Long Term Financing of Infrastructure

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Abstract

Infrastructure projects, given their long life, require long term financing. The main sources of long term financings are insurance and pension funds who seek long term investments with low credit risk. However, in India household financial savings are mainly invested in bank deposits. Insurance and pension funds account for only a small percentage of household financial savings. In addition most infrastructure projects do not qualify for investment by insurance and pension funds because of the complex risk profiles of these projects. This paper examines the steps taken by the government to enhance the flow of long term financing for infrastructure projects.

Long Term Financing of Infrastructure

The strategy for the Twelfth Plan encourages private sector participation in infrastructure directly as well as through various forms of Public Private Partnerships (PPPs). Infrastructure investments increased from about 5% of GDP during the Tenth plan period to 7.2% during the Eleventh Plan period. During the Twelfth Plan period infrastructure investment is projected to increase to 8.2% with 9% in the last year, 2016-17. Almost 50% of the total infrastructure investment is expected to be financed by private sources during the Twelfth Plan as against 36% during the Eleventh Plan period. **(Planning Commission 2013)** It is expected that private investment will not only expand capacity, but also improve the quality of service and reduce cost and time overruns in implementation of infrastructure projects.

In a PPP, responsibility for both construction and operation of the project are bundled together, which creates incentives to optimize resource allocation over the lifetime of the concession, with the potential to reduce overall costs. The project is implemented through a Special Purpose Vehicle (SPV) with a project sponsor, usually a private sector developer or construction company. The government, through a project authority, enters into a concession agreement with the SPV as the concessionaire. The concession agreement provides specifications of the project and services to be rendered as well as revenue sources of the SPV. For example, in the case of a road project revenue would be in the form of tolls from users or annual availability payments (annuities) from the government authority. The concession agreement is usually long term, given the long useful life of many infrastructure assets.

Over the life of a typical PPP contract unexpected events and contingencies, that could not have been predicted when the contract was signed, will arise. It is also likely that the parties will get into a dispute over how the contract should be interpreted, or whether both parties have been performing as agreed. In some cases, these disputes may result in early termination of the contract. Apart from the risks of contract related disputes, renegotiation and possible termination, the major risk in PPP financing is construction risk. In the typical PPP project there is a significant drop in risk once construction is completed and the project is operating smoothly. In some concession agreements some portion or all of the revenue risk may be borne by the government.

The financial structure for a PPP project usually consists of 70-80% debt and 20-30% equity. Equity is usually contributed by the project developer, construction companies and facilities management companies in the SPV. The project sponsors would like to minimize their equity contribution since equity investment is usually not their main business. However, debt investors would like equity investment from the sponsors as a guarantee of their performance and commitment to the project.

The high initial capital expenditure and long life of infrastructure assets require long term debt financing. Financing by rolling over short term debt exposes the project to rollover or refinancing risk. New debt may not be available or available only at high interest rates leading to a situation of financial distress. Most of the debt financing for infrastructure projects in India has come from banks. However, banks are constrained in providing long term financing because of an asset liability mismatch arising from their relatively short maturity deposits. While life insurance and pension funds can provide long term funds their contribution has been limited given the regulatory restrictions on minimum credit ratings of their investments.

Therefore, the main issue in the financing of infrastructure is the intermediation of long term savings into infrastructure investment through low credit risk securities. This requires financial intermediaries with adequate due diligence, monitoring and structuring skills for infrastructure projects. The Indian government has taken several steps through the market and banking regulators – SEBI and RBI – to provide regulatory frameworks for specialized infrastructure financing intermediaries. Regulatory frameworks have been put in place for a special category of Non-Banking Finance Companies (NBFC), called Infrastructure Finance Companies (IFC), and Infrastructure Debt Funds (IDF). Simultaneously, the government has also set up a 100% government owned NBFC, India

Infrastructure Finance Company Limited (IIFCL), for providing long term financing and credit enhancement for bond issues by PPP projects. Finally, in order to enhance the supply of long term financing to public sector infrastructure development companies, the government enables them to issue budgeted amounts of long term tax free infrastructure bonds to institutional and retail investors.

However, there are more fundamental problems with PPP projects which cannot be resolved with better financial intermediation. Gains from PPP projects come by enhancing project viability by sharing of risks between the government and the private partner. However, infrastructure projects in India carry significant risks largely outside the control of private parties. For example, in the case of power generation projects the two major sources of risk are the poor financial and operating condition of the largely state controlled power distribution companies and the inability of the public sector Coal India to enter into long term contracts with generators to supply coal. Similarly, road projects face serious construction risk because of problems related to land acquisition and environmental clearances and in the post completion phase there are political problems related to toll collections and periodic revisions as per concession contracts. These 'supply side' problems are well known and not covered in this paper.[1]

This paper is organized as follows. Section 1 provides an overview of the current state of infrastructure financing in India. Section 2 discusses the experience of bond markets in private financing of infrastructure in the UK. This highlights the role of insurance and pensions funds in providing long term savings and of specialized financial intermediaries in facilitating investment in infrastructure projects. Section 3 discusses the creation of specialized infrastructure finance intermediaries - Infrastructure Finance Companies and Infrastructure Debt Funds. Section 4 analyzes the role of direct government intervention through the issuance of tax exempt long term infrastructure bonds by infrastructure related Public Sector Undertakings (PSU). The government has also set up a 100% government owned infrastructure NBFC, the India Infrastructure Finance Company Limited (IIFCL), for channeling direct government financing and guarantees to infrastructure projects. Section 5 concludes.

1. Infrastructure Financing in India

The financial sector in India is dominated by banks. **(IMF 2013)** Commercial banks are the largest group, comprising 58% of total financial assets, followed by life insurance with 17% of total assets. There are a large number of NBFCs with 12% of total assets operating in specialized segments (leasing, factoring, microfinance, infrastructure finance). Pension and provident fund assets account for about 5.5% of total assets. Pension provision covers 12 percent of the working population and consists of civil service arrangements, a compulsory scheme for formal private sector employees, and private schemes offered through insurance companies. Finally mutual funds account for 8% of assets.

Public ownership is a defining feature of the financial system. Majority publicly owned banks account for three quarters of banking system assets. About 69 percent of insurance premiums and 80 percent of insurance assets are accounted for by public insurers. Most of the pension system is in public hands. The public life insurance company and public provident fund are the two largest providers of funds to the Indian capital market.

Given the pattern of household savings in India there is a scarcity of long term savings. More than 50% of household savings is accounted for by 'physical savings' (investments in physical assets such as homes and more recently in gold) and not subject to financial intermediation. About 55% of household financial savings is accounted for by bank deposits, which are relatively short term in nature. Life insurance and provident and pension funds account for the balance savings. Investments in equity, has been small, except during the period just prior to the financial crisis.

[1] For an analysis of the role of policy uncertainty in the current slowdown of investment see Anand and Tulin (2014)

Consistent with the pattern of household savings the main sources of infrastructure financing are commercial banks, insurance and pension funds and NBFCs. Table 1 below shows the projected sources of financing for the 12th five year plan. Of the total planned investment the share of the private sector is about 48%. Almost 50% of the total investment is expected to be financed by borrowings. The distribution of the 50% borrowings is 21% is from banks, 11% from NBFCs, 3% from pension and insurance funds and 6% from external commercial borrowings with a 9% gap.

Table 1
Projection of Infrastructure Investment and Financing
during the 12th Five Year Plan period 2012-2017

	Amount (Rs. Crores)	% of total
Total Infrastructure Investment	5,574,663	100%
Govt (Central/State) Budget and Internal generation	1,973,732	35%
Private -Internal Accruals / Equity	825,291	15%
Borrowing		
Govt PSU	917,092	16%
Private	1,858,549	33%
Total	**2,775,641**	**50%**
Availability of Borrowing		
Domestic Bank Credit	1,164,646	21%
NBFCs	618,462	11%
Pension/Insurance funds	150,248	3%
External Commercial Borrowings (ECBs)	331,834	6%
Likely Total Debt Resources	2,265,171	41%
Gap between Estimates and Likely Requirement	510,470	9%

Source: Planning Commission 2013

Bank financing

As shown in Table 2 below banks are the major source of debt financing for infrastructure in India. However, banks are close to their maximum sector exposure limit so that additional bank financing will be constrained by the rate of overall credit growth.

Table 2
Sources of Infrastructure Financing

Rs. Crores						
As on	**Mar-07**	**Mar-08**	**Mar-09**	**Mar-10**	**Mar-11**	**Mar-12**
Commercial banks	144,531	205,336	269,972	379,888	540,390	619,100
Life Insurers (Life Fund)	69,837	63,262	66,673	85,674	89180	97,319
Non Life Insurers	6,102	7,660	8,980	10,373	12,215	15,198

Source: Planning Commission 2012c

Banks also face an asset-liability mismatch if they provide long term loans financed by relatively short term deposits. According to the **RBI (2013b)**, while banks have been meeting the needs of financing infrastructure currently, there may be some further constraints on such long term financing once the Basel III bank liquidity norms such as the Liquidity Coverage Ratio and Net Stable Funding Ratio are implemented. According to the Trends and Progress in Banking **(RBI 2013c)**, "maturity mismatch has often been highlighted as a concern for the Indian banking sector given the sector's increased exposure to long-term infrastructural loans financed primarily from deposits of shorter maturities." Similar concerns have also been expressed by rating agencies. **(India Ratings and Research 2013a)**

A different view is expressed by the RBI **(RBI 2013d)**,

> Almost all banks rely exclusively on retail deposits to fund their advances portfolio. The individual retail deposits may not have an average tenor of more than one year, whereas most of the big advances of the banks are long tenor, in the range of 8-10 years. While on an individual basis, the retail deposit may be considered volatile, on a portfolio level, these deposits are stable, which enables banks' maturity transformation action. Hence, my point is that if, as going concerns, banks can rely on retail deposit to fund projects for 8-10 years, they might as well do so for 13-15 years.

Even if this assessment is true for the banking sector as a whole it is unlikely to be true for individual banks.

Concerns have also been expressed about bank's due diligence and credit appraisal of infrastructure projects. The Non-Performing Assets (NPAs) and the restructured assets in this segment have increased quite substantially of late. The Gross NPAs and restructured standard advances for the infrastructure sector together, as a percentage of total advances to the sector, has increased from 4.66% as at the end of March 2009 to 17.43% as at the end of March 2013. According to **RBI (2013 d)**, "There is enough evidence to suggest that a substantial portion of the rise in impaired assets in the sector is attributable to non-adherence to the basic appraisal standards by the banks."

Life Insurance and pension funds

Life insurance and pension funds are considered as the main source of long term financing.

Life Insurance companies have three sources of assets under management - life funds, pension and annuity funds and unit linked (ULIP) funds. It is the first two which are suitable for long term investment. The government owned Life Insurance Corporation of India accounts for almost % of the total non ULIP funds. Life Insurance companies are restricted by minimum rating requirements imposed by the Insurance Regulatory and Development Authority of India (IRDA). They are required to invest 50% in government securities. Of the balance, 75% is to be invested in AAA rated securities. Under the norms prescribed by IRDA, insurance funds should invest 15% of their "controlled funds" in infrastructure and social sectors.

Pension funds in emerging markets are small. **(Group of Thirty 2013)** For example, in 2010, total pension assets were 20 percent of GDP in Brazil, 9 percent in China, 7 percent in Mexico, and 5 percent in India, compared to 103 percent for the United States. In India, the development of a specialized voluntary defined contribution supplementary pension, the New Pension System, is in its initial stages.

It is difficult for infrastructure projects to satisfy the rating requirements for insurance and pension fund investments. This is especially during the construction period when projects face risks related to construction, land acquisition, financing and cost escalations, and enforcement of property rights. With these risks, projects at inception typically get a low credit rating in the BBB- category. Even after commercial operations begin, ratings may typically go up marginally at best, as demand, off take and regulatory risks remain.

According to the **Planning Commission (2013, page 57)** there is a need to channel savings from gold and real estate to instruments of long term savings such as life insurance, pensions and provident funds.

> The need for long-term savings products is the mirror image of the other important need—that of long-term finance for long gestation products, namely physical infrastructure. Without the first, the latter becomes hard.

2. Bond Market for infrastructure financing

There is an almost unanimous view over the last two decades about the need for developing a vibrant corporate bond market in India. However, while significant efforts have gone into the development of corporate bond markets, substantial progress has not been made yet **(RBI 2013a)**. According to the **Planning Commission (2013)**

> The market for infrastructure debt generically belongs to the corporate bond market and without movement on the latter, movement in the former is not likely. … For several independent and interrelated reasons, in the Twelfth Plan, special efforts must be made to ensure that the corporate bond market takes off.

Bond financing of infrastructure requires not only the availability of long term savings with pension and insurance funds but also the presence of specialized financial intermediaries with due diligence, negotiations and structuring capabilities for PPP projects. This is well demonstrated by the collapse of a thriving bond market for PPP projects in the UK following the financial crisis in 2008 **(EPEC 2010)**. The use of bonds to finance PPPs has differed widely among countries in Europe. According to the European PPP Expertise Center (EPEC), bonds have been used most extensively in countries with significant private-sector pension schemes which have long-term liabilities that need to be matched to long-term investments. Bond financing has been most prevalent in the UK since the launch of the Private Finance Initiative (PFI)[2] in the 1990s. In fact bond financing was the dominant financing solution for large projects in the decade preceding the financial crisis. The PFI benefited from an increasingly competitive finance market with access to fixed rate, long term finance from both the banks and capital markets. Banks provided long term floating rate loans which project companies swapped into fixed rate loans using interest rate swaps.

In the UK, pension funds and life insurance companies were the main investors in PPP bonds, either directly or through fund management companies. However, unlike banks, these investors did not invest in due diligence capabilities for infrastructure projects. Instead, they relied on the guarantee provided by 'Monoline' insurance companies[3]. 'Monolines' were in the sole business of providing a guarantee to investors of timely payment of principal and interest in exchange for a fee, a process known as 'wrapping'. This process of wrapping converts the rating of the bond to the rating of the monoline, which is usually maintained by the monoline at triple-A by holding adequate reserves. This made the bonds suitable investments for pension funds and life insurance companies.

The monoline was responsible for conducting due diligence and structuring project financings as well as monitoring and administering the investments on an on-going basis. Since the monoline took the front-line risk of project default, bondholders historically ceded control of decisions to it. This "controlling creditor" role made it easier for borrowers to obtain decisions in a bond-funded project because the lender control was vested in a single entity irrespective of the nature of the decision.

[2] Public Finance Initiative refers to the specific form of Public private Partnership (PPP) followed in the UK.
[3] These companies are called "monolines" because, although they are legally licensed and organised as insurance companies, they are permitted by law to offer only one form of insurance – financial guarantees – as opposed to other insurance companies which may offer various insurance products and are called "multi-line" insurers.

With the onset of the financial crisis monoline insurers lost their triple-A credit ratings mainly because of their exposure to sectors other than infrastructure, such as subprime mortgages.[4] Reviving the bond market without the monolines has been difficult since institutional investors have not built teams within their organisations that are capable of structuring and negotiating PPP project financings. As pointed out by **EPEC (2010)**, "Most PPPs require many months, if not years, of involvement by funders which is not a justifiable expense for most fund managers seeking to buy two or three PPP bonds per year." Simultaneously, banks have become reluctant to lend long term because of Basel III additional capital requirements for long term lending.

In response to these problems the European Investment Bank (EIB) has launched the Project Bond Initiative. **(EIB 2012)** The Initiative aims to provide partial credit enhancement to projects in order to attract capital market investors. This is achieved in two ways. In the funded format, the EIB will give a subordinated loan to the project company from the outset. In the event of a default by the project company losses will first be borne by the subordinate lenders, i.e. the EIB. Senior lenders will be impacted only after the entire subordinate loans have been wiped out. In the unfunded version the EIB will provide contingent credit line which can be drawn if the cash flows generated by the project are not sufficient to ensure Senior Bond debt service or to cover construction costs overruns. The credit enhancement is available during the lifetime of the project, including the construction phase.

The UK experience demonstrates that bond financing of infrastructure requires the availability of long term savings with insurance and pensions funds and specialized financial intermediation services for due diligence, structuring and post financing monitoring and renegotiations.

3. Specialized Infrastructure Financial Intermediaries

Given the specialized nature of infrastructure PPP project structuring, due diligence and monitoring there is a need for specialized financial intermediaries.

