent of the Class IV towns and 75 percent of the Class I cities had an organized sewerage system. Moreover, 48 percent of the population did not have access to sanitation facilities. The same extent of problem exists for collection of solid wastes also. The collection efficiency for solid waste ranged from 50 to 83 percent in different size class of towns. Further, disposal of these wastes is often done in very hazardous conditions (HUDCO,1995). The impact of these lacuna is felt in the deteriorating public health conditions which ultimately also reflect on urban productivity.

While the quality and level of these urban services can be attributed to a variety of factors, a major problem has been the inability of various local authorities, which are charged with these responsibilities, to plan their investments and mobilize the needed resources effectively. In the past, main contribution to investments in these services has come from central and state plan allocations. These resources, which generated low cost loans backed by governmental guarantees, have led to a situation of service inefficiencies and lack of adequate attention to effective tariff structures and cost recovery. There has been concern among some officials and scholars regarding the likely decline in these allocations in the coming years.

In this paper, it is argued that the likely declines in plan allocations for the urban

infrastructure sector may be turned into an opportunity for improving the financial health of local and service delivery authorities by evolving an urban infrastructure credit policy with a focus on capital market access. While the potential of the capital market may seem very high, its realization will require considerable efforts both from the demand and supply sides. It is necessary for the state and central governments to facilitate this process through an enabling policy framework and leverage limited budgetary funds effectively. .

There is almost an unanimous understanding among the financial community that to enhance market based funds for the urban infrastructure sector, some form of innovative debt structuring will be necessary. One such arrangement which may be especially appropriate to explore for urban infrastructure is the development of a municipal bond system for Indian cities. The term "municipal bonds" is being used in this paper in a *generic* sense, and covers market borrowing by a variety of authorities and agencies. These include the municipal and state or metro level functional service authorities, financial intermediaries and private or joint sector companies set up as special purpose vehicles (SPVs) to finance or provide services through BOO-BOOT arrangements. Borrowing is essentially for municipal services and may include water supply, sewerage, roads, and land development as well as education and health facilities.

The following sections of this paper discuss some of the important issues in evolving a municipal bond system to finance urban infrastructure services. The next section focuses on the need for and constraints to accessing the capital market for urban infrastructure. The two important aspects for a municipal bond system in the Indian context relate to the institutional arrangements for market borrowing and the type of financing structures which will promote commercial borrowing with limited recourse. The main issues and options for these are discussed in the next two sections. Any efforts for market borrowing in this manner will need considerable support from the government. Some of the important aspects of such support are reviewed in the fourth section. The final section concludes the paper with the imperatives for any successful programme for market borrowing for urban infrastructure in the coming years.

2.0 ACCESSING THE CAPITAL MARKET - NEED AND CONSTRAINTS

One of the main reasons for this deplorable state of urban infrastructure is the inadequate capital available to finance urban environmental infrastructure. The alternative avenues for meeting this growing need are limited. Traditionally, urban infrastructure has been financed largely through budgetary allocations. However, it is likely that, with the increasing pressure on government resources and the high fiscal deficit, this source is not likely to provide any real increases. Additional finance has come through institutional resources, essentially though HUDCO, and some limited investments by the local and parastatal agencies through their internal resources. It is estimated that during the Eighth Plan

period the financial resources through these resources is not likely to exceed Rs. 2000 crores per annum.[1] This falls short of the estimates of investment requirements ranging from Rs. 3530 to 7520 crores per annum even to meet basic service levels (Refer Table 1).

Thus, on one hand, the current systems of financing suggests significant shortfalls in financing even the most basic level of services. On the other hand, financial sector reforms have enhanced the opportunities of tapping the capital market. In recent years, there has been a spurt in resource mobilization by the corporate sector through the capital market. For example, over the last five years, the total capital mobilized through the domestic capital markets has risen from Rs.5465 crores to over Rs.35000 crores (See Table 2). Especially, in the last two years, the share of new capital issues to Gross Domestic Savings has doubled from about 10 percent to over 20 percent.

Some of the plan allocations and institutional resources to the urban sector have benefitted from the *Directed Credit* policy followed in the country. Ongoing financial sector reforms will also lead to liberalization of this regime. For example, sources like the funds of Life Insurance Corporation (LIC), which have been allocated to this sector under this regime are likely to decline further. For example, if the Malhotra Committee recommendations for LIC are implemented, then the share of LIC's mandated investments to the social sector will be only to the extent of 10 percent of total controlled funds as against 25 percent of the incremental controlled funds as required by present guidelines.[2] While this may lead to a reduction of mandated investments by LIC in the social sector, it will also enhance the availability of long term funds through the market. Similarly, if some of the other recommendations regarding the entry of private sector in the insurance business are accepted, the quantum of insurance business will be enhanced considerably. Similar review of investment norms for provident and pension funds is also likely to take place in the coming years. Thus, while availability of such long term funds may increase, access to these will have to be on commercial terms, rather than the earlier regime of directed mandatory investments.

These observations suggest that to enhance resources for this sector, one of the most promising options may be to develop the capability to access the capital market. In this general scenario, policy makers and analysts in India have increasingly realized the need to enhance the access to additional resources for the urban infrastructure sector. For example, the working groups set up to assist the State Finance Commissions under the 73rd and 74th

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1 These estimates are for municipal services including water, sewerage and sanitation, solid waste collection and disposal, urban roads and streetlights. The plan allocations are estimated from Eighth Plan allocations for these services (refer Mehta and Satyanarayana, 1993 for details).

2 Controlled funds refer to total funds mobilized by the Life Insurance Corporation through its life insurance business.

Table 1
Investment Requirements and Potential for Urban Infrastructure
(Rs. Crores in 1991-92 prices)

a. Investment Requirements

Level of Service		Average Annual Investment Requirements (1991-2000)
Low	At current unit costs	3530
	With 50 % real increase in costs	5295
High	At current unit costs	4993
	With 50 % real increase in costs	7519

b. Estimated Sources of Finance During the Eighth Plan Period (1992-97)

Source of Finance		Average Annual Finance Flow
Plan Allocations during the Eighth Plan		
	Central Plan	73
	State Plan	1497
Institutional Sources		
	HUDCO	250
	IL&FS	100
	Bilateral / Multilateral agencies	100
Internal Sources		
	Municipal Authorities	55
	Parastatal Agencies	25
Total		2100

Sources: i. For investment requirements, Mehta and Satyanarayana (1994).
ii. For Finance estimates, Mehta and Satyanarayana (1994) for plan allocations and institutional resources, and Mehta Dinesh (1995) for estimates of internal sources, and HUDCO(1995) for IL&FS.

Constitutional Amendment have suggested promotion of commercially viable market borrowing for urban infrastructure services by municipal authorities (NIUA, 1995).

Constraints in Tapping the Capital Market:

Despite the apparent attractiveness of tapping the capital market for urban environmental infrastructure, there are serious institutional and sectoral constraints which have to be overcome. These may be distinguished between those related to the *Demand* side from the urban infrastructure sector and the *Supply* side constraints emerging from the lack of a well developed bond market in the country.[3] Demand side constraints include the poor market image of this sector in general and of the municipal and functional authorities in particular, especially in relation to their poor financial health and financial management capabilities, persisting inefficiencies in service provision, and the inherited structure of inadequate and politically sensitive tariff structures. A major constraint also arises out of the past dependency of local agencies on Central and State Plan funds. Therefore, there is a need to develop capacity beyond such plan borrowing, to develop project structures in a commercial format with which it will be possible to access the market. Sectoral demand side constraints are discussed at greater length in subsequent sections.

Supply side constraints include the macro constraint posed by a stagnant domestic savings rate in the economy and lack of a well developed debt market. For example, the information in Table 2 highlights the fact that, in the last two years, the share of new capital issues has been around 40 percent of Net Domestic Savings. This high ratio suggests constraints in further resource mobilization through the domestic capital market unless the savings rate in the economy is improved. Gross Domestic Savings as a proportion of GDP has been stagnating at around 22 percent, and has even declined to 20 percent in the last two years. Thus, any efforts at further resource mobilization should be such that they contribute to improvements in the savings rate also.

The growth in the Indian capital market has been dominated by equities, especially by the corporate sector for manufacturing industries. There has been no corresponding growth in debt securities. For example, the information presented in Table 2 highlights the shift from debt to equity in recent years. The share of non-convertible debentures ranged from 57 to 60 percent of total volume between 1988-89 and 1991-92. However, it declined sharply to 12.8 and 22.4 percent in the last two reported years. The growth in the capital market has thus entirely been due to equities only. Some of the main reasons for this are the lack of a deep and wide investor base and an almost non-existent secondary market for debt in the Indian market. In the past, government debt securities, which have dominated the debt

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3 Demand refers to financial resources for infrastructure and Supply refers to resources from potential investors through the capital market.

Table 2
Capital Issues to Public - India

		1988-89	1989-90	1990-91	1991-92	1992-93	1993-94
1.	Number of Capital Issues	253	379	335	572	1038	1168
2.	Capital Issues (Rs Crores)	5465	12287	9683	13450	28195	32322
3.	As a % of Net Domestic savings	11.8	21.8.	13.0	17.0	41.2	45.9
4.	As a % of Gross Domestic savings	6.4	12.0	7.6	9.5	20.0	20.4
5.	Gross Domestic savings as a % of GDP	21.5	22.3	23.7	23.1	20.0	20.2
	Distribution of Capital Issues (%)						
A.	**By Type of Securities**						
1.	Equity & Preference Shares	19.4	14.7	15.7	17.8	58.7	52.2
2.	Non-convertible Debentures	48.5	41.7	59.0	55.0	12.8	22.4
	Private Sector Companies	10.0	6.4	11.1	13.7	65.5	24.2
	Mutual Funds and Financial Institutions	12.3	8.6	10.8	9.0	11.1	33.5
	Public Sector Companies	77.7	86.7	78.1	77.4	23.5	41.5
3.	Convertible Debentures	32.1	42.8	25.3	27.2	28.4	25.4
B.	**By Mode of Issue**						
1.	Public Issues through Prospectuses	46.0	36.1	26.3	24.2	50.4	61.3
2.	Rights Issues	24.9	27.6	27.5	29.1	44.2	27.5
3.	Private Placement	29.1	36.3	46.2	46.7	5.4	11.3
C.	**By Ownership**						
1.	Private Sector Companies	54.5	55.1	45.8	48.1	71.2	62.2
2.	Mutual Funds and Fin.Inst	7.9	8.7	8.2	9.4	24.2	26.9
3.	Public Sector Companies	37.7	36.2	46.1	42.5	4.5	10.9

Source : Centre for Monitoring Indian Economy, (1994).
CSO(1995), for Estimates of Gross Domestic and Net Domestic Savings and Cross Domestic Product.

scene, have had a captive market due to the SLR and other directed credit policy requirements. This has also inhibited the debt market development.

