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# Innovative financial intermediation and long term capital pools for infrastructure: a case study of infrastructure debt funds

## 1. Introduction

Infrastructure projects are characterized by long asset lives and long pay back periods, which consequently requires long term financing. Lenders to infrastructure projects face several risks due to the capital intensive and long term nature of the projects (Agrawal *et al.*, 2011). Consequently, availability of long term debt to fund infrastructure projects have been limited in many emerging economies. To facilitate the availability of long term debt, Government of India has approved the creation of Infrastructure Debt Funds (IDFs). This paper highlights the salient features of IDFs and analyses its effectiveness as an intermediation mechanism for infrastructure funding.

Since the late 1990s, India has adopted a mixed model of infrastructure development, where both the private and public sector were involved in infrastructure development (Khandelwal and Khanapuri, 2015). Over the years, the private sector had become an important source of finance for infrastructure development in India. The share of private sector was expected to increase from 36.6% in the XI Plan to 48.1% in the XII Plan (Planning Commission, 2013). The increasing involvement of private sector in infrastructure development could be seen across several emerging countries.

Debt constitutes a major portion of funding of infrastructure projects (Silva *et al.*, 2004). The main sources of debt for infrastructure projects are commercial banks, specialised financing institutions created for infrastructure funding, Non-Banking Financial Companies (NBFCs), insurance companies, bond markets, and external commercial borrowings (ECBs). In general, infrastructure projects in India have a debt-equity ratio of 70:30. Therefore, non availability of debt capital, specifically, long term debt can therefore result in hurdles to capacity creation in infrastructure. For the period 2012-17, the funding gap in debt for infrastructure projects was estimated to be in excess of Rs. 5000 billion (Planning Commission, 2013). In order to address this gap, new ways and means of raising debt capital have been considered. Creation of IDFs is one such mechanism.

The aim of this paper is to assess the effectiveness of IDF's as a financial intermediation mechanism to provide long term capital for infrastructure. We use the concept of financial

intermediation since the scheme would act as an interface to both capital providers (investors) and capital seekers (infrastructure projects). Specifically, the objectives of this paper are the following:

- i. To provide a rich description of the IDFs, including the different forms of setting up of these funds.
- ii. To assess the rationale for setting up the IDFs in the light of other funding sources for financing infrastructure.
- iii. To evaluate the effectiveness of IDFs in meeting the objective of attracting capital for infrastructure projects.

Rest of the paper is structured as follows. Section 2 provides a brief literature review. Section 3 details the methodology and data sources used for the study. Section 4 provides the description of IDFs. Section 5 presents the findings and discusses them. The conclusions are presented in Section 6.

## 2. Literature Review

Financing has emerged as a key concern in infrastructure development, surpassing issues such as availability of superior technology and expertise, in both developed and developing nations (Reinhardt, 1993). Although it was believed that globalization would ease infrastructure financing, the sector continues to experience a funding gap, especially in developing countries (Ngowi *et al.*, 2006). Being highly capital intensive, with larger initial costs and lower operating costs, infrastructure projects have long gestation and have non-recourse or limited recourse financing (Lall and Anand, 2009). In developing countries, public sector resources are not sufficient to fund complex integrated infrastructure services (Ferreira and Khatami, 1996). Further, Governments are not as successful as the private sector in recognizing and shifting risk (English and Guthrie, 2003). Private funding has therefore emerged as a significant source of finance for the infrastructure sector.

Innovation in financial intermediation can help in attracting new capital sources to address the funding gap. Chen (2006) observed that China's rapid financial intermediation development contributed to its rapid economic growth during the post 1978 reform period. Financial intermediation has also found to play an important role in the rapid industrial transformation of the United States, the United Kingdom, Canada, Norway and Sweden over the period 1870-1929 (Rousseau and Wachtel, 1998).

In India, financial intermediation in the infrastructure sector is primarily done by banks, Non-Banking Financial Companies (NBFCs), Infrastructure Finance Companies (IFCs), insurance and pension funds. Commercial banks are important contributors of debt capital in the infrastructure sector. However, the long term nature of infrastructure loans and short term

nature of banks' liabilities has posed increasing asset liability mismatch risk and concentration risk in banks, on the back of rapidly growing bank exposure to the infrastructure sector (Rastogi and Rao, 2011). Further, Public Private Partnerships (PPPs) have a highly leveraged balance sheet and lenders concentrate on the downside risks associated with lending which can influence the debt servicing capability of the project (Laishram and Satyanarayana, 2009). Many infrastructure projects in India carry complex risk profiles and hence do not qualify for investments by insurance and pension funds (Sinha, 2014).

Financial innovations have emerged globally to close the gap between the rising global demand for infrastructure and the availability of financing sources offered by traditional financing mechanisms (Mostafavi and Abraham, 2010). Chen (2002) argues that financial innovation would play a key role in addressing some of the major problems associated with current approaches to infrastructure financing in the Asia–Pacific region. Innovative financing mechanisms have emerged in the U.S. as traditional federal and state grants were no longer sufficient to sustain and restore the continuously increasing civil infrastructure needs (Mostafavi *et al.*, 2012). Similarly, Canada's rising urban infrastructure debt showed that the methods of financing and maintaining urban infrastructure were insufficient, and the Government should begin to use innovative tools which can provide the financial resources for Canadian infrastructure (Vander and Roberts, 2006). Rastogi and Vivek (2011) using an empirical and theoretical framework establish that PPP infrastructure assets in India have robust and stable cash flows and are intrinsically safe. They also assess the potential innovative financial products that could help encourage the flow of additional capital to infrastructure projects.