NBFCs - Infrastructure Finance Company (IFC)

The RBI has created a separate class of non-deposit taking NBFC called Infrastructure Finance Companies (IFC) satisfying the following conditions. **(RBI 2010)**

(i) a minimum of 75% of its total assets should be deployed in infrastructure loans,
(ii) net owned funds of Rs.300 crore or above;
(iii) minimum credit rating 'A' or equivalent
(iv) CRAR of 15% with a minimum tier I capital of 10%.

With respect to credit concentration norms IFCs may exceed the concentration of credit norms applicable to NBFC-ND-SI (Systemically Important) in lending to any single borrower by 10% of its owned fund, that is up to a total of 25% of its owned fund, and to any single group of borrowers by 15% of its owned fund, that is up to a total of 40% of its owned fund.

IFCs are eligible to avail, under the automatic route, that is, without prior approval of RBI, ECBs (External Commercial Borrowing) up to a maximum of 75% of their owned funds, from recognised lenders under the automatic route.

Infrastructure Finance Companies can maintain risk weight at 50% for assets covering PPP and post commercial operations date (COD) projects which have completed at least one year of satisfactory commercial operations and which are backed by a buyback guarantee by a designated Project / Statutory authority under a Tripartite Agreement.

[4] With few exceptions, the infrastructure portfolios of the monolines have continued to perform.

NBFC-IFC, given their concentration on infrastructure projects, will develop due diligence, structuring and monitoring skills for infrastructure projects.

Infrastructure Debt Fund **(RBI 2013e)**

Infrastructure Debt Funds provide an alternative financial intermediation mechanism for infrastructure financing and investment.

An Infrastructure Debt Fund (IDF) can be set up either as a trust or as a company. A trust based IDF would normally be a Mutual Fund referred to as IDF-MF; while a company based IDF would be a Non Banking Finance Company referred to as IDF-NBFC. IDF-MF would be regulated by SEBI under rules applicable to Mutual Funds while IDF-NBFC would be regulated by the RBI. IDF-MFs can be sponsored by banks and NBFCs.

The IDF-MF is essentially a focused debt mutual fund. At least ninety percent of the net assets of the scheme should be invested in the debt securities or bank loans in respect of completed and revenue generating projects of infrastructure companies or special purpose vehicle. In order to raise long term finance it should either be a close-ended scheme maturing after more than five years or interval scheme with lock-in of five years and interval period not longer than one month. Since it is primarily aimed at high net worth investors, the minimum size of the unit is Rupees ten lakhs and the minimum investment from any investor is Rupees one crore.

IL&FS Financial Services Ltd (IFIN) launched the IL&FS Infrastructure Debt Fund with the first set of three close-ended mutual fund scheme, having maturities of 5, 7 and 10 years, respectively. The size of each scheme is Rs.500 crores. The Debt Fund will be managed by IL&FS Infra Asset Management, a joint venture between IL&FS Financial Services and India's largest insurer, Life Insurance Corporation of India. Five public sector banks and the two joint-venture partners have contributed to the initial fund. **(India Ratings and Research 2013b)** The fund's strategy is to invest around 20% of the portfolio in operational projects with established track record and credible promoters; another 25% would be invested in take-out financing of bank loans of completed projects; and 15% of the portfolio could be invested in projects under construction. The Fund will rely on the IL&FS Group's investment experience from infrastructure financing in selecting, credit appraisal, structuring and monitoring investments in subordinated debt facilities, including funding to promoter vehicles and investments in mezzanine debt instruments.

The IDF- NBFC will raise resources through issue of bonds of minimum 5 year maturity and invest in bonds issued by the PPP infrastructure project company. The project must have completed at least one year of satisfactory commercial operation post the commercial operation date (COD). The project company will use the proceeds of the bond issue to retire a portion of its senior debt, presumably from banks.

The key aspect of the financing in the case of IDF-NBFC is the Tripartite Agreement among the Debt Fund, the Concessionaire of the PPP project and the Project Authority, for ensuring compulsory redemption of the bonds held by the IDF in the event of default by the Concessionaire. So far the cabinet Committee on Infrastructure has approved the Model Tripartite Agreement (MTA) for the Road sector with the National Highway Authority of India as the Project Authority. **(Planning Commission 2012a)** While the IDF has all the rights and entitlements as the senior lenders, the IDF has the first claim on all termination payments. According to the MTA, a default by the Concessionaire will trigger the process for termination of the agreement between the Project Authority and Concessionaire as specified in the Concession Agreement. The Project Authority will redeem the bonds issued by the Concessionaire which have been purchased by IDF-NBFC, from out of the termination payment. The IDF-NBFC will pay a fee to the Project Authority as mutually agreed upon between the two.

The Tripartite Agreement is specific to the IDF-NBFC and does not apply in the case of IDF-MF.

India Infradebt is the first IDF-NBFC to start operations after receiving its license in February 2013. It is a joint venture, (shareholdings percentage in brackets), among ICICI Bank (30%), ICICI Home Finance Ltd (1%), Bank of Baroda (30%), Citicorp Finance (India) Ltd (29%) and Life Insurance Corporation of India (10% per cent). While ICICI Bank, Bank of Baroda and Citicorp Finance will provide project finance and domestic and international fund raising services, LIC will be investing in Tier-II capital and Senior Bonds issued by the Infradebt. India Infradebt carried out a Rs.500 crore debenture issue in July 2013 which was rated AAA by Crisil **(Crisil ratings 2013)**.

Some questions have been raised about the viability of Infrastructure Debt Funds. According to Dr.K.C. Chakrabarty, Deputy Governor, Reserve Bank of India, "Having assumed the risk till the project comes on stream and starts generating stable revenues, I don't understand why a bank would be willing to trade a good credit risk for the risk of funding another greenfield project!". **(RBI 2013d)** However, the idea of the IDF is based on the premise that banks are not in a position to provide long term financing to PPP projects and will price their loans appropriately to cover the higher risks of greenfield projects.

4. Direct Government interventions

The government has initiated steps to directly ensure availability of long term funds for PPP projects. Over the last three years the government has provided in the annual budgets for the issuance of long maturity tax free bonds by infrastructure related public sector financial and non-financial undertakings. This enables the infrastructure PSUs to offer suitable interest rates to attract long term bond investors. The government has also established a wholly government owned NBFC for providing long term direct financing and credit enhancement for bonds issued by PPP projects.

Long maturity tax free infrastructure bonds

The 2011-12 budget provided for the issue of Rs.30,000 crores of tax free bonds which was increased to Rs.60,000 crores in the 2012-13 budget. The budget for 2013-14 is Rs.48,000 crores. The total amount is allocated to various public sector infrastructure related finance companies and infrastructure companies. The bonds have maturities of ten, fifteen or twenty years. Since the issuers are all public sector undertakings the credit risk of the bonds is negligible.

The coupon rate is capped at discounts below the Government security (G-Sec) rate based on Issuer rating and investor category as shown in Table 3 below. Investors are classified in four categories: Retail Individual Investors (RII), Qualified Institutional Buyers (QIBs), Corporates and High Net-worth Individuals (HNIs). Retail Institutional Investors include Resident Individual Investors and Hindu Undivided Families applying for an amount aggregating upto and including Rs.10 lakhs across all Series of Bonds in the Issue. Issuers have the option of offering Retail Individual Investors a higher interest rate. The higher rate of interest, applicable to RIIs, is not available in case the bonds are transferred by RIIs to non-retail investors.

Table 3

	Coupon rate (annual payment) ceiling	
Issuer rating	**Retail Individual Investors**	**Other investors**
AAA	Gsec-55bps	Gsec-80bps
AA+	Gsec-45bps	Gsec-70bps
AA/AA-	Gsec-35bps	Gsec-60bps

Source: Government of India 2013

One problem with tax exempt bonds is that they are considered a relatively costly mechanism for delivering a subsidy to the issuer of the bonds, because the revenue forgone by the government in connection with the tax exemption is greater than the subsidy received by the issuer. **(US Treasury 2011)** A portion of the revenue foregone by the government is captured by holders of tax exempt bonds whose tax rates exceed the rate of tax on the marginal (or market-clearing) buyers of the tax exempt bonds.
As the issuers of tax-exempt debt expand the pool of bond purchasers, until it is sufficiently large to exhaust the amount of debt they are bringing to market, they draw in bond buyers from lower income tax brackets by raising the interest rate enough so that the yield on tax-exempt bonds is competitive with the after tax rate of return on taxable instruments for investors in those lower brackets. As a result, the marginal buyer of tax-exempt bonds will typically demand a tax-exempt yield that exceeds what an individual in a higher income tax bracket requires to purchase those bonds.

Suppose that a tax-exempt bond buyer's preferred alternative investment is a taxable bond. If taxable bonds paid 8 percent in interest and the market-clearing bond buyer faced a 25 percent marginal tax rate, the yield on a tax-exempt bond would be 6 percent which is equal to the after tax interest on the taxable bond. In that case, the revenue forgone by the government (Rs.20 in lost income taxes based on a Rs.80 interest payment taxed at 25 percent) would equal the interest savings of the tax-exempt bond issuer (who pays 6 percent instead of 8 percent in interest).

However, some taxpayers who purchase those bonds would probably be in a higher tax bracket and consequently would produce a tax revenue loss that exceeded the savings of the bond issuer. For example, if a taxpayer in the 33 percent bracket purchased the tax-exempt bond bearing a 8 percent rate of interest, it would cost the government Rs 27 (Rs.80 of interest income that would have been taxed at a 33 percent rate). In that case, the Rs.20 interest subsidy provided to the issuer of the tax-exempt bond would cost the government Rs.27.

According to several analysts in the US, only about 80 percent of the tax expenditure from tax-exempt bonds actually translates into lower borrowing costs for issuers, with the remaining 20 percent simply taking the form of a transfer to bondholders in higher tax brackets. Using tax-exempt bonds to finance infrastructure is also regressive, because the amount by which the benefits captured by investors exceeds the issuer's cost savings increases with the taxpayer's marginal tax rate.[5]

In February 2009, the US Administration and Congress passed the American Reinvestment and Recovery Act of 2009 to address the economic contraction caused by the financial crisis. The Recovery Act included the Build America Bonds (BABs) program. The bonds issued are taxable for which the government pays a 35 percent direct subsidy to the issuer to offset borrowing costs. Payment is made contemporaneously with each interest payment date under such bond. Since BABs are taxable bonds which were sold without regard to tax status, they appeal equally to investors that do not have tax liability, including pension funds and other long term institutional investors, and to traditional investors of tax-exempt bonds. By broadening the set of investors BABs helped to reduce issuer borrowing costs, especially on longer maturity issues. In addition to broadening the market for municipal bonds, BABs more efficiently deliver the federal subsidy for state and local government borrowing because each dollar of subsidy goes directly to the issuer.

In the case of Infrastructure Bonds in India the differential cap on interest rates offered to investors, as shown in Table 3, may be motivated by similar concerns. This may be considered as a form of price discrimination which allows the issuer to capture some of the 'surplus' which otherwise is captured by high tax bracket investors in the case of uniform interest rates.

[5] This has been questioned on the grounds that the alternative to investing in a tax exempt bond is not necessarily a taxable bond.

India Infrastructure Finance Company Limited (IIFCL)

The India Infrastructure Finance Company Limited (IIFCL) was established in January 2006 as a wholly owned government company to provide long-term financing for infrastructure projects.[6] IIFCL's operating paradigm was governed by "The Scheme for Financing Viable Infrastructure Projects through a Special Purpose Vehicle called the India Infrastructure Finance Company Limited" (SIFTI**)." (Planning Commission 2009)** IIFCL commenced operations in April 2006.

IIFCL funds infrastructure projects which are implemented through a project company set up on a non-recourse basis, i.e., those set up as SPVs or those that are units of larger corporate entities but whose cash flows can be ring-fenced. IIFCL is required to assign overriding priority to PPP projects that are implemented by private sector companies selected through a competitive bidding process, preferably based on standardized or model documents approved by the respective governments. In order to finance its lending IIFCL raises long term finance against sovereign guarantee for which it pays an annual guarantee fee. IIFCL also receives an allocation of the tax exempt infrastructure bonds. The government has provided the entire paid up capital of Rs.2,900 crores as on March 31, 2013.

IIFCL mainly provides long-term loans to project companies in association with banks. As on March 31, 2013 the total outstanding loans was Rs.18,921 crores out of which Rs.16,351 crores was in the form of direct lending **(IIFCL 2013)**. Initially, IIFCL sanctioned loans based on the appraisal of the Lead Bank[7]. However, IIFCL is progressively moving towards performing its own credit evaluation, according to the ADB **(Asian Development Bank 2012a)**.

