FROM GOVERNMENTS TO MARKETS: FUNDING URBAN INFRASTRUCTURE

ABHAY PETHE
MANJU GHODKE

DEPARTMENT OF ECONOMICS
UNIVERSITY OF MUMBAI

Dr. Vibhooti Shukla Unit in Urban Economics & Regional Development

WORKING PAPER NO. 1

From Government to Markets – Funding Urban Infrastructure

Abhay Pethe & Manju Ghodke*

Abstract

Provision of quality urban infrastructure is an area of major concern for the Indian Economy. The environment defined by the context of globalisation and privatisation has implied fiscal compression and the consequent scarcity of resources at all levels of Government. Financing of urban infrastructure thus assumes critical importance. Public-private participation is the order of he day. It is in this context that this paper argues for a role for newer financial instruments like 'municipal-bonds'. The paper also argues that for these initiatives to be successful, a thick and efficient secondary market in this segment of debt market is crucial. It will impart liquidity and create an incentive for the individual agents to invest in the muni-bonds.

** Abhay Pethe, is Professor of Urban Economics and Regional Development, Vibhooti Shukla Chair, Department of Economics, University of Mumbai and Ms. Manju Ghodke is a Faculty member at UTIICM.*

From Government to Markets – Funding Urban Infrastructure

Abhay Pethe & Manju Ghodke

1. Introduction

It is incontrovertible that good infrastructure is central to all economic activity. It facilitates efficiency in key economic services, improves the economy's competitiveness, and generates high productivity and supports strong economic growth. Concomitantly, poor infrastructure can significantly impede economic growth and be a substantial drain on the economy's resources.

Given the very characteristics of the relevant projects, infrastructure services are often monopolistic in nature. Investments in this sector are typically bulky, with high up-front costs and long payback periods. Compared to other projects, the infrastructure sector generates large positive and negative externalities. On account of this unique characteristic, each infrastructure project has these additional costs and benefits, which are not easily translated in the traditional levies that users pay for these services. Consequently infrastructure services have been traditionally produced and provided by the public sector in most of the countries.

The importance of appropriate infrastructure commensurate with economic growth has been recognised at the highest policy levels in India. We have witnessed in its wake a series of reforms aimed at commercialising infrastructure industries in the backdrop of declining state finances and the imperatives of introducing competition and efficiency. This level of activity is still not significant in the area of urban infrastructure, the demand for which is closely linked to the growth of our cities and townships. *This paper focuses on the vital issue of ways of encouraging capital market funding of urban infrastructure and argues that a thick, efficient and vibrant secondary market in relevant debt segment will go a long way towards satisfying a crucial need.*

2. Changing role of Governments

As governments face resource constraint together with the compelling need of upgrading and expanding the infrastructure, there has been a growing revolution in the thinking about the role of government in funding and providing a host of such services. A large number of countries have actively encouraged private participation in infrastructure with a view to bolstering economic growth and increasing social welfare. Efficiency is the other reason for encouraging the role of private sector. Moreover the measures needed to make private participation feasible such as stabilising the economy; breaking up monopolies and introducing sound tariff policies have the potential to better public performance as well. As early as the decade 1984-94, private investment flows to infrastructure had already averaged $ 60 bn. a year. (World Bank 1995).

The developed countries have been successful in encouraging private participation in infrastructure. In the USA private firms and property owners associations of various sorts have owned on an outright basis both toll roads and residential streets. Under a range of franchise, contracting and regulatory arrangements, private firms have also collected solid waste and operated urban transport. In the UK, the mass transit transport system has also been operating on similar lines. In France, although the government predominantly owns water works the private sector participates under a variety of contracting and leasing arrangements. [See, Jacobson, C. and J. Tar (1995)] Many developed countries have successfully funded their infrastructure through the capital market. For instance, Canada, which has relatively low household savings rates, has successfully financed infrastructure investments through domestic bond issues. Similarly, in the USA, in the case of the Tennessee Valley Authority, the capital market funded over 80% of its borrowing requirements.

3. Enlisting Private Sector Support in Infrastructure

Tremendous possibilities exist to enlist private sector support in infrastructure. Private sector participation can take various forms. Depending on the characteristics, an infrastructure project can be more or less suitable for private sector participation. For instance, projects that capture significant social benefits such as urban transport or water works systems are more suited for traditional government ownership. This is because *non-exclusion* characteristic comes into play making pricing difficult. Indeed, in the first case even joint consumption comes into play making it close to the pure public good category. Of course this may not be true if tolls are applicable (as in the case of flyovers or express ways) and if metered connections (which is generally not the case) exist the above is not true for water. On the other hand, projects that offer more commercial returns such as telecom offer greater scope for private participation.

