road assets for 30 years from the date of financial closure.

The NHAI is expected to generate growth capital for construction of new roads and highways under the Bharatmala programme through monetisation of its operating road assets.

The key parameters of a TOT model are:

- Source of revenue: Toll collection undertaken by the concessionaire
- Bidding parameter: Highest upfront fee (IECV) payable to the government authority
- Concession period: 20-30 years, with 100% exit option after two years. The concession period may be increased or decreased based on the revenue generated at a predefined time period (year 10 and year 20 as per the current TOT model)
- Method of securitisation: The government authority calculates the IECV, which is free cash flow expected to be generated by the project discounted by the weighted-average cost of capital (WACC)
- Target investors: Minimal construction risk allows for investment by pension funds and sovereign wealth funds

In 2016, the Cabinet authorised the monetisation of 75 publicly-funded national highways with a cumulative length of ~6,400 km. In March 2018, the first ToT bundle, which comprised nine operational road assets, was bid out. These assets, six in Andhra Pradesh and three in Gujarat, totaled a length of 682 km. The IECV of the authority (NHAI) was Rs 6,258 crore. The consortium of MAIF Investments India Private Ltd and Ashoka Buildcon Ltd emerged as the highest bidder by bidding Rs 9,681 crore, i.e., ~1.5 times the IECV of NHAI. The financial closure of the bundle was achieved on August 29, 2018.

The success of this issue was mainly attributed to right asset mix, comprising assets with established cash flow, long concession period, and better risk allocation in the TOT Model Concession Agreement, addressing key issues in earlier PPP models.

Following this, state governments are also likely to consider asset monetisation through the TOT model for their portfolio of mature, operating road assets. For example, in Maharashtra, Maharashtra State Road Development Corporation (MSRDC) and the NHAI are expecting proceeds of at least Rs 8,000 crore from the securitisation of toll receivables for Mumbai-Pune Expressway through the TOT model. Other states can consider TOT as the preferred model for asset monetisation of respective trunk routes, linking key cities.

Bids for the second ToT bundle were issued on August 6, 2018, comprising eight operational road assets totaling ~586 km in Rajasthan, Gujarat, Bihar and West Bengal with 12 toll plazas. However, the bids received were less than the IECV of the authority and, hence, the second bundle was not awarded.

Recently, the NHAI has invited bids for the third TOT bundle, which comprises nine operational road assets totaling a length of 566 km in Uttar Pradesh, Bihar, Jharkhand and Tamil Nadu. This bundle has recently been awarded.

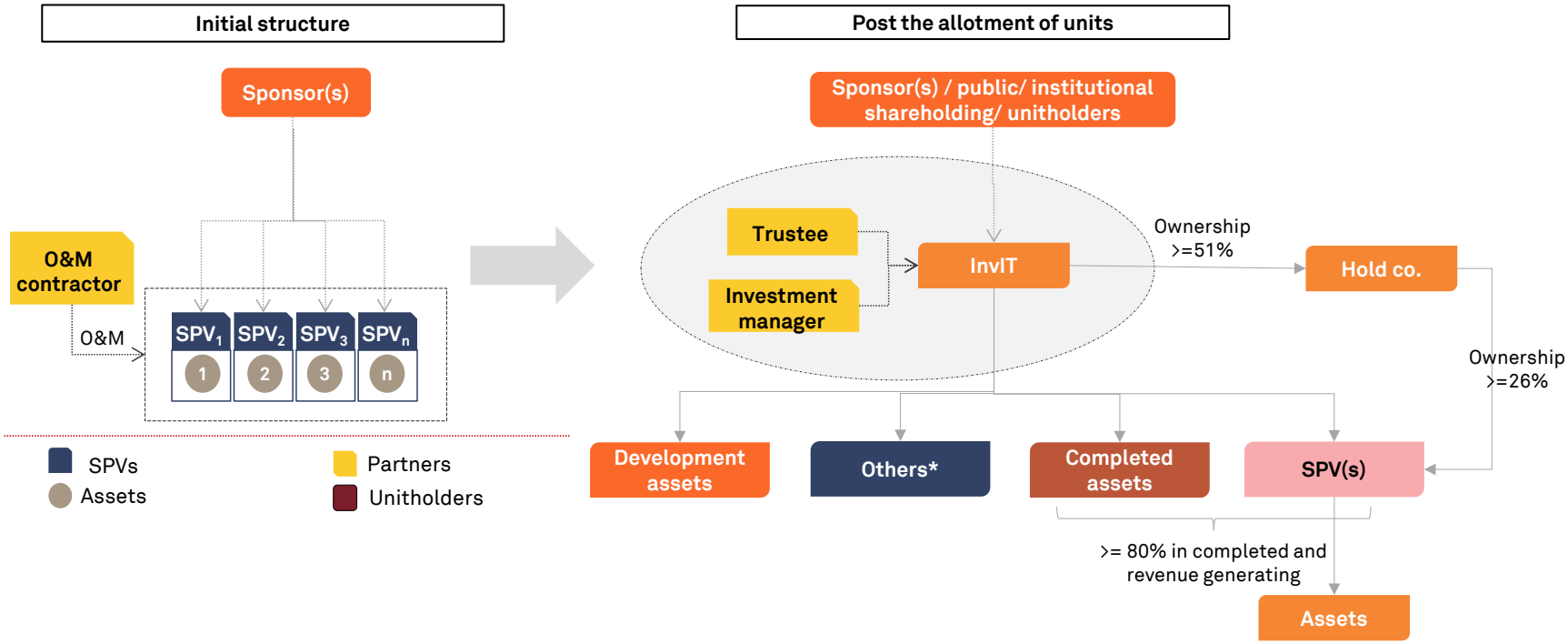
The recent successful bidding for NHAI TOT Bundle 3 provides a good baseline for reference for future TOT monetisation. In recent months, ports, airports, etc., have been proposed for asset monetisation on similar lines. The Task Force recommends that the TOT model must be configured by DEA and Niti Aayog for use by other infrastructure ministries to enable asset monetisation.

iii. InvITs and Real Estate Investment Trusts (REITs) : InvITs are trusts holding infrastructure assets, such as operational roads and transmission assets, which have long concession periods and stable cash flows.

InvITs are registered with the Sebi, and can raise funds by listing on the exchanges and issuing units to investors. The sponsors of the assets may retain operational control of the assets and divest a part of the holding over a period of time to realise the market value and raise significant capital.

InvITs help developers raise capital from a wider investor base, and also help sponsors time the market for stake dilution. These are hybrid instruments regulated by Sebi and are mandated to pay at least 90% of distributable cash flows to investors. Such distributions are to be mandatorily made at least on a half-yearly basis. Because of their pass-through status, InvIT units offer tax-efficient returns and are ideally suited for long-term institutional investors.

Figure 86 Typical structure of an InvIT



Source: CRIS analysis

The key features of InvITs are:

- They derive value only from the cash flows of underlying assets and have no operating income of their own
- InvITs primarily hold operating infrastructure assets with a specified investment limit for under-construction assets (private InvITs have a higher flexibility to invest in under-construction assets compared with public InvITs)
- They require prior approval from the regulator/concessioning authority for asset transfer or sale
- Upfront advantages for the sponsors (developers), investors (unit holders) and lenders are:
- Sponsors: Can monetise invested capital, prepay SPV bank debt through InvIT loans raised from fresh issue and/or unlock capital to bid for new projects (freeing-up of capital)
- Investors: Cash yields derived from dividends, interest on InvIT loans and buyback/capital appreciation of units mandated by the SEBI to distribute at least 90% of distributable cash flows at least once in every six months
- Lenders: After the SPV loan prepayment, banks would have higher headroom to lend to new projects

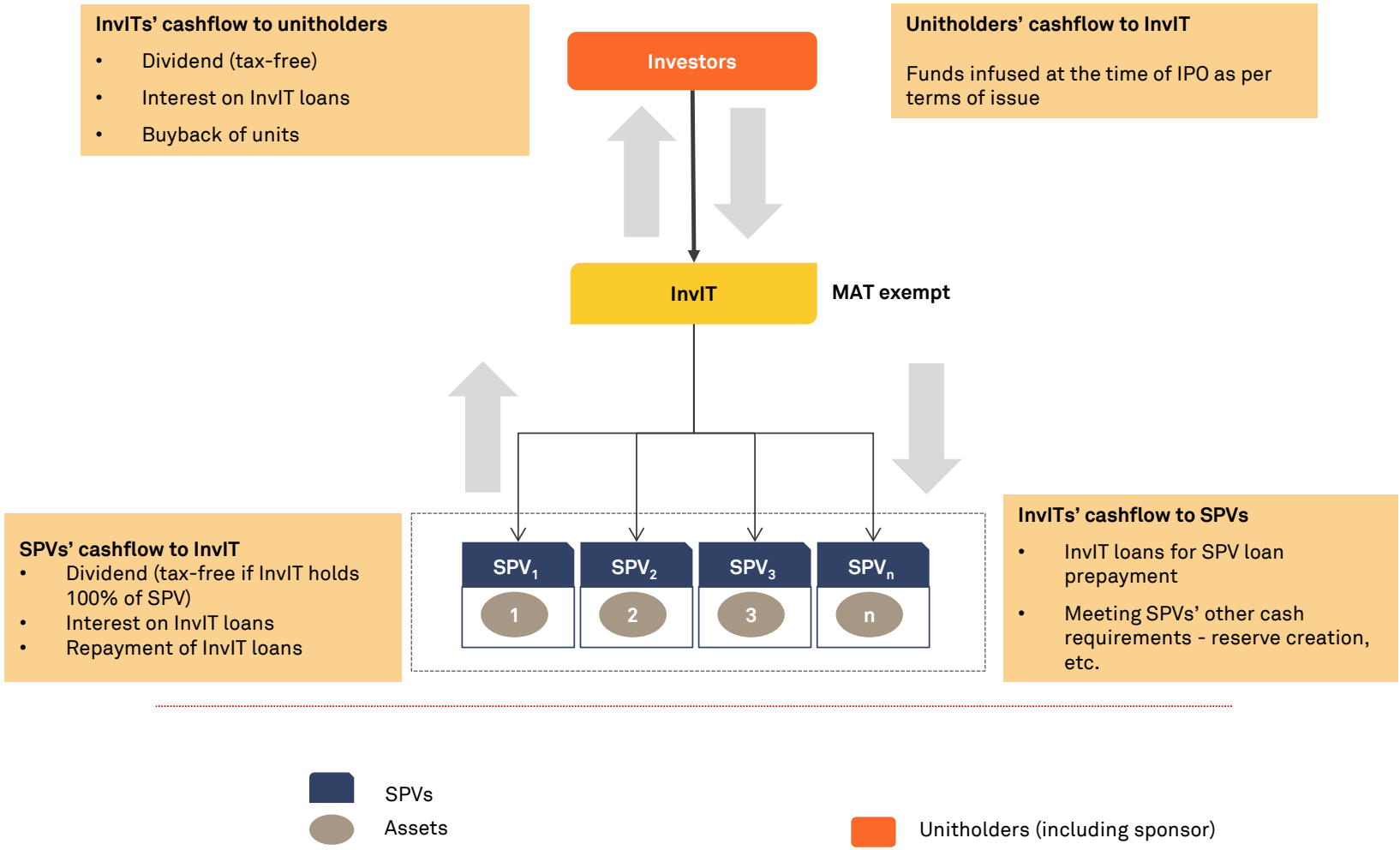
As per an RBI circular dated October 14, 2019 (RBI/2019-20/83, DBR. No.BP.BC.20/08.12.014/2019-20), the central bank has now issued guidelines on bank lending to InvITs. Such bank lending to InvITs would be subject to the following conditions:

- Banks are required to formulate a board-approved policy on exposure to InvITs covering processes, such as appraisals, loan sanctions, exposure limits, and mechanisms for monitoring
- Banks are required to undertake thorough assessment of sufficiency of cash flows at the InvIT level to ensure timely debt servicing
- The overall leverage of InvIT and the underlying SPVs together should be within the permissible limits prescribed in the board-approved policy of the bank
- Banks are required to monitor the performance of underlying SPVs, as the ability of an InvIT to meet debt obligation depends on the performance of the underlying SPVs
- Banks are required to lend to only those InvITs, where the underlying SPVs have existing debt and are not facing any financial difficulties
- Bank financing to InvITs for acquiring equity stake in other entities are subject to regulations, such as:
- Borrowing company should provide infrastructure facilities and should have satisfactory net worth
- Borrowing company or its directors/ promoters should not have defaulted on bank/FI loans
- Bank financing to be restricted to 50% of the finance required for acquiring the promoter's stake
- Tenor of bank loans should not be longer than seven years
- Bank financing acquisition of shares by promoters should be within the regulatory ceiling of 40% of their net worth as of March 31 of previous year
- Board should have approved the proposal for bank finance
- Compliance with statutory requirement as mentioned under Section 19(2) of the Banking Regulations Act, 1949

Returns and tax implications for InvITs

InvITs are a transparent, tax-efficient investment that provide stable income and diversification benefits to investors.

Figure 87 InvITs' cashflows to stakeholders

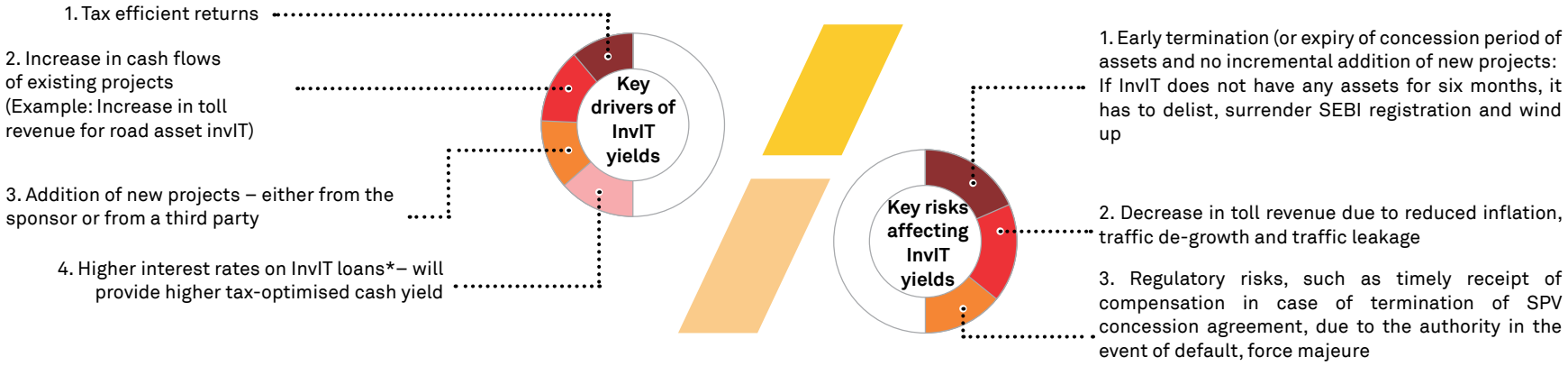


Source: CRIS analysis

Key drivers and risks for InvIT yields

The key drivers and risks for InvIT yields for an operating BOT-toll road project are highlighted in the following infograph.

Figure 88 Key drivers and risks for InvIT yields



*Note: * - InvIT loans are loans provided by the InvIT to downstream SPVs to prepay their external debt*
Source: CRIS analysis

Details of InvIT issuances done in India are summarised in the following table.

Table 4 InvITs issued till June 30, 2019

Sr No.	Name	Listing month	Issue size (Rs crore)	Category	Sector	Type of assets
1	IRB InvIT Fund – IRB Infrastructure Developers	May 2017	5,035	Publicly listed	Toll roads	7 operational BOT road projects
2	India Grid Trust of Sterlite Power	June 2017	2,250	Publicly listed	Transmission	5 operational transmission assets
3	IndInfravit Trust – L&T IDPL	June 2018	3,200	Privately placed	Roads	5 operational BOT road projects
4	India Infrastructure Trust – Brookfield	March 2019	12,950	Privately placed	Gas pipeline	1 operational natural gas pipeline project

Source: CRIS analysis

The Ministry of Power, the NHAI etc., have initiated action to monetise core operational assets using InvITs. It is necessary for these Ministries to ensure that the efficiency of revenue collection through these assets proposed for monetisation is toned up through various means (including plugging revenue leakages using O&M operators) so that the InvIT process fetches higher values. The Task Force also recommends that real estate assets of government and CPSEs should be monetised using REITs.

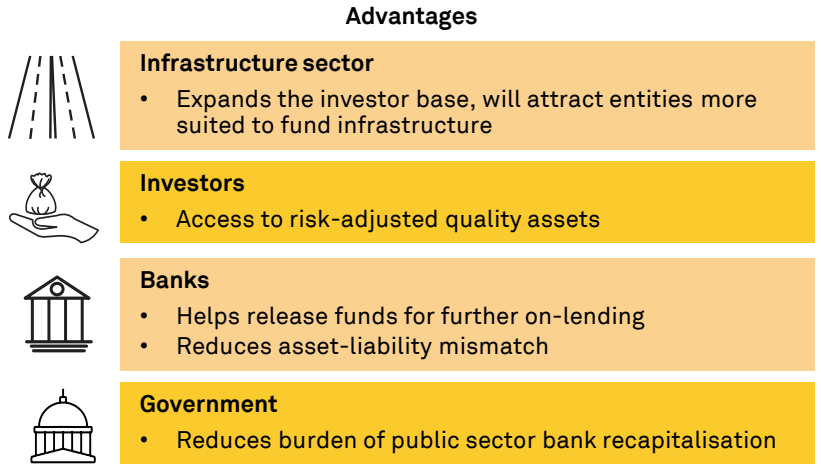
Sale of portfolio of assets to strategic/financial investors: Portfolio sale assists in unlocking capital and allows for participation of institutional investors. For instance, relaxation in exit clause by the NHAI enabled a precedent for portfolio buyouts in the roads sector. The Task Force recommends that the BOT/HAM/TOT contracts of all other infrastructure projects provide such a mechanism imparting higher liquidity to infrastructure investments.

Securitisation of infrastructure loan assets: Given the reluctance of institutional investors to bear the construction risk inherent in the infrastructure sector, securitised paper backed by the cash flows of the operating infrastructure assets provide another avenue for patient capital. Most infrastructure loan assets typically bear a rating of not more than 'BBB-' and with the absence of a market for lower-rated securitised paper, it is envisaged that the complete loan asset pool will require support to improve credit quality. Credit enhancements such as excess interest spread, cash collateral and guarantee can help improve the credit quality to meet investor expectations. The securitised paper can usher in capital market investors to the infrastructure asset class.

This could potentially help banks diversify their risks and alleviate larger risks from a single project, while recycling capital to finance critical infrastructure requirements. It also offers an opportunity for banks to improve their capital ratios by transferring loan assets from their balance sheets to securitisation trusts and SPVs.

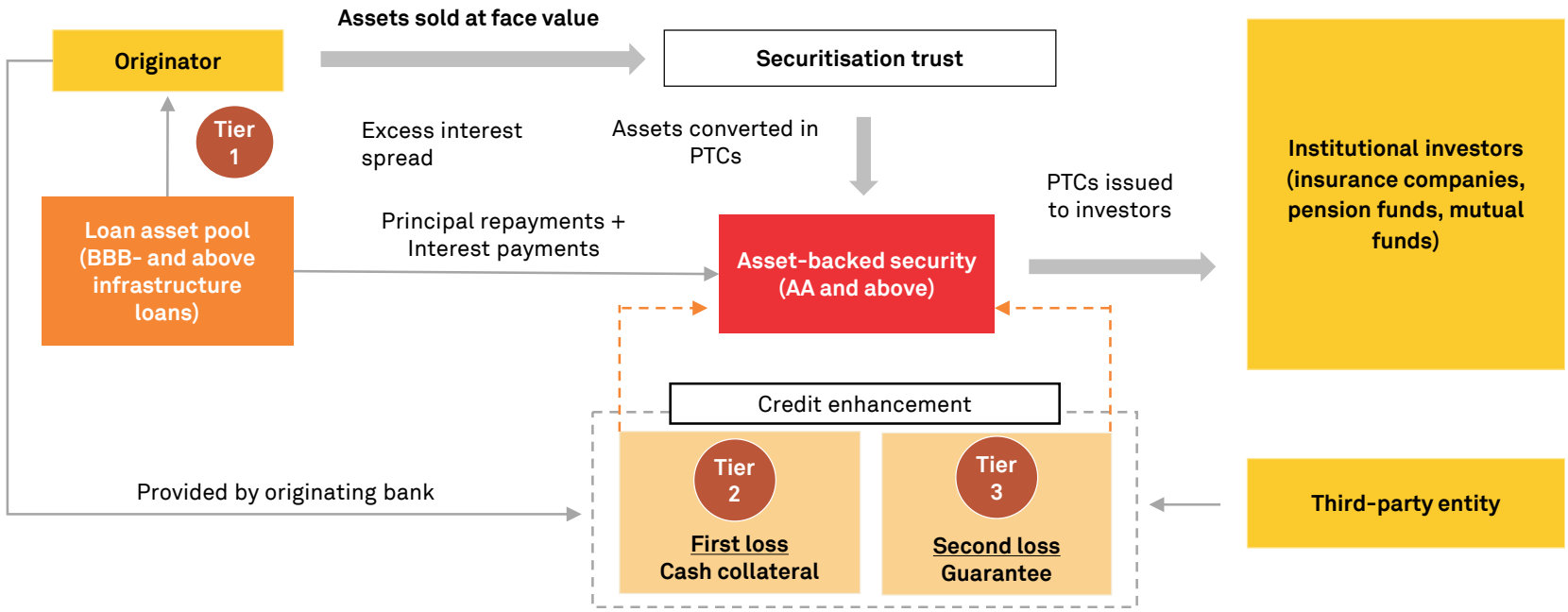
There are no prior instances of project-finance securitisation in India. Post-COD infrastructure projects, with credit enhancements at appropriate stages, if required, can be targeted for securitisation.

Figure 89 Advantages of loan-asset monetisation through securitisation



Source: CRIS analysis

Figure 90 Typical structure of loan asset monetisation through securitisation



Source: CRIS analysis

Infrastructure loan assets are amenable to securitisation. Post-COD infrastructure projects could be targeted for securitisation. Indian banks should be encouraged to securitise existing infrastructure loans through the bond market. This will create capacity for them to lend to fresh investment in infrastructure assets. The Task Force recommends that the proposed Inter Ministerial Steering Committee on Financing of Infrastructure deliberate on the subject to work out a positive regulatory environment to enable securitisation markets to take off in India.

The Task Force recommends that there is a need to replicate the success of models like InVITs, REITs and TOTs across infrastructure sectors like freight corridors, metro rails, oil pipelines, power transmission, ports, and renewable energy etc. to enable the large infrastructure deficit in the country. The following, therefore, may be considered –

i. NITI may get all other infrastructure ministries who are yet to identify monetisable assets to start working on asset monetisation. It is recommended that annual targets for each infrastructure

ministry for next three years may be laid out, including assets which are yet to be commissioned.

ii. NITI may circulate on Asset Monetisation (AM) Guidebook and get all state governments and local bodies also to use AM effectively to finance new assets.

iii. Land monetisation to be actively promoted by ministries as a means of financing. Example river front development of Sabarmati, marina re-development projects proposed by the Ministry of Shipping.

Revitalising land monetisation:

The Government of India departments, other than Railways and Defence, do not have a specialised organisation to handle commercial development of government lands. An alternate could have been entrusting the work to NBCC, which however is focused on construction and bogged down by large construction projects. There is need for a separate organisation / authority which can work with various departments to utilise these surplus and unutilised land assets of Government of India and CPSEs effectively. The objective is to set up an empowered organisation with competence to carry out commercial exploitation of land, manage land concessions, as well as raise funds for re-investment in CPSEs as well as for infrastructure construction in the country.

- Identification of surplus lands with government departments or CPSEs is the start of the process. "Surplus" land or property can be defined as property that is not needed, or not appropriate, for provision of the public service for which the agency owning the property is responsible. In the simplest case, "surplus" land is land which is vacant and not planned for future service use. In a more complex case, land may presently be in use, but planned to be vacated as part of improvements in service efficiency. Identifying "surplus" land may be thought of as a "supply-driven" approach to public land disposition. Once "surplus" land has been identified, market forces and perhaps other agents of government can focus on the surplus parcels and express demand for them
- Proposal for National Land Management Corporation - A systematic and specialised way of monetising land assets could unlock greater economic benefits for the government and also assuage the restricted supply of land. The Task Force recommends that a National Land Management Corporation, registered under the Companies Act, can be established to act as the facilitator for land monetisation and act as an asset manager for lands owned by government of India and CPSEs
- Concessioning principles - The first guiding principle of the SPV is to treat land as a non-renewable resource that needs to be preserved. Hence, the SPV would normally employ land lease or concessions as a primary mode of commercial exploitation. However, given the practical difficulties in existing concession, sale of land may also be a viable option
- Eminent domain - Legal cover will be provided for the SPV through an appropriate legislation. The SPV will focus on lands belonging to any central government ministry/department or CPSE. It will also consider development or co-development of land belonging to Defence or Railways if so required by these agencies. The SPV will also consider co-development of private land parcels adjoining government lands so as to maximise revenue
- Board composition - The SPV should be professional with representation from MoHUA, DEA, DOLA, DPE and DIPAM and strong independent directors from real estate and finance domains. A professional CEO will be hired from the market along with a sound technical team with high degree of competence with market rates of compensation

- SPV's functions - The SPV will provide the following full life-cycle services to ministries/departments/CPSEs:
    a. Establish and update the comprehensive inventory of Public lands
    b. Develop Model Concession Agreements for various kinds of land developments/sale of land
    c. Legal management of litigation/encumbrances relating to land
    d. Development planning, design and bid process management
    e. Concession/contract and revenue management
    f. Redevelopment of concessioned properties
    g. Raising capital from market backed by land assets

- Processes - The SPV would be a specialised organisation with a business approach undertaking the above-mentioned tasks. This agency should be staffed with real estate/legal/business development professionals with capabilities to
    a. Identify best use for excess land to be concessioned/sold
    b. Negotiate with the local authorities on changes to regulated land use as needed
    c. Resettlement and rehabilitation/eviction of occupiers
    d. Agree on local infrastructure improvements required as the land use changes
    e. Carry out project development plan in consultations with land owning agencies and government
    f. Carry out road shows to market offers
    g. Make timed decisions for concessioning / selling land to avoid disruption to local real estate markets
    h. Identify development partners through a competitive process

- Concessioning policy - This SPV would concession land following competitive and transparent processes by auctions or pre-qualified calls. This agency should be responsible for identifying real estate opportunities and optimising value for taxpayers. A land development and concessioning policy will be approved by the government. The policy will also need to dwell on delegation of powers to Board of Directors of the SPV or to an Empowered Committee, development models, bidding processes, land concession options, contract management, management fees for services rendered, revenue sharing, etc., to enable speedy decisions on individual projects. Sale of land would also be an option to be pursued

- Business model - All stakeholders, public and private, should receive fair compensation for the land that they make available, as an incentive to participate in the process. It is suggested that Land owning departments, including states or local bodies, will also get a share of the proceeds for its schemes, to incentivise release of valuable land for commercial development. The SPV will receive a management fee for various services rendered to land owning agencies. All these would form part of the Land Development & Concessioning Policy

Getting user charges right

It is vital to ensure correct pricing of infrastructure services as infrastructure assets often provide crucial services emanating from roads, electricity, water, etc. The price for access to the asset is an important factor as firstly the consumers must get access to essential services at a price that is fair so that it doesn't discourage the use of asset. Secondly, from the asset owner's perspective, it is essential that it earns risk-adjusted returns that justify the investment. While for a consumer, the lowest possible price is desirable, from a practical point of view, given the limited availability of government budgetary sources of funds for creating infrastructure assets, not all infrastructure can be provided at subsidised rates or for free.

Determining fair user charges is crucial to finance and grow infrastructure so that the end-user values the asset to ensure that it is efficiently used, and not squandered away. Free services can often be overused leading to dire consequences, especially for limited natural resources such as water. Fair value is also important as the need is to provide quality infrastructure to end users. User charge also ensures that sufficient funds are available for the upkeep and maintenance of the asset. By recovering the costs of infrastructure services, the government/private player could use resources for expanding or upgrading services thus helping in overall development of the economy. For example, in case of city metro, user charges alone do not lead to investment returns but still form a critical component of part-financing some of the operational investments required during the life of the asset. Even if the capital expenditure cost of social infrastructure cannot be recovered through user charges, at least recovery of the operation and maintenance (O&M) costs of infrastructure must be ensured.

User charges can also help in providing infrastructure services from a demand perspective. For example, civic authorities can respond to demand for expanding essential urban infrastructure by providing appropriate services with the cost being easily recovered. This would boost ease of living and provide residents with well-functional, quality infrastructure such as water and sewerage connections, paved roads, clean neighbourhood, etc. This model has been well established in highways in India where levying user charge has resulted in better quality roads with improved safety, reduction in travel time and better fuel efficiency for users.

A carefully defined user charge, therefore, will provide more clarity for investors, which in turn will ensure more investments. This has been done in India by including the provision about setting up of user charges in the contract (concession agreement) or leaving them to independent sectoral regulators.

The following may be considered –

i. Infrastructure ministries need to work out ways to recover costs of economic infrastructure services through rational user charges that are indexed to inflation.

ii. Subsidies should be passed on to consumers directly through DBT, leaving the infrastructure service to function commercially.

iii. Ministries may support and incentivise states to incorporate cost recovery policies while implementing central sector schemes.

iv. The Ministry of Finance may take up with Finance Commission to consider incentivisation of cost recovery via performance grants.

v. Social infrastructure services should consider recovery of at least the cost of operation and maintenance of infrastructure assets.

Strengthening the municipal bond markets in India

Grants from state and central government currently dominate the municipal financing landscape in India. These grants, which are devolved under state and centrally-sponsored schemes or directly through the Finance Commission, are substantially lower than the investment requirements of respective cities. This has affected the cities' capacity to provide quality services to its citizens. In an attempt to augment its funding sources, some cities have tapped into debt markets to raise long-term debt for part-financing their capital expenditure.

Although municipal bond issuances in India date back to mid-1990s, when Ahmedabad Municipal Corporation did the first municipal bond issue in India, the number and the value of issuances has been relatively small with only 8 cities accessing the bond markets in the earlier phase. The recent spurt in the bond issuances by ULBs have resulted from a policy push by the Government of India in the form of interest subsidy incentives to cities issuing municipal bonds. The Ministry of Housing and Urban Affairs (MoHUA) has targeted 50 cities to access the bond markets by 2024. If this has to materialise a variety of measures have to be initiated in order to improve the scale of funds raised through municipal bond issuances in India, as indicated below.

- Improving financial discipline and regular disclosure by local bodies – Although many steps and initiatives have been undertaken to improve the accounting quality and disclosure of financial information of local bodies, only a few local bodies have implemented these recommendations in letter and spirit. Further, delay in audit of financial statements compounds these issues. It is necessary for urban local bodies to have a robust municipal accounting system along with strong, credible and transparent disclosure of financial information to augment their access to municipal bond markets and improve investor interest. While reform initiatives under AMRUT have helped, the sustenance of the same continues to be a challenge. The Task Force recommends a nation-wide capacity building exercise to enhance the financial governance and accounting standards in local bodies to meet market requirements, including lateral entry of financial management talent into local body organisations
- Augmenting the revenue base and buoyancy of revenues of urban local bodies – A majority of the urban local bodies have inadequate revenue base and limited buoyancy of revenue. These issues, coupled with increasing establishment and administrative expenses have rendered many of the local bodies ineffective and unable to even meet their operating and maintenance expenditure from their own revenues. Effective implementation of reforms under AMRUT focusing on improvement, coverage and collection is needed in order to improve revenue from taxes and user charges. These initiatives should be complemented by introducing innovative ways for expanding revenue base for urban local bodies such as land-based revenue streams, value capture finance, advertisements, etc. This implementation can be coupled with incentives for the local bodies that successfully implement these reforms
- Addressing the gap in credit worthiness of local bodies through innovative credit enhancement structures – The bond market issuances in India with a credit rating of AA and above only are palatable to investors. However, only a few of the local bodies in India have a credit rating of AA and above. Hence, it is critical that the local bodies improve their credit worthiness for successful bond issuance. Given the issues of lower revenue base and buoyancy in own revenue for local bodies, it is important that the MoHUA, multilateral development banks (MDBs) and other financial institutions support the local bodies with innovative credit enhancement structures to improve investor confidence. Investor participation in bond issuances of urban local bodies can be augmented through effective waterfall repayment mechanism
- Encouraging pooled bond issuances – As only the financially strong

local bodies are able to access the debt markets with independent issuance, pooled bond issuances can serve as a bridge linking small and medium towns to debt markets. Pooled funding allows ULBs to aggregate their financing needs, diversify their credit risks and spread the transaction costs of a bond issuance. It opens up avenues for projects/entities such as ULBs that have inherent credit risks and might not attract funding on their own. Pooling arrangements at state or regional levels allow small and medium cities to aggregate their financing needs and diversify credit risk, which serve to attract investors as well as spread the transaction costs among a number of borrowers. With proper credit enhancement, pooled funding can also reduce the cost of debt for urban local bodies for their funding requirements for urban infrastructure projects. Pooled funds act as a pass-through facility that receive contributions from multiple financial partners and allocate resources in turn to multiple implementing entities.

- MoHUA may consider incentivising municipal bond financing through its schemes and request incentivisation by the Finance Commission, in place of subsidies (interest subvention)

Reforms pertaining to value capture financing (VCF)

Value capture financing refers to recovering a portion of increment in land or property valuation due to positive externalities from actions other than property owner's investments. This appreciation in the value can be attributed to regulatory changes, investments in public infrastructure, which increases the quality of housing, employment access, transportation or social benefits, and emergence of key commercial, residential, institutional or cultural development in the neighbourhood. Land-based fiscal tools (LBFTs) such as general taxes, benefit taxes, fees or user charges, and regulatory fees act as critical avenues for augmenting the financial resources for urban infrastructure financing. MoHUA has released a Value Capture Policy Framework (VCPF). The Task Force recommends that the VCPF may be adopted in expressways, railways, land pooling, ports or area development, etc. Concerned ministries may build this into the financing plan for NIP. State governments and local bodies should also be persuaded/incentivised to adopt this framework. A national capacity-building mission to facilitate VCF across sectors and levels of government must be launched jointly by NITI Aayog, DEA and MoHUA.

Identifying the key land-based value capture mechanism prevalent in India - It is critical to identify relevant LBFTs prevalent in major urban local bodies in India, and the reforms should focus on these LBFTs for improving their revenue potential. Certain LBFTs, such as property tax, development charges, and betterment charges are common in India, and the reforms required to improve these are highlighted below.

Property tax

- Linking the property tax assessment to the latest market value guidelines - At present, for majority of urban local bodies in India, property tax is assessed using old property guideline values/ is area-based and, thus, any increment in the land or property value is not captured, hence rendering the property tax base not buoyant. Therefore, reforms are required wherein the property tax is assessed using the latest market value guidelines, thus, capturing the current land/ property value due to infrastructure interventions. This will increase the buoyancy of revenue from property tax for urban local bodies
- Revision of rates applicable – For most of the urban local bodies in India, the applicable rates are not revised regularly. A revision of applicable rates for different categories of properties such as residential, commercial and vacant/ open land, along with its linking with market-value will aid in sustaining the buoyancy of revenue from property taxes
- 100% coverage and collection efficiency – As revenue from property tax is one of the major sources of own-revenue for urban local bodies, it is critical that they improve its coverage and collection efficiency

Development charges

- Transitioning from area-based assessment to value-based assessment – For a majority of urban local bodies, the existing rates are calculated based on area and, thus, are static. It is recommended that the development charges be linked to the market value that are revised annually, thus helping in capturing the buoyancy of the market
- Transfer of Development Rights (TDR) – TDR may be used as a mechanism to facilitate the speedy acquisition of land for developing infrastructure, such as city road development, satellite towns and metro rail. Under the TDR route, the government will acquire the land from land owners in exchange for development rights that are transferred to the land owner. The development rights issued as Development Rights Certificate (DRC) will empower the owner to go for extra floor area ratio (FAR) fixed by the government. The rights can also be traded with other developers, and can be utilised on any piece of land, depending on personal choice. The TDR can be designed for slum redevelopment, urban amenities, and low cost housing projects to name a few. Hence, the TDR may be used as an effective tool to address the extended and costly process of land acquisition, especially in urban areas

Betterment charges

- Transitioning from area-based betterment charges to value-based betterment charges – For a majority of urban local bodies, the existing betterment charges are calculated based on area and, thus, are static. It is recommended that these betterment charges be linked to the market-value that are revised annually, thus, aiding in capturing the buoyancy of the market
- Redefining the basis of levying betterment charges – Betterment charges are levied on land/ property owners that have benefitted due to development schemes/ town planning schemes to offset the cost of developing physical and social infrastructure. The betterment charges are linked to increment in the land value due to provision of infrastructure. Introducing development schemes/ town planning scheme (TPS) and capturing scheme-wise increment can be used as an instrument to develop new areas. Thus, financing infrastructure in town planning/ improvement schemes through betterment charges needs to be mainstreamed

Introducing innovative VCF tools

- Tax increment financing (TIF) – Under TIF, the incremental revenue from future increase in property tax or surcharge on the existing property tax rate is ring-fenced and utilised for financing new infrastructure investment in the area. The area under development is earmarked and the incremental property tax values are used for part financing of the projects in the identified area
- Project linked impact fee – At present, only a few urban local bodies levy impact fee to capture some portion of increment in land/ property within the impact area of the project. This can be complemented by identifying certain benefit zones which get directly affected by the implementation of the identified project. The impact fee will be directly levied on the land owner and will be charged when the land/ property is sold or developed
- Urban transport fund: Some states have set up a city level fund under the Urban Metro Transit Authority (UMTA) law. This has provisions for an urban transport fund to which betterment levies or TDRs or surcharges in betterment zones related to transportation projects, such as metro or BRTS, accrue for plough-back into urban transport infrastructure projects

Infrastructure Financing

This chapter explores traditional and innovative ways for financing infrastructure development in India, including fund raising through capital markets, traditional sources such as banks and development finance institutions (DFIs), external financing from multilateral and bilateral agencies, and foreign investments.

Capital Markets

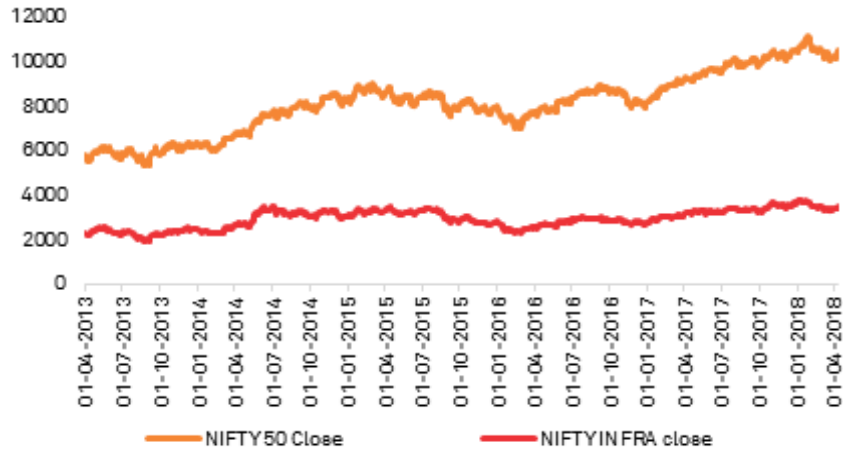
Equity and IPOs

As of March 31, 2018, the equity market for the infrastructure sector in India had a market capitalisation of about Rs 9 lakh crore, as against a total market capitalisation of Rs 150 lakh crore, constituting ~6%[71] of the total trades in the market.

This could be a direct consequence of a lower valuation accruing to the infrastructure sector, versus all the listed Indian companies, given the capital-intensive nature of the infrastructure-development business and the debt-laden balance sheet of developers. The average price-to-earnings (PE) ratio of stocks in the Nifty 50 index was ~26 for fiscal 2018, while that of stocks in the infrastructure sector was ~17.

The following figure highlights the sector benchmark's performance versus Nifty 50, reflecting the prevalent challenges of infrastructure development in India.

Figure 91 Nifty 50 versus Nifty Infra performance, FY13–FY18

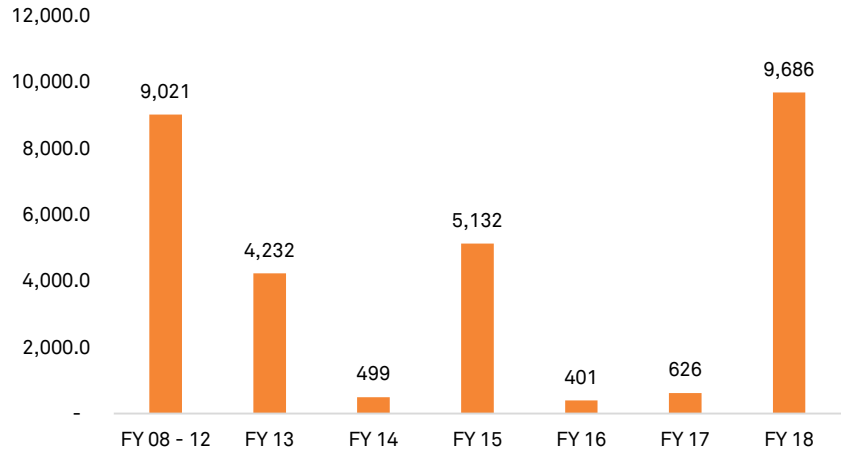


Source: NSE

Between fiscals 2008 and 2018, infrastructure corporates have raised an aggregate amount of ~Rs 30,000 crore through equity issuance in the capital markets, with total issuances in fiscal 2018 alone being ~33% of the total amount raised in the period.

[71] *As of April 11, 2018. Source: NSE, BSE, India Infoline*

Figure 92 Year-wise equity issuance by infrastructure companies (Rs crore)



Source: Bloomberg

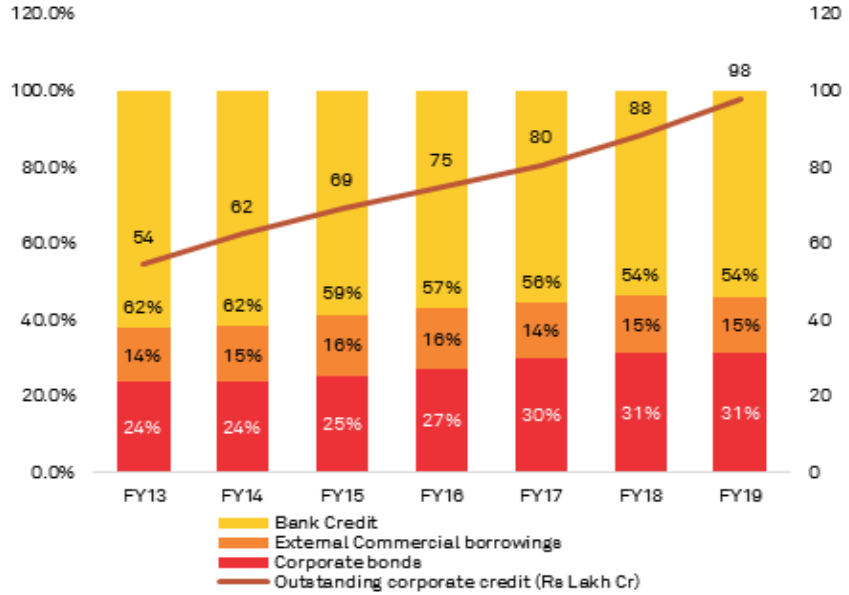
Bond markets

Indian bond markets are growing at a healthy pace. However, some of the structural issues continue to plague the growth of corporate debt bond markets.

The depth of capital markets in India is low – as of end fiscal 2018, the penetration of India's corporate debt market (outstanding value of corporate debt as a percentage of GDP) was ~17%, which was far smaller than countries such as the US, South Korea and Malaysia.

Bank loans are still the primary source of funding for corporates. While the pie of corporate bonds is increasing gradually, it still faces some structural issues.

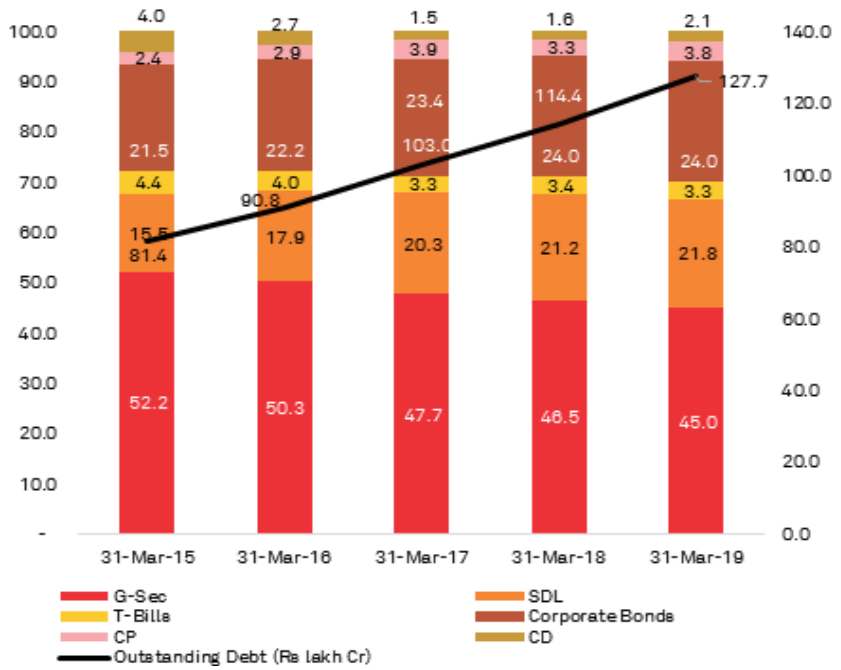
Figure 93 Details of outstanding corporate credit (Rs lakh crore)



Source: RBI, SEBI

Bond markets have grown substantially over the past five fiscals. However, debt markets remain skewed towards sovereign securities, which account for over 70% of the outstanding debt. Hence, the crowding out is high for corporate bonds.

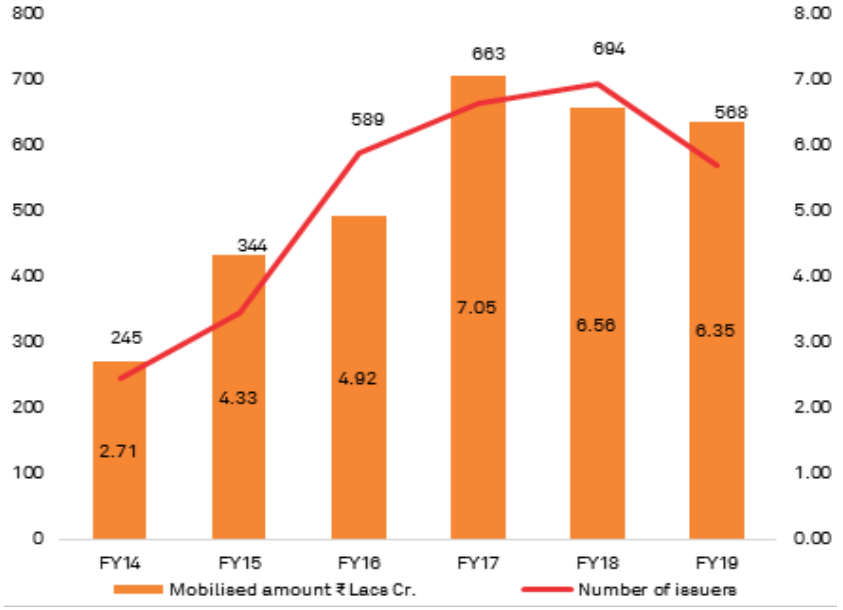
Figure 94 Details of outstanding debt (Rs lakh crore)



Source: RBI, SEBI

Corporate bond markets have also grown at a healthy pace over the years with some slowdown observed in last few years due to rising yields and credit events which reduced investor confidence and demand.

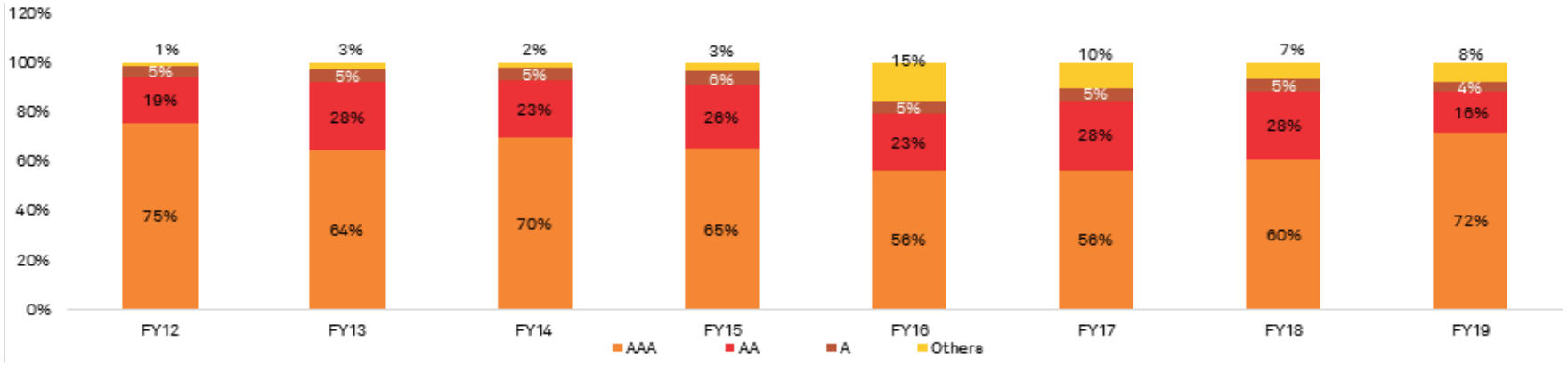
Figure 95 Trends in issuances of corporate bonds (Rs lakh crore)



Source: Prime Database

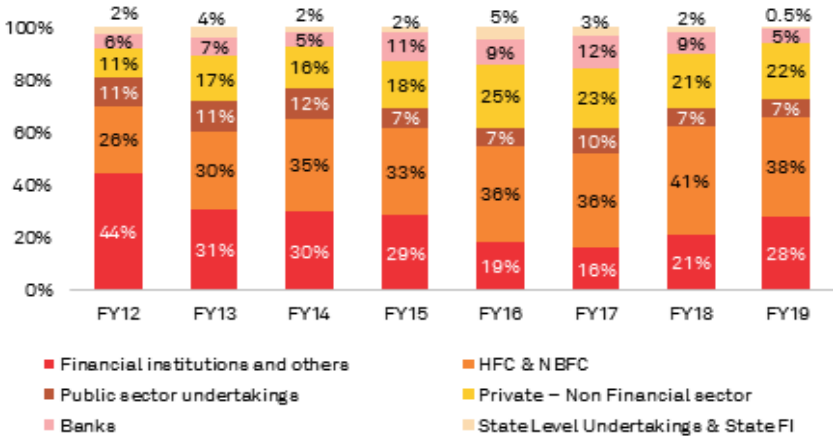
However, the markets are completely skewed towards top-rated and financial sector entities.

Figure 96 Proportion of corporate bond issuances in various rating categories



Source: Prime Database

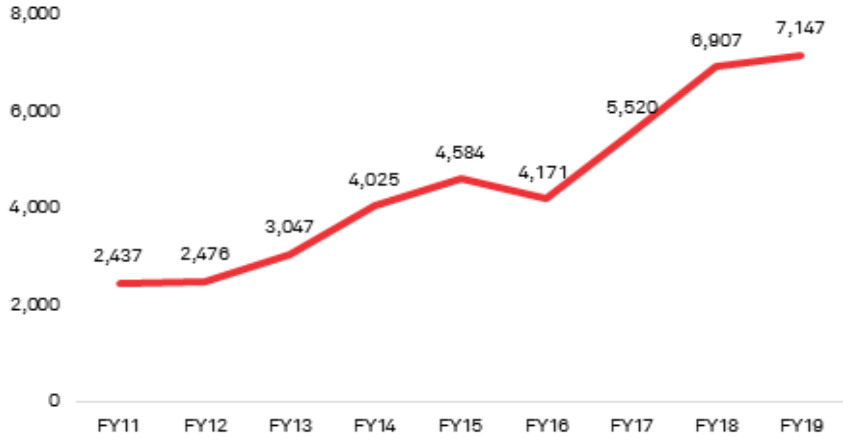
Figure 97 Proportion of corporate bond issuances in various sectors



Source: Prime Database

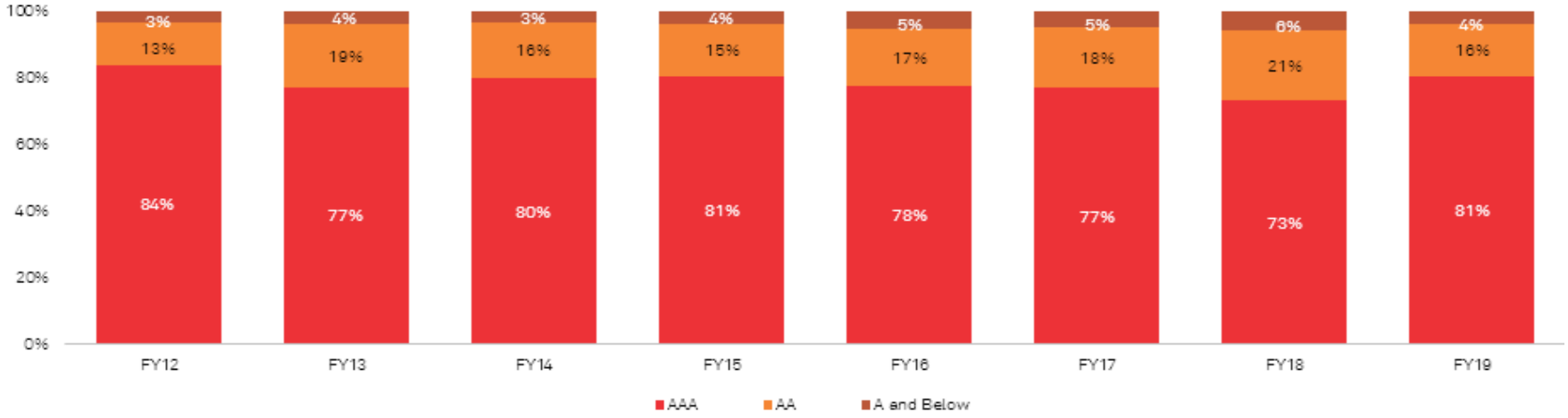
Secondary market also reflects similar trends, where again top-rated and financial sector entities top the charts.

Figure 98 Trend in average daily trading of corporate bonds



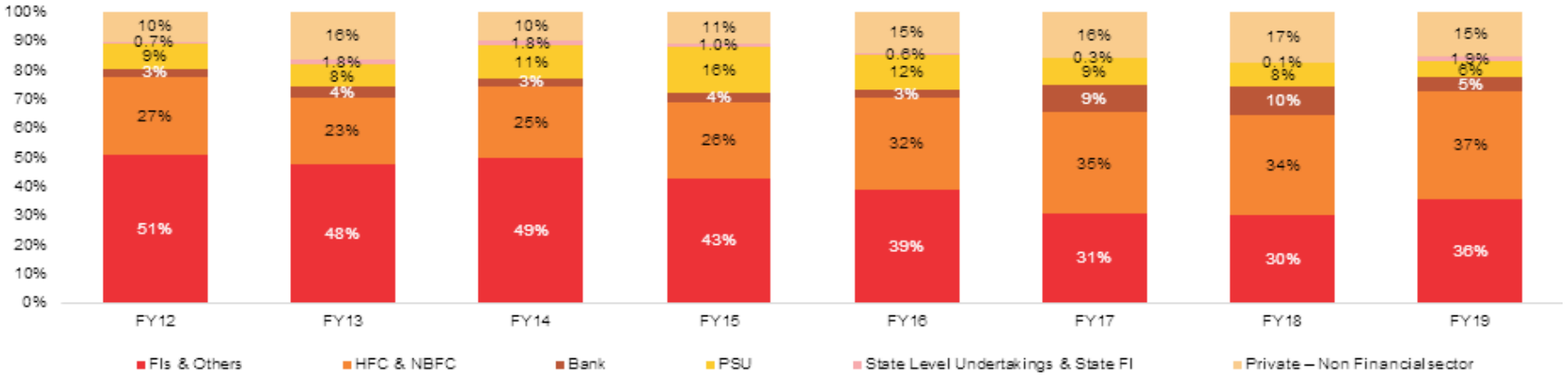
Source: FIMMDA, CRISIL Estimates

Figure 99 Trend in rating-wise break-up of traded corporate bonds



Source: Prime Database, CRISIL Estimates

Figure 100 Trend in sector-wise break-up of traded corporate bonds



Source: Prime Database, CRISIL Estimates

Additionally, most large investors, such as pension funds and insurers, have restrictive investment guidelines, limiting investments below AA-rated papers. It also has been observed that key investors like EPFO have lowered their floor for their corporate bond allocation owing to reasons such as low supply, etc. This leads to reduced demand and liquidity for such issuers, leading to higher yield demanded by investors, and making it more difficult for them to raise funds through the bond market.

This is one of the key reasons why resources raised through capital markets for infrastructure corporates are limited in India. Further, the presence of institutional investors, such as insurance companies and pension funds, which are the main source of infrastructure corporate debt with long tenures, is limited even though a separate limit is available for such investments. This can be also attributed to lower credit ratings of infrastructure projects.

The Task Force notes that the Department of Economic Affairs is working on a plan to deepen the bond market, based on announcements made in the 2019 and 2020 Union Budget speeches of the Finance Minister. While these measures may be expedited, the Task Force recommends that the government take suitable measures to make bond issuances by infrastructure companies attractive. The Task Force also recommends that the announcement proposing setting up of the Credit Enhancement Guarantee Corporation be expedited, as this is expected to support growth of the bond market for infrastructure projects.

Domestic pension and insurance funds

By 2050, the global population aged 65 years and older will have doubled, from 10% to 20%. Nearly 130 crore people – 80% of the elderly – will live in low income countries. Yet, only around one-third of the population in these countries have any sort of formal retirement income. Pension systems address this: by providing income in the event of old age, disability and premature death of the primary beneficiaries. In addition, pension systems contribute to promote long-term savings, which, in turn, stimulates economic growth. Pension funds are also an increasingly important source of infrastructure finance, sustainable finance, and leaders in greening our financial systems. But pension assets as a % of GDP remains low at ~10% in India as against 130% in Australia, 140% in the US, 105% in the UK, and 94% in Canada.

Similarly, insurance coverage in developing economies remain stubbornly low. Where insurance markets do exist, these need to be made more robust and inclusive: i) Insurance helps reduce or avoid poverty in the face of adversity, with paid insurance claims having a long-term benefit well beyond the immediate event (avoiding measures like selling income-generating assets or taking children out of school), and ii) insurance can reduce poverty beyond compensating losses through claims payments, and benefit also the uninsured and the overall economy through quantifying and reducing risk, enhancing access to credit, and enabling greater savings and investments – serving as an important source of long-term domestic capital. Furthermore, insurance offers the most effective risk management, especially for events of low frequency but high severity that are on the rise due to climate change.

Indian pension funds, including NPS (National Pension System), EPFO, etc, have assets under management (AUM) of over Rs 18 lakh crore ($ 250 billion). Similarly, insurance funds, including LIC, have AUM of nearly Rs 37 lakh crore. Thus, collectively, the pension and insurance AUM exceeds Rs 55 lakh crore ($ 760 billion). A large portion of the funds are invested in G-secs and other safe assets. LIC has been investing in infrastructure created by the Centre and state governments, with the infrastructure AUM for fiscal 2019 at Rs 3.84 lakh crore, or ~10.5% of the total AUM of Rs 36.65 lakh crore. EPFO, with an AUM of Rs 11 lakh crore, is permitted to invest up to 5% in asset-backed securities, units of REITs and InvITs, up to 40% in equities (which include infrastructure equities), and up to 40% in debt securities (which may include

infrastructure project debt securities).

The Task Force recommends that the government work with pension funds in enabling these to invest in brownfield and greenfield infrastructure projects. A working group may be set up under the IMSC on finance to document infrastructure investments, and suggest ways forward in enhancing infrastructure investments by domestic pension and insurance funds.

The Task Force also recommends that the Department of Financial Services take immediate measures to reform the pension and insurance systems so that pension savings and insurance coverage support quick growth of pension and insurance savings to at least 30% of GDP by 2025 and investments in infrastructure before India's demographic dividend disappears in 2050.

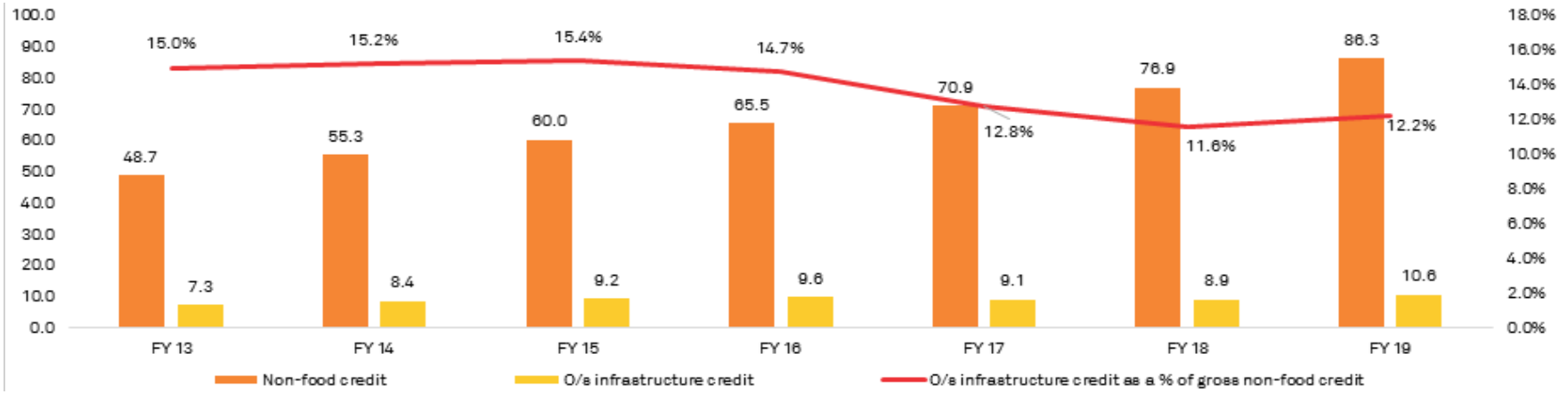
Banks

Bank lending to infrastructure

In India, the infrastructure financing landscape is dominated by bank lending, with the outstanding credit to infrastructure sector, as a percentage of gross non-food credit, by banks elevated at 15% until fiscal 2016. However, due to rising non-performing assets in the banking sector, driven by declining asset quality in infrastructure sector, this share declined to 12% in fiscal 2019.

The following figure highlights the trend in outstanding bank credit to the infrastructure sector in India between fiscals 2013 and 2019. Given the challenges faced by banks and FIs in recovering their dues from developers and contractors, the growth in outstanding credit to the infrastructure sector has been subdued during the review period.

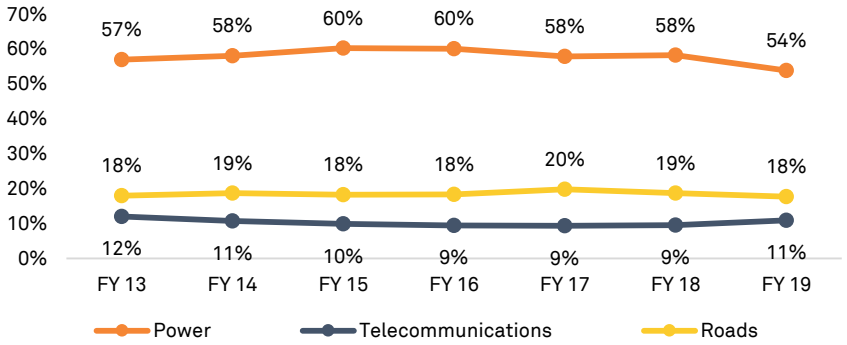
Figure 101 Outstanding bank credit to infrastructure sector, year-wise (Rs lakh crore)



Source: RBI

The following figure shows that the power and road sectors have the largest exposure in the banks' total exposure to the infrastructure sector, with both contributing ~72% of the outstanding infrastructure credit as on March 31, 2019.

Figure 102 Power, roads and telecommunications sectors dominate outstanding infrastructure credit (%)



Source: RBI

Infrastructure financing is generally done on project finance basis, characterised by non-recourse or limited-recourse lending, in which, the main security package consist of first charge on project cash flows through an escrow account, rights under the PPP agreement, and first charge on the project assets. Infrastructure projects in the under-construction stage are typically rated at BB or below, signifying the high risk in funding these projects.

Typically, interest rates for ~75% of all infrastructure loans are in the 9-13% range, which is typical of less-risky projects. This is because banks in India lend on relationship basis, where riskier projects are financed by banks because of the ongoing lending relations between the bank and the promoters. Relationship-based lending rarely factors in a risk-based approach to pricing, resulting in mispricing of the project risk by banks while financing the project during the construction period, which involves high construction risk.

Further, the need of the hour is to have sector-specific DFIs that have the domain expertise to appraise and lend to under-construction projects. This will free up banks' exposure limits to lend to operational assets and further recycle capital in the form of down-selling exposure to bond investors and patient capital, such as pension funds and insurance companies.

DFIs' lending to infrastructure

DFIs are specialised institutions promoted or assisted by the government to channel 'development finance' to important sectors, especially where commercial finance is not a viable proposition.

The challenges are acute in sectors such as industry, infrastructure, agriculture, and small and medium enterprises (SMEs; especially the lack of availability of long-term finance). The role of DFIs is to identify the gaps in financial markets in these sectors and act as a 'gap-filler'. The lack of viability for commercial finance may be due to one or more supply-demand mismatch factors, including sectoral risk, low returns, liability mismatch and unavailability of collateral.

DFIs bring in a balanced approach to lending towards critical projects, while leveraging on their policy/institutional strengths to mitigate risks, thus creating an efficient source of capital.

DFIs in infrastructure are sector-specific – national-level ones play an important role in railways, power and roads sectors, whereas state-level DFIs are largely in the urban sector.

A review of the DFIs in the infrastructure space reflects a high number of sector-specific DFIs housed within a specific line ministry. However, individual entities have tried to diversify their portfolios across specific sub-sectors.

For example, infra NBFCs such as Power Finance Corporation Ltd (PFC) and REC Ltd (acquired by PFC in 2019) have fairly diversified portfolios across the power sector value chain (generation, distribution and transmission), while Housing and Urban Development Corporation Ltd (HUDCO), by virtue of its urban infrastructure mandate (urban infrastructure includes multiple sectors, such as water supply, sewerage and housing), has a wide sectoral presence. Hence, the size and scale of this diversification is limited.

Entities such as PTC Financial Services Ltd have been attempting to look beyond opportunities in the power sector and create a pan-infrastructure portfolio with limited success.

At the state-level, the number of DFIs has been largely limited. Most of the infrastructure implementation is undertaken through grants. The extra-budgetary resources (including loans) are raised directly by the state (through state-development loans/bonds passed on as grants) or by the implementing agency (through bonds and term loans). However, there have been a few successful DFI initiatives, especially in the urban infrastructure space, such as: Tamil Nadu Urban Development Fund and Water and Sanitation Pooled Fund (Tamil Nadu), Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC), and Odisha Urban Infrastructure Development Fund (OUIDF).

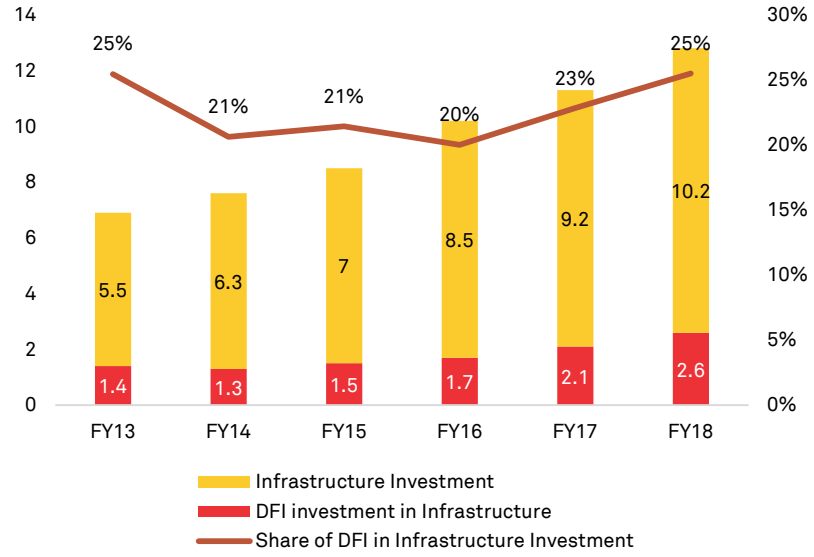
The DFI staff bring in a deep understanding of the sectoral issues and opportunities, helping them in appraising the projects/entities more effectively. They also leverage on the expertise of the line ministries in project selection and appraisal.

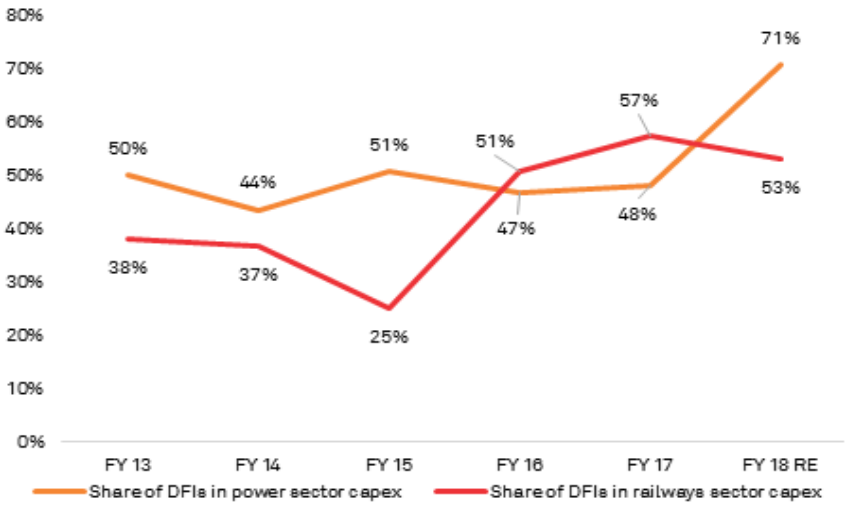
DFIs' share in investments in the infrastructure sector have been sizeable, predominantly in power and railways.

The total disbursement by DFIs was ~23% of the average annual infrastructure investment between fiscals 2013 and 2018. The total disbursement of national-level DFIs increased from Rs 1,36,083 crore to Rs 2,57,432 crore during the period, implying a healthy CAGR of ~14%. DFIs' investments are mainly focused on the power and railways sectors. The average share (~23%) is skewed by sectors, such as power and railways, which had a relatively high DFI share of ~50% and ~40% of the sectoral investment, respectively.

Figure 103 highlights the trend in annual infrastructure investment and compares DFIs' disbursements versus investments between fiscals 2013 and 2018.

Figure 103 Contribution of DFIs to infrastructure investments, FY13-18 (Rs lakh crore)





Note: Share of DFIs is based on the sum of disbursements by the entities, which also includes short-term loans/bridge loans, long-term loans towards refinancing and towards capex. As disaggregated information is not available, the above chart considers total disbursements to total annual capex comparison.

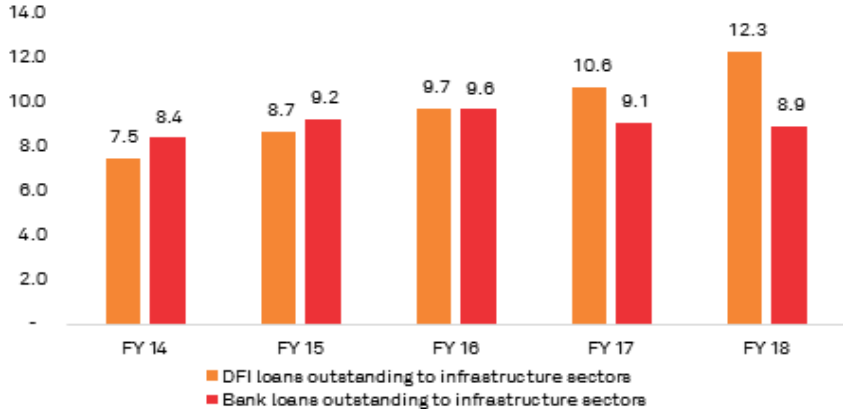
Source: Annual reports of DFIs, RBI; RE – revised estimates;

DFIs have shown higher growth in infrastructure loan assets versus commercial banks

Along with DFIs, lending from commercial banks, and borrowings from the capital markets and multilateral financial institutions form the major sources of financing infrastructure in India. The outstanding credit of DFIs logged a healthy CAGR of 14% between fiscals 2013 and 2018, from Rs 7.5 lakh crore to Rs 12.3 lakh crore, while that of scheduled commercial banks (SCBs) has seen a sluggish growth, increasing from Rs 8.4 lakh crore in fiscal 2014 to Rs 8.9 lakh crore in fiscal 2018, a CAGR of ~2%.

Of late, SCBs have taken a conservative approach in lending to the infrastructure sector, due to unfavourable investment environment in the infrastructure sector in India and further deterioration of asset quality. Given the mandate of infrastructure development for most of the DFIs, even during the tough times of increasing delinquencies in the infrastructure sector, they have increased their exposure considerably versus SCBs, and have overtaken SCBs in terms of overall exposure to the infrastructure sector in India. The following figure highlights the overall exposure of DFIs (national level) and SCBs to the infrastructure sector between fiscals 2014 and 2018.

Figure 104 Outstanding credit of DFIs and banks to the infrastructure sector in India (Rs lakh crore)



Source: RBI, Annual reports of DFIs

Challenges in long term financing of infrastructure

1) Banks face challenge of stressed assets

The infrastructure sector is facing key issues with respect to availability of capital for funding new projects. Banks and NBFCs,

which were traditional lenders to infrastructure, have high exposure to stressed assets in the infrastructure sector. These stressed assets have led to capital adequacy issues for several major banks/ lenders, and further restricted their ability to lend. Moreover, the traditional risks associated with long-term lending, such as asset-liability mismatch (ALM) issues, have also led to risk aversion among lenders. The Task Force recommends that the government take special steps to reduce the overhang of the telecom and thermal power sectors' stress on bank lending to the infrastructure sector.

2) NBFCs face liquidity crunch

In view of the modest bank credit disbursement to the infrastructure sector, NBFCs had stepped up lending in the last few years to fund infrastructure projects. The aggregate AUM of key infrastructure NBFCs such as L&T Infrastructure Finance, SREI Infrastructure Finance, Tata Cleantech Capital, IL&FS Financial Services, and PTC India Financial Services was about Rs 66,500 crore as of March 31, 2018. In 2018, one of the largest infrastructure NBFCs defaulted on loan payments mainly due to high leverage, ALM issues and high exposure to stressed infrastructure assets promoted by related parties. This led to a loss of investor confidence in NBFCs as a whole, and especially those with infrastructure lending as a focus, creating a liquidity crunch and ultimately increasing the cost of funds for most NBFCs. Greater regulatory supervision proposed by the RBI is expected to enable greater prudence in lending by NBFCs.

3) Infrastructure development funds (IDFs) to gain critical mass

IDFs are relatively recent entrants in the infrastructure financing landscape. IDFs were conceptualised to help take out banks' mature operating infrastructure assets, helping the lenders recycle capital and gain headroom for lending to greenfield projects. IDFs also help original lenders mitigate the ALM risk. However, IDFs have seen limited success mainly due to limited availability of operational infrastructure projects with a track record of satisfactory performance of one year. Besides, banks are unwilling to part with their good infrastructure assets to IDFs as their existing asset quality is under pressure amid moderation in overall banking system credit growth. These two factors have impacted IDFs' growth in loan book in recent past. With the sectoral and client concentration being much higher than that of conventional NBFCs, such as higher exposure to renewable assets where there is limited seasoning, the IDFs' ability to manage the higher concentration risk while profitably growing the business will be a key deciding factor for their asset quality and eventual loan book growth. The aggregate AUM of key IDFs such as L&T IDF, IDFC IDF, ICICI IDF and Kotak IDF was only about Rs 13,000 crore as of March 31, 2018. NHAI has been among the first government contracting authorities (GCAs) who has put in place a model tripartite agreement (MTA) among NHAI, the concessionaire and the IDFs to facilitate take-out financing by the IDFs in BOT projects. The Task Force recommends that the adoption of the MTA by all infrastructure GCAs implementing PPP projects should be facilitated by the DEA, imparting liquidity in loan assets of banks. Other facilitative measures, including permission for IDFs to lend to InvITs, may need to be considered by the RBI.

4) DFIs are now only sector-specific

The Industrial Finance Corporation of India (IFCI) was the first DFI set up in 1948, marking the beginning of the era of development banking in India. Subsequently, DFIs such as Industrial Credit and Investment Corporation of India (1955), Unit Trust of India (1963), Industrial Development Bank of India (1964), Export-Import Bank of India (1982), National Bank for Agriculture and Rural Development (1982), Small Industries Development Bank of India (1990), and various state financial corporations were set up to cater to the specific needs of various sectors.

Over the past few years, while some of the major DFIs have amalgamated with their banking outfits (such as ICICI and IDBI), some have been

reclassified as systemically important non-deposit taking NBFCs (such as IFCI). The remaining four all-India financial institutions – Exim Bank, National Bank for Agriculture and Rural Development (NABARD), National Housing Bank (NHB), and Small Industries Development Bank of India (SIDBI) – are primarily refinancing agencies, focused on non-infrastructure sectors. NABARD has played an important role in financing rural infrastructure, such as road networks, irrigation facilities, flood protection, storage to accelerate economic growth, and improve the quality of life in rural areas. HUDCO has played an important role in promoting, developing and financing housing and urban infrastructure related projects. It has been the nodal agency for promoting government's policy in priority sector of social housing under PMAY.

DFIs had demonstrated good credit appraisal skills in appraising and funding greenfield projects, ensuring the specific sector-related issues are adequately addressed/mitigated while financing these. During the early part of fiscals 2000-2010, DFIs such as ICICI, IDBI and IDFC were instrumental in providing long-term finance to industry and infrastructure. However, after achieving critical mass, these transformed into universal banks as these did not have the advantage of low-cost liabilities to de-risk their business models. Besides paucity of low-cost funds, factors such as withdrawal of government guarantee for bond issuance, and the resultant non-statutory liquidity ratio (SLR) status of their bonds, and high concentration risk led to financial stress for many DFIs. These developments further hampered DFIs' lending to greenfield projects. Also, many DFIs faced asset quality issues attributed to the ongoing stress in the infrastructure sector and high exposure to stressed sectors, such as power generation.

Recently, the government has indicated its intent to develop IIFCL into a DFI by increasing its equity capital by Rs 15,000 crore. IIFCL has had limited success in financing of infrastructure thus far. With increased equity capital, the idea is to create requisite headroom for borrowing such that IIFCL can finance big infrastructure projects.

As can be seen from the table below, while the outstanding loan assets of the aforesaid DFIs was Rs 11.1 lakh crore as of March 31, 2019, these institutions are focused on mainly lending to specific sectors and not to infrastructure as a whole.

Table 5 Development finance institutions

Name of the DFI	Role	Outstanding loan assets (March 31, 2019) (Rs lakh crore)
REC Ltd (erstwhile Rural Electrification Corporation Limited)*	Provides financial assistance to the power sector, mainly transmission and distribution segments	2.81
Power Finance Corporation Ltd (PFC)*	NBFC focussed on lending to the power sector. It mainly funds assets involved in power generation	3.15
Indian Renewable Energy Development Agency Ltd (IREDA)	NBFC engaged in extending financial assistance for setting up renewable energy projects	0.21
Indian Railway Finance Corporation (IRFC)	NBFC engaged in financing railway infrastructure in India	1.9
India Infrastructure Finance Company Ltd	Provides financial assistance to all infrastructure sectors	0.35
NABARD	Provides financial assistance to irrigation projects, flood protection and watershed management, agriculture storage and marketing infrastructure and food processing	1.95
HUDCO	NBFC engaged in financing housing and urban infrastructure projects	0.73
	Total*	**11.1**

Source: Respective company websites and annual report, CRIS analysis
**Except NABARD, all entities mentioned are NBFCs*

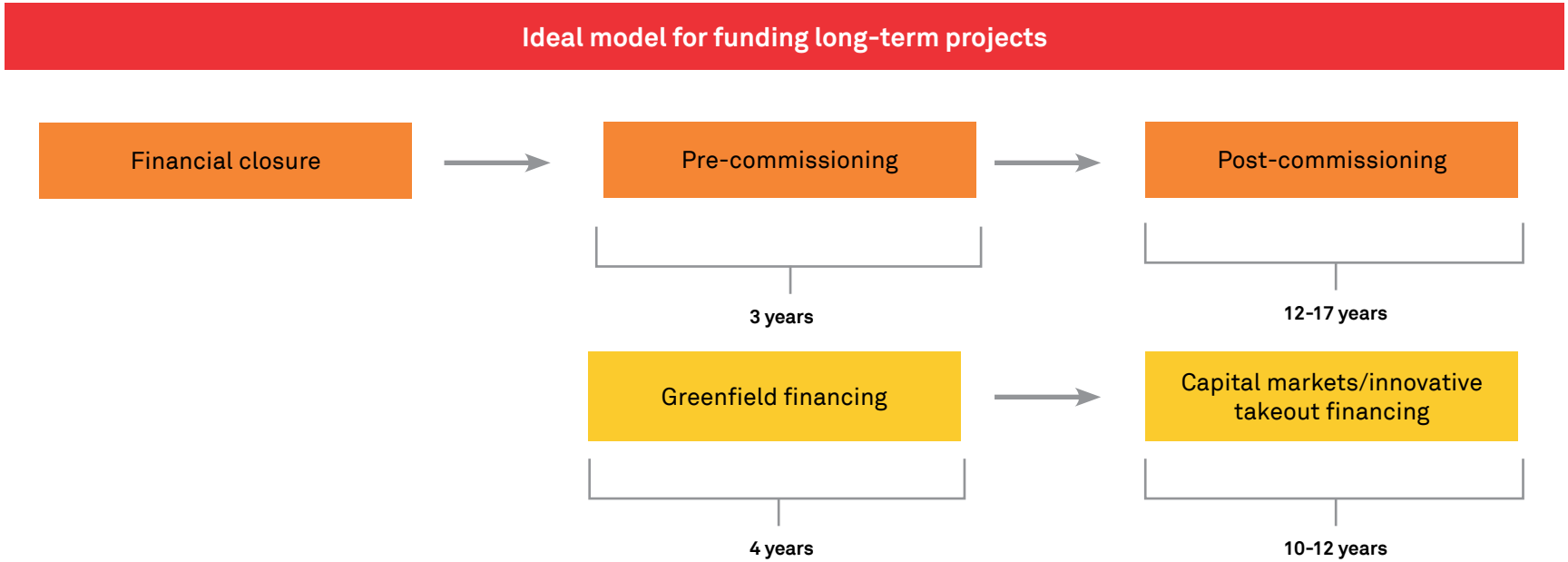
Recommendations to address the challenges

The capital available for long-term investment can be increased by inducting new sources of finance and freeing up capital of original lenders, thus facilitating a perpetual cycle of lending, refinancing, asset recycling and new lending. The recommendations to this end are as follows:

1) Funding long-term projects: Right institutions for the right stage in project finance

To bridge the funding gap, it is imperative to develop a new class of investors who can bring in patient capital from insurance companies, pension funds and provident funds. This capital has differentiated risk-return preferences compared with greenfield funding capital and is likely to come in only once the project is commissioned and has stabilised. This “patient capital” prefers assured, stable returns over long periods even if such returns are lower than those on construction phase financing.

Figure 105 Funding long-term infra projects

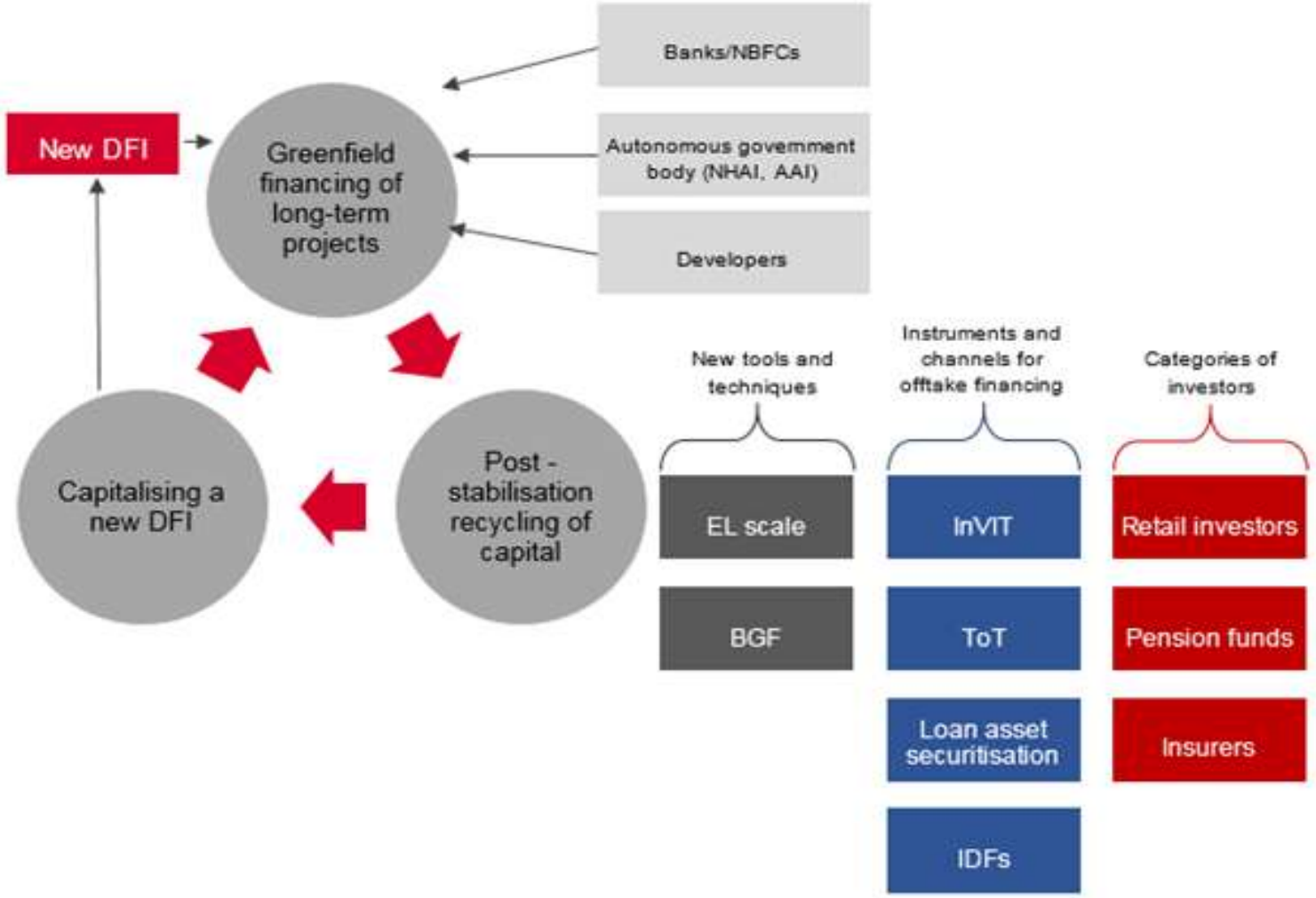


The ideal mode of financing long term projects is for banks/project financing institutions to focus on funding up to the pre-commissioning stage of projects.

After the project is commissioned and stable, the greenfield financing institutions must refinance the debt (through bonds) through long-term investors. Such refinancing will free up considerable funds for banks and enable their redeployment in new projects. While this financing model will allow banks to address their ALMs better, bond investors will also get good quality, long-term assets with stable cashflows. Besides, developers can benefit from reduced costs and fixed interest rates that can help offset the interest rate risks inherent in bank loans.

For this to happen, the banks will, however, need to adopt a stronger risk-based pricing model for project loans. It will also be critical to develop the ability to assess projects – a skill which seems to be in short supply after the demise of the DFIs. Banks can price their loans to reflect the evolving risk profile of projects.

Figure 106 Right ecosystem of funding infra projects at the appropriate stage



An ecosystem of enabling institutions, investors, and tools and techniques will be required to do this. In the greenfield stage, along with the existing set of banks/ NBFCs, there may be a need for an exclusive DFI that has solid project appraisal skills and is adequately capitalised with long-term financing sources.

In the post-commissioning stabilisation stage, there is a need to attract new sources of capital and investors. To do so, a significant scale up of recently introduced offtake finance initiatives, such as IDFs, InvITs, and ToT modes of monetisation is needed. Further, new modes such as loan asset securitisation and sale of non-core assets may also be explored.

Also, new techniques to measure credit risk (the expected loss rating scale) and credit enhancement of infrastructure loan assets (through partial or complete guarantees from a bond guarantee fund) are needed to suit the risk appetite of this new class of investors.

These measures are elaborated below.

2) DFIs with better credit appraisal skills

A strong DFI with competitive cost of funds and strong project appraisal and credit monitoring skills can offer superior risk-based pricing of long term project loans. Such an institution will be differentiated and have the following characteristics:

i. Domain expertise and project appraisal skills: It should have developed expertise in assessment of sector-specific project risks across multiple infrastructure sectors. It will also need to have a strong risk management framework for continuous credit monitoring. Availability of manpower and leadership skilled in project appraisal is a pre-requisite for success

ii. Well capitalised with access to long term sources of finance: It will need to have access to long term finance (most likely from long term bonds from capital markets) at competitive cost so that funding of long term and infrastructure projects could be done in an economically viable manner and without associated ALM mismatches. However, it must be noted that DFIs in the past had to convert into universal banks in view of the challenges they faced in securing long term financing, given the non-SLR status of their bonds. The Task Force recommends that some of the existing DFIs may be capitalised adequately with the help of MDBs, such as IFC, ADB, NDB, etc. DFIs should also actively seek equity investment from local and global pension funds. The Task Force also recommends that given that infra financing is a critical input for implementing the NIP, a positive tax free or low tax regime for long-term bonds be allowed for raising capital through the bond markets. This will also help deepen bond markets in India

iii. Diversified asset base with funded projects across sectors to prevent concentration risk: It is necessary that the DFIs have a diversified asset base across all sectors in order to protect against cyclical nature of the infrastructure/industrial sectors. This will also enable greater investor confidence. Hence, sector-specific DFIs may be encouraged to consider diversification into new infrastructure sectors that have potential for growth

3) Advisory think tank for risk-sharing partnership projects

There is a need to develop a cross sectoral project advisