

Infrastructure Finance

Sheela Malik¹, Amit Singhal², Lokesh Yadav³

^{1,2,3}Department of Civil Engineering,
Ganga Institute of Technology and Management,
Kablana, Jhajjar, Haryana, India

Abstract : There is huge demand for continuing investments in all the areas of civil engineering. This includes infrastructural development (real estate, residential complexes), transportation (railways, airports, docks and harbors), Power Generation and transmission. The Key issue is the while the need of the project exists, how these projects financed. This paper will basically focus the characteristics of infrastructure finance, identifying new sources of risk capital with the existing types of risk capitals and reducing the amount of required risk capital.

Keywords: Role of Banks, Characteristics of Infrastructure Finance, Risk Capital Required.

I. INTRODUCTION

There is a need for large and continuing amounts of investment¹ in almost all areas of infrastructure in India. This includes transportation (roads, ports, railways, and airports), energy (generation and transmission), communications (cable, television, fiber, mobile and satellite) and agriculture (irrigation, processing and warehousing). The key issue is, while the need exists, how these projects will get financed. In the past the government has been the sole financier of these projects and has often taken responsibility for implementation, operations and maintenance as well. There is a gradual recognition that this may not be best way to execute/finance these projects. This recognition is based on considerations such as:-

A. Cost Efficiency

Privately implemented and managed projects are likely to have a better record of delivering services of a higher quality. The India Infrastructure Report (2008) estimates that the Indian economy's growth rate would have been higher by about 2.5% if the delays and cost overruns in public sector projects had been managed efficiently. The report goes on to state that the predominant cause for such delays / overruns was not under-funding of the projects, but arose, "on account of clearances, land acquisition problems, besides factors internal to the entity implementing the project".

B. Equity Considerations

Since it is hard to argue that every infrastructure project uniformly benefits the entire population of the country, it may be more appropriate to impose user charges which recover the cost of providing these services directly from the user rather than from the country as a whole (the latter is the effect if the government builds the project from its own pool of resources). If users are to be charged a fair

price then the project acquires a purely commercial character with the government then needing to play the role only of a facilitator.

C. Allocational Efficiency

Since users are likely to pay for services that they need the most, private participation and risk-return management has the added benefit that scarce resources are automatically directed towards those areas where the need is the greatest.

D. Fiscal Prudence

Both at the centre and state levels, for a variety of reasons, there is a growing concern that the absolute and relative (to GDP and GSDP respectively) levels of fiscal deficit are high and that incurring higher levels of deficit to finance infrastructure projects is infeasible.

II. CHARACTERISTICS OF INFRASTRUCTURE FINANCE

Infrastructure projects differ in some very significant ways from manufacturing projects and expansion and modernisation projects undertaken by companies.

A. Longer Maturity

Infrastructure finance tends to have maturities between 5 years to 40 years. This reflects both the length of the construction period and the life of the underlying asset that is created. A hydro-electric power project for example may take as long as 5 years to construct but once constructed could have a life of as long as 100 years, or longer.

B. Larger Amounts

While there could be several exceptions to this rule, a meaningful sized infrastructure project could cost a great deal of money. For example a kilometre of road or a megawatt of power could cost as much as US\$ 1.0 million and consequently amounts of US\$ 200.0 to US\$ 250.0 million (Rs.9.00 billion to Rs.12.00 billion) could be required per project.

C. Higher Risk

Since large amounts are typically invested for long periods of time it is not surprising that the underlying risks are also quite high. The risks arise from a variety of factors including demand uncertainty,¹⁴ environmental surprises, technological obsolescence (in some industries such as telecommunications) and very importantly, political and policy related uncertainties.

D. Fixed and Low (but positive) Real Returns

Given the importance of these investments and the cascading effect higher pricing here could have on the rest of the economy, annual returns here are often near zero in real terms. However, once again as in the case of demand, while real returns could be near zero they are unlikely to be negative for extended periods of time. Returns here need to be measured in real terms because often the revenue terms of the project are a function of the underlying rate of inflation.

III. TYPES OF RISK CAPITAL REQUIRED

There are two types of risk capital that are deployed in any project:

A. Explicit Capital

This is typically the equity that a developer or a sponsor commits to the project. Here while the downside is unlimited if the project does well, there is no limit on the upside either. The sponsor seeks to conserve his capital and maximise the returns on it by deploying unique and project specific skills and by managing the underlying risks associated with the project. Given a limited supply of capital, the promoter also tends to concentrate his energies and capital in a small number of relatively lumpy investments so that he does not spread himself and his resources too thinly. In a typical infrastructure project, the developer puts together a consortium of capital providers who not only commit capital to the overall project but also assume complete operational and financial responsibility for specific risks thus, lowering the capital requirements from the developer.