In the wave of privatisation and deregulation that has been sweeping across the globe, it is being increasingly recognised that ownership and operation of infrastructure facilities are separable and sophisticated models exist to meet the desired characteristics for individual projects. Most private sector participation is a variant of the build-own-operate-transfer (BOOT) arrangement. Herein the private operators finance and build a project, operate and generate project income and eventually transfer ownership to government at the end of the concession period.

4. The Role of Capital Market

Aside from the alternative sources of finance such as government funds (now dwindling worldwide) and foreign flows, a sustained infrastructure development programme will not be possible without a concerted strategy for mobilising domestic funds. While the importance of innovations in the contractual agreements of projects to enable private participation is critical so also is the need to channelise private savings into long-term investment. The capital market can provide the intermediation by bringing the infrastructure developers and private savers together. Countries, which have been able to successfully finance infrastructure projects through domestic capital markets, have taken a number of specific measures to support their development.

To finance infrastructure a number of options exist depending on the ownership/operation model selected. The broad choice is between public sector and private sector funding. Public sector funding can be made from the following sources: government budget, Overseas aid (for developing countries), borrowing through specialised banks or agencies, domestic capital markets, and international capital markets. In some cases repayment of the funds does not depend on the success of the project, lenders do not carry any project risk and their investments are backed by government guarantees.

On the other hand, funds for private sector participation can come from the following sources: promoter capital, bank finance (example, syndicated loans), debt issues on domestic capital markets, sale of equity rights, and borrowings on international capital markets. In such cases, repayment of borrowings depends to various degrees on the success of the project or on the financial viability of the promoter. This funding can however be made more attractive with the government providing some revenue or sales guarantee.

5. Changing Paradigm in Indian Infrastructure

In line with global trends, Indian infrastructure scenario too, is witnessing the changing role of government from it's traditional role as a 'provider of services to a 'Facilitator' of services by ensuring that infrastructure services are actually delivered in a desirable manner. However there are yawning gaps in the demand/supply equation of each of these services. For instance, in the power sector, shortages in the peak power capacity and energy in the last five years have been estimated around 20 % and 8% respectively. Despite the launching of the much-hyped guarantees of rate of return and fast track projects, very few projects actually reached financial closure. There has been little progress in the road sector despite a national road policy, 100% FDI through the automatic route and a dedicated road fund. In the case of telecom, policy glitches abound as the state attempts to dismantle monopolies.

The state of the Indian infrastructure and its massive fund requirements have been clearly elucidated (See Rakesh Mohan Committee Report, and Indian Infrastructure

Report). The report had estimated annual requirements of funds for infrastructure at $ 26 bn during 1996-2001 and higher at $ 43 bn during 2002-2006. The report had further added that about 15% of the investment could be financed externally and 85% had to be domestically raised. An important reason for raising money domestically is because most of these projects earn revenues in local currency and hence in the long run it would be difficult to finance them out of foreign savings.

As is known, in the case of India, financing from budgetary resources is becoming increasingly difficult. The banking systems role is limited, given that majority of their funds are for short maturities. The entire focus of universal banking as suggested by the Narsimham committee seems to be on financial institutions converting themselves into banks and getting into activities at the short end. In the fitness of things, the same corollary would apply to banks extending their activity in the long-end. (See Towards Bank Financing of Urban Infrastructure, by Abhay Pethe and Manju Ghodke).

6. The Status of Urban Infrastructure

The availability of urban infrastructure whether drinking water, sewerage disposal, solid waste management or roads to name a few essential services leaves a lot to be desired. Data shows that while 20% of urban India does not have access to safe drinking water, almost 72% is not covered by any sewerage (India Infrastructure Report 2001, 3iNetwork). The growth in urban population in the period 1991-2001 was 31.13% as against 17.97% for the rural areas. While growth rate of employment in the urban areas averaged around 3.8% per annum, it dropped to about 1.6% in the rural areas. Therefore, the urban areas have to be enabled to absorb larger increments to the labour force.