These macro constraints suggest that measures to develop capital market access should be ones which help in enhancing the overall savings rate and contribute to debt market development. Introduction of debt securities, which will be able to widen and deepen the investor base for debt, is also critical. It is worth highlighting, however, that the two aspects are interlinked, as the development of a secondary market will be aided by larger volumes of such securities issued at market rates. Given the limits on domestic resources, there may be some possibilities of exploring the international capital market also. While the international investors have shown a keen interest in the infrastructure sector, their

participation would be realized only if commercially viable investment opportunities are developed. It is, however, unlikely that any significant borrowing under this route is likely to be possible for the urban infrastructure sector with the Ministry of Finance (MOF)'s stringent limits on total external commercial borrowing (ECB). Even if these limits are relaxed, the urban sector has generally not received any priority in national allocations.

For urban infrastructure, an added constraint relates to the fact that financial sector professionals have probably not viewed this sector as a potential market and, as a result, they lack information and sector experience at present. The challenge, therefore, is to improve the market image (in terms of risks and returns) of this sector through real improvements in infrastructure systems along with developing an interest among potential dealers and institutions through appropriate incentives.

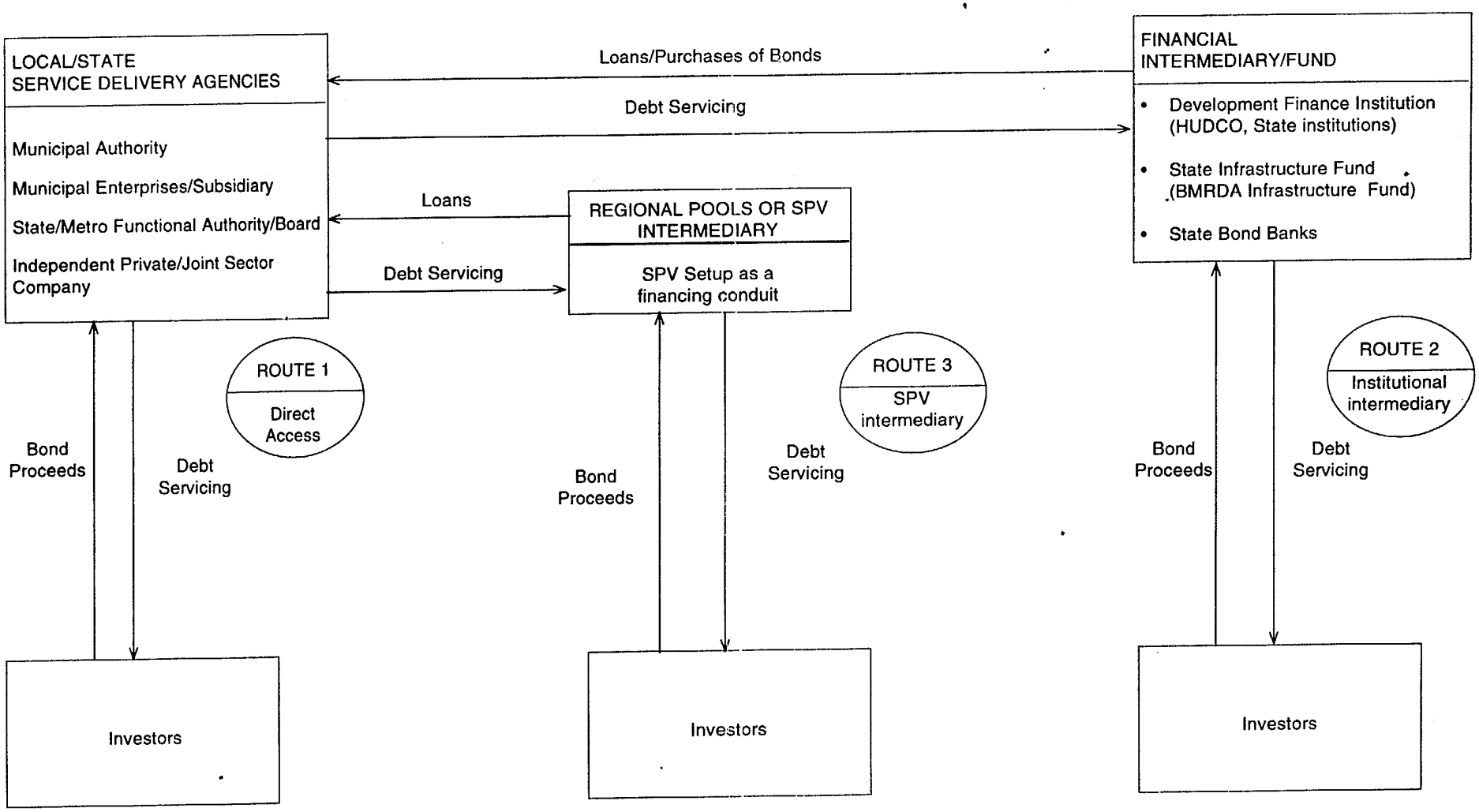
3.0 INSTITUTIONAL ARRANGEMENTS FOR MARKET BORROWING

To develop possibilities for borrowing by the urban infrastructure sector, it is essential that appropriate arrangements are explored within the constraints posed by the poor market image of this sector in general. One such arrangement which may be especially appropriate to explore for urban infrastructure is the development of a municipal bond system for Indian cities. The term municipal bonds, as mentioned earlier, is used to describe market-based debt for municipal services. The actual bonds may be issued by a variety of borrowers, including municipal authorities and service agencies, private operators or financial intermediaries who provide finance for municipal infrastructure. Within this larger perspective of municipal bonds, three alternative (though not exclusive) routes for market borrowing are discussed below. They are the *Direct Access* route, the *Financial Intermediation* route involving financial intermediaries as borrowers from the capital market, and the *SPV Intermediary* route where the SPV is used as a financing vehicle by a group of local borrower entities or for specific projects (Refer Figure 1).

Direct Access Route:

In using this route, the market is accessed directly by the actual service delivery agency which may be a municipal authority or enterprise, other statutory functional authorities at the state or metro levels, or an independent project/service company set up in the private or joint sector. This mode has been practiced in the US for well over a century. European cities have also borrowed through bond sales throughout this century, but their experience has been somewhat limited when compared with that of the United States. A recent European experience was that of the city of Prague, which raised resources though a $250 million dollar bond issue on the international market (Johnson, 1995). This practice is now being emulated in several developing countries in the wake of the worldwide rise in decentralization policies and initiatives in the last few years. For example, in a recent and

Figure 1
ILLUSTRATIVE INSTITUTIONAL ARRANGEMENTS FOR MARKET ACCESS



probably unprecedented public referendum, the citizens of Naga City, in the Philippines, voted in favour of financing a new bus terminal through the flotation of local government bonds (Kehew, 1995).

The advantage of this route is that the impact of market rigor in improving service efficiency will be the most direct. To the extent that local borrowing is linked to mandatory credit ratings, this route will also provide incentives and motivation for greater financial discipline and reforms among the borrowing agencies. Further, for agencies which are perceived as good credit risks by the market, the borrowing costs will also be lower, as the intermediation spreads are avoided. In a well developed capital market, the issuers can also have greater freedom in choosing the timing of their investments. On the whole, this route seems to be in keeping with worldwide trends in both decentralization and disintermediation, due to increased information, better integration of capital markets and increased choices for individual investors to place their capital directly. This would suggest greater reliance on the direct access mode. This is reflected in the worldwide trend of lower spreads and profits for financial intermediaries (Economist, 1994).

A brief review of the appropriate Indian legislation[4], including the antiquated Local Authorities Loan Act of 1914 and the relevant state municipal legislation, indicate that these will not be deterrents to such direct borrowing. Section 4(i) of this Act permits an appropriate level of government to make rules consistent with the Act regarding the nature of funds, security, and administration of the loan. Section 7, however, also suggests that any special enactment at the state level will override the provisions of this Act. Most municipal legislation, which effectively overrides the earlier Act, allows the local authorities to borrow, though only with permission from their respective state governments. Borrowing powers of some of the larger municipal corporations like Bombay and Calcutta are defined in relation to a ceiling which is set as a percentage of the total Annual Rateable Value of the properties or as a definite monetary limit. Their securities are also treated as trustee securities under the Indian Trusts Act (Planning Commission, 1983). At present the borrowing by other functional authorities will depend on their respective statutes. The reality of the Indian situation at present suggests that, at this stage, the direct access route may be feasible for very few of the delivery agencies. Further, this can be articulated only within a state level framework. The following discussions highlight the specific constraints which may inhibit direct borrowing.

Inadequate Capacity of Local and Service Authorities: The overall limitation to market borrowing from the demand side relates to inadequate capacity of the local and service authorities for market borrowing. This is reflected in a variety of constraints. For example,

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4 A more detailed review of the municipal legislation and those governing the statutory authorities is being undertaken under the FIRE(D) programme.

the low level of prices charged for these services, which recover less than 50 percent of operation costs, has given this sector the image of a social service. This is further compounded by inefficiencies in cost recovery and in service delivery due to a lack of consumer orientation. A second important constraint relates to the probable inability of conventional government accounting systems to satisfy potential investors regarding the true picture of their financial status, especially as understood by the financial community in general. A third constraint arises out of the fact that most authorities at present simply do not have the necessary credit histories upon which their creditworthiness can be established for the purpose of projecting a positive market image. It, of course, would still be possible for them to use a modified revenue bond structure to initiate market borrowing for at least a part of their requirements as discussed later. This procedure will help these agencies gain experience in market borrowing as well as establish their creditworthiness and help them to gradually move out of the dependency syndrome referred earlier. Since at present information about such issuers is not easily available or in-adequate detail, this would be an important step towards enhancing "knowledge" of this sector. This would be crucial for establishing a direct access route for the future.

Rising Internal Debt of the Government: When direct borrowing is done by municipal authorities, it will become a part of the internal debt of the government and will, therefore, contribute further to the already high fiscal deficit. The total internal debt to GDP ratio for the central and state governments[5] combined was 61 percent in 1993-94 and the ratio for total liabilities including the external liabilities of the centre was about 67.7 percent of the GDP. While the need to control government debt cannot be denied, a more important concern should be "the underlying fiscal situation, the purposes for which the borrowed funds are used and the debt management" (EPW, 1995). In this respect the use of the municipal revenue bond structure, as discussed below, will be useful to explore.[6] It will enhance local revenue capacity through viable increases in user charges. This, however, necessitates developing a fiscal and regulatory framework at the state level within which permission for local borrowing is considered. For example, credit ratings may be made mandatory for any direct local borrowing through a revenue bond structure.

While in earlier years state governments used to allocate some shares of their total open market borrowing (OMB) limits to local and statutory authorities, this practice has been changed since 1994-95, with the total market borrowing being done by the State Governments themselves. Thus, any permissions for the local and statutory authorities will require a review of these procedures. It may be pointed out, however, that this problem can

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5 The debt of the local governments is a part of the state government debt.

6 It needs to be also explored as to whether borrowing within a revenue bond structure can be treated to be outside the general open market borrowing of the government, as these bonds do not pledge the 'full faith and backing' of the government.

be avoided when the issuer is a statutory or private (or joint sector) authority or a special purpose vehicle created for financing, to the extent that their borrowing is not a part of the internal public debt of the government.

It is clear from the above discussions that, while these constraints are serious, they are not insurmountable. More importantly, it is the possibility of direct access itself which can provide the much needed incentive and motivation for these authorities to introduce necessary financial and service delivery reforms. In the past, most policies and programmes have placed an undue emphasis on "technical assistance" as a panacea, without paying adequate attention to develop systems which provide incentives to local entities to introduce reforms and efficiency measures. Such incentives must emerge from a infrastructure finance system which creates the need for local authorities to look beyond their dependency on state allocations or other subsidized resources. It will be useful to draw upon the design of the Australian Loan Council, which co-ordinates the macro-economic fiscal policy with state level market borrowing. The states are given greater freedom to determine their own financial requirements which is, however, linked to stringent standards of financial reporting and the willingness to be subject to tighter surveillance and adherence to various fiscal indicators. Any explanations for variations from these indicators are made public to ensure transparency of the entire process (World Bank, 1995).

Financial Intermediation Route:

In using this route, financial intermediaries access the market directly and use these proceeds to either purchase the bonds of local agencies or provide loans to local borrowers. This route has been used extensively in Europe where municipal banks have generally obtained their resources from contractual savings institutions and other long term resources borrowed from the market (World Bank, 1994). Even in the USA, where direct access by local authorities is the dominant route for capital market access, many state level arrangements like state bond banks and revolving funds provide intermediation to smaller (and weaker) municipalities or for sectors such as water and sewerage. While financial intermediaries like Municipal Development Funds are also found in many developing countries, these are more likely to be publicly funded and have generally not accessed the market for resources.

A review of the various types of intermediation suggests that there are five main options[7]. The first is a typical banking institution which focuses on lending for municipal infrastructure. The known cases are from Belgium (Credit Communal de Belgique - CCB, which is owned by the municipal governments) and a state owned bank from France. Both

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7 This categorization and review are based on Johnson (1995), Davey (1988) and a review of Indian experience.

are governed by their country's banking regulations. A second type is the bond banks, found in the USA and in Denmark, which essentially "*package* borrowing requirements of one or more municipalities and then go to the capital markets to secure financing" (Johnson, 1995). They are not banks in a general sense and do not provide any other banking services.

A variety of special loan funds, largely capitalized by some form of subsidies, form the third category of intermediaries. During the last two decades such institutions have also been promoted in several developing countries with varying levels of success. However, the experience of these indicate a lack of sustained capacity for investment, largely due to "undercapitalization, poor financial discipline and substantial arrears" (World bank, 1994). The few exceptions highlight the importance of independent management and rigorous project appraisal. This category also includes revolving funds in the USA which have been set up through initial grants from the Environmental Protection Agency, especially for environmental infrastructure. Many of these have leveraged the initial capital through a variety of financing arrangements, including contributing to debt service reserve funds, providing other credit enhancements to local issuers, as well as securitisation of repayments of loans made from initial grants. Some have also used the grants in combination with market borrowing to provide loans to local borrowers at blended interest rates.

Another category of intermediaries is different from any of the above. These do not lend directly to local borrowers but provide rediscounting or refinance facilities for other commercial institutions like banks or even private financial companies. A well known case of the former is FINDETER in Colombia, which rediscounts up to 85 percent of commercial banks' loans to municipalities. Its main capitalization sources have been bond issues sold to commercial banks and loan recycling. The market borrowing helps to leverage the limited central government budgetary allocations and donor resources also available to it. It has been operating successfully for more than twenty years. Its success depends both on its own management and appraisal system and quality of the institutions to which it lends (World bank, 1994 and Johnson, 1995). In India, in other sectors like agriculture and housing, similar institutions exist, like NABARD and the National Housing Bank (NHB), which also refinance commercial and cooperative banks and private housing finance companies. However, this has not been prevalent for infrastructure so far. This method, however, adds a further tier as well as costs in the intermediation process.

The fifth category of financial intermediaries, especially found in India, is the Development Finance Institutions, which have focused their activities on selected sectors like manufacturing (IDBI, ICICI, IFCI) and housing and infrastructure (HUDCO). Given its client base, HUDCO has largely relied on government guarantees as the security for their loans. Its resource mobilization had been supported by government guarantees and through the directed credit mechanism. In wake of financial sector reforms and the gradual decline in the directed credit policy, it has now initiated attempts to raise resources from the market.

In general this has been true for all DFIs, with gradual increase in their cost of funds. This has put considerable pressure on them to link their lending rates to the increasing cost of funds, especially with the deregulation of lending rates. This is being reflected in the recent increase in Minimum Lending Rates being resorted to by the DFIs.

The choice among these options for the type of financial intermediaries would depend on the local country context and the history of municipal credit institutions. The main aim of the financial intermediation route should be to move towards market rigour and promoting credit histories with which the direct access route will become feasible for many local issuers. At the same time, though financial intermediaries add intermediation costs for the final borrowers, they will also most likely have a wider market access at lower costs. A critical requirement in their functioning will be rigorous appraisal mechanisms which will ensure viability and bankability of infrastructure projects financed by them. Their procedures should also be such that they provide incentives to the service delivery agencies to enhance efficiency and introduce necessary reforms. Their main function should be to promote more viable borrowing by local agencies, rather than simply routing government grants. Further, they must also maintain a good credit rating themselves in order to be able to borrow from the market directly at competitive rates.

Regional Pools and SPV Intermediary:

A third alternative is collaboration among several local or other service delivery authorities, who create regional pools with a special purpose vehicle (SPV) to raise resources through debt and equity. This may be effective in reducing costs of issuance and for using structured arrangements which may be difficult to develop for a small single borrower entity. In the US, such pools are common, especially among smaller authorities. Their main purpose is to "expand opportunities for obtaining capital and to lower its cost to local governments. They do this, not so much because the participants in the pool are poor credit risks, but they have difficulty in accessing the market because of their small size or because they have not borrowed previously" (Peterson, et.al. 1988). Larger issues generate stronger investor interest which leads to lower interest costs for the smaller borrowers. The bonds are issued either as blind pools, with actual borrowers identified later or for a specific set of local projects or bond issues. In either case, there is no cross liability across borrowers from the pool. Most of these pools have commercial credit enhancement such as bond insurance. In fact, often the bond insurance company helps to ensure rigorous appraisal and commercial structuring. These arrangements also provide advice and technical assistance to the local authorities.

Such regional pools have been formed in the US under several types of structural arrangements. For example, the *municipal league pools* are formed by associations of cities which act as the pool administrator. At times the league sets up a SPV to serve as a conduit.

In some cases one of the participants in a pool serves as an issuer for bonds, though its credit pledge is only for its own borrowing. Such *lead city pools* are generally formed to meet regional or area-wide infrastructure. In other cases, *special financing districts* are created to finance a specific project or group of investments. The debt is repaid through special assessments or user charges for services within this new geographical entity.

Such a SPV may also be used as a financing vehicle for financing specific projects where the creditworthiness of local entities may not be adequate for direct access, even though the specific project or service may provide adequate opportunities for commercial structuring. In such an arrangement, the strength of sponsors, the legal status of the SPV and the financial assessment of the specific project or service become important concerns for potential market access.

4.0 FINANCING STRUCTURES AND ARRANGEMENTS:

It is important to put the entire issue of market borrowing in a larger perspective. As highlighted by the World Development Report, 1994, "the options available to a country depend on its administrative capability and the state of its capital market." In India, the situation in this regard is complex. On the one hand, the administrative and financial management capability of local and service authorities in general is not very high, though there are cases of authorities with adequate capacities. Similarly, while the capital market for equities has begun to develop in the last few years, the market in debt securities has remained at best illusory. It will probably be necessary to support and encourage a variety of approaches. The important concern in all the options, however, will have to be the development of market and consumer oriented institutions. The first stage in this process would be to develop project financing structures which will withstand market scrutiny. Within the institutional options discussed above, an important aspect concerns the type of financing structures which may be used to support commercially viable projects. This relates to issues of the type of bond structures, the nature of security and credit enhancement, and the timing and maturity of market borrowing in relation to the project cycles for the investments. These issues are discussed below.

Type of Bonds:

Municipal Bonds generally include both General Obligation (GO) Bonds, which carry the "full faith and credit" of the issuing governmental authority, and Revenue Bonds which rely on specified sources of revenues from facilities and services which are financed out of the bond proceeds. The latter are more often issued by specific service or functional authorities.

The only country in the world where the use of capital markets to finance investments

in urban infrastructure has a long history, spanning over a century, is the United States of America. The USA has the most well developed municipal bond system in the world with a primary market volume of over $292 billion in 1993 and a total outstanding municipal debt nearing almost a trillion dollars. In the US, the last two decades have seen tremendous growth in the use of revenue bonds as opposed to general obligation bonds, with their share increasing from one-third in 1970 to over 70 percent by 1994.

The legal foundation for GO debt issued by US local entities is based on the US Constitution. "The ability to incur debt, forms of debt and methods of repayment are clearly defined by the constitution of each of the fifty states" (Wong, 1995). Legal interpretations are expressed in detailed governmental codes. However, the debt issued through revenue bonds is not considered as indebtedness within the meaning of constitutional provisions, but its authority is derived from the "*special fund doctrine*" under the US Constitution. The question of a potential levy of a very high level of taxes does not arise since the fund for servicing revenue bonds is largely realized from direct user charges for specific services. A large proportion of revenue bonds in the US is issued by public revenue authorities, including municipal enterprises, water and sewer utilities, special assessment districts, business improvement districts, etc. which are able to corporatize the service delivery and set the rates for user charges at appropriate levels more easily.

For urban infrastructure in India, in general it would be preferable to advocate the use of the revenue bond structure, which relies on specified sources of revenues from facilities and services which are financed out of the bond proceeds. The focus on revenue bonds is suggested for several reasons. First, the use of revenue bonds would help to raise local awareness regarding service delivery and help to enhance its efficiency, since the success of these bonds depends on the potential revenue streams which, in turn, are dependent on the quality and coverage of service provision. Secondly, it must be remembered that, in India, even the state governments have not been given widespread powers to raise general obligation debt. It is only recently that the creditworthiness of the State of Rajasthan has been rated and the state has received the necessary permissions to mobilize market debt for a canal and an irrigation project which were not financially self sufficient. It, therefore, seems unlikely that municipal authorities, which are a lower tier of government, (especially those which are not viewed to be in good financial health) will be given such powers on a wide scale. On the other hand, revenue bonds issued by either local authorities or other private or statutory authorities and financial intermediaries may be a far more acceptable form of debt for the local tier of government. Thirdly, as municipal governments generally have a poor market image in the financial community, more explicitly demonstrable project or service revenue streams will probably be more acceptable to potential investors.

In India, some recent innovations in the power sector have made use of structured debt obligations (SDOs), which are akin to revenue bonds. These instruments have essentially

relied on proven and reliable revenue streams from a select set of consumers of the State Electricity Boards, with ultimate recourse to a state government guarantee. The two recent cases are those of the RIICO and IPICOL bonds. Despite their potential, there may also be some constraints for sustainable development of this route. For example, the use of a budget allocation for the state guarantee may be difficult to sustain beyond initial projects. Similarly, by pledging their best revenues for a single debt, the agencies may have restricted their access to further debt.

Use of such structured arrangements in a more sustainable manner for urban infrastructure through a revenue bond route would be relevant for those services where a levy of user charges on a financially self sufficient basis is possible, such as water, sewerage, solid waste collection, playgrounds or even specific education and health facilities. While the use of very low tariffs has generally been the rule, access to market resources by local and state authorities through the application of a credit rating is likely to provide the necessary motivation for increasing rates of user charges by local or state delivery agencies. In trying to adapt the revenue bond route for urban infrastructure in India, attention will have to be paid to some important basic issues related to developing effective security structures, as discussed below.

The use of GO bonds may be appropriate for other general municipal functions where it may not be possible to ensure direct cost recovery, like roads, street lighting, public health, etc. However, such borrowing will have to be within the overall state OMB allocations as determined by the concerns of macro economic stability. Given the past patterns of OMB allocations, it seems probable that the urban sector share will continue to be low. However, the use of the revenue bond route for other services like water will free up the limited resources based on the general borrowing strength of municipal authorities.

Security Structures:

The most distinguishing feature of a revenue bond is the security structure which underlies it. Since the lender has recourse only to the pledged revenues, the specific source(s) need to be very clearly identified, their legality clearly ascertained and their reliability rigorously assessed. The type of revenues which are actually used in this regard vary considerably across different sectors and agencies. For example, for water and sewerage, while it is generally user charges which are used, these can also be further supported by other streams like tax increments resulting from property improvements or capacity allocation charges. In the US, there are also examples of debt service surcharges on water or sewerage user charges which have been approved on a prospective basis for new bond issues. The important aspects here relate to both the legal power of the issuer to charge or receive these revenues on a continuing basis and the reliability of market trends assumed in projecting future revenues. An additional consideration is to ensure that the revenue streams which are

pledged do not legally have other priority claims.

It must, however, be recognized that the market image of the urban infrastructure sector is generally poor with high perceived risks linked to low tariff levels and to a lack of political will to revise these. Market concerns in such a situation would focus on the adequacy of revenue streams, especially when there is a lack of demonstrable history in this regard. The risks attached to the feasibility of tariff revenues and adequate demand will have an important influence on the cost of funds. Thus, most revenue bonds generally carry covenants related to the levels at which user charges will have to be levied so that the net revenues are sufficient to meet the debt service charges. Another major concern will be the legal validity of the revenue pledge, since conventional revenue bonds have no other recourse. In this regard, the bankruptcy provisions governing the issuing authorities also become important considerations. For example, in the US under the recent amendments to the bankruptcy legislation, the special revenues pledged to bond holders cannot be tapped by general creditors in the event of a bankruptcy declaration.

Credit Enhancement:

Municipal revenue bonds will need to be rated by credit rating agencies based on their credit quality. Recent experience with some of the SDOs and infrastructure bonds in India suggest that a better rating helps to both reduce the cost of borrowing and expand market coverage. The quality of credit in a revenue bond can be enhanced in a variety of ways, some of which are internal to the specific bond structure which is developed, as well as others which rely on external measures, such as insurance or guarantees. It is likely that given the rather low market image of urban infrastructure, strong credit enhancement will be crucial for market acceptability and for ensuring that the cost of bonds is within the debt servicing capacity. The potential measures for credit enhancement which are internal to the bond structure include the following.

i. Debt Service Reserve Fund: A debt service reserve fund is created to provide a cushion against delayed debt service payments. It generally has sufficient funds to cover annual debt service charges. It may be capitalized from the bond proceeds, from previous reserves of the issuing authority or by using special grants for this purpose. It essentially helps to ensure timely payments and does not necessarily ensure against total default. Its replenishment, in case of delayed payments, needs to be clearly established. It is most likely that for urban infrastructure some assurance or guarantee from state governments may be required at least for initial projects or issues. A commonly used mechanism is a state-aid (grants or transfers) intercept whereby in case of delays in debt servicing payments by a local authority the state transfers are diverted to the debt service reserve fund. However, more preferable alternative sources for such guarantees which use the urban sector potential need to be explored. Some examples are: the participation of the

local corporate sector in providing such guarantees; arrangements to divert revenues from select local tax payers; and, committing some of the land resources of the agency. The timing for tapping the debt service reserve fund and its replenishment become very important as illustrated in Figure 2. The importance of a trusted institution or firm to act as a trustee in this arrangement is crucial in enhancing the credit quality of the issue.

ii. Overcollateralization of Cash-flow: This helps to cover to some extent the delays or delinquencies in the collection of user charges without adversely affecting timely debt-servicing. This may be achieved by requiring a debt service coverage ratio of 1.1 to 1.25 from the specifically committed revenues.

iii. Flow of Funds Structure: The bond resolution must clearly set forth the order of priority in which the revenues generated by the enterprise will be allocated to various purposes. Figure 2 also illustrates a typical flow of funds structure.

iv. Additional Bonds Test: Another important covenant relates to an additional bonds test which "prohibits an issuer from issuing parity bonds with the same revenue streams unless certain coverage requirements with respect to outstanding and new debt are met." The test here may be applied to historical or future projected revenues, though the former are preferred by the credit rating agencies. In the case of the latter, the coverage requirements will need to be enhanced.