In India, the challenge of obtaining long term funding for the infrastructure sector is greater due to the absence of a well-developed bond market. While the Government bond market is illiquid, the corporate bond market is restrictive to participants and is mostly arbitrage driven (Schou-Zibell and Wells, 2008). Problems relating to information asymmetry, low liquidity and distortions from the corporate debt segment would need to be solved to broad base the debt markets (Bose and Coondoo, 2003). IDFs have been considered as a mechanism to attract additional debt capital for infrastructure in several regions. The study by Gawlitta and Kleinow (2015) has traced the emergence of IDFs in the European Union. An overview of IDFs worldwide has been provided by Lambert (2014), where he has also argued how setting up of IDFs can contribute to the development of infrastructure in India.

### **3. Methodology and data sources**

A case study methodology was adopted for this study because of the following reasons (Yin, 1984): (i) the study is exploratory in nature; (ii) the object of the study, viz., IDFs is a contemporary phenomenon; (iii) the study aims to understand the “how” and “why” questions pertaining to IDFs; and (iv) it helps to investigate the phenomenon along with its context. A

multiple case holistic design approach was followed for this study to enhance generalizability and make the findings more representative (Tversky and Kahneman, 1986) and reduce bias (Jaikumar and Bohn, 1986). A strength of case study approach is the ability to use multiple sources of evidence, such as interviews and secondary sources (Yin, 1981).

At the time of the conduct of the study, four IDFs were operating in India. Three of the IDFs gave their consent to be interviewed for the study. Since access is also an important factor in the selection of cases (Pettigrew, 1990), we selected the above three IDFs as case studies. Data was obtained from both secondary documents as well as in-depth interviews. Multiple sources of evidence helped in development of converging lines of enquiry and led to a process of triangulation (Denzin, 1978:301).

Our data collection process started with a detailed review of various secondary sources. This primarily constituted circulars and notifications from regulatory authorities such as the Ministry of Finance, the Reserve Bank of India (RBI), the Securities and Exchange Board of India (SEBI), and the Insurance Regulatory and Development Authority (IRDA). In addition, information from news updates and the websites of the IDFs were also used in the analysis. These sources provided detailed background information on IDFs and the related regulatory framework. Subsequently, we conducted detailed interviews with the top management of the three IDFs that have been used as case studies. These interviews formed an important data source for this study. The following is the list of people interviewed for the study:

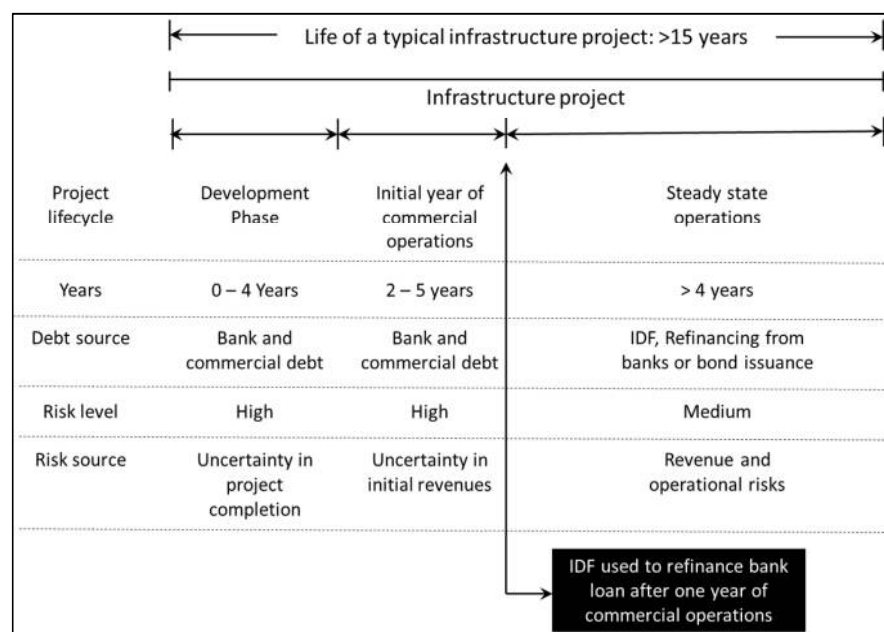
- Managing Director & CEO, Company A
- Chief Executive, Company B
- Chief Investment Officer, Company C

The interviews were semi structured and the broad contours of the discussion were determined before the start of the interview. This helped to achieve focus during the discussion and obtain the required information while simultaneously giving the freedom to navigate to related topics depending upon the response of the interviewee (Thillairajan, 2002). The interviews were conducted after taking prior appointment with the respondents, so they were able to provide their undivided attention during the interview. The interviews were held in the offices of the interviewees. Each interview lasted about 90 minutes. These interviews were subsequently transcribed, resulting in 26 pages of transcribed information. The interviews with the IDFs helped in supporting and corroborating the information obtained from secondary sources. Appendix 1 gives the list of questions asked during the in-depth interviews.

#### **4. Description of Infrastructure Debt Funds**

IDFs are investment vehicles which fund the debt requirement of infrastructure companies. In India IDFs were conceptualized as a vehicle to refinance the bank and commercial debt at the

time of their maturity. Figure 1 provides an illustration to situate the IDF's in the lifecycle of infrastructure projects.



**Figure 1: Situating the IDF in the lifecycle of infrastructure projects**

#### *Design and Structure of IDFs*

An IDF could either be set up as a Non-Banking Financial Services company (IDF-NBFC) or as a Mutual Fund trust (IDF-MF). In the case of the former, it was regulated by the Central Bank, the Reserve Bank of India (RBI). In the case of the latter, it was regulated by the Securities and Exchange Board of India (SEBI). Sponsors of the IDF, which could include banks, NBFC's, or Infrastructure Financing Companies (IFCs), provided the initial equity. Subsequent capital was raised from investors (both domestic and international). The IDF issued bonds (in the case of IDF-NBFC) or mutual fund units (in the case of IDF-MF) to the investors. The securities issued by the IDF could be either rupee denominated or foreign currency denominated, depending on the type of investors. However, the IDF made only rupee loans to infrastructure projects. The salient differences between the two structures are highlighted in Table 1.

**Table 1: Differences between IDF-NBFCs and IDF-MFs**

Sl.No	Description	IDF-NBFCs	IDF-MFs
1	Structure of entity	Company	Trust
2	Regulating Authority	RBI	SEBI
3	Sponsors	Banks and IFCs	Banks and NBFCs
4	Funds raised through issue of	Bonds	Mutual Fund Units
5	Minimum capital requirement	Rs. 3000 million	No such minimum requirement
6	Leverage	Possible	Not possible
7	Investments in Non PPP Assets	Not allowed	Allowed

Sl.No	Description	IDF-NBFCs	IDF-MFs
8	Investments during Construction Phase	Not allowed	Allowed
9	Existence of a Tripartite Agreement	Yes	No
10	Risk of Default lies with	IDF	Investors in the IDF
11	Risk level	Lower	Higher
12	Magnitude of Returns	Lower	Higher

RBI's master circular on Para-banking activities (RBI, July 2013) provided the eligibility parameters for banks for sponsoring IDFs. Investment in a single IDF could not exceed 10% of the banks paid up share capital and reserves. The bank's exposure to IDFs in the form of equity contribution would form a part of its capital market exposure and had to be within the prescribed limits (between 30 – 49 percent). There should be clear board laid down policies for sponsoring IDFs. Further, the IDF should make a disclosure in the prospectus / offer document at the time of inviting investments that the sponsoring bank's liability is limited to the extent of its contribution to the paid up capital.

NBFCs and IFCs which acted as sponsors of IDFs were governed by the RBI's notification on IDFs (RBI, November 2011). In the case of NBFCs sponsoring IDF-MFs, the NBFC should have a minimum Net Owned Funds (NOF) of Rs.3000 million. Other conditions such as net NPAs to be less than 3% of net advances, existence for at least 5 years, profit-making for the last three years with satisfactory performance, and Capital to Risk Weighted Assets (CRAR) of 15% should have to be complied as well.

The IDFs could raise funds from both domestic and international institutional investors, by issuing the appropriate security. Domestic and offshore institutional investors, which included insurance and pension funds invested in the IDFs. The funds raised would be deployed in infrastructure projects.

An important feature of the IDF structure (specifically the IDF-NBFC) was the presence of a Tripartite Agreement that had to be entered between the Concessionaire, the Project Authority (government) and the IDF. A model Tripartite Agreement for IDFs was approved by the Cabinet Committee on Infrastructure (CCI) in October 2012. The provisions in the Tripartite Agreement protected the IDF in the case of any default by the Concessionaire (RBI, November 2011). In the case of a default by the Concessionaire, the Project Authority will redeem the bonds of the Concessionaire that were purchased by the IDF. However, for availing the protection under the Tripartite Agreement, the IDF had to pay a fee to the project authority.

Thus the Tripartite Agreement acted as a credit enhancement mechanism for the IDF. Since the Project Authority (which was essentially a public utility or a government authority) was a



signatory to the Tripartite Agreement, it helped to achieve a high credit rating for the IDF, thereby reducing the cost of funds. A respondent interviewed for this study indicated,

*“...the Tripartite Agreement said that if there is a termination event, IDF- NBFC would have the first choice on the termination payments. Since the concession granting authority was typically a sovereign or sovereign equivalent, the IDF- NBFCs were rated AAA.”*

#### *Conditions for formation of IDF*

The conditions to be satisfied for forming an IDF were laid down by the SEBI and the RBI for IDF-MFs and IDF-NBFCs respectively.

SEBI's Mutual Fund Regulations in 2011 (SEBI, August 2011) discussed the guidelines for an IDF-MF. An existing mutual fund may launch an IDF scheme if it had key personnel having adequate experience in the infrastructure sector. The sponsor or the parent company of the sponsor should have been carrying out infrastructure financing activities for at least 5 years. The scheme could either be a close ended scheme with a minimum maturity of five years or an interval scheme with lock-in of at least five years. Pursuant to the amendment in mutual fund regulations in 2013 (SEBI, April 2013), the units of the IDF-MF could also be offered through private placement.

