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AUGMENTING INDIAN INFRASTRUCTURE FINANCE: EXEMPLIFICATION OF TWO INNOVATIVE INSTRUMENTS

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Abstract

Infrastructure sector is expected to play a huge role in helping India achieve its aim of becoming a 5 Trillion economy in the next three years. Being a capital intensive sector, new and innovative financing avenues must be explored along with the traditional sources to bridge the gap between requirement and availability of funds. This requires out of box thinking. New ideas such as structured finance can help de-risk banks and increase the quantum of funds in infrastructure sector.

This paper identifies two innovative tools, namely Securitisation and Take-out Finance and exemplifies their benefits to the concerned parties as well as to the infrastructure sector. Both these tools help in directing funds of investors with different risk appetites towards the infrastructure sector addressing some of the major concerns of low availability of funds and high risks involved with infrastructure financing. These tools and a few more innovative financing methods might be helpful.

Key Words: Innovative Financial Instruments, Securitisation, Take-out Finance, De-risking of Banks, Augmentation of Funds

1.0 INTRODUCTION

India, the fifth largest economy, aims to touch the aspirational GDP level of $5 trillion mark from its existing nearly $3 trillion (WB, 2021). Robust infrastructure is one of the primary inputs towards this goal. During the financial years 2008 to 2017, infrastructure investment in India was estimated at $1.1 trillion. Even though there have been substantial investments in the last decade; there is still a need for further augmentation in many segments of infrastructure. As per ICRA report, the total credit to infrastructure has grown at 10% in FY2021 to Rs. 24.7 lakh crore[1] as on March 31, 2021. However, an estimate of $1.4 trillion is required as primary investment in the next few decades in India to achieve a $5 trillion Economy. Infrastructure projects are complex, capital-intensive, have long gestation period and hence expose lenders to a variety of risks. It includes excessive sector exposure and asset-liability maturity (ALM) mismatch. Limited (or Nil) recourse nature of infrastructure financing further exacerbates the situation. The existing financial ecosystem has been helpful in enhancing the level of funding; however it has been utilized to its near capacity. To finance the infrastructure deficit, innovative methods of funding may have to be explored.

Structured Finance provides options of creating multiple instruments by suitably arranging risks and commensurate rewards. The fundamental concept of securitization could be leveraged for this domain. There have also been many related innovations like InvIT, IDFs, Masala Bonds, etc. This paper explores two possible options. The first is application of securitization and related instruments, and the second is take-out financing which can enable longer amortisation period for infrastructure projects.

The rest of this document has been arranged as following. Section 2 reviews the relevant literature, section 3 details about the methodology adopted, section 4 explores securitization process as a potential solution with benefits to stakeholder. Section 5 briefs on Take-out financing, followed by concluding remarks in section 6.

2.0. LITERATURE REVIEW

The relevant literature has been reviewed and presented in the following two segments.

2.1 Securitization

2.2 Take-out Financing

[1] 1 crore = 100 lakh = 10 million = 1,00,00,000

2.1 Securitization

As mentioned in Section 1, there is a need to explore innovative solutions of financing infrastructure in India. The process of securitization helps raise liquid funds by suitably adjusting the asset side of the balance sheet (Fabozzi and Kothari, 2007). Typically, in a financial structure, loans are financed by lenders for a fixed period at a fixed or floating rate. The installments are collected by lenders and used to finance fresh loans. The lenders' capacity is limited as they have to wait till the time they recover the installments with interest and cannot generate new loans. Further, the assets of the lenders cannot be rotated for further business as they are almost illiquid. In the process of securitization, certain types of assets are pooled so that they can be repackaged into interest-bearing securities (Davidson and Herskovitz, 1994). The principal payments and interest from these assets are passed through to the purchasers of the securities (Jobst, 2006).

Securitization provides an alternative to these lenders to generate resources without any change in the capital employed. These loans can be pooled together by lenders and they can sell their right to receive future payments from the borrowers of these loans. The lenders would receive their consideration for the same value by securitizing the loans portfolio. These resources can further be used to develop the lending business.

Securitization in India mostly takes the form of a trust structure. The underlying assets are sold to a trustee company. This company holds the security in trust for investors. The trustee company in this case is a special-purpose vehicle (SPV), which issues securities in the form of pass-through or pay-through certificates (PTCs). The legal owner of the underlying assets is the trustee. Investors holding the PTCs are entitled to beneficial interest in the underlying assets held by the trustee (Romero et. al, 2017).

2.1.1 Objective

The objective of the securitization process is to mobilize resources from a wider investor base, by transferring 'income earning' asset portfolio from the balance sheet of the originator to a willing third party. The process of converting the asset portfolio such as loans and advances or future receivables into negotiable or tradable securities or assignable debt is called 'securitization'.

2.1.2 The Securitization Process

Securitization is an innovative technique of converting illiquid assets into liquid assets. The process of securitization involves combining similar illiquid assets (e.g EMIs) into a pool and selling them in the form of securities to the investors in the capital market. This helps in channelizing capital market funds to any sector like infrastructure or urban development. The value of these instruments is derived from the cash flows or collateral value of the financial asset.

2.1.3 Participants

The following participants are involved in a typical securitization deal (Kendall, 1996), explained in Figure 1:

2.1.3.1 **Originator**: The original lender who provides funds to the borrower is the Originator. The Originator usually owns the cash flows or assets around which the transaction is structured. In the balance sheet of the original lender, receivable stands as an illiquid asset. In order to infuse liquidity, the originator requires funds and is hence called the driver of the deal.

2.1.3.2 **Borrower**: The borrower can also be called an **Obligor.** This entity borrows funds from the originator with promises to repay the same over a period of time. The borrower is the source of the cash inflows for the entire process of securitization. The asset being transferred to the SPV, is equal to the loan amount that is outstanding from the borrower. Ultimately, money flows to the *investors* from the borrowers via *SPV*. The credit standing of the obligor/obligors is of immense importance in a structured finance transaction.

2.1.3.3 **SPV** (Special Purpose Vehicle): For the process of securitization, the illiquid assets are pooled together and this pool of asset is removed from the balance sheet of the originator and transferred to an entity specially created to carry out this deal. This entity is a Special Purpose Vehicle (SPV). The SPV fragments the pool of receivables into marketable securities. These receivables are issued to the *investors*. In India, an SPV can be incorporated as a trust or a body corporate. Mostly, the SPV has independent directors or trustees.

2.1.3.4 **Investors**: The investors are the subscribers of the securities issued by the SPV. Investors could be individuals or institutions like banks, financial institutions, provident funds, mutual funds, pension funds, insurance companies, etc.

2.1.3.5 **Ancillary Service Providers (**e.g. Registrar to the Issue, Servicing & Paying Agent, Credit Enhancing Agency etc.**):** They are entities who provide services to the issue, SPV and/or the Investor. The S&P agent for instance collects the amount due from the obligor and transfers to the investor under the aegis of SPV. Credit Enhancing Agency provides protection to the Investor against identified risks.

2.1.3.6 **Credit Rating Agency:** This is the body, which assesses and evaluates the risk associated with the securities issued to the investors. It studies the certainty and quality of the cash flows from time to time and accordingly assigns a commensurate rating to the instrument. The rating agency plays a very critical role since the pricing (both initial and subsequent) of the instrument is directly dependent on its rating.

2.1.3.7 **Structurer**: Structurer is an Investment Banker engaged by the SPV to design the structure, to identify the appropriate ancillary service providers, to define the interaction with different agencies associated with the deal and to provide other advisory services as may be required.

2.2 Take-out Financing

Infrastructure financing needs investments over a very long period; which necessitates much longer-term investments than commercial borrowing. It replaces short-term interim financing and these loans are usually mortgages that are collateralized with assets and have fixed payments that are amortizing (Kagan, 2020). Typical commercial lenders, on the other hand, find it difficult to engage with long-term investments, such as those lasting for 20 to 30 years. Hence, Take-out financing allows banks to finance 15-year projects through five to seven-year money, thus addressing the main problem of maturity mismatch (Chakravarty, 2002).

The take-out finance scheme helps lenders tackle concerns regarding hitting the sectoral limit, asset-liability mismatches, and liquidity challenges that long-term debt financing to core projects might cause. In this scheme banks and lenders can enter into an agreement with financial institutions under the scheme to transfer outstanding loans from their books to the financial institution taking out long-term debt.

Take-out financing helps in financing long term project by engaging different lenders with their medium term funds. This also helps the banks to keep a 'clean' balance sheet along with better management of asset liability position. It also allows banks to generate fresh loans by transferring the existing loans to the next lender. For example – in Halol Toll Road Project in Gujarat State of India, the primary lender was IDFC. The primary lender transferred the loan to the partner institution after 5 years (The total tenure was 15 years). Take-out financing plans can be utilised for projects that take a long time to build, such as 10-15 years, but a bank can lend only for a maximum of five years. This concept has worked well in India, where financial entities such as the India Infrastructure Finance Company Limited (IIFCL) have taken over the bank loan.

An interest rate cap and restricted usage take-out financing are utilised, according to Srivastava (2011), to circumvent a bottleneck caused by a lack of infrastructure projects induced by equity funding choices and the corporate bond market, as well as overlap rules. Take-out finance (TOF), according to Lakhmani and Sikroria (2012), is a loan that is 'taken over' by financial institutions or a special purpose vehicle (SPV) to avoid default.

Relaying (or passing) of assets from one set of lender to another set, may be termed as relay financing. After the first lender fulfils its debt obligation, the next lender steps in. Thus, the second lender has taken over loan from the first lender, the first lender has taken his funds out of this project. This way the process may be repeated. Further, the overall amortisation period stands elongated.

3.0 METHODOLOGY

Securitization is a well-known process and has been utilized in many ways to channelize funds from market to augment availability of funds to any specific sector/s of economy. This has happened across sectors and geographies. India has witnessed application of securitization in loan financing of sectors like housing, auto loan, plastic money etc. Infrastructure sector is yet to gain the advantage of this method for channelization of funds to itself from otherwise ready to be deployed in financial markets.

Similar is the position of take-out finance. This technique enhances the tenure of the loans and helps financial institutions manage their asset liability mismatch (ALM) issues. It already has a small beginning in India; it has huge potential; which is expected to be exploited at much larger scale in the near future; especially in infrastructure financing which are big ticket loans and have long tenures (in decades).

There may not be ready cases to quote; but both the techniques (Securitization as well as Take-out Finance) have huge potential applications in Infrastructure Finance. This paper illustrates their utility with the help of one typical numerical example for each of these two techniques. The figures used have been taken to match the existing market rates. These exemplification helps in comprehending the associated advantages; might help in making the techniques popular.

4.0 SECURITIZATION OF INFRASTRUCTURE LOANS

Since securitization can convert any receivables (with low liquidity) to marketable instruments (with high liquidity), it has been successfully utilized in many sectors. India has already witnessed application of this process in sectors like housing finance when many pools of loans have been securitized. Infrastructure is another sector where this process may be of use. The proposed structure is detailed in section 4.1. It has also been exemplified with requisite calculations etc. in section 4.2; advantages to stakeholders also have been explained subsequently.

4.1 A Typical Securitization Structure

The process of securitization begins when the lender/originator segregates receivables into pools, which are relatively homogenous in terms of types of credit, maturity or interest rate risk. The pools of assets are then transferred to a SPV usually constituted as a trust. The originator may float the SPV as a subsidiary in the form of a limited company. Securities in the form of debt, certificates of beneficial ownership and other instruments are issued by the SPV. Interest and principal payments on the receivables in the underlying pool of assets are collected by the servicer (which could be the originator) and transferred to the investors.

Securitization amalgamates two forces that are pertinent in current finance scenario namely structured finance and capital markets. Securitization is referred to as structured finance as the risk factor is reduced since the securitized assets are backed by specific assets or cash flows (Jobst, 2006a). Further, creation of a capital market product (i.e. marketable product) is the objective of securitization.

SPV's are set up with the objective of acting as the legal owner of the assets or cash-flows underlying the transaction and ensuring bankruptcy remoteness from the Originator. The SPV issues securities to the Investors and distributes the funds received from the Obligors and Originator as payment against these securities to the Investors.

Some of the main features of an SPV are as follows:

- It is formed only for the specified purpose and no other activities are undertaken
- It helps in avoiding bankruptcy remote
- Helps to maintain a "Clean" Balance Sheet i.e. no outstanding liabilities

The payment structures followed by an SPV can be of two types

4.1.1 Pass Through: In this the SPV remits any funds collected from the Obligors / Originator completely and immediately to the investors.

4.1.2 Pay Through: This structure permits de-synchronization of servicing of the securities from the underlying cash flows. i.e. in the Pay Through Structure, the SPV is given discretion to re-invest the funds and pay investors according to a pre-determined schedule.