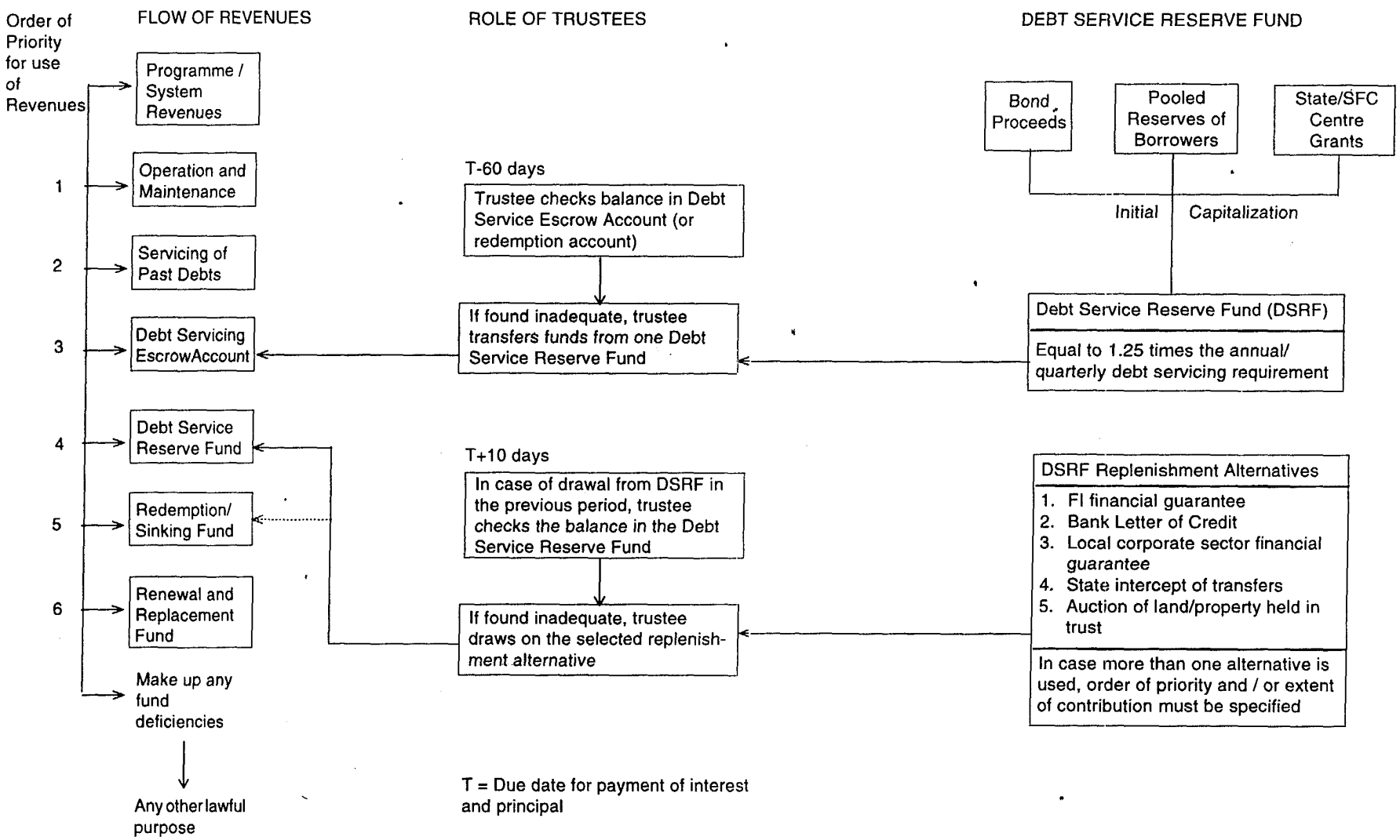
v. Other Related Covenants: Additional covenants may cover aspects such as the requirement to operate and maintain the facility and to provide casualty insurance, a list of permitted investments for pledged funds, the retention and allocation of surpluses after meeting the specified flow of funds, etc.

vi. Double Barreled Bonds: While the main security of revenue bonds is through user charges, tax revenues may be used as a back up security arrangement in case of delays. Such guarantees may enhance the credit quality considerably. While such arrangements may be needed initially, over time reliance on such measures needs to be eliminated.

In addition, there may be other credit enhancements which are external to the bond security structure. For example, those practiced in the US include, bond insurance or financial guarantees from private insurance companies, a Letter of Credit (LOC) from banks or other arrangements supported by the State governments. Such insurance essentially provides for timely payments of debt servicing in case the borrower is unable to do so. Premiums for such bond insurance depend on quality, length, size and type of issue, generally ranging from 0.10 to 1.0 percent of the issue's total principal and interest.

Figure 2

ILLUSTRATIVE FLOW OF FUNDS AND CREDIT ENCHANCEMENT FOR MUNICIPAL REVENUE BONDS

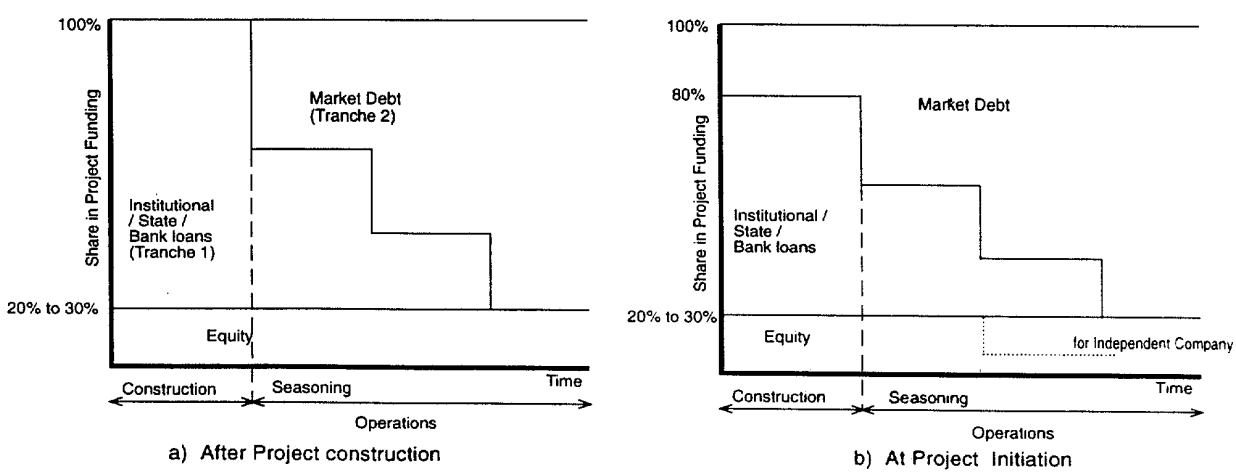


Timing and Maturity of Borrowing:

The issue of when to access the market for infrastructure financing is influenced by the general perception of high risk attached to project development and construction phases which may take 2 to 3 years and 2 to 5 years respectively. Secondly, given the past image of low tariffs and cost recovery, the history of revenue collection is essential in a revenue bond (or a SDO) arrangement. Given these concerns, it may be advisable to attempt market access only after the construction phase, or even after cash flow seasoning experience is available. In such arrangements, a two tranche finance package as suggested for the power sector by Dattagupta (1994) would be appropriate so that the FIs (or banks) finance the first tranche (for 2 to 5 years), while the second tranche is arranged through market access. The FIs or banks may insist on project completion guarantees and an underwriting commitment from another institution for the second and subsequent tranche. "While the first tranche will be at higher cost due to the project completion risks, the second (and subsequent) tranche can be longer term bonds at better rates as operations would have already begun. The underwriting ensures that the bank is repaid at the end of three years from the proceeds of the loans raised in the second tranche" (Dattagupta, 1994). The extent of market access can be increased over time so that the entire loan is repaid through the bond proceeds from refinancing. The share of market access will depend on the cost trade off between the rates charged by the FIs and the market rates to be paid for the revenue bonds (refer Figure 3a).

As an alternative, arrangements can be evolved in a more innovative way so that, for a given investment need, initial market access may be restricted to a small share (say 20 percent) for which suitable security and credit enhancements can be worked out based on secure revenue streams and appropriate credit enhancements. Over time, with reduced risks due to project completion and revenue seasoning, market share can be increased and institutional loans may be repaid through refinancing (Refer Figure 3b).

Figure 3
TIMING AND EXTENT OF MARKET ACCESS FOR DEBT



The financial intermediaries or state level revolving funds arrangements can provide suitable insurance and underwriting facilities in such arrangements at commercial terms. Such arrangements will help the local agencies to establish credit histories and prove their credit worthiness for more future market borrowing.

While most infrastructure investments require long term finance, it is likely that in the domestic capital market securities beyond 5 to 7 years may be difficult to market. For example, in the Indian capital market, use of innovative instruments like bonds with a revolving underwriting facility (to respond to the problem of longer maturity requirements) and accumulating bonds for initial period (to respond to the low pay outs in infrastructure projects in the initial period) has been tried. It may thus be necessary to develop a mix of instruments with varying terms and combine these with longer term institutional resources to respond to the infrastructure sector needs and market realities. Similarly, it would be necessary to vary the bond features to cater to different investor segments. For example, in the USA, many local issuers use mini bonds which are targeted to the local individual investors (Peterson, 1988). The use of combinations of serial versus term bonds[8] cater to different investor groups. In fact, in many issues, bids are allowed to be submitted with any combination of serial or term bonds to reflect the investor demand directly (GFOA, 1995). The planned issue of municipal bonds in Naga City in the Philippines has been termed "Rainbow" bonds, as these use a range of coupon values to cater to different groups, with a maximum of US$40000 for institutional investors to US$20 targeted for local sale (Kehew, 1995). It must be remembered that the local sales are also important for generating local awareness and acceptance for such bond issues.

5.0 NATURE OF STATE SUPPORT:

While there may be considerable potential for a system of revenue bonds in India, the review in previous sections also clearly highlights the need for a variety of state support for developing such a system for urban infrastructure investments. Some of the important issues for state support are discussed below.

Developing Financing Systems for Urban Infrastructure:

The entire idea of introducing a system of municipal bonds for urban infrastructure is based on the premise of the need for developing and promoting sustainable mechanisms for enhancing access to capital market resources. It may be argued that the potential of market access can itself provide incentives for other local reforms related to improving revenue sources and collections, better cost recovery of services and improving expenditure efficiency. These in turn will need to be based on a greater consumer orientation in service planning and delivery. The move towards greater access to capital market resources on the

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8 In a serial bond structure, a certain amount of principal becomes due in annual installments, whereas in a term bond, principal payments are bundled into one large maturity (GFOA, 1995).

one hand requires a well developed market with the capabilities and procedures in place for credit rating, appropriate risk insurance, underwriting facilities, as well as public regulation of financial markets. These processes are under way in India. Further, the ongoing reform process will probably make it possible to have greater market based access to long term contractual resources including insurance and pension funds in the coming years. On the other hand, there is also a need for either strong local issuers or a set of financial intermediaries which will be able to link the local borrowers with the emerging capital market.

The conditions in India point to the likelihood of agencies at varying levels of capacities and motivation. For example, there are Municipal Corporations like Madras where complete commercial accounting has been adopted. Its lack could otherwise be a major hurdle to direct access. There is also the example of the Ahmedabad Municipal Corporation which is obtaining a rating as it explores direct borrowing. The recent working groups formed to assist the State Finance Commissions set up under the 73rd and 74th Constitution Amendment Act have also advocated market borrowing by municipal authorities (NIUA, 1995). On the other hand, there are national and state level intermediaries which are also vying to enhance market access and leveraging the limited governmental subsidized funds. For example, there are moves to institutionalize the municipal development fund in Tamilnadu and an infrastructure fund by the Bombay Metropolitan Regional Development Authority in order to enhance their market access. Some of the recent central government programmes like the Mega City scheme have also set up state level intermediaries in order to leverage the limited plan allocations. Other arrangements being tried include the SPV set up for undertaking the Tiruppur Area Development project in the state of Tamilnadu. Under this activity, the equity stake is provided by the local association of industrialists, the state government agency for industrial infrastructure development and the Infrastructure Leasing and Financial Services (IL&FS). The latter are also the financial advisors for the project.

These observations suggest that it will be useful to encourage and promote all of the three institutional arrangements discussed earlier. This will help create competition so that the financial intermediaries will also need to keep their costs low to attract the best local borrowers, whereas for local borrowers there is an incentive to improve their performance adequately so that they are able to access the market directly at lower costs. Each arrangement, however, will have its own requirements and prerequisites to ensure that the development is sustainable and does not have long term adverse impacts on the financing system. These are discussed below.

State Level Framework for Direct Access: As discussed earlier, the three constraints to direct access will need to be addressed adequately. First of all, there will have to be an acceptance of a policy of direct borrowing by local entities (municipal and other functional service agencies), since state permissions for this mechanism will be necessary as per existing legislation. Such direct borrowing will need to be incorporated into a rigorous regulatory framework with mandatory credit rating and probable limits on the GO type of borrowing.

Proper legal assessment of revenue bond structures will also need to be done to ensure that these do not represent full faith and commitment of the governmental entity.

At present, it is within the annual and five-year plan process that the borrowing limits for sub-national governments are worked out. Open market borrowing (OMB) of municipal corporations is governed by local allocations from the total OMB allocated for the State Plan. Vertical allocation of the total governmental OMB between the centre and states is decided by the Ministry of Finance in consultation with the Reserve Bank of India (RBI). Its further horizontal distribution across states is decided every year by the Planning Commission in discussion with state governments. Of the total state government borrowing, on an average less than 20 percent has been through OMB. Further, of this percentage, a very small share is probably available for urban environmental infrastructure. For example, in the state of Maharashtra, out of the total OMB by the state government, only 10 percent was allocated to urban related authorities. Even this has been changed since 1994-95 with the total borrowing being done by the state governments and local allocations done through state loans.

In order to evolve a meaningful system of municipal borrowing, it would be useful to differentiate between GO and Revenue bonds as discussed above, with the former being linked to plan allocations and the latter remaining outside of the State plan. This will require identifying appropriate agencies and introducing the necessary legislative and operational changes (as required), to enable these agencies to borrow directly from the capital market on the strength of their own credit rating.

Developing Financial Intermediaries: The need for financial intermediation, at least as an interim measure, until the direct access route is well established, is well accepted. It is also likely, as evident from the US experience, that some form of intermediation will always be necessary for smaller and weaker local entities. For financial intermediation, there needs to be greater debate on the choice among different type of intermediaries. There are several choices which may be considered for India.

Three issues are important in this regard. The first concerns the need to have a greater market orientation and professional and independent management for these intermediaries. Even if these have access to cheaper governmental resources, rather than using these for unsustainable grants and subsidized loans, the need is to leverage larger volumes of market resources with these. The second issue concerns promoting specialized financial intermediaries for urban infrastructure, as seems to be the policy emphasis, versus enabling and inducing general finance institutions like the commercial and cooperative banks and other DFIs like the IDBI, ICICI and IFCI to start including urban infrastructure in their portfolios. The advantage of the latter will be that far more choices will be available to local borrower entities. To support this, refinance facilities for these institutions and tax advantages as have been announced for other infrastructure sectors will be helpful. However, the experience in housing sector suggests that specialized agencies are probably essential as urban

infrastructure is not likely to become a priority for other DFIs and banks till the market image of the sector improves.

The third issue concerns the nature of specialized intermediaries to be promoted for urban infrastructure. Eighth Plan had recommended setting up a national Infrastructure Bank. However, this has not materialized. Instead, HUDCO has started lending for this sector since the last five years and plans to operate its operation in this sector. In addition, several loan funds set up at the state or metropolitan level. Many of these have however, been only routing agencies, without adequate emphasis on project appraisal. There are some exceptions, however. The first is the Municipal Development Fund in Tamilnadu which was set up under the World Bank program and is now being considered for the establishment of a development finance institution. The second is the Infrastructure Fund which is being explored by the Bombay Metropolitan Regional Development Authority (BMRDA) which would be set up from the surpluses generated by BMRDA from its Bandra Kurla complex. None of these have so far even attempted to tap the capital market directly. Many of the new infrastructure finance corporations have been set up under the central government's Mega City scheme, which emphasizes leveraging of plan allocations. However, even in these market access is envisaged through further intermediation, as these corporations plan to raise institutional finance. While the state level institutions in principle can provide competition among different intermediaries, in reality these introduce distortion and confusion as they do not operate on market principles. Thus while such state level intermediaries are important, greater market orientation in their operations is critical.

On the whole then, the key to developing successful financial intermediaries would be to enhance their resources through greater market access and follow rigorous project appraisal using more innovative project structuring arrangements as discussed earlier. For these to work in practice, independent and professional management will be essential.

Promoting SPVs: The importance of promoting SPVs need to be recognized as these are different from the financial intermediaries. The three types of SPVs which may be promoted through positive support include i) joint ventures of municipal authorities coming together as in the USA to reduce the costs of market access, ii) for supporting infrastructure systems which need regional cooperation and iii) for promoting public private partnerships through joint sector SPVs. The specific support may be as equity contributions in the case of the third alternative, whereas for the first two, the support may be more of an advocacy role with the necessary permissions from the state governments.

Creating Credit Enhancement Opportunities: The most important form of support for developing the direct access and SPV route, once the regulatory structure has been defined, would be to develop sustainable credit enhancement opportunities for local entities. The main question concerns the options for credit enhancement opportunities that will be possible to sustain without unduly taxing either government budgets or capital adequacy norms of financial institutions.

In India, no effective mechanisms exist at present in any sustainable manner. While Bank LOCs are available under the new norms for capital adequacy, it is likely to become more difficult to provide such guarantees on a sustainable basis. This would also be true for those financial institutions which have been providing guarantees for the power sector on a limited scale. With the expected reforms in the insurance sector, it is possible that specialized financial guarantees (or bond insurance companies) may become feasible in the future. It may be useful to explore the possibilities of supporting some of the existing finance institutions by starting such operations with future subsidiaries or new companies in mind. For urban infrastructure, it is also necessary to explore whether a niche market can be developed in this area by some of the existing financial institutions which have been involved in lending to this sector.

Another option that may be considered is the development of a separate guarantee institution and/or an insurance facility which operates on a commercial basis. This may be done either by supporting a new institution with private management and capital, as is being planned in Thailand[9], or enabling an existing institution (development finance institution, state finance intermediary or an insurance company[10]) to introduce such a facility. Most of these intermediaries are at present considering only finance operations. However, with the expertise built up for credit analysis by these funds, the insurance business can be profitable and this will help to leverage their resources to a very great extent. The result would be to greatly enhance leverage of limited public funds. It may be also useful for the State Finance Commissions which have been set up under the 73rd and 74th Constitution Amendment Act to make provisions for such funds which could then be leveraged through market access. The key to developing this successfully would be to maintain a high level of credit analysis, ensure that the guarantee and/or insurance operations remain viable, and ensure that the agency can consistently obtain a high credit rating for itself. The smaller debt requirement of urban environmental infrastructure projects of many municipal authorities, some of which have a high level of economic growth, is likely to make this option a real possibility.

Leveraging Limited Governmental Resources: It is being increasingly realized among policy makers that there is a need to leverage the limited public resources in order to enhance the quality of urban infrastructure. The above discussions suggest several mechanisms for such leveraging. For example, these may be used to create credit enhancement opportunities for direct access. This may be through equity in a commercial guarantee facility or

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9 The Thai Guarantee facility is planned as a public-private corporation with private management. It will provide guarantees for loans made by private financial institutions to municipalities and private operators of urban environmental infrastructure. The guarantee will help these agencies to secure longer term loans and establish credit histories with which it will be possible to access the market later. This will help to leveraging the resources by more than ten times (World Bank, 1994, p.100).

10 The opening up of the insurance sector to private sector, as per the Malhotra Committee report may help in this process. However, even otherwise, GIC may be supported to develop such a facility.

contributions to debt service reserve funds to enhance the credit quality of bond issues. Alternatively, contributions to equity of SPVs or other intermediaries can also help to leverage the limited funds manifold. These funds may also be used to contribute to revolving fund of state intermediaries. Further leveraging may also be attempted by securitisation of loan repayments from revolving funds. The critical need in all these cases is that market discipline is brought in and independent management of resources is possible within a larger state level framework as described above. The subsidies, where necessary for specific sectors need to be transparent and direct.

Strengthening Service Delivery and Local Borrowers:

In the past, the nature of policy discussions regarding institutional failures have implicitly focused far too much on lack of technical knowledge on the part of the local government staff. There has been on the other hand a neglect of the "constraints and perverse incentives confronting local personnel and their political leadership" (Dillinger, 1993). To some extent the institutional financing arrangements discussed above would help to introduce incentives for introducing local reforms. This may be further supported with other direct incentives which will also lead to improvements in service delivery as discussed below.

Tariffs and Charges for Services: Probably the most critical element in bringing in market discipline in urban infrastructure will be attaining an adequate tariff structure which reflects the true costs of service provision and is also based on a demand assessment for these services. This would require considerable local efforts as neither costs nor demand are at present assessed in any meaningful manner. Many policy analysts have argued for local autonomy in fixing tariffs. There is also some evidence of considerable tariff revisions which have been achieved by making it a condition for access to institutional finance from HUDCO or the World Bank (HUDCO, 1995). However, the ground evidence suggests that the need may be more acute for some level of mandatory tariff requirements, as otherwise there is likely to be strong local political opposition to upward revisions in tariffs. It is probably due to this that in many states minimum tariffs are set at the state level itself.

It is also likely that separation of the service delivery function, either through a public private partnership or by creating a municipal or statutory enterprise, may help to resolve this issue. This may help to take the pricing and other management decisions outside of day to day political control, though public monitoring and policy control is retained. The recommendation of setting up a Utility Tariff Commission in each state, made by a recent working group on Augmentation of Resources for the State Finance Commissions under the 74th Constitution Amendment, needs to be considered seriously in this regard (NIUA,1995). Such a Tariff Commission, however, would lay down the principles for tariff setting which have to be followed, rather than the actual minimum rates as has been the practice. Compliance with such principles should be mandatory and promoted through appropriate incentives. The State Finance Commissions can incorporate such incentives in the design of

their transfer mechanisms. Measures to improve recovery of charges and fees should also receive attention as at present only 50 to 60 percent of the outstanding demand is actually collected.

An additional aspect which is crucial for urban services is the need to develop measures which can capture the high economic potential and high demand for urban services. For the urban services, it would be useful to introduce land based measures as the effect of infrastructure provision is generally evident in land price increases. For example, valorization charges or development charges which capture the infrastructure costs would be useful. An additional example is provided by the town planning schemes in Gujarat, essentially land readjustment measures, which provide tremendous potential as land becomes available to local agencies to finance infrastructure without recourse to any other cumbersome legislation. However, these are bogged down at present by administrative problems. Another potential option, where considerable excess demand in water and sewerage exists, is to mobilize initial contributions through capacity allocations or for a future connection. Thus the future consumers make up-front contributions which contribute to the cost of facilities.[11] The City and Industrial Development Corporation (CIDCO), Bombay also captures the future infrastructure costs through its Present Value based land pricing model. Introduction of such measures on a wider scale will, however, require reforms in accounting and financial management practices as discussed below.

Financial Administration and Management: At present the governmental financial administration and reporting systems do not adequately reflect the true financial conditions of these agencies and services, especially as would be required by credit rating agencies and investors. Further, for some of the debt instruments, separation of revenue streams and service costs will be necessary and detailed information will be necessary on an on-going basis. It is also important that the financial practices permit clear linking of expenditure and revenues for different service functional areas. In this context the fund accounting approach followed in the US is of relevance. This provides a mechanism to segregate the revenues, expenditure and assets of a project or service for which bonds have been issued from those of the government or public entity as a whole.[12]

Within India, financial practices of some of the larger Municipal Corporations like Greater Bombay (for separate budgets for different functions) and Madras (for commercial

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11 Refer Mehta and Mehta, 1992 and Mehta and Satyanarayana, 1994 for more detailed discussion of some of these measures.

12 It is worth noting that even among the private finance companies, one of the initial constraints to securitisation efforts was that "most originators do not have adequate statistical data to highlight significant predictive indicators". Jaykumar and Yadav (1994) emphasize that often a long lead time often goes in establishing the performance on these by the credit rating agencies. This clearly points to the need to appropriate financial management information systems for enabling market access.

accounting and simplification and computerization of budgeting) are noteworthy and point to the nature of improvements which are necessary. An important aspect in these is the need to link the revenues and expenditures of each function, with a clear and transparent provision of subsidies as decided by local priorities. The need is for state level introduction of reforms, as for example has been done by the Government of Maharashtra. The ordinance for the 74th Constitution Amendment Act in Maharashtra requires that the Municipal Commissioner prepare an annual report on incidence and extent of subsidy for different services for the general body of the Municipal Corporation. It needs to be highlighted that while the overall reforms are important, partial changes can be made within the municipal systems to develop possibilities of market access or even more viable borrowing from institutional sources. These should, however, be done in a manner which permit and provide incentives for wider reforms over time.

Development and Strengthening of Public Service Authorities: In the US revenue bond market, there has been a trend towards setting up public revenue authorities which are based on corporate principles as noted above. For many of the infrastructure services, it is these authorities which access the capital markets. These may be either separate authorities or set up as municipal enterprises. Their main characteristic is that they manage the entire service operations along with rate setting and collections. Their borrowing is based on specified revenue streams and carry rate covenants to ensure adequate debt service coverage.

In India, there are many state level functional authorities especially for water supply and sewerage. In many cases they do project implementation on a turnkey basis, leaving operations and cost recovery to local authorities. This separation leads to several problems. For example, the local authorities are generally dissatisfied with the project selection and execution by the state agencies as they have little control and influence on these. They are then faced with public protest over system deficiencies. In some cases, state authorities provide bulk supply of water, however, rate setting for bulk water is always contentious since there is no competition or performance monitoring and agency inefficiencies are passed on to local authorities. There is an increasing trend towards separate authorities for water and sewerage services of large metros with relatively better track record, such as Madras, Hyderabad and Bangalore. There are a few examples of municipal enterprises such as the BEST of Bombay Municipal Corporation, DWSSB of Delhi Municipal Corporation and AMTS of Ahmedabad Municipal Corporation. These have varying levels of service efficiency and financial performance. On the whole, however, unlike in the power sector, where almost each and every State Electricity Board is in the red, some of the authorities for urban infrastructure services have a good track record which will stand the scrutiny of the market place. It would thus be appropriate to support these in accessing the markets directly.

Strengthening public service revenue authorities necessitates exposing them to market discipline and supporting their endeavors with the necessary technical assistance, especially in the areas of contracting, rate setting and financial management. Developing and

monitoring of management efficiency and service effectiveness benchmark is also essential as water and sewerage are likely to be natural monopolies. For services like solid waste management, greater competition can be designed in contracting of the primary and secondary collection systems. Secondly, credit rating of any borrowing by these agencies needs to be a mandatory requirement. Efforts to improve credit ratings will provide the necessary motivation for improving their efficiency and performance.

Private Sector Participation for Competition: Another emerging trend at least in other sectors, like power and roads, is to involve the private sector through BOOT types of arrangements. Given the past constraints of low tariffs, it is likely that attracting the private sector will be limited to only a few cases where high tariffs are possible due to high demand of consumers and the project size is large enough to attract BOOT type of operators. For example, the Infrastructure Finance and Leasing Services (IL&FS) plans to take up an integrated development programme incorporating water supply, sewerage, roads and land development in the export centre in Tiruppur, Tamilnadu. However, many more opportunities exist for involving private sector through contracting out of services. The limited evidence available suggests considerable cost savings. For example, in Rajkot, where many local services have been contracted out, the cost savings have ranged form 20 to 73 percent (Mehta, 1993). It would be possible to explore greater private sector participation through appropriate unbundling of services.

Technical Support for Local Project Structuring: The main development costs in mobilizing resources through municipal bonds relate to project development, legal and technical assistance, and design and marketing of municipal bonds. The state level intermediaries can also help to lower costs by offering services and technical assistance for these activities. Tamilnadu Municipal Development Fund has provided such assistance to municipal authorities in developing finance and operating plans as well as project proposals. Efforts to involve private consulting firms and developing methodologies for use in the public domain will also help to reduce costs. It must be emphasized, however, that such services should be demand driven. While initial support costs should be met, attempt should be made to design approaches whereby it will be possible to incorporate these costs ultimately in project costs, for example, loans to local agencies which are interest free till project development is approved. A recent idea put up by the Ministry of Surface Road Transport for the road sector provides incentives for private firms to take up project development, by promising a 30 percent share in project development at rates which are higher than those received from the lowest bidder in competitive tenders (Gogoi, 1995). Such measures may provide useful means of encouraging innovative project structuring to emerge.

Deepening and Widening the Potential Investor Base:

While there are several issues related to the development of domestic capital market, focus on the need to deepen and widen the investor base is justified for at least two reasons.

Most other issues related to the operations and regulatory side of the capital market such as setting up of depositories, dealer system, settlement system and greater transparency, are general in nature and do not differ for the infrastructure sector. On the other hand, infrastructure requires long term resources and the opportunity for tapping appropriate resource pools becomes critical. Secondly there is widespread acceptance of the fact that a major problem affecting the development of a secondary market in debt is the rather thin investor base, which is largely confined to banks and financial institutions (FIs). Due to this, adequate variations in investor preferences are not expressed in the market leading to the problems of illiquidity.

While the issue of a thin investor base is recognized widely, there has not been adequate attention paid to measures necessary for widening and diversifying it. This is true both as far as research and actual practice are concerned. "There must be some examination of the investor base before one taps it. Nobody seems to have done this so far. There seems to be no evidence that people have learnt how to assess the supply and demand position. Debt research is a neglected area" (Sathe, as quoted in Srikanth, 1995). There have been some attempts in the last two years to respond to the immediate investor preferences by designing debt instruments to meet these. However, this has not happened through a systematic analysis of the investor preferences and the nature of regulations which affect these. The potential investor base in India is very large and will at least include households (retail sector), the fast rising mutual funds, commercial and co-operative banks, trusts, long term funds from the insurance and provident and pension funds, corporate sector and other development and-non-banking finance institutions. In addition, international debt funds may also be attracted from the NRIs and other foreign institutional investors (FIIs). For infrastructure sector, the ideal would be the long term funds like insurance and pension funds. The US experience also suggests that with appropriate incentives it would be possible to attract the individual investors to this area. Recent issues like the Sardar Sarovar Nigam also hint at the possibilities of tapping the local sentiments for attracting local investors. Many cities in the US and Europe have successfully tapped local residents for such funds.