Although there was no specific indication by the RBI, the IDF guidelines (RBI, November 2011) meant that only experienced, credible and serious players were eligible to set up IDF-NBFCs. The minimum Net Owned Funds (NOF) was required to be Rs. 3000 million with Capital to Risk Weighted Assets (CRAR) of 15%. The IDF-NBFC could invest only in those infrastructure projects that were set up as a PPP project and have completed one year of satisfactory commercial operations. The IDF-NBFC should have a minimum rating of 'A' from credit rating agencies. An IDF official agreed that the rating of IDF-NBFCs was high because of RBI's clear guidelines,

*“...the reason why we have got the AAA rating is because the Reserve Bank of India has clearly defined on what we can do and what we can't do”.*

#### *Resources*

IDFs needed to raise long term resources to avoid Asset-Liability Mismatch (ALM) issues. The IDF-NBFCs could raise capital through the issue of rupee or dollar denominated bonds. The bonds would have a minimum maturity period of 5 years. The principal investors were expected to be domestic and off-shore institutional investors, especially insurance and pension funds that are looking for long term investment opportunities (RBI, November 2011). SEBI,(August 2011) specified the guidelines pertaining to raising resources by IDF-MFs. IDF-MF would raise resources from investors by allotting them mutual fund units of the scheme of the IDF, which would be subsequently listed on a stock exchange. There had to be a minimum of 5 investors,

with no single investor holding more than 50% of the net assets of the scheme. The minimum investment amount was Rs. 10 million and the minimum size of the unit was Rs. 1 million. There had to be a firm commitment for at least Rs. 250 million from the strategic or anchor investors before the allotment of the units of the scheme were marketed to other potential investors.

The instruments in which foreign investors were allowed to invest were regulated. Initially, it was specified that the maturity of the instrument would be 5 years and the foreign investments would have a lock in period of 3 years (RBI Foreign Investment in IDFs, November 2011). Subsequently, in January 2013, the RBI relaxed the lock-in requirement and maturity restriction (RBI, January 2013). The residual maturity at the time of first purchase was specified at 15 months. The overall limit for all foreign investment in IDFs (other than investment by non-resident Indians) (in both Rupee and Foreign Currency denominated securities) was limited to USD 10 billion, within the overall ceiling of USD 25 billion for Foreign Institutional Investment investment in bonds or non-convertible debentures issued by Indian companies in the infrastructure sector or by IFCs. There was no cap for investment by non-resident Indians in IDFs by way of rupee denominated bonds or units.

The main investor segments targeted by the IDFs in the domestic market were insurance funds, pension funds and provident fund monies, since infrastructure investments by these segments were regulated. Further, rating of the IDF was another important criterion which determined the flow of funds. A majority of infrastructure projects had low rating because of the presence of inherent risks. This deterred international investors from investing directly in such projects. The presence of a highly rated intermediary in the form of an IDF was also aimed to tap this set of investors, to give them comfort and confidence in the Indian infrastructure sector.

#### *Investments*

Khandelwal and Khanapuri (2015) identified two key decisions to be taken by IDFs while making an investment decision: (1) the sector and project to choose for deployment of funds, and (2) the pricing, tenor and other terms of investments. However, the nature of investments that the IDF was also determined by their structure, whether it was an IDF-NBFC or IDF-MF.

IDF-NBFC's could invest only in infrastructure PPP projects, which were characterised by a Concession Agreement, wherein the Project Authority agreed to compensate the lenders, partially or fully, in the event of default of the Concessionaire (RBI, November 2011). The IDF also had to sign a Tripartite Agreement with the Concessionaire and the Project Authority for ensuring that the payment was received in the case of the termination of concession. Delays and cost overruns were common in the infrastructure sector, owing to the inherent risks and increasing complexity of projects (Pai and Bharath, 2013). Keeping this in mind, RBI had mandated that IDF-NBFCs could invest only in projects which have completed at least one year

of satisfactory commercial operations. As a result, the IDF-NBFCs were considered to have relatively low risk and received concessions on credit concentration norms, such as a higher maximum exposure in any project. For example, the maximum amount an IDF-NBFC can invest in any project was 50 percent of its total Capital Funds and not 50 percent of Owned Funds as in the case of other NBFCs. An additional exposure up to 10% could be taken at the discretion of the Board of the IDF-NBFC. Over and above this, an additional exposure of up to 15% can be permitted by RBI if the financial position of the IDF-NBFC was satisfactory.

IDF-MF's on the other hand can invest in all types of projects, including non-PPP projects (SEBI, August 2011). Also, they can invest across the lifecycle of the infrastructure project. This meant that IDF-MFs could take over the loan even before the start of commercial operations of the project. Every IDF scheme was required to invest a minimum of 90% of net assets in infrastructure companies or special purpose vehicles (SPVs) created for facilitating or promoting infrastructure. The investment can be in debt securities, securitized debt instruments or in bank loans of such projects. The remaining 10% of net assets could be invested in equity shares, convertible instruments of infrastructure companies, infrastructure development projects, money market instruments and bank deposits.

## 5. Analysis and discussion

### *The raison d'être for IDFs*

The major sources of debt capital for infrastructure projects in India are fourfold: commercial banks, NBFCs, the insurance firms, and external commercial borrowings.

Commercial bank finance accounted for the largest component of private funding at 21% of the total infrastructure funding (Working Sub-Group on Infrastructure-Planning Commission, 2012). Banks and NBFCs in India were regulated by the RBI. The infrastructure sector was considered as a preferred sector to the banking industry, and outstanding bank credit to infrastructure grew at a CAGR of 43.41% from 1999-00 to 2012-13. This translated to a significant growth in the share of infrastructure in gross bank credit, from 1.63% in 2000 to 13.37% in 2013 (RBI, August 2013). Further, growth in credit to the infrastructure sector has been higher than the growth in total bank credit in almost all the years. Because of the high growth rate, most banks were close to reaching the ceiling limits for lending to the infrastructure sector after 2010. The phenomenal growth in bank credit to infrastructure was also accompanied by a growing risk of impaired assets in this sector, which indicated the probability of a systemic problem. Bank credit to the infrastructure sector came under the RBI's scrutiny owing to the exceptional growth rates (growth of over 100 times in 13 years) (RBI, August 2013). Bank credit to infrastructure are given in Table 2. Details of Non-Performing Assets (NPAs) on infrastructure lending are given in Table 3.