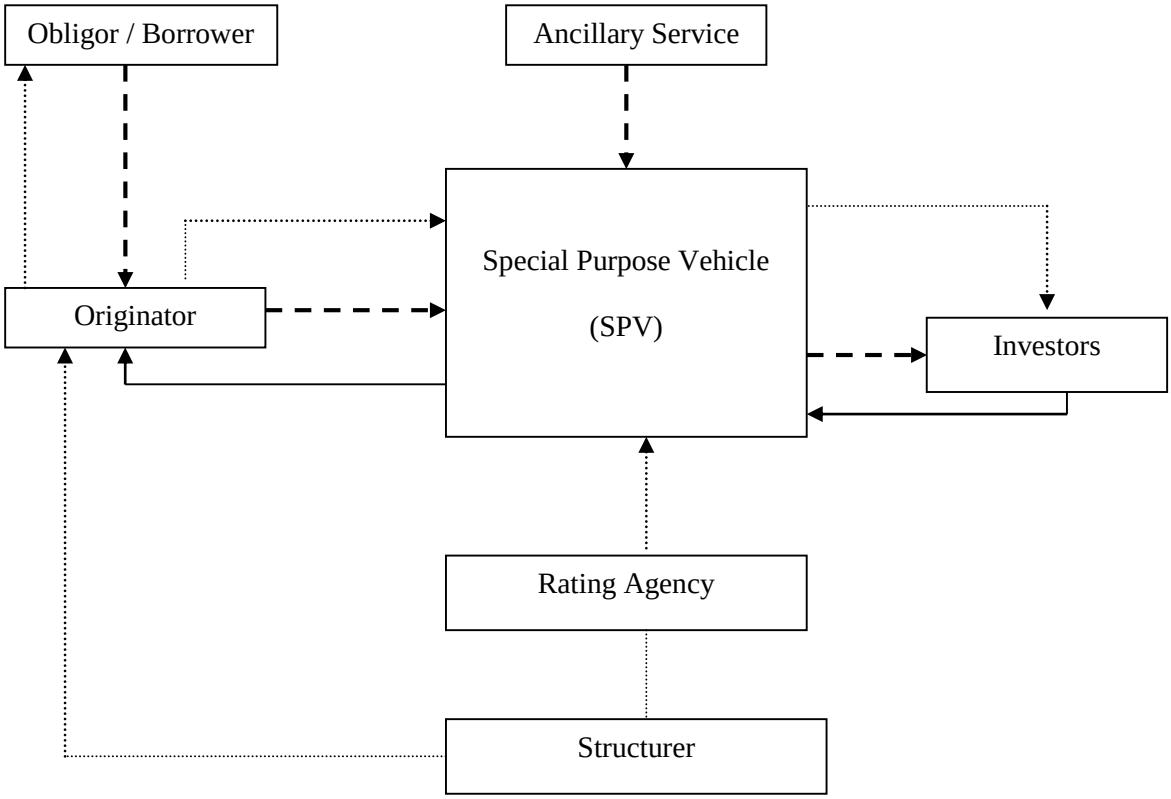

Fig 1: Interactions between Entities in a Typical Securitisation Process

4.2 An Illustration

Let us understand the process and mechanism of securitization with the help of an illustration.

Let us assume an Infrastructure Finance Company named Build India Ltd. has advanced a loan worth Rs. 100 million[2] in 2019 at Weighted Average Coupon (WAC) of 12 % for a term of 15 years. For the first three years the direct loan was carried out on which EMI was Rs. 12 lakh. Exactly 3 years later (i.e. in 2022) the Principal Outstanding (OS) on this loan would be Rs. 900 lakh. Build India Ltd. decides to convert this loan into cash (liquid asset) to avail better business opportunities.

[2] 1 Lakh = 1,00,000 = 0.1 Million

The objective of Build India Ltd. is to securitise its receivables. For this purpose, an SPV may be incorporated and receivables transferred at par. The Weighted Average Maturity (WAM) of the securitised instrument is 12 years. Further, SPV appoints Build India Ltd. as Servicing and Paying agent.

SPV Ltd. decides to issue Pass Through Certificates against these securitised assets. It structures receivables worth Rs. 900 lakh into 2 tranches:

- Senior Tranche I: PTC A is issued against Rs. 800 lakh with a coupon of 10% for a term of 12 years.
- Subordinate Tranche II: PTC B is issued against Rs. 100 lakh.

Build India also makes credit enhancement arrangement by depositing cash collateral of Rs. 100 lakh with an escrow account. The total administrative, servicing and maintenance expenses incurred by SPV Ltd. are assumed to be 150 basis point on the Principal outstanding of PTC A. If the SPV Ltd is able to allocate Rs. 9.56 lakh on PTC A. per month (800/PVIFA 1%, 144 periods = 800/83.68), the senior security (PTC A) is properly serviced.

Therefore, the schedule of payment for SPV Ltd (for the next 12 months) will appear as follows:

Table 1: Payment Schedule of SPV Ltd. for 12 Months

Schedule of payments for 12 months (01.04.22 to 31.03.23)								
Months	**Gross Receivable**	**Principal o/s A**	**Sevicing fee**	**Amount available for A & B**	**Int of PTC A**	**Principal of A**	**Scheduled Installment to PTC A**	**Installment available to PTC B holders**
1	12.00	800.00	1.00	11.00	6.67	2.89	9.56	1.44
2	12.00	797.11	1.00	11.00	6.64	2.92	9.56	1.44
3	12.00	794.19	0.99	11.01	6.62	2.94	9.56	1.45
4	12.00	791.25	0.99	11.01	6.59	2.97	9.56	1.45
5	12.00	788.28	0.99	11.01	6.57	2.99	9.56	1.45
6	12.00	785.29	0.98	11.02	6.54	3.02	9.56	1.46
7	12.00	782.27	0.98	11.02	6.52	3.04	9.56	1.46
8	12.00	779.23	0.97	11.03	6.49	3.07	9.56	1.47
9	12.00	776.17	0.97	11.03	6.47	3.09	9.56	1.47
10	12.00	773.07	0.97	11.03	6.44	3.12	9.56	1.47
11	12.00	769.96	0.96	11.04	6.42	3.14	9.56	1.48
12	12.00	766.81	0.96	11.04	6.39	3.17	9.56	1.48

It is interesting to note that while the PTC A holders get a return of 10% per annum over 12 years, the PTC B holders are projected to earn (No default, No pre-payment scenario) an IRR of approximately 17.80% p.a. (Refer Annexure I/Excel Sheet for the working).

4.3 Benefits of Securitisation (Gandhi, 2015)

The securitization yields advantages to all the stakeholders as described below:

4.3.1 To the Originator

Securitization offers a number of advantages to the seller. The various advantages are listed below.

- It Improves the liquidity position of the seller
- It transfers the credit and prepayment risks to the investors.
- It helps to 'clean' the balance sheet by removing an illiquid asset and also generates funds for the growth of business thereby improving profitability and return on investment ratios.
- Securitization process leads to the financial asset being taken off the balance sheet of the originator, thereby relieving pressures of capital adequacy, and provides immediate liquidity to the originator.
- It also facilitates better asset liability management by reducing market risks resulting from interest rate mismatches
- It offers a quick and effective alternative funding source. Cash for the originator is generated without any addition to borrowings. Companies that face the issue of capital inadequacy can undertake the method of securitization to raise funds.
- It helps in dichotomizing the risk of the originator and the instrument. The securitized instrument is independent of the credit standing of the originator. Also it is insulated against any bankruptcy risk of the originator. As a consequence, the securitized papers have a high rating and the cost of borrowing is also lower.

4.3.2 To the Investors

Securitization provides varied benefits to the investors. The various advantages are listed below.

- Securitized instruments provide opportunities to the investors of varied risk appetites. Different classes of securities are issued from one asset pool to attract investors of different preferences. These classes of securities are varied in their yield,

tenure, structure and priority of payment. Investors can decide which security is the most appropriate for them. Hence, the choice of instruments is widened. Risk averse investors can invest in relatively low risk investment (*Senior Tranches*). Risk taking investors can invest in *Junior Tranches* which are riskier but mostly high yielding.

- A secondary market offers liquidity and an easy exit route to the investors.
- The Senior Tranche is a low risk instrument and yields a higher return than normally available on Government or Corporate bonds (Refer to PTC A in the illustration)
- Investors usually make their investment decision by looking at the safety, liquidity and yield of the security. PTCs are typically highly rated and relatively safer. They have enhanced liquidity as they can be listed on stock exchanges like other debt instruments.
- Rating agencies and trustees closely monitor the payment structure.

4.3.3 To Financial Markets

For the financial system, securitization has the advantages as listed below.

- It lowers the cost of financing by introducing securitized instruments. SIs are able to ensure the availability of finance at a lower cost .
- The number of debt instruments in the market increases, providing additional liquidity in the market.
- Better allocation and management of risks is facilitated.

5.0 TAKE-OUT FINANCING

Take-out financing structure is a mechanism that is designed to help banks avoid asset-liability maturity mismatches arising due to long tenor loans extended to infrastructure projects. In this, a common loan agreement is signed between lenders and borrowers (Srivastava and Rajaraman, 2017). A 'relay financing' model can enable refinancing and take- out financing to de-risk banks, and enable longer amortisation period for infrastructure projects. The first phase infra projects can be financed by a set of banks, which can then pass it on to long-term lenders after a certain term.