IIFCL launched its Credit Enhancement initiative with a pilot transaction with the support of ADB. **(Asian Development Bank 2012b)** Under this scheme IIFCL plans to provide partial credit guarantee to enhance the ratings of project bonds issued by infrastructure companies. With credit enhancement, infrastructure project bonds are expected to become attractive investments for insurance companies and pension funds. The projects under the facility will be expected to have a minimum stand-alone bond rating without credit enhancement of BBB+, and should have completed at least 2 years of commercial operation. The funds raised through the issue of credit enhanced bonds will be used to prepay bank debt before its scheduled maturity.

Under the pilot transaction, IIFCL enhanced the credit rating of a Non Convertible Debenture (NCD) issue of Rs.320 crore by GMR Jadcherla Expressways Private Limited (GJEPL). The company was incorporated in October 2005 as a SPV owned by GMR Group of Companies. It was awarded a 20-year concession through competitive bidding by the National Highways Authority of India (NHAI) in February 2006 to design, engineer, construct, operate, maintain, and expand into four lanes the existing two-lane section of National Highway 7 from Farukhnagar to Jadcherla and to improve, operate, and maintain the four-lane stretch of the highway from Thondapalli to Farukhnagar on a build-operate-transfer basis. The toll expressway began operations in February 2009.

IIFCL provided an unconditional and irrevocable First Loss Default Guarantee (FLDG) to the bondholders to the extent of 24% of the NCD amount. On the basis of the credit enhancement ICRA assigned a Rating of [ICRA] AA (SO) [ICRA double A (Structured Obligation)] against a stand-alone rating of A. In the event of default, after IIFCL pays its obligations under the guarantee, it will have recourse to the project assets. The first loss structure was developed with guidance from rating agencies as the most efficient way to lower the probability of default to bond holders and uplift credit

[6] The Government, along with RBI and IDBI, had earlier sponsored the Infrastructure Development and Finance Company (IDFC) in 1997. IDFC is now a private listed company with about 17% of government shareholding and 49% shareholding by Foreign Institutional Investors (FII)

[7] According to the SIFTI, "Lead Bank means the *Bank*/Financial Institution (FI) that is funding the project and is designated as such by the Inter-Institutional Group or consortium of Banks/Financial Institutions provided the risk exposure of IIFCL is less than that of the lead bank in a project."

of the underlying bonds. This was considered a better use of resources than a full credit wrap covering 100% of the amount of the bonds.

The High Level Committee on Financing Infrastructure **(Planning Commission 2012b),** after reviewing the initial performance of IIFCL, concluded

> IIFCL was set up by the Government in 2006 to provide long-term debt for infrastructure projects since the commercial banks were unable to do so on account of their asset-liability mismatch. IIFCL has since provided loans to a large number of projects albeit on the same terms as banks, but with a marginal increase in the tenure of loans. IIFCL has raised its funds against sovereign guarantees and not on the strength of its balance sheet. However, the benefits of sovereign guarantee have not been fully realised as IIFCL has largely duplicated the role of commercial banks, which was not its mandate.

The Committee recommended that IIFCL should substitute its direct lending operations by guarantee operations that would enable the flow of non-bank long-term credit for infrastructure projects, especially, insurance and pension funds. Moreover, instead of continuing to borrow solely on the strength of sovereign guarantees, it should start raising funds on the strength of its balance sheet.

5. Conclusions

It is now generally accepted that infrastructure projects require long term financing and life insurance and pension funds are the major sources of long term finance. Banks can at best be expected to provide short term financing during the construction period. To the extent pension and insurance funds do not have their own due diligence capabilities for infrastructure projects, Infrastructure Finance Companies (IFC) and Infrastructure Debt Funds (IDF) can provide such services. In addition, if the infrastructure projects do not meet the minimum ratings requirements, then the Infrastructure Investment and Financing Company Limited (IIFCL) can provide credit enhancement to the bonds issued by such projects. The success of these initiatives will now depend upon the ability of the government to generate a supply of PPP projects in an environment of policy certainty.

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