Long term funds: Some of the long term resources which are ideally suited for infrastructure financing include insurance and provident funds. Even in the US, efforts are being made to induce pension funds to invest in infrastructure since tax exempt status fails to attract these funds. In India, there are restrictions on these funds which discourages (or restricts) their investments in infrastructure. For a municipal bond system to be developed in the country, it may be essential that the investment guidelines for these funds are made more liberal. For example, in the Insurance sector, the Malhotra Committee recommendations already provide for inclusion of securities with high level of credit rating as a part of the prudential norms under Section 27 A and B. It also recommends the removal of any ceiling for a single firm in case of securities with the highest level of credit rating. More liberalized investment norms for life and general insurance have also been recommended. While this may reduce some of the directed credit to this sector, it will

enhance the market access to the long term insurance funds. Similar provisions for the provident and pension funds and trusts to invest in such instruments which are properly rated and listed "will contribute to an increase in the size of the market for these securities" (Jaykumar and Yadav, 1994). In the past, it has generally been felt that one can not afford to be speculative with this basket of funds and the capital market is too unpredictable. Recent discussions, however, suggest that it would be important to make use of the new investment opportunities within a prudential regulatory framework (Gayathri and Kanungo, 1994 and Venu 1994a).

Tax Exemption: Tax exemption for municipal securities has been an important feature of the US bond market. In the Indian context, tax exemption may be considered from at least two perspectives, even though, on the whole, there has been a reduction in the total volume of tax exempt securities due to the burgeoning fiscal deficit. The last budget has provided a tax holiday for BOOT operators in infrastructure projects. Similarly, tax benefits have been accorded to financial institutions on interest income earned from financing infrastructure projects. Similar concessions need to be provided for urban infrastructure also as these have high level of positive externalities for economic growth and productivity of the manufacturing sector in the city as well as significant health benefits for the population. Secondly, if such concessions can be given for attracting private sector and institutional investors to infrastructure finance, it would also make sense to provide income tax exemptions for attracting individual investors, who have been the main investors in US municipal bond markets. Even in India, there is an increasing consensus among market analysts of the need to start retailing debt securities, even to individual investors. The tax exemption on income from municipal bond type of securities can also help to enhance household savings which have been stagnant for many years now.

It must, however, be recognized that in economic terms, such tax exemption is not an efficient subsidy. It also discourages those investors who may not benefit from tax exemption, like the provident and pension funds. In order to deal with these trade offs, an appropriate ceiling (as a proportion of total project costs) can be put on total tax exempt debt which may be issued by an authority for a given project.

Information Base about Local Issuers: An important consideration in developing greater market access for urban infrastructure sector relates to a better information base about the potential issuers of municipal bonds. This is critical to generating an interest and awareness among potential investors and the financial community in general. For generating investor confidence information related to the legal capacity of the issuers to issue such debt, financial information regarding the issuing entity as well as the project or service being financed, the reliability and dependability of revenue streams in relation to past records and expected demand for services is essential. Further greater interaction and more open and effective communications between the issuers and investors are also necessary. This is one area where initial state support can prove to be very useful.

6.0 CONCLUSIONS:

The traditional means of financing urban infrastructure, plan allocations and through the directed credit mechanism are likely to witness real declines in the coming years. However, this may be turned into an opportunity for improving the financial health of local agencies by introducing market rigour in their operations. It is clear that both from the perspective of a better urban infrastructure system to support the economic development process and of developing an appropriate financing system within the spirit of the 74th Constitution Amendment Act, enhancing the access to capital market will prove to be useful. This will also provide means for leveraging the limited plan resources of the government.

Despite the growth of capital market in India in recent years and the apparent attractiveness of tapping it for the urban sector, overall macro constraints of a stagnant savings rate, continuing public dissavings and lack of a real debt market need to be considered. These suggest that measures which simultaneously help to enhance the savings rate and contribute to debt market development should be encouraged. On the demand side, low financial management capacity and a poor market image of this sector are important constraints. Considerable innovative state support and appropriate framework for financing system will be necessary.

Options for Institutional and Financing Structures:

This paper has attempted to highlight the options for institutional arrangements and financing structures for this purpose. Based on the experience in financing infrastructure in developed and other developing countries, three options for accessing the capital market are suggested. These are i) *Direct Access*, where the local service delivery agency (municipal, functional board or private operator) borrows from the market, ii) *Financial Intermediation* where a financial intermediary accesses the market and provides loans, refinance or guarantees to local agencies or iii) *Special Purpose Vehicle Intermediary* for regional associations of cities or for special projects. Each of these has its own advantages and limitations. While direct access would avoid the intermediation costs and the impact of market rigour will be most direct, this route may not be effective for many of the agencies at this stage. The intermediation route on the other hand, would reduce the costs of borrowing for such agencies and provide a much wider market access. In many other situations, setting up a SPV, either as an intermediary or for specific projects themselves can be the most effective route. Given the wide diversity of capacity and motivation among the potential borrower agencies, and the wide variety of institutional capacities and contexts in India, it would seem most appropriate to promote all the options simultaneously, through a well defined financing framework.

In terms of the financing structures, as far as possible a revenue bond route, which relies on specified sources of revenues from facilities and services financed out of the bond proceeds, will be the most preferable. These will also help to improve the service efficiency

efforts have generally tended to focus on technical assistance without adequate emphasis on "the constraints and perverse incentives confronting local personnel and their political leadership." To some extent the financing systems discussed above would help to introduce incentives for introducing local reforms. This needs to be further supported with other direct measures to support improvements in service delivery and local agency capacity. The main areas requiring attention are;

- Tariffs and charges for services to ensure that most agencies move towards a full cost recovery system. It may also be useful to consider the setting up of a urban utility tariff commission which would set out the principles for tariff setting and monitor the performance and compliance.
- Financial administration and management systems
- Development and strengthening of public service authorities
- Private sector participation for competition
- Technical support for local project development

State Support for Enhancing the Investor Base for infrastructure Securities:

From the supply side, there are several issues related to the development of domestic capital market. For infrastructure access to long term resources is important and, therefore, measures to support this are crucial. Three important aspects need attention.

- Liberalization of investment guidelines for long term funds like insurance and provident or pension funds will help to attract a much larger pool of resources to the infrastructure sector through the market
- The issue of tax exemption needs greater attention. On one hand, tax exemption on income from infrastructure securities will help to attract the individual investors (and help improve overall savings rate), it is generally not perceived as an economic subsidy. However, in view of the fact that tax exemptions are already being offered for other infrastructure sectors to attract private and institutional finance, it would seem logical to make these available for urban infrastructure, where positive externalities are very high.
- To develop a greater awareness among the investor community and finance sector in general, it is essential to develop a good information base on potential issuers of municipal bonds, and provide more opportunities for them to interact.

In conclusion, it may be reiterated that while the financial sector reforms put constraints on the traditional sources of finance, they also provide enormous opportunities to access the capital market for financing urban infrastructure. It is crucial that these opportunities are seized aggressively, so that urban infrastructure sector emerges with a new image and is able to effectively respond to the growing demand for its services.

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Community Consulting International (CCI)
1012 N Street, NW
Washington DC 20001-4297, USA

in association with
Technical Support Services (TSS)
1012 N Street, NW
Washington DC 20001-4297, USA

The FIRE(D) Project Office
E - 3/4, Vasant Vihar
New Delhi 110 057, India
Tel: (91-11) 603-551 / 688-9636
Fax: (91-11) 688-1460 / 688-3380

THE FIRE (D) PROJECT

The objective of the Indo-US Financial Institutions Reform and Expansion (FIRE) project, funded by the U.S. Agency for International Development (USAID), is to support the Government of India in its efforts to strengthen domestic capital markets to enable them to serve as efficient sources of development finance. One of the components of the FIRE project seeks to expand the debt market through the financing of commercially viable urban environmental infrastructure projects, defined as those which result in the provision of affordable urban services on a full cost-recovery basis by their sponsoring municipal corporations and authorities. This Debt Market/Infrastructure component, (FIRE-D), is under the auspices of the Union Ministry of Urban Affairs and Employment with USAID support targeted to the National Institute of Urban Affairs (NIUA), the Housing and Urban Development Corporation Limited (HUDCO) and the Infrastructure Leasing and Financial Services Limited (IL&FS) as well as to selected local entities.

The FIRE-D Project is designed to foster the development of a commercially viable infrastructure finance system by channelling USAID Housing Guaranty (HG) funds to selected demonstration cities and states to assist in the financing of urban environmental infrastructure projects. HUDCO and IL&FS, acting as financial intermediaries, make loans to selected municipal corporations, state boards and authorities and private enterprises which have formed partnerships with municipal entities. Eligible projects include water supply, sanitation, solid waste management, and integrated area development schemes. NIUA acts as the advocate for policy change and the coordinator for delivery of technical assistance and training directed at the development of local government capacity in the areas of identification, development and management of commercially viable urban environmental infrastructure projects; pricing and cost recovery for urban services; and financial management systems to support accessing of capital markets. It is expected that the participating institutions will be able to replicate the policy changes and project development initiatives beyond the demonstration states and municipalities to other areas throughout India.

This USAID-funded program will make available up to $125 million from US capital markets in loans, combined with grant funds for management support, technical assistance and training. Loan guarantees must be matched with capital investment raised in the Indian debt market through FIRE's creation of innovative financial instruments.

Technical assistance, training and research support is provided by a consortium of US firms led by Community Consulting International (CCI) in association with Technical Support Services (TSS). Principal partners in the consortium include the Wall Street investment banking firm of Grigsby Branford and Company (GB&C) and the Government Finance Officers Association (GFOA) of the USA and Canada.

For more information on the FIRE(D) Project, contact the project office at the address mentioned above.

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