5.1 Relay Financing Model

Infrastructure projects do not generate positive cash flows in the early phases, as they are placed in the very risky zone due to construction uncertainties; yet they tend to produce stable cash flows once the infrastructure facility moves into the operational phase (Croce, 2015). Not all investors access the same investment routes. The risk appetite and availability of funds of every lender/investor varies. A relay financing model can help address these concerns. A lender with higher risk appetite may invest in the infrastructure project at a higher rate of interest as the initial phase of construction is risky. After a few years, when the initial phase of construction has taken a head start, the first lender with a higher risk capital may now pass on the loan to another lender with a relatively less risk appetite at a lower rate of interest (See Fig-2). The same exercise can be done with the third lender. This makes the relay financing model, which is a win-win situation for all the parties.

Fig 2: A Typical Relay Race

Firstly, the infrastructure project is assured of constant flow of funds which is imperative for project viability.

Secondly, the repayment period is extended, reducing the instalment value. As the lumps of instalments reduce, viability of the project increases.

Thirdly, the investors can invest in infrastructure projects, depending on their risk appetite and availability of funds. A risk averse lender, who would have been unable to take up the same project at its initial stages, can also participate in infrastructure financing towards the end of the project. Products such as take-out finance also helps banks to address their asset liability mismatch as infrastructure projects have longer tenure.

5.2 Illustrative Example

Let us understand the process and mechanism of Relay Financing Model with the help of these Three Scenarios. Scenario A is a case of direct lending which is compared with Scenario B wherein the period of loan is extended and take-out financing/ relay financing is applied. In Scenario C, we also explore the case of risk being reduced for every subsequent lender and its impact on the installment value and reduction in expense.

5.2.1 Scenario A

Let us suppose an Infrastructure project requires a loan of Rs. 800 million for 10 years. A loan is initiated for the same at 10% Rate of Interest. In general circumstances, the PVIFA for 10 years at 10% is 6.14. The Equal Annual Instalment (EAI) is 800/6.24 i.e. [Loan Amount/PVIFA] amounting to Rs. 130.20 crore is shown in *Table 2*. (Refer Annexure II/Excel Sheet for the working).

Table 2: Annual Instalment in case of Direct Lending

Years	**Up to 10**
Rate of Interest	10%
EAI (in crore)	130.20

Table 3 gives a brief on the repayment schedule for the borrower in case of single lender for a period of 10 years.

Table 3: Debt Repayment Schedule for 10 year Direct Lending Model *(Value in crore)*

Year	**Principal Outstanding (PO)**	**Interest Paid (IP)**	**Principal Paid (PP)**
1	800	80	50.19
2	749.80	74.980	55.21
3	694.58	69.45	60.74
~	~	~	~
10	118.36	11.83603	118.3603

5.2.2 Scenario B

Now, taking Scenario A as a base, we increase the loan tenure to 90 years and also introduce the concept of take-out financing, wherein after a certain period, the loan is taken up by a different lender.

Let us suppose an Infrastructure project requires a loan of Rs. 800 crore for 90 years. Let's assume the interest rate for every lender is 10%. The EAI for every subsequent lender is shown in *Table 4.*

Table 4: Annual Instalment in case of 90 Year Take-out Financing

Years	**Up to 10**	**11 to 20**	**21 to 30**	**31 to 40**	**41 to 50**	**51 to 90**
Rate of Interest	10%	10%	10%	10%	10%	10%
EAI (in crore)	80.02	75.23	63.79	49.58	35.16	22.61

As can be seen in *Table 5*, by increasing the repayment period, the loan installment goes down for every subsequent lender, eventually improving the project viability.

Table 5: Debt Repayment Schedule of 90 Year Takeout Financing *(Value in crore)*

	Year	Principal Outstanding (PO)	Interest Paid (IP)	Principal Paid (PP)
Lender 1	1	800.00	80.00	0.02
	2	799.98	80.00	0.02
	3	799.97	80.00	0.02
	~	~	~	~
	10	763.22	68.69	11.33
		751.89		
Lender 2	11	751.89	67.67	7.56
	12	744.34	66.99	8.24
	13	736.10	66.25	8.98
	~	~	~	~
	20	653.51	58.82	16.41
		637.10		
Lender 3	~	~	~	~
Lender 4	~	~	~	~
Lender 5	~	~	~	~
Lender 6	51	221.07	15.48	7.13
	52	213.94	14.98	7.63
	53	206.31	14.44	8.17
	~	~	~	~
	90	**-1102.86**	-77.20	99.81

Comparing Scenario A with B, it can be indicated that take-out finance helps reduce the EAI. The significant reduction in EAI ranges from 39% to 83%. The installment to debt ratio and installment to revenue ratio also goes down.

The gains from relay financing model can be calculated for each year by subtracting new annual installment from the original annual installment and further calculating gains at Net Present Value. The present value of these savings at interest rate 8.5% is Rs. 74.26 crore which shows that by using Relay financing, we can reduce project expense by 9.28% (74.26/800) (Refer Annexure /Excel Sheet for the working).

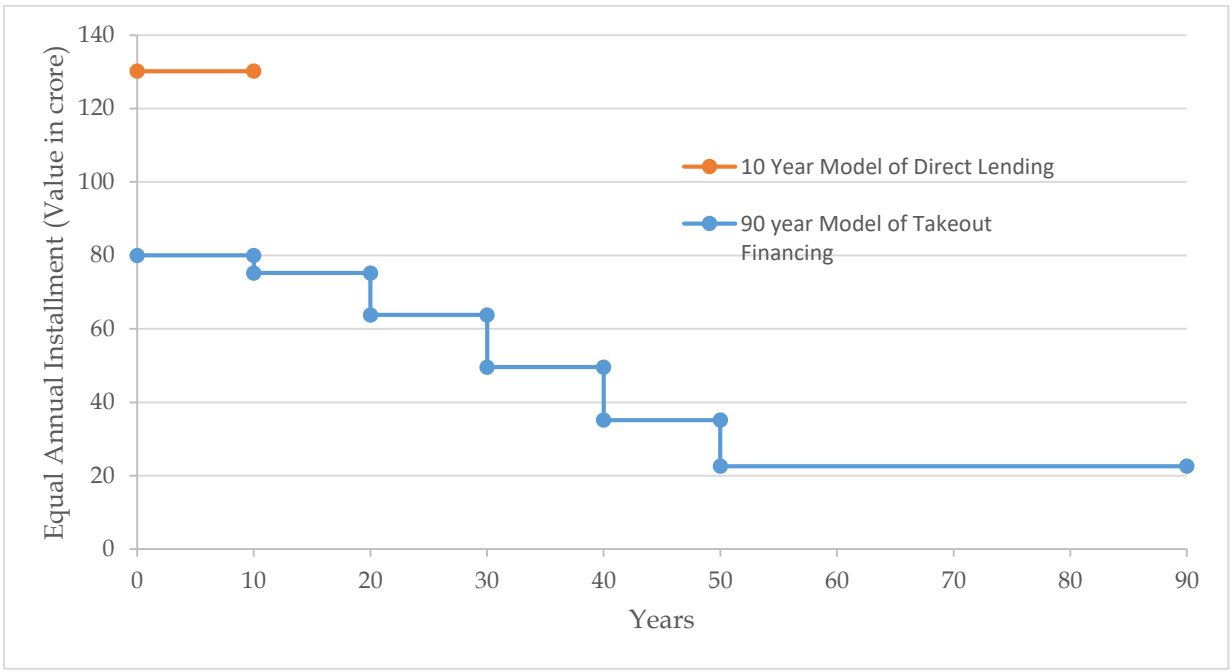

Fig 3: Instalment Patterns in Direct and Takeout Financing

Figure 3 shows the trend of equal annual installments in case of a direct loan for 10 years and a Relay Financing model of 90 years. By increasing the repayment period, the installments value falls. This increases the project viability, while also ensuring constant cash flows for the project.

5.2.3 Scenario C

Let us suppose an infrastructure project requires a loan of Rs. 800 crore for 20 years. Due to initial stages of construction being risky and uncertain, let us assume that Lender A is willing to invest in this venture at the interest rate of 10%. After say 5 years, wherein the projects' initial construction is completed and the risk and uncertainty factor of the project has reduced, a new lender steps in and offers to provide funds at the rate of 9%. The interest rate is reduced since the project viability is improved. Further, the first lender can now invest in another project. *Table 6* shows the Equal Annual installment for each lender.

Table 6: Annual Instalment in Case of Relay financing with falling ROI

Years	**Up to 5**	**6 to 10**	**11 to 20**
Rate of Interest	10%	9%	8.50%
EAI (in crore)	93.97	88.67	86.73

As can be seen in *Table 7*, it may be worked out at the end of the loan period i.e. Year 20, that the loan is completely paid off with the last installment. Since the installments from Year 6 to 20 are lower than the original installment i.e. Year 1 to 5, it indicates substantial gains for the project promoter.

Table 7: Debt Repayment Schedule of 20 Year Takeout Financing (Value in crore)

	Year	**Principal Outstanding (PO)**	**Interest Paid (IP)**	**Principal Paid (PP)**
Lender 1	1	800.00	80.00	13.97
	2	786.03	78.60	15.36
	3	770.67	77.07	16.90
	~	~	~	~
	5	735.18	73.52	20.45
		714.73		
Lender 2	6	714.73	64.33	24.34
	7	690.38	62.13	26.53
	~	~	~	~
	10	603.40	54.31	34.36
		569.04		
Lender 3	11	569.04	48.37	38.36
	12	530.68	45.11	41.62
	~	~	~	~
	20	79.93	6.79	79.93

The present value of these savings at interest rate 8.5% is Rs. 34.90 crore which shows that by using Relay financing, we can reduce project expense by 4.36%(34.90/800) (Refer Annexure/Excel Sheet for the working).

5.3 Benefits of Take-out Financing

1. Take-out financing helps in increasing the total quantum of funds available for infrastructure financing.
2. It helps involve lenders of different risk appetites and direct funds towards the infrastructure sector.
3. Relay Financing Model helps in reducing project expense.

4. Elongation in loan repayment period, even if rate of interest remains the same for every lender leads to reduction in the instalment value. It also reduces the Instalment to debt ratio.

5. Instalment to Debt Ratio and Instalment to Revenue ratio is lower in Relay Financing Model.

6. It also improves the DSCR (Debt Service Coverage Ratio) which measures the cash flows available to pay current debt obligations.

7. A lower user charge and overall benefits the economy

6.0. CONCLUSION

Since Indian infrastructure needs a lot of funds, innovative methods which help de-risk infrastructure loans and enhance availability of funds are being explored. Securitization as well as Take-Out financing are of use in infrastructure financing. The exemplifications of both these innovative methods justify their utility. For securitisation, risk management mechanisms have been exemplified. Investors with different risk appetites can be tapped to augment necessary resources such as PTC A is less risky than PTC B. Hence, these instruments may be sold to the investors of different risk appetite; hence help organise more funds for the sector. Further, Take-out finance helps in replacing riskier funds with relatively less risky funds. This way it may be possible to reduce the initial outlay to the extent of nearly 10 percent. Extending the loan tenure helps in reducing the instalment value. Eventually this leads to rise in quantum of funds in the infrastructure project as well as reduction in expense. Hence, securitisation and take-out finance can help address some of the major concerns regarding infrastructure finance.

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Annexure I

Table 8: PTC A Schedule

Months	Principal O/s	Instalment	Interest	Principal repayment	Servicing fee	Months	PVF @ 10/12% p.m
1	800.00	9.56	6.67	2.89	1.00	1.00	0.99
2	797.11	9.56	6.64	2.92	1.00	2.00	0.98
3	794.19	9.56	6.62	2.94	0.99	3.00	0.98
4	791.25	9.56	6.59	2.97	0.99	4.00	0.97
5	788.28	9.56	6.57	2.99	0.99	5.00	0.96
6	785.29	9.56	6.54	3.02	0.98	6.00	0.95
7	782.27	9.56	6.52	3.04	0.98	7.00	0.94
8	779.23	9.56	6.49	3.07	0.97	8.00	0.94
9	776.17	9.56	6.47	3.09	0.97	9.00	0.93
10	773.07	9.56	6.44	3.12	0.97	10.00	0.92
11	769.96	9.56	6.42	3.14	0.96	11.00	0.91
12	766.81	9.56	6.39	3.17	0.96	12.00	0.91
13	763.64	9.56	6.36	3.20	0.95	13.00	0.90
14	760.45	9.56	6.34	3.22	0.95	14.00	0.89
15	757.22	9.56	6.31	3.25	0.95	15.00	0.88
16	753.97	9.56	6.28	3.28	0.94	16.00	0.88
17	750.70	9.56	6.26	3.30	0.94	17.00	0.87
18	747.39	9.56	6.23	3.33	0.93	18.00	0.86
19	744.06	9.56	6.20	3.36	0.93	19.00	0.85
20	740.70	9.56	6.17	3.39	0.93	20.00	0.85
21	737.31	9.56	6.14	3.42	0.92	21.00	0.84
22	733.90	9.56	6.12	3.44	0.92	22.00	0.83
23	730.45	9.56	6.09	3.47	0.91	23.00	0.83
24	726.98	9.56	6.06	3.50	0.91	24.00	0.82
25	723.48	9.56	6.03	3.53	0.90	25.00	0.81
26	719.95	9.56	6.00	3.56	0.90	26.00	0.81
27	716.39	9.56	5.97	3.59	0.90	27.00	0.80
28	712.80	9.56	5.94	3.62	0.89	28.00	0.79
29	709.18	9.56	5.91	3.65	0.89	29.00	0.79
30	705.53	9.56	5.88	3.68	0.88	30.00	0.78
31	701.85	9.56	5.85	3.71	0.88	31.00	0.77
32	698.14	9.56	5.82	3.74	0.87	32.00	0.77
33	694.39	9.56	5.79	3.77	0.87	33.00	0.76
34	690.62	9.56	5.76	3.80	0.86	34.00	0.75
35	686.82	9.56	5.72	3.84	0.86	35.00	0.75
36	682.98	9.56	5.69	3.87	0.85	36.00	0.74
37	679.11	9.56	5.66	3.90	0.85	37.00	0.74
38	675.21	9.56	5.63	3.93	0.84	38.00	0.73

39	671.28	9.56	5.59	3.97	0.84	39.00	0.72
40	667.31	9.56	5.56	4.00	0.83	40.00	0.72
41	663.31	9.56	5.53	4.03	0.83	41.00	0.71
42	659.28	9.56	5.49	4.07	0.82	42.00	0.71
43	655.21	9.56	5.46	4.10	0.82	43.00	0.70
44	651.11	9.56	5.43	4.13	0.81	44.00	0.69
45	646.98	9.56	5.39	4.17	0.81	45.00	0.69
46	642.81	9.56	5.36	4.20	0.80	46.00	0.68
47	638.61	9.56	5.32	4.24	0.80	47.00	0.68
48	634.37	9.56	5.29	4.27	0.79	48.00	0.67
49	630.10	9.56	5.25	4.31	0.79	49.00	0.67
50	625.79	9.56	5.21	4.35	0.78	50.00	0.66
51	621.44	9.56	5.18	4.38	0.78	51.00	0.65
52	617.06	9.56	5.14	4.42	0.77	52.00	0.65
53	612.64	9.56	5.11	4.45	0.77	53.00	0.64
54	608.19	9.56	5.07	4.49	0.76	54.00	0.64
55	603.70	9.56	5.03	4.53	0.75	55.00	0.63
56	599.17	9.56	4.99	4.57	0.75	56.00	0.63
57	594.60	9.56	4.96	4.60	0.74	57.00	0.62
58	590.00	9.56	4.92	4.64	0.74	58.00	0.62
59	585.35	9.56	4.88	4.68	0.73	59.00	0.61
60	580.67	9.56	4.84	4.72	0.73	60.00	0.61
61	575.95	9.56	4.80	4.76	0.72	61.00	0.60
62	571.19	9.56	4.76	4.80	0.71	62.00	0.60
63	566.39	9.56	4.72	4.84	0.71	63.00	0.59
64	561.55	9.56	4.68	4.88	0.70	64.00	0.59
65	556.67	9.56	4.64	4.92	0.70	65.00	0.58
66	551.75	9.56	4.60	4.96	0.69	66.00	0.58
67	546.78	9.56	4.56	5.00	0.68	67.00	0.57
68	541.78	9.56	4.51	5.05	0.68	68.00	0.57
69	536.74	9.56	4.47	5.09	0.67	69.00	0.56
70	531.65	9.56	4.43	5.13	0.66	70.00	0.56
71	526.52	9.56	4.39	5.17	0.66	71.00	0.55
72	521.35	9.56	4.34	5.22	0.65	72.00	0.55
73	516.13	9.56	4.30	5.26	0.65	73.00	0.55
74	510.87	9.56	4.26	5.30	0.64	74.00	0.54
75	505.57	9.56	4.21	5.35	0.63	75.00	0.54
76	500.22	9.56	4.17	5.39	0.63	76.00	0.53
77	494.83	9.56	4.12	5.44	0.62	77.00	0.53
78	489.39	9.56	4.08	5.48	0.61	78.00	0.52
79	483.91	9.56	4.03	5.53	0.60	79.00	0.52
80	478.39	9.56	3.99	5.57	0.60	80.00	0.51
81	472.81	9.56	3.94	5.62	0.59	81.00	0.51

82	467.19	9.56	3.89	5.67	0.58	82.00	0.51
83	461.53	9.56	3.85	5.71	0.58	83.00	0.50
84	455.81	9.56	3.80	5.76	0.57	84.00	0.50
85	450.05	9.56	3.75	5.81	0.56	85.00	0.49
86	444.24	9.56	3.70	5.86	0.56	86.00	0.49
87	438.38	9.56	3.65	5.91	0.55	87.00	0.49
88	432.48	9.56	3.60	5.96	0.54	88.00	0.48
89	426.52	9.56	3.55	6.01	0.53	89.00	0.48
90	420.51	9.56	3.50	6.06	0.53	90.00	0.47
91	414.46	9.56	3.45	6.11	0.52	91.00	0.47
92	408.35	9.56	3.40	6.16	0.51	92.00	0.47
93	402.20	9.56	3.35	6.21	0.50	93.00	0.46
94	395.99	9.56	3.30	6.26	0.49	94.00	0.46
95	389.73	9.56	3.25	6.31	0.49	95.00	0.45
96	383.41	9.56	3.20	6.36	0.48	96.00	0.45
97	377.05	9.56	3.14	6.42	0.47	97.00	0.45
98	370.63	9.56	3.09	6.47	0.46	98.00	0.44
99	364.16	9.56	3.03	6.53	0.46	99.00	0.44
100	357.63	9.56	2.98	6.58	0.45	100.00	0.44
101	351.06	9.56	2.93	6.63	0.44	101.00	0.43
102	344.42	9.56	2.87	6.69	0.43	102.00	0.43
103	337.73	9.56	2.81	6.75	0.42	103.00	0.43
104	330.99	9.56	2.76	6.80	0.41	104.00	0.42
105	324.18	9.56	2.70	6.86	0.41	105.00	0.42
106	317.32	9.56	2.64	6.92	0.40	106.00	0.41
107	310.41	9.56	2.59	6.97	0.39	107.00	0.41
108	303.44	9.56	2.53	7.03	0.38	108.00	0.41
109	296.40	9.56	2.47	7.09	0.37	109.00	0.40
110	289.31	9.56	2.41	7.15	0.36	110.00	0.40
111	282.17	9.56	2.35	7.21	0.35	111.00	0.40
112	274.96	9.56	2.29	7.27	0.34	112.00	0.39
113	267.69	9.56	2.23	7.33	0.33	113.00	0.39
114	260.36	9.56	2.17	7.39	0.33	114.00	0.39
115	252.97	9.56	2.11	7.45	0.32	115.00	0.39
116	245.52	9.56	2.05	7.51	0.31	116.00	0.38
117	238.00	9.56	1.98	7.58	0.30	117.00	0.38
118	230.43	9.56	1.92	7.64	0.29	118.00	0.38
119	222.79	9.56	1.86	7.70	0.28	119.00	0.37
120	215.08	9.56	1.79	7.77	0.27	120.00	0.37
121	207.32	9.56	1.73	7.83	0.26	121.00	0.37
122	199.48	9.56	1.66	7.90	0.25	122.00	0.36
123	191.59	9.56	1.60	7.96	0.24	123.00	0.36
124	183.62	9.56	1.53	8.03	0.23	124.00	0.36

125	175.59	9.56	1.46	8.10	0.22	125.00	0.35
126	167.50	9.56	1.40	8.16	0.21	126.00	0.35
127	159.33	9.56	1.33	8.23	0.20	127.00	0.35
128	151.10	9.56	1.26	8.30	0.19	128.00	0.35
129	142.80	9.56	1.19	8.37	0.18	129.00	0.34
130	134.43	9.56	1.12	8.44	0.17	130.00	0.34
131	125.99	9.56	1.05	8.51	0.16	131.00	0.34
132	117.48	9.56	0.98	8.58	0.15	132.00	0.33
133	108.90	9.56	0.91	8.65	0.14	133.00	0.33
134	100.24	9.56	0.84	8.72	0.13	134.00	0.33
135	91.52	9.56	0.76	8.80	0.11	135.00	0.33
136	82.72	9.56	0.69	8.87	0.10	136.00	0.32
137	73.85	9.56	0.62	8.94	0.09	137.00	0.32
138	64.91	9.56	0.54	9.02	0.08	138.00	0.32
139	55.89	9.56	0.47	9.09	0.07	139.00	0.32
140	46.79	9.56	0.39	9.17	0.06	140.00	0.31
141	37.62	9.56	0.31	9.25	0.05	141.00	0.31
142	28.38	9.56	0.24	9.32	0.04	142.00	0.31
143	19.05	9.56	0.16	9.40	0.02	143.00	0.31
144	9.65	9.56	0.08	9.48	0.01	144.00	0.30

Table 9: PTC B Schedule

Months	**Principal O/s**	**Gross instalment received**	**Servicing fee**	**Amount available for A & B**	**Instalment of PTC A**	**Principal of A**	**Instalment available to PTC B holders**
							-100
1	100	12	1	11	6.67	2.89	1.44
2	100	12	1.00	11.00	6.64	2.92	1.44
3	100	12	0.99	11.01	6.62	2.94	1.45
4	100	12	0.99	11.01	6.59	2.97	1.45
5	100	12	0.99	11.01	6.57	2.99	1.45
6	100	12	0.98	11.02	6.54	3.02	1.46
7	100	12	0.98	11.02	6.52	3.04	1.46
8	100	12	0.97	11.03	6.49	3.07	1.47
9	100	12	0.97	11.03	6.47	3.09	1.47
10	100	12	0.97	11.03	6.44	3.12	1.47
11	100	12	0.96	11.04	6.42	3.14	1.48
12	100	12	0.96	11.04	6.39	3.17	1.48
13	100	12	0.95	11.05	6.36	3.20	1.49
14	100	12	0.95	11.05	6.34	3.22	1.49
15	100	12	0.95	11.05	6.31	3.25	1.49
16	100	12	0.94	11.06	6.28	3.28	1.50
17	100	12	0.94	11.06	6.26	3.30	1.50

18	100	12	0.93	11.07	6.23	3.33	1.51
19	100	12	0.93	11.07	6.20	3.36	1.51
20	100	12	0.93	11.07	6.17	3.39	1.51
21	100	12	0.92	11.08	6.14	3.42	1.52
22	100	12	0.92	11.08	6.12	3.44	1.52
23	100	12	0.91	11.09	6.09	3.47	1.53
24	100	12	0.91	11.09	6.06	3.50	1.53
25	100	12	0.90	11.10	6.03	3.53	1.54
26	100	12	0.90	11.10	6.00	3.56	1.54
27	100	12	0.90	11.10	5.97	3.59	1.54
28	100	12	0.89	11.11	5.94	3.62	1.55
29	100	12	0.89	11.11	5.91	3.65	1.55
30	100	12	0.88	11.12	5.88	3.68	1.56
31	100	12	0.88	11.12	5.85	3.71	1.56
32	100	12	0.87	11.13	5.82	3.74	1.57
33	100	12	0.87	11.13	5.79	3.77	1.57
34	100	12	0.86	11.14	5.76	3.80	1.58
35	100	12	0.86	11.14	5.72	3.84	1.58
36	100	12	0.85	11.15	5.69	3.87	1.59
37	100	12	0.85	11.15	5.66	3.90	1.59
38	100	12	0.84	11.16	5.63	3.93	1.60
39	100	12	0.84	11.16	5.59	3.97	1.60
40	100	12	0.83	11.17	5.56	4.00	1.61
41	100	12	0.83	11.17	5.53	4.03	1.61
42	100	12	0.82	11.18	5.49	4.07	1.62
43	100	12	0.82	11.18	5.46	4.10	1.62
44	100	12	0.81	11.19	5.43	4.13	1.63
45	100	12	0.81	11.19	5.39	4.17	1.63
46	100	12	0.80	11.20	5.36	4.20	1.64
47	100	12	0.80	11.20	5.32	4.24	1.64
48	100	12	0.79	11.21	5.29	4.27	1.65
49	100	12	0.79	11.21	5.25	4.31	1.65
50	100	12	0.78	11.22	5.21	4.35	1.66
51	100	12	0.78	11.22	5.18	4.38	1.66
52	100	12	0.77	11.23	5.14	4.42	1.67
53	100	12	0.77	11.23	5.11	4.45	1.67
54	100	12	0.76	11.24	5.07	4.49	1.68
55	100	12	0.75	11.25	5.03	4.53	1.69
56	100	12	0.75	11.25	4.99	4.57	1.69
57	100	12	0.74	11.26	4.96	4.60	1.70
58	100	12	0.74	11.26	4.92	4.64	1.70
59	100	12	0.73	11.27	4.88	4.68	1.71
60	100	12	0.73	11.27	4.84	4.72	1.71

61	100	12	0.72	11.28	4.80	4.76	1.72
62	100	12	0.71	11.29	4.76	4.80	1.73
63	100	12	0.71	11.29	4.72	4.84	1.73
64	100	12	0.70	11.30	4.68	4.88	1.74
65	100	12	0.70	11.30	4.64	4.92	1.74
66	100	12	0.69	11.31	4.60	4.96	1.75
67	100	12	0.68	11.32	4.56	5.00	1.76
68	100	12	0.68	11.32	4.51	5.05	1.76
69	100	12	0.67	11.33	4.47	5.09	1.77
70	100	12	0.66	11.34	4.43	5.13	1.78
71	100	12	0.66	11.34	4.39	5.17	1.78
72	100	12	0.65	11.35	4.34	5.22	1.79
73	100	12	0.65	11.35	4.30	5.26	1.79
74	100	12	0.64	11.36	4.26	5.30	1.80
75	100	12	0.63	11.37	4.21	5.35	1.81
76	100	12	0.63	11.37	4.17	5.39	1.81
77	100	12	0.62	11.38	4.12	5.44	1.82
78	100	12	0.61	11.39	4.08	5.48	1.83
79	100	12	0.60	11.40	4.03	5.53	1.84
80	100	12	0.60	11.40	3.99	5.57	1.84
81	100	12	0.59	11.41	3.94	5.62	1.85
82	100	12	0.58	11.42	3.89	5.67	1.86
83	100	12	0.58	11.42	3.85	5.71	1.86
84	100	12	0.57	11.43	3.80	5.76	1.87
85	100	12	0.56	11.44	3.75	5.81	1.88
86	100	12	0.56	11.44	3.70	5.86	1.88
87	100	12	0.55	11.45	3.65	5.91	1.89
88	100	12	0.54	11.46	3.60	5.96	1.90
89	100	12	0.53	11.47	3.55	6.01	1.91
90	100	12	0.53	11.47	3.50	6.06	1.91
91	100	12	0.52	11.48	3.45	6.11	1.92
92	100	12	0.51	11.49	3.40	6.16	1.93
93	100	12	0.50	11.50	3.35	6.21	1.94
94	100	12	0.49	11.51	3.30	6.26	1.95
95	100	12	0.49	11.51	3.25	6.31	1.95
96	100	12	0.48	11.52	3.20	6.36	1.96
97	100	12	0.47	11.53	3.14	6.42	1.97
98	100	12	0.46	11.54	3.09	6.47	1.98
99	100	12	0.46	11.54	3.03	6.53	1.98
100	100	12	0.45	11.55	2.98	6.58	1.99
101	100	12	0.44	11.56	2.93	6.63	2.00
102	100	12	0.43	11.57	2.87	6.69	2.01
103	100	12	0.42	11.58	2.81	6.75	2.02