**Table 2: Bank credit to infrastructure sector**

Particulars	2000	2004	2008	2009	2010	2011	2012	2013
Total Bank Credit	4,435	8,641	24,769	29,999	34,967	42,993	50,748	58,797
Bank Credit to Infrastructure	72	513	2,053	2,618	3,816	5,371	6,164	7,860
Annual growth in total bank credit		18% <sup>a</sup>	30% <sup>b</sup>	21%	17%	23%	18%	16%
Annual growth in bank credit to infrastructure		63% <sup>a</sup>	41% <sup>b</sup>	28%	46%	41%	15%	28%
Share of Infrastructure as a % of total bank credit	1.63%	5.94%	8.29%	8.73%	10.91%	12.49%	12.15%	13.37%

Notes: All figures in Rs. billion unless otherwise indicated; <sup>a</sup>Compounded Annual Growth rate for the period 2000 - 2004; <sup>b</sup>Compounded Annual Growth rate for the period 2004- 2008.

Source: Infrastructure Financing by Banks in India: Myths and Realities (Keynote address by Dr. KC Chakrabarty, Deputy Governor, RBI)

**Table 3: Asset quality of infrastructure loans by scheduled commercial banks**

Particulars	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13
Gross NPA% of Infrastructure Loans	0.61%	0.60%	0.73%	1.03%	1.45%
(GNPAs + Restructured Standard Advances) / Gross Advances	4.66%	5.06%	3.65%	12.22%	17.43%

Source: Infrastructure Financing by Banks in India: Myths and Realities (Keynote address by Dr. KC Chakrabarty, Deputy Governor, RBI)

Despite being the most important source of debt capital, bank loans to infrastructure were characterized by the following limitations:

- a. *Asset Liability Mismatch*: The long term nature of infrastructure financing compared to shorter tenure of bank deposits resulted in asset liability mismatch. Short term deposits constituted a majority of the banks' liabilities. In the case of the country's largest bank, the State Bank of India, 78% of the total liabilities comprised of deposits as on March 31, 2014 (on a standalone basis) (SBI, FY 2013-14). On an average, bank deposits have a tenure of 3 to 4 years, which implied that banks can typically fund assets with an average tenure of 5 to 7 years on the strength of the permanent capital on their balance sheets. Infrastructure projects, by their very nature require funding for longer tenures. Therefore, when banks lend to infrastructure projects, they face an asset liability mismatch. Further, investors had more investment options in recent years, unlike in the past where investment options for retail investors were limited and bank deposits was preferred. As a result, the flow of deposits to banks had become volatile, which further aggravated the problem of asset liability mismatch. In order to overcome this problem, the RBI allowed banks to issue long term bonds to fund infrastructure in July 2014 (RBI, July 2014). However, it was expected to take a while for banks to issue infrastructure bonds to raise capital for infrastructure projects.
- b. *Exposure Limits*: RBI prescribed single borrower and group borrower limits for the banking sector. The credit exposure to a single borrower should not exceed 15% of the capital funds of the bank (RBI - Exposure Norms, 2014). Credit exposure to borrowers

belonging to the same group should not exceed 40% of the capital funds. Banks could lend an additional 5% (in case of single borrower) and an additional 10% (in case of group borrower) over and above the prescribed limits, provided the additional credit exposure was on account of lending to infrastructure projects. Since the infrastructure sector in India was characterized by a few large companies, most banks had already taken significant exposure with many of the companies, and were operating very close to the prescribed limits. Further, RBI required banks to set internal limits for aggregate exposure to a particular sector. The growing share of infrastructure credit had resulted in the banks reaching this limit as well. Table 2 indicates that infrastructure credit had been growing at a faster rate than total bank credit, indicating that the headroom for bank funding for infrastructure was limited.

Interview respondents indicated that these limitations in bank funding had to be considered seriously, since the banks were the largest source of private debt capital for infrastructure players. One of the respondents emphasized the same as follows:

*“One cannot completely remove banks from infrastructure financing, unless there was an alternate mechanism. Otherwise, infrastructure will not get funded in the country. So banks had to remain and at the same time, exposure limit problems and ALM mismatch of the banks needed to be sorted out. How can both be done at the same time was the dilemma of the Government (at the time of IDF conceptualisation)”*

NBFCs were the second largest source of debt capital to infrastructure companies, accounting for about 10% of the infrastructure funding (Working Sub-Group on Infrastructure-Planning Commission, 2012). With the exponential growth of infrastructure financing needs, a special categorisation of NBFCs, known as Infrastructure Finance Companies (IFCs) was introduced by RBI. Both IFCs and other NBFCs lending to the infrastructure sector increased their loan book considerably during 2007-12 due to high credit demand from power, telecom and road sectors. Outstanding credit to the infrastructure sector given by leading NBFCs is given in Table 4.