While total plan outlay increased from Rs. 20 bn in the first five-year plan to Rs. 4341 bn in the eighth five year plan the share of plan outlay towards housing and urban development has stagnated from 2.1% in the 1st plan to 2.4% in the 8th plan. It was the eighth plan which for the first time recognised the importance of this sector by identifying the key issues in the emerging urban scenario: namely, the widening gap between demand and supply of infrastructural services badly hitting the poor; unabated growth of urban population aggravating the accumulated backlog of housing shortages, resulting in proliferation of slums and squatter settlement and decay of city environment and high incidence of marginal employment and urban poverty as reflected in NSS 43rd round that 41.8 million urban people lived below the poverty line.

Management of urban infrastructure and the supporting financing system changed significantly during the second half of the 1980s and 1990s. The Eighth plan (1992-97) envisaged building cost recovery into the municipal finance system. This is being further reinforced during the Ninth Plan period (1997-2002) with a substantial reduction in budgetary allocations for infrastructure development. The metropolitan and other large cities are expected to make capital investments on their own, besides covering the operational costs for their infrastructure services. Most of the development projects are to be undertaken through institutional finance rather than budgetary support. A strong case has been made for making the public agencies accountable and financially viable. [See Kundu, A. (2001)]

7. The need for Capital Market funds in Urban Infrastructure

In such a scenario, the domestic capital market can emerge as a viable and potentially important source of financing. The market capitalisation in India was 28.6% of GDP in FY 01 and was at a high of 48% of GDP in the previous year. In FY 01, the market raised Rs. 142 bn through equity issues and a larger Rs. 342 bn through debt issues. Despite these large volumes, in India, capital market activity is limited as far as financing infrastructure is concerned. Except for some dedicated bonds in the nature of tax saving instruments, most of infrastructure financing has been confined to budgetary support and funds from other financial intermediaries. At the broad level, this problem could be tackled to some extent by creating a strong secondary market in debt and evolving new products, which would cater to the specific fund requirements of infrastructure.

In the case of urban infrastructure, funding through the capital market has been in the form of debt instruments popularly known as 'municipal bonds' which are more in the nature of structured financial products. Policy is already in place regarding the issue of such instruments by the urban local bodies. This however is at the initial public offer (IPO) level. Unfortunately, among the urban infrastructure projects in India which have been perceived as commercially viable, few can have municipal bonds issued in the market. The weak financial position and revenue sources of the urban local bodies make this even more difficult. As a consequence, a new type of credit instrument has been designed to enable the local bodies to tap the capital market, which are structured debt obligations (SDOs). These are arrangements through which bonds are issued on the condition that the borrowing agency pledges or escrows certain buoyant sources of revenue for debt servicing. This is a mechanism by which the debt repayment obligations are given utmost priority and kept independent of the overall financial position of the borrowing agency. It ensures that a trustee would monitor the debt servicing and that the borrowing agency would not have access to the pledged resources until the loan is repaid. In this context, it may be pertinent to point out that in the developed economies, especially the US, there are pooled fund banks that perform such functions. We need to borrow the essential idea and refashion our existing institutions such as the development banks to play the role. Of course, instead of cherry picking, i.e., considering only the strongest ULBs, there will have to be a group of ULBs whose collective rating is reasonable and then they must collectively helped (through underwriting) to issue muni-bonds as a instrumentality for raising resources. This we believe will succeed only if there is a secondary market in existence for the relevant paper. *We thus want to highlight the importance of developing or enabling a vibrant secondary market for such paper if these bonds can be expected to emerge as viable financial options for capital market funding of urban infrastructure projects.* In the light of the wide-ranging reforms already initiated in the debt segment of the NSE, creating active secondary market in municipal paper must be a worthwhile immediate agenda.

8. Current status of Private Capital in Infrastructure

Most of the attempts to attract private capital into infrastructure have involved inviting private participation in projects that have been identified and designed by the government. For example, the government decides on a road project, lays down the specifications, and calls for bids from the private sector. Typically, in this approach, the private sector bidder demands a traffic guarantee, of even worse, a revenue guarantee in what is euphemistically called an annuity model. At this stage, the private sector bears very little of the demand side risks of the project.

Whatever legal form such a contract may take, it is clear that in economic terms, the net result is no different from the government borrowing to finance the project in the public sector. The only difference is that the government's liability in the so-called private sector infrastructure project is off-balance sheet. It is not an immediate liability that shows up as government debt, but is a contingent liability to make good the revenue shortfalls under the infrastructure project. We need to move away from this kind of guarantee regime. This may be possible only when entrepreneurs acquire skills in risk taking by using modern techniques of risk management.