B. Implicit Capital

This is typically the risk capital that is committed by a lender to the project. Loans have the characteristic that while the downside is unlimited the upside is limited to the rate of interest charged on the loan. Secondly, the loans typically involve much larger amounts of money relative to the equity investments. Given the fact that a typical lender raises money from retail deposits he needs to hold a reasonably high amount of capital to assure his depositors that irrespective of the fate of the project, he will be able to meet his obligations. Assuming that the desired rating aspiration for the lender is AAA an unsecured loan to a typical ten year infrastructure project) could require as much as 25% tier 1 capital to be committed to it. Since the capital is required to cover the lender against all the uncertainties surrounding a specific project, the lender seeks to reduce the amount of capital deployed by diversifying across projects and by ensuring that to the extent possible, the explicit capital is sufficient to cover the risks beyond the worst-case scenarios. The lender seeks to be compensated for this capital through the rate of interest charged on the project loan.¹⁸ Given the relatively large amounts of funds required for each project and the comparatively smaller number of such providers, lenders in the past have typically not had the opportunity to sufficiently diversify their risks¹⁹ nor have they had a sufficient amount of tier 1 capital. Not unexpectedly,

having held significantly less than the required amount of implicit capital, they have very quickly found themselves undercapitalised relative to the level of credit rating that they had committed to their depositors and in some cases have even defaulted to them. The risk capital required for infrastructure projects is the most scarce and, therefore, very expensive resource. Given the risks, amounts and maturities involved, required rates of return on such capital could well be excess of 25% to 30% per annum even in today's low interest rate environment. Given the large amounts of risk capital that could potentially be required this would have a significant impact on the cost of the eventual service that is sought to be provided. In the past, the sources that have been tapped for this capital have included professional developers, manufacturers of equipment, contractors, domestic and international equity investors and in several cases the government itself. The whole question of 'Sources of Infrastructure Finance' then becomes a much narrower question of 'Sources of Risk Capital for Infrastructure Finance' in the first instance and then secondarily a question of the manner in which these funds may be intermediated from the providers to the borrowers.

This paper attempts to address these issues along four dimensions:

- a) Reducing the amount of capital required by each project;
- b) Increasing the supply of this capital;
- c) Facilitating the flow of funds to this sector, and
- d) Enhancing the role of banks as intermediaries.

IV. REDUCING THE AMOUNT OF REQUIRED RISK CAPITAL

As a first step, before looking for new sources of this risk capital, given its extreme scarcity and very high cost, every attempt needs to be made to limit the amount of capital that is required by ensuring the following:

A. Removal of the Effect of Controllable Uncertainties

All controllable uncertainties (such as those imposed by unexpected changes in policy, tax rates and political considerations) are either eliminated or the government directly takes the financial responsibility for them²² in a timely²³ manner. This has the effect of imposing a general tax on the entire country for these uncertainties and taking it away from individual projects. This is, of course, relatively easy to articulate but much harder to implement in a democratic polity where governments and their political compulsions change frequently but the importance of a stable, even if imperfect, policy environment cannot be overemphasized. Ease in contract administration and adherence to these contracts by all entities including state entities is a good example of a controllable uncertainty that has the potential²⁴ to reduce the quantum of total capital required.

B. National Diversification Benefit

Even though a developer may be implementing only a small project in a small command area, if the desire is to ensure that the cost of the service provided by it is benchmarked at a national level and does not vary a great deal from region to region, the benefit of national or state level diversification could be made available to each project.²⁵ From a lender's point of view, it should be possible to diversify away as many components of the risk as possible through the use of credit and equity derivatives. Credit derivatives and other related contracts have the effect of allowing the reduction of capital consumption through diversification without necessarily having to incur the costs of buying or selling the underlying credit exposure.

C. Global Diversification Benefit

Several infrastructure projects involve exposure to global risks such as rainfall, temperature and fuel and other commodity prices. Permitting lender to access these markets directly or through brokers will allow them to reduce their exposure to many of these risks, thus once again, reducing their consumption of implicit capital.