**Table 4: Top IFCs/NBFCs in the Infrastructure Sector and the outstanding credit**

IFC/NBFC	Outstanding Credit (Standalone) as on						
	March 31, 2014	March 31, 2013	March 31, 2012	March 31, 2011	March 31, 2010	March 31, 2009	5 Year CAGR
PFC	1,687.92	1,425.24	1,120.17	874.24	798.56	644.29	21%
REC	1,358.99	1,145.75	899.85	732.07	664.53	513.81	21%
IFCI	167.82	107.59	98.19	107.17	105.83	74.34	18%
SREI	77.89	61.81	26.94	20.25	35.97	12.11	45%
L&T Infra Fin	NA	123.16	90.47	71.65	42.55	22.58	53% <sup>a</sup>
IDFC	505.69	485.84	424.80	339.39	250.27	205.92	20%

Notes: All figures in Rs. billions; NA: Not Available; <sup>a</sup>Four year CAGR calculated from 2009 to 2013; PFC: Power Finance Corporation; REC: Rural Electrification Corporation; IFCI: Industrial Finance Corporation of India; SREI: SREI Infrastructure Finance; L&T Infra Fin: L&T Infrastructure Finance; IDFC: Infrastructure Development Financial Corporation

Source: Individual company annual reports from respective websites

RBI specified the exposure limits by IFCs for lending to the infrastructure sector (RBI - Master Circular NBFCs, 2014). A NBFC was not allowed to lend more than 15 percent of its owned funds to a single borrower and more than 25 percent of its owned funds to a single group of borrowers. However, these limits can be increased by 5 percent and 10 percent respectively, if the additional exposure was on account of infrastructure lending. For IFCs, the single and group borrower limits were further enhanced to 25 percent and 40 percent respectively of its owned funds. Though IFC's were able to provide long term funding, a limitation of NBFC funding was the quantum of funding that was available for investment in infrastructure. In addition, the exposure limits and NPA's that affected the banks were equally applicable for the NBFC's.

Insurance companies were required to invest a part of their funds in the infrastructure and housing sectors (IRDA, 2013). The IRDA regulations stipulated a minimum investment of 15 percent in insurance and real estate sectors. Table 5 gives the trend of infrastructure investments by two of the largest insurers in India, the Life Insurance Corporation (LIC) and the General Insurance Corporation (GIC). The trend shows that the exposure of insurance companies to infrastructure sector has been below the minimum limits prescribed by the regulatory agency. Therefore, there was significant scope to attract more investments from insurance firms for infrastructure projects.

**Table 5: Infrastructure investments by LIC (Life Fund) and GIC**

Particulars	FY14	FY13	FY12	FY11	FY10
Panel A: LIC					
Infrastructure and Social Sector Investments	1,104.33	78,451.67	63,296.53	59,636.82	59,924.83
Infrastructure and Social Sector Investments as a % of Total Investments	9%	8%	7%	7%	9%
Panel B: GIC					
Infrastructure and Social Sector Investments	3,164.62	2,748.66	2,506.10	2,390.21	2,092.03
Infrastructure and Social Sector Investments as a % of Total Investments	12%	11%	12%	12%	12%

Notes: All figures in Rs. billion

Source: Public Disclosures by LIC and GIC

However, insurance funds investing in debt securities have to comply with the strict credit rating requirements. In the case of life insurance companies (general insurance companies), minimum of 75 percent (65 percent) of the investment should be in debt that have a credit rating of 'AAA' or equivalent. Investment in securities that have a rating of 'A' or lower debt cannot be higher than 5 percent (8 percent). (IRDA, 2013). Since a majority of the infrastructure bond issues fell below this limit, attracting capital from insurance companies had been difficult for infrastructure projects. One of the respondents said,

*"The insurance companies have a mandate that they can predominantly invest only in AAA rated projects. This is stipulated by the regulatory agency and they are supposed to follow it. Infrastructure*

*projects by their very nature will not be able to get such a high credit rating, other than a handful of them like annuity projects and road projects where there is no traffic risk”.*

This is corroborated by Table 6 which gives an account of the long term rating of infrastructure companies and projects by one of the leading credit rating agencies, ICRA. A sample list of 238 companies in roads, ports, airports and infrastructure development space was considered for this analysis. It is seen that bulk of the companies/projects (81% of the companies selected) had long term ratings of BBB, BB or B. Only 11% of the companies selected had a long term rating of AAA, AA or A.

**Table 6: Ratings of Infrastructure Companies/Projects**

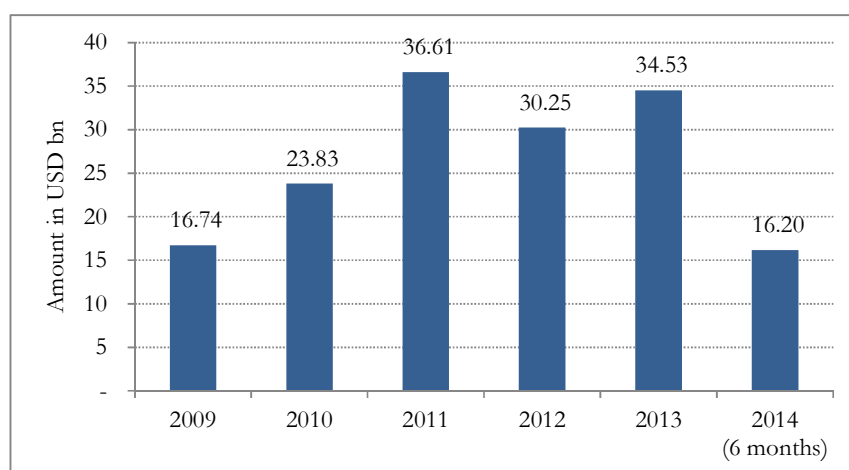
Long Term Rating as on June 30, 2014	Number of Issues (including Structured Obligation (SO*))
AAA	1
AA+	3
AA	3
AA-	4
A+	4
A	7
A-	4
BBB+	12
BBB	14
BBB-	31
BB+	20
BB	28
BB-	25
B+	32
B	23
B-	7
C+	2
C	1
D	17

Notes: \* An SO rating is specific to the rated issue, its terms and its structure and does not represent the rating agency's opinion on the general credit quality of the issuers concerned.