9. Development of Secondary Markets in Asia

India is not alone in its efforts at developing strong secondary debt markets. All across Asia, policy makers are worried about the absence of broad, deep and resilient bond markets. The World bank (Dalla et al, 1995, p.8) has published a study of emerging Asian bond markets urging that Asian economies "accelerate development of domestic….bond markets," and has launched another major study aimed at helping countries develop more efficient bond markets. Along with Malaysia, Hong Kong has led the way. Hong Kong has succeeded in fostering development of an active fixed-income market in Exchange Fund bills and Notes even though the government has not run significant deficits (Sheng (1994) and yam (1997). In 1998, the Asian-Pacific Economic Cooperation (APEC 1999) formed a study group to identify best practices and promote the development of Asian bond markets. Much of this official concern stems from the perception that the absence of bond markets made several Asian economies more vulnerable to financial crisis. The Governor of the Bank of Thailand (Sonakul (2000) reflected this view when he observed, “If I [could] turn back the clock and have a wish [list] … high in its ranking would be a well-functioning Thai baht bond market.” [See, R.J. Herring and N. Chatusripitak, (2000)].

Considerable emphasis in India is being given at the level of issue of new bonds. ULBs such as Ahmedabad, Bangalore, Hyderabad have already issued such paper. Many others have got themselves rated for the purpose. *What is however equally or more important is the creation of an active secondary market to add value to this paper. Such a development would be very beneficial on many counts. Most important such a market would introduce the much-needed liquidity in the paper. This would help in incentivising the market for this paper, as it would satisfy the motives of arbitrage opportunities, treasury operations, portfolio balancing and asset-liability management. It would help in the important process of price discovery of these instruments, as pricing of bonds is the main challenge for the issuer. In the absence of an active secondary market in risk-free debt of comparable maturity, it is difficult to identify the appropriate opportunity cost of funds. Better risk diversification would also result from an active secondary market.* The point being stressed upon is that municipal bond or debt paper should be able to fulfil the motives of holding such paper aside from a reasonable return.

There are policy issues involved if municipal paper is to be made attractive to holders. As paper issued technically by the third layer of government, namely, urban local bodies, certain tax breaks could be envisaged without the current ceiling of Rs. 50 crore. It is said that the Infrastructure bonds issued by FI’s have essentially sold on account of the additional Rs. 20,000 tax break allowed under Sec 88 of the IT act. Debt papers of better functioning ULBs, provided they meet certain benchmarks – one could be their credit rating – could be given some status such as central and state government bonds, which are part of SLR. Liberalising the prudential norms of provident and pension funds would create a good market for such long-term paper. Perhaps even inclusion of such paper as priority sector advances could create a good institutional demand for such paper. Today we witness active trading in the government securities which was made possible because of the policy driven efforts of Primary dealers (PDs) in creating markets for this paper. The trading in the secondary markets has increased from Rs. 5498 bn in FY 00 to Rs. 7127 bn in FY 01. Bulk of these transactions were accounted by dated govt. securities with a share in almost 98%. There is still very limited activity in the non-government segment of debt.

Given the importance to activating this market the RBI has issued a series of measures to deepen this market. Apart from strengthening further the system of PDs, the entire market design has been put in place for debt paper. This includes trading in demat, formation of the Clearing corporation of India Ltd. (CCIL) for providing counter guarantee and most important the launching of the negotiated dealing system on NSE aimed at providing an anonymous transparent system of trading in debt. This would be available for all market participants who have a current and SGL account with RBI. The CCIL promoted by major banks, financial institutions and primary dealers, is going to be a key market infrastructure to significantly improve market efficiency and integrity. It will also put in place strong risk management measures since it will be acting as the central party offering settlement guarantee in respect of clearing and settlement. To offer the settlement guarantee CCIL will insist on its members entering a contractual arrangement through appropriate legal documentation. With RBI functioning as the settlement bank the settlement, risk will be completely eliminated. The CCIL and NDS would together introduce transparency, market efficiency, and nationwide markets and investor protection. In the first phase, this screen-based facility has been made available for dealing in call money, notice/term money, government securities, T-bills, repos, CDs and CPs. In the second phase, this would cover derivative products such as interest rate swaps and forward rate agreements. An important issue of reforms that could help kick-start the secondary market activity in non-government debt is the proposal to expand the securities for repo transactions. Given this spurt in reforms aimed at developing the debt markets, it would perhaps be an opportune time to Juxtapose and position the municipal securities in this process.

10. Policy Issues in Tapping Capital Market – Asian Experience

Aside from the alternative sources of finance such as government funds (now dwindling worldwide) and foreign flows, a sustained infrastructure development programme will not be possible without a concomitant strategy for mobilising domestic funds. While the importance of innovations in the contractual agreements of projects to enable private participation is critical so also is the need to channelise private savings into long-term investment. The capital market can provide the intermediation by bringing the infrastructure developers and private savers together. Countries, which have been able to successfully finance infrastructure projects through domestic capital markets, have taken a number of specific measures to support their development. A first imperative for domestic capital market development is the accumulation of contractual savings pools, which through institutional investors channelise savings towards securities. The most important for investment in infrastructure would be pension funds and life insurance funds. The policy here should not only enable these funds to invest in corporate bonds and equities but also provide protection to investors to inspire confidence in such instruments. In Malaysia, the Employers provident fund created in 1991 has emerged as the single largest institutional investor. In Chile, the system of pension funds created in the 1980s, is managing assets over US$ 26 bn and has been responsible for increasing the savings rate from 14% in the 1980s to 27% by 1995.

Direct measures are also required to strengthen the domestic capital market. This involves the establishment of a legal framework for trading and supervision. Regulation also needs to be in place for underwriters, brokers, dealers and other entities providing support services. For the investor, appropriate disclosure norms and legal protection should be in place. The government can help in the setting up of rating agencies and a sound payment mechanism, which would minimise the risks in securities trading. Thailand took proactive measures in the early 1990s such as the stock exchange act, laws governing the business of securities companies, a civil and commercial code for companies and supervisory agencies. Malaysia created a liquid facility for financial institutions, the creation of dealer networks to underwrite government auction securities, the establishment of a rating agency and computerised securities trading system to promote secondary market development. Following these measures, both these countries witnessed a takeoff in the domestic markets. Another major boost to capital markets in the emerging economies has come from divestment of government holdings in utilities. Malaysia launched such a programme in the early 80s. As a result, the share of infrastructure stock as a proportion of total stock market capitalisation is almost 30%. Thailand too tackled its investment requirement problem by offering shares of its 14 largest public utilities and state enterprises. By 1993, the combined assets of these 14 utilities amounted to over 20% of the market capitalisation of the Thailand Stock exchange. Governments can introduce other supportive mechanisms to encourage the development of new instruments for infrastructure financing. These could range from policy guarantees to back-up guarantees, refinancing and maturity extensions, performance based grants and contingent lines of credit. Another major step would be the development of a securitization market, which would assist the rollover of funds.

In developed countries, institutional investors, such as pension funds, insurance companies, endowment companies finance infrastructure either through direct private placements or through bonds. In India, too this can be possible if policy measures allow these entities to invest in the long gestation projects. Comprehensive changes would be required in the institutional segment of contractual savings and the debt market. Given the size of the outstanding in the debt, market policy issues in this regard could help create a vibrant secondary market for debt.

11. Conclusion

While private sector participation may accelerate in infrastructure, the government would still be playing a decisive role being involved as a buyer, seller or supplier. Given the aim to reach a higher growth trajectory for the economy, **a concerted approach to encourage and enable private sector participation in infrastructure would be critical and a vibrant and deep secondary market for debt would be crucial in helping to accelerate such a process.**

References

1. *India Infrastructure Report 2002,* Governance Issues for Commercialization, 3iNetwork, Oxford University Press
2. *Financing and Pricing of Urban Infrastructure,* edited by Kulwant Singh, Behnam Ta'I, New Age International (P) Limited, Publishers
3. *The Fundamentals of Municipal Bonds*, The Bond Market Association, John Wiley & Sons
4. *Reforming Indian Debt Markets,* R. H. Patil, Economic and Political Weekly, February 2, 2002
5. *Indian Infrastructure,* Volume IV, No. 4, November, 2001
6. *Financial Institutions Center,* The Case of the Missing Markets : The Bond Market and Why It Matters for Financial Development, by Richard J. Herring, Nathporn Chatusripitak, The Wharton School, University of Pennsylvania
7. *Indian Securities market – A Review,* Volume IV 2001, NSE
8. *Ownership and financing of infrastructure: Historical perspectives*, Charles D. Jacobson and Joel A. Tar, June 1995, World Bank.
9. *Urban Development, Infrastructure Financing and Emerging System of Governance in India: A Perspective* by Amitabh Kundu, 2001.
10. *The case of the Missing Market: The Bond market and Why it Matters for Financial development* Richard J. Herring and Nathporn Chatusripitak, The Wharton School 2000.