V. NEW SOURCES OF RISK CAPITAL

In terms of new sources of capital, in addition to convincing the existing set of capital providers to commit more capital by creating an enabling policy environment, the following ideas could be explored:

A. First Loss Default Guarantee Funds (FLDGs) created by the Government

This is a very important idea, particularly in a situation where the overall supply of funds is adequate but there is a constraint in the supply of total risk capital and the government is seeking to operate within its fiscal limits. As a concept it requires governments to (a) stop spending the money required for projects; (b) focus on eliminating the effects of uncertainties caused by it and (c) to the extent that uncertainties remain, provide risk capital in a manner that preserves the incentives of all the other players to act in a consistent manner. FLDGs seek to provide non-event specific partial credit guarantees to lenders (unlike the partial credit guarantee being explored by World Bank - refer earlier footnote), are limited to only a part of the loan (say 25.0%) and operates on a first loss basis (i.e., in case of 25.0% FLDG the first 25.0% of the loss would be absorbed by the Fund). This manner of providing capital is in many ways superior to recapitalising existing intermediaries or creating new ones with Government capital.

- The corpus which supports the FLDGF may be invested in interest bearing government securities so that the corpus continues to grow and there is no net impact on the government deficit (i.e. is cash neutral).
- Unlike in the case of recapitalisation where the government capital becomes the primary or the sole risk capital being deployed, in the case of FLDGs even if they are administered mechanically, the government capital is

secondary capital. The primary capital being deployed is the implicit capital supporting the balance 75.0% of the loan. The FLDG has the effect of reducing the total quantum of the implicit capital that is needed but not to zero. The belief is that in seeking to maximise the return even on a lower amount of implicit capital the lender would be equally diligent. And, it may also bring in smaller and more specialised providers of implicit capital and loan funds.

- FLDG concept draws its value from the diversification benefits inherent in a larger number of projects. FLDG pool makes this diversification benefit available to the lenders by reducing the project risk borne by them. In the US markets, monolithic insurance companies like the MBIA²⁹ provide such credit supports for urban local bodies and other borrowers.

B. Securitisation

A large project loan could then be broken up into several smaller pieces which could then be bought by insurance companies, individuals, banks, pension funds, etc. each of whom would have other diversified investments. This would typically be done in conjunction with a FLDG of the sort described earlier so that the securitised instrument acquires an investment grade character and can be subscribed to even by highly (credit) risk-averse lenders. In addition, if well established, active trading of such paper has the effect of establishing a pricing benchmark for such project risk and if packaged along with other securities, could even produce a very high quality paper.³⁰ However, for this to happen at a large scale a great deal of facilitative legislation and incentive structures would have to be built.

Facilitating the Flow of Funds.

1). *Redefine NDTL to include only cash or cash-like instruments:* Currently Net Demand and Time Liabilities (NDTL) are defined to include almost all the liabilities of a bank. The definition is important because under the Banking Regulation Act, SLR and CRR are defined with reference to NDTL. SLR and CRR obligations impose a financial cost on the bank but are important³⁷ where a bank is performing a maturity transformation role. However, where a bank is mobilising fixed maturity deposits or bonds, particularly where the original maturities are greater than one year, it is not clear why CRR and SLR would be required to be maintained. One of the rationales for the continuance of specialised DFIs for infrastructure finance has been they are able to issue long-term bonds at low spreads over the G-Sec rate and do not have to maintain CRR and SLR on them. This is an anomaly which can easily be addressed within the Banking Regulation Act so that banks will be able to issue long maturity bonds (including 25 year Deep Discount Bonds) at identical rates.

2). *Strongly Encourage the use of Derivatives:* Typically, equity, commodity, forex and interest rate derivatives form the primary products in the derivative markets while the insurance companies, banks, hedge funds and large corporate are the larger participants. Derivatives markets are important for the risk transformation roles they play. In

the Indian context, these markets are underdeveloped due to a large number of regulatory issues. Currently credit derivatives are not permitted in the Indian markets while the banks are not permitted to trade in equity and commodity derivatives. Further, the market for interest rates derivatives is very thin because there are strict restrictions on the participation of banks in the exchange traded derivatives. While Over-the-Counter (OTC) derivatives may be traded by the banks, the large public sector banks are largely absent from the market. Insurance companies, the other natural counter-parties, have not yet received permission from the Insurance Regulatory and Development Authority (IRDA). Through the use of such derivatives it will be possible for participants to design products which are capital efficient and are tailored to the requirements of infrastructure finance. For example, floating nominal rates give more fixed real rates of interest than do fixed nominal rates of interest. Given the preference for fixed nominal rates on the part of the long-term retail investor, derivative markets provide the only bridge between them.

3). *Free up the allocation of funds from Insurance Companies and Provident Funds:* This is a much harder challenge and before this is done the following questions would have to be clearly answered:

- In the absence of these funds, will there be a decline in the availability of funds

for the central/ state governments.

- Currently insurance companies and provident funds hold no capital against credit risk and interest rate risk but nevertheless have to deliver promised returns to their investors in a default free manner. Nor presumably do they have the expertise to manage these risks. This could be one possible reason why these entities may have been allowed to lend to DFIs but not directly to the underlying borrowers. Where will this capital come from and how will these competencies be built.

1). *Eliminate the distinction between an advance and an investment:* Given the importance of instruments such as commercial paper and bonds in providing finance to companies and the ease with which borrowers move between one form of financing and another, there is a strong case that this distinction should no longer be made even in the balance sheets of banks. Even though both sets of instruments increase the level of credit risk borne by the bank in an identical manner, considerations such as credit / deposit ratio, priority sector requirements and a strong regulatory preference for “Advances” over “Investments” create a distorted set of preferences.

2). *Require detailed product and client segment level profitability, NPA, provisioning and consumption of capital to be reported:* This is important because otherwise income streams and growth from a few segments mask the underperformance of the bank in other segments.⁴⁴ This reduces incentives to build specialisation in each area of business that the bank is engaged in and creates the potential for future catastrophes once the positive returns

from the few sectors disappears. This reporting will ensure that right from the beginning the banks are engaged in infrastructure finance in a disciplined manner.

3). *De-emphasise the role of the Non Performing Asset Ratio as an Independent Performance Measure:* In its evaluation of banks, despite the fact that strong provisioning guidelines and capital adequacy rules have been imposed, in its recent guidelines, the RBI has started to emphasise the NPA Ratio as a standalone performance measure. This is both inconsistent and counter-productive. If provisioning has been done properly⁴⁵ then the Non Performing Asset is actually the “good” part of the loan (the “bad” part has already been provisioned away) and more importantly if the lender has engaged in high-risk, high-return businesses (such as infrastructure finance), he is likely to have a higher proportion of assets which are not performing relatively to a lender that has only engaged in low-risk businesses. The question to ask would be, are the risk-return models in balance, i.e., what is the return on equity after an appropriate level of provision has been taken and what is the capital adequacy. This independent emphasis on the NPA ratio is sending a strong signal to banks that they need to move away from businesses such as infrastructure finance.

4). *Directed Credit:* If banks behave as risk-neutral intermediaries, in order to get them to participate in any sector the only requirement would be to ensure that the risks and the returns of the sector are in balance. However, if the concern is that banks are behaving in a risk-averse manner and there is a belief that the positive externality of a rupee of investment in infrastructure exceeds that of a similar rupee in any other sector, it would be very useful to explore the inclusion of infrastructure as a component of the priority sector. However, this should be done while also ensuring that banks are able to meet these requirements by purchasing suitable instruments in the market and not only through originating every asset themselves. RBI has taken a step in this direction with the recent circular dated July 20, 2004 with respect to “Investment by banks in Mortgage Backed Securities - Lending to Priority Sector under Housing Loans”

VI. CONCLUSION

Infrastructure growth is a critical necessity to meet the growth requirements of the country. Government led infrastructure financing and execution cannot meet these needs in an optimal manner and there is a need to engage more investors for meeting these needs. Even though the Indian financial system has adequate liquidity, the risk aversion of Indian retail investors, the relatively small capitalisation (compared to the large quantum and long duration funding needs of infrastructure finance) of various financial intermediaries requires adoption of innovative financial structures and revisiting some of the regulations governing the Indian financial system. The risk capital required in the infrastructure sector can be understood as the Explicit Capital brought in as equity by the project sponsors and the Implicit Risk Capital provided by the project lenders. Implicit Capital providers seek to manage

their risk-return reward by ensuring availability of adequate Explicit Capital and diversification across various projects. Given this profile of the Explicit Capital, greater flow of this risk capital can be ensured by removing the effects of controllable uncertainties in the policy environment and making available the benefits of diversification through alternate mechanisms. New sources of this risk capital can be sourced by providing partial risk guarantees (in form of First Loss Deficiency Guarantees), formation of highly capitalized financial intermediaries and encouraging securitization transactions. In addition to above, various regulatory initiatives and market reforms are required to enable the commercial banking system to participate more vigorously in providing infrastructure financing.

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