Source: ICRA Limited

External Commercial Borrowings (ECB) was a form of borrowing where Indian companies could borrow funds from foreign investors. The interest rate was usually linked to an international benchmark rate such as LIBOR. ECBs were highly regulated by the RBI. Figure 2 indicates the trend in ECB during 2009-14. It could be seen that ECBs showed a volatile trend. From the country's economy standpoint, the ECBs increased systemic leverage. ECBs also carried with it unique set of risks and challenges such as exchange rate risks and international interest rate risks. Since the loans were denominated in foreign currency, it was important to hedge for currency risks. This resulted in additional hedging costs. Further, ECBs were generally

beneficial for larger companies with higher credit ratings, as they can get better interest rates. Smaller infrastructure developers had difficulties in mobilising capital through ECBs.



Source: Reserve Bank of India, 2014

**Figure 2: External commercial borrowings in India**

**Table 7: Summary of the salient features of different debt sources**

Particulars	Banks	NBFCs	Insurance	ECBs
Regulating authority	RBI	RBI	IRDA	RBI, Ministry of Finance
Funding cost	High	High	Low	Medium
Asset Liability Mismatch	High	Medium	Low	Medium
Exposure Limits	Applicable	Applicable	Applicable	Not applicable
Promoter Limits	Applicable	Applicable	Applicable	Not applicable
Credit rating requirement	Medium	Medium	High	Medium
Value Addition	Low	Low	Absent	Absent

Table 7 summarizes the salient features of the four sources of debt discussed above. Despite the existence of various funding avenues, there is still a paucity of reliable long term capital for the sector. The challenges in the existing forms of financial intermediation led the Government to examine a more robust form of long term funding for the sector. In the Union Budget 2011-12, the then Finance Minister proposed the creation of IDFs. Subsequently, in June 2011, the Government released a note on the structure of IDFs, as a means to address the issue of sourcing long term debt from insurance and pension funds. By providing long term funding, IDFs overcome the limitations faced by banks. Since IDFs with Tripartite Agreement secure high credit ratings, they would be in a position to attract funds from insurance companies. While IDFs, raised money from both domestic and foreign investors, they provided only rupee loan to infrastructure companies, which helped the borrowing firms to avoid exchange rate and currency risk.



### *Effectiveness of IDFs to borrowers*

Bank loans were generally subject to interest reset clauses at the time of refinancing. This caused a lot of volatility in the project cash flows. When the bank loans were refinanced with a loan from IDF the volatility reduced, IDFs provided long term loans that did not necessitate refinancing. Further, in many cases, IDFs took over the loan after the stabilisation of operations, when the project risks were considerably lower. This enabled them to determine the tenure of the loan in a better manner. IDF financing thus helped infrastructure companies to gain access to reliable long term capital, thus lowering the overall financing risk for the project.

Infrastructure projects are generally sensitive to interest cost changes. Wu (2006) suggests that even a small change in interest rates can increase project costs substantially, affecting the project viability. In the case of IDFs, loans were granted at a cost which was lower than that of existing bank loans, because the IDFs invested in that stage of the project lifecycle where the risk profile of the asset was lower. Interview respondents indicated that there was a difference of at least 50 basis points in the interest rate offered by an IDF vis-à-vis that offered by the bank. The lower cost helped in reducing the overall cost of capital for the infrastructure project.

IDFs offered flexibility in the repayment schedule. The tenure of the loan could be extended without classifying the loan as a restructured asset in the case of an IDF. Infrastructure projects could experience variability in cash flows and an IDF loan can help in accommodating this variability. In addition, IDFs helped in structuring repayments according to the cash flows of the project. One of the respondents said,

*"IDFs do structuring in terms of the repayments. Back ending is possible because the bank repayment is usually linear whereas the cash flows of the project may vary across years. So as an IDF-NBFC, there is some flexibility in terms of the structuring of the repayment - this is a key value add".*

RBI and SEBI have clearly stipulated that IDFs can be sponsored only by entities with robust experience in financing infrastructure. Interview respondents indicated that the strong experience of the sponsors of IDFs can benefit the borrowing infrastructure companies. Although the level of monitoring of IDFs was not as stringent as done by private equity investors, IDFs engaged in more active monitoring mechanisms compared to commercial banks and other conventional lenders. Site visits were undertaken regularly and monthly cash flow assessments were done. If the IDF had a group company which had an engineering experience, this can be leveraged to the benefit of the infrastructure project as well. Thus

there is more value addition to the infrastructure company than mere provision of capital. An interviewee remarked,

*“There is stringent monitoring. Monthly reports on operational costs are obtained and financial covenants are monitored quarterly. IDF operates like an equity fund in terms of monitoring its investments although it is a debt fund. Board positions are not taken; but wherever possible observer seats are taken. We are not passive investors. That’s how an IDF differentiates itself as a fund manager.”*

#### *Effectiveness of IDFs to investors*

IDFs were ideal vehicle for investors with long term funds who wished to invest in the infrastructure sector, but lacked the experience to invest directly. The involvement of a highly rated financial intermediary with experience and credibility enhanced investor confidence and they were willing to accept a lower return on their investment as a result of lower risk. Moreover, credit enhancement mechanisms such as the Tripartite Agreement helped in attracting funds from sources that could not earlier invest in the sector.

In addition, the income earned by IDFs was not taxable in the hands of the IDF. This was not a tax holiday and but a permanent exemption. As a result, investors could earn comparable income despite the interest rate charged to infrastructure companies being lower than that charged by banks. However, the income was taxable in the hands of the investors. The withholding tax on interest payments by the IDFs has been reduced to 5% from 20% (Ministry of Finance, 2011; Ministry of Finance, 2014). As the interview respondents indicated, the above factors together provided an attractive risk-return ratio for IDFs.

#### *Expanding the capital available for infrastructure projects*

Indian infrastructure was significantly funded by the Government and quasi Government entities (such as the government owned banks). This was highlighted by one of the respondents,

*“...there is no long-term financial institution available for funding infrastructure. So, the onus of funding infrastructure has typically been with public sector banks. On the one hand 50-60% of the funding is run by Government directly, and another 20-30% is done indirectly through the PSU banks which are primarily controlled by the Government. Therefore, a significant concentration of risk is in the hands of Government or quasi Government entities”.*

IDFs could therefore help in increasing the share of private sector funding.

- Banks recovered their capital when the IDFs refinanced the loans previously provided by the banks. Recovery of capital helped the banks to lend to new infrastructure projects that are being developed, which would not have been possible if their previous loans had not been refinanced by IDFs. Setting up of IDFs thus helped to release capital to fund projects in the development stage. This results in enhanced funding for the sector as a

whole. IDF-NBFCs can leverage its equity up to 9 times. For example, if the equity infusion is Rs. 2000 million, the IDF can leverage up to Rs. 18,000 million, which results in about Rs. 20,000 million of loanable funds. When the IDFs took over the loans from banks, the systemic leverage came down, as the refinanced loan amount had a component of equity as well. Thus, IDFs brought down the leverage in the system, though by a small proportion. Further, the IDFs could contribute to the development of the bond market in the country since the IDF-NBFCs issue bonds to investors to raise resources.

## 6. Conclusion

The IDFs have been envisaged by the government of India to attract long term debt capital for infrastructure projects. They were expected to attract capital from sources other than commercial banks for the infrastructure sector.

The structure of IDFs were characterised by several unique features: (i) IDFs (the IDF-NBFC) invested only in projects that had completed at least one year of operations. Since the risk profile of projects that were in the operations phase were considerably lower as compared to those in the construction or development phase, the cost of capital for IDFs would be lower. (ii) The existence of tripartite agreement between the IDF, concessionaire, and project authority ensured that in the event of termination of the concession, IDF would have priority to recover its loans. This tripartite agreement significantly reduced the risk of default, enabling the IDFs to secure AAA credit ratings, which were higher than the projects in which the IDFs would invest. (iii) Securing such high ratings helped to attract investment from insurance and pension funds, who were otherwise unable to invest in infrastructure because of lack of projects with strong ratings. IDFs were thus able to attract investment capital from insurance and pension funds for infrastructure projects.

For the borrowers, the advantage from IDFs was that they provided long term capital at a lower cost. In addition to providing capital, IDFs also added value to the borrowing companies, in terms of management inputs as well as strengthening the internal systems and processes, which the banks do not normally get involved in. Since IDFs refinanced the bank loans, the banks were able to reinvest their capital in other projects that were under development.

Despite several advantages, IDFs had to overcome certain challenges and limitations. The biggest challenge for the IDFs could be the resistance from banks to give away the safe loans. Once operations have been stabilized, the chances of default were significantly lower. This was the time when the IDF stepped in. Although the IDF structure helped the banks in freeing up their exposures to advance new loans, banks may be unwilling to lose first charge of loans to IDF-NBFCs on the back of the Tripartite Agreement which was signed.

Another possible limitation for IDF-NBFCs was the restriction on the nature of the projects which they can invest in. IDF-NBFCs were allowed to invest only in PPP projects, after 1 year of successful commercial operations. Although this was an important factor which determined the superior rating of IDFs, non-PPP projects that required long term funding cannot be funded by IDF-NBFCs. Projects facing high construction risk would not be able to tap IDF-NBFCs and the IDF-NBFCs will also have a smaller range of projects to choose from (Khandelwal and Khanapuri, 2015). Further, the IDF-NBFC can only provide debt up to the level approved by concession-granting authority, whereas the actual debt may be much higher than the approved level of debt, because of cost overruns.

Despite the limitations, IDFs can bring respite to the complex funding requirements demanded by the infrastructure sector. IDFs being an innovative vehicle of financial intermediation, can bridge the gap by directing funds from long term capital pools to the infrastructure sector. Future research in this area could be to study the viability of IDFs and understand the factors which can lead to the success of the IDF concept in India.

## Appendix 1: Illustrative questions asked during in-depth interviews

- How has infrastructure been traditionally funded in India? What have been the drawbacks and limitations of these sources?
- How do foreign and domestic investors perceive investing in infrastructure in India?
- What are the difficulties in getting capital from insurance and pension funds to fund infrastructure projects?
- How do IDFs address the problems of infrastructure financing? What is the underlying motivation of setting up IDFs?
- What are the risk measures built in the regulations of IDFs? What are the restrictions that govern the investments of IDFs?
- What are the eligibility criteria specified by the government for sponsors to start IDFs? How relevant are they?
- Can you describe your IDF? Who are the sponsors in the fund?
- What categories of investors would find IDFs attractive? What is your fund raising strategy?
- How are the fund managers of IDFs compensated?
- What are the projects you have invested in?
- What are your interest rates? What is the loan tenure?
- How do you select the projects that you invest in? After investment, how do you monitor the performance? Apart from providing capital, do you add value to your investments by management inputs? Why?
- How does funding from IDF differ from that of the banks and other infrastructure financing companies?
- What is the vision that you have for your IDF?
- What are the challenges facing the IDF?

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