104	100	12	0.41	11.59	2.76	6.80	2.03
105	100	12	0.41	11.59	2.70	6.86	2.03
106	100	12	0.40	11.60	2.64	6.92	2.04
107	100	12	0.39	11.61	2.59	6.97	2.05
108	100	12	0.38	11.62	2.53	7.03	2.06
109	100	12	0.37	11.63	2.47	7.09	2.07
110	100	12	0.36	11.64	2.41	7.15	2.08
111	100	12	0.35	11.65	2.35	7.21	2.09
112	100	12	0.34	11.66	2.29	7.27	2.10
113	100	12	0.33	11.67	2.23	7.33	2.11
114	100	12	0.33	11.67	2.17	7.39	2.11
115	100	12	0.32	11.68	2.11	7.45	2.12
116	100	12	0.31	11.69	2.05	7.51	2.13
117	100	12	0.30	11.70	1.98	7.58	2.14
118	100	12	0.29	11.71	1.92	7.64	2.15
119	100	12	0.28	11.72	1.86	7.70	2.16
120	100	12	0.27	11.73	1.79	7.77	2.17
121	100	12	0.26	11.74	1.73	7.83	2.18
122	100	12	0.25	11.75	1.66	7.90	2.19
123	100	12	0.24	11.76	1.60	7.96	2.20
124	100	12	0.23	11.77	1.53	8.03	2.21
125	100	12	0.22	11.78	1.46	8.10	2.22
126	100	12	0.21	11.79	1.40	8.16	2.23
127	100	12	0.20	11.80	1.33	8.23	2.24
128	100	12	0.19	11.81	1.26	8.30	2.25
129	100	12	0.18	11.82	1.19	8.37	2.26
130	100	12	0.17	11.83	1.12	8.44	2.27
131	100	12	0.16	11.84	1.05	8.51	2.28
132	100	12	0.15	11.85	0.98	8.58	2.29
133	100	12	0.14	11.86	0.91	8.65	2.30
134	100	12	0.13	11.87	0.84	8.72	2.31
135	100	12	0.11	11.89	0.76	8.80	2.33
136	100	12	0.10	11.90	0.69	8.87	2.34
137	100	12	0.09	11.91	0.62	8.94	2.35
138	100	12	0.08	11.92	0.54	9.02	2.36
139	100	12	0.07	11.93	0.47	9.09	2.37
140	100	12	0.06	11.94	0.39	9.17	2.38
141	100	12	0.05	11.95	0.31	9.25	2.39
142	100	12	0.04	11.96	0.24	9.32	2.40
143	100	12	0.02	11.98	0.16	9.40	2.42
144	100	12	0.01	11.99	0.08	9.48	2.43
						IRR per month	0.01483

						IRR per annum	0.177961

Annexure II

Table 10: Debt Repayment Schedule for 10 Year Direct Lending model (Value in crore)

Year	Principal Outstanding (PO)	Interest Paid(IP)	Principal Paid (PP)
0			
1	800	80	50.19
2	749.80	74.98	55.22
3	694.59	69.46	60.74
4	633.85	63.39	66.81
5	567.04	56.70	73.49
6	493.55	49.35	80.84
7	412.70	41.27	88.93
8	323.78	32.38	97.82
9	225.96	22.60	107.60
10	118.36	11.84	118.36

Table 11: Debt Repayment Schedule for 90 Year Takeout Financing (Value in crore)

Year	Principal Outstanding (PO)	Interest Paid(IP)	Principal Paid (PP)
0			
1	800	80	0.01
2	799.98	80.00	0.02
3	799.97	80.00	0.02
4	799.95	80.00	0.02
5	799.93	79.99	0.02
6	799.91	71.99	8.02
7	791.88	71.27	8.75
8	783.14	70.48	9.53
9	773.61	69.62	10.39
10	763.22	68.69	11.33
	751.89		
11	751.89	67.67	7.56
12	744.34	66.99	8.24
13	736.10	66.25	8.98
14	727.12	65.44	9.78
15	717.34	64.56	10.67
16	706.67	63.60	11.63
17	695.05	62.55	12.67
18	682.38	61.41	13.81
19	668.56	60.17	15.06
20	653.51	58.82	16.41
	637.10		

21	637.10	54.15	9.64
22	627.46	53.33	10.46
23	617.00	52.45	11.35
24	605.66	51.48	12.31
25	593.35	50.43	13.36
26	579.99	49.30	14.49
27	565.50	48.07	15.72
28	549.78	46.73	17.06
29	532.72	45.28	18.51
30	514.21	43.71	20.08
	494.13		
31	494.13	39.53	10.05
32	484.08	38.73	10.85
33	473.23	37.86	11.72
34	461.52	36.92	12.65
35	448.86	35.91	13.67
36	435.20	34.82	14.76
37	420.44	33.63	15.94
38	404.50	32.36	17.22
39	387.28	30.98	18.59
40	368.69	29.49	20.08
	348.61		
41	348.61	26.15	9.01
42	339.59	25.47	9.69
43	329.90	24.74	10.42
44	319.48	23.96	11.20
45	308.28	23.12	12.04
46	296.25	22.22	12.94
47	283.30	21.25	13.91
48	269.39	20.20	14.96
49	254.44	19.08	16.08
50	238.36	17.88	17.28
	221.07		
51	221.07	15.48	7.13
52	213.94	14.98	7.63
53	206.31	14.44	8.17
54	198.15	13.87	8.74
55	189.41	13.26	9.35
56	180.06	12.60	10.00
57	170.06	11.90	10.70
58	159.36	11.15	11.45
59	147.90	10.35	12.25
60	135.65	9.50	13.11

61	122.54	8.58	14.03
62	108.51	7.60	15.01
63	93.50	6.54	16.06
64	77.44	5.42	17.19
65	60.25	4.22	18.39
66	41.86	2.93	19.68
67	22.18	1.55	21.05
68	1.13	0.08	22.53
69	-21.40	-1.50	24.10
70	-45.50	-3.19	25.79
71	-71.29	-4.99	27.60
72	-98.89	-6.92	29.53
73	-128.42	-8.99	31.60
74	-160.02	-11.20	33.81
75	-193.83	-13.57	36.17
76	-230.00	-16.10	38.71
77	-268.71	-18.81	41.42
78	-310.12	-21.71	44.32
79	-354.44	-24.81	47.42
80	-401.86	-28.13	50.74
81	-452.59	-31.68	54.29
82	-506.88	-35.48	58.09
83	-564.97	-39.55	62.16
84	-627.13	-43.90	66.51
85	-693.63	-48.55	71.16
86	-764.79	-53.54	76.14
87	-840.94	-58.87	81.47
88	-922.41	-64.57	87.18
89	-1009.59	-70.67	93.28
90	-1102.86	-77.20	99.81

Table 12: Debt Repayment Schedule of 20 Year Takeout Financing (Value in crore)

Year	Principal Outstanding (PO)	Interest Paid(IP)	Principal Paid (PP)
0			
1	800.00	80.00	13.97
2	786.03	78.60	15.36
3	770.67	77.07	16.90
4	753.77	75.38	18.59
5	735.18	73.52	20.45
	714.73		
6	714.73	64.33	24.34
7	690.38	62.13	26.53
8	663.85	59.75	28.92

9	634.93	57.14	31.52
10	603.40	54.31	34.36
	569.04		
11	569.04	48.37	38.36
12	530.68	45.11	41.62
13	489.07	41.57	45.16
14	443.91	37.73	48.99
15	394.92	33.57	53.16
16	341.76	29.05	57.68
17	284.08	24.15	62.58
18	221.50	18.83	67.90
19	153.60	13.06	73.67
20	79.93	6.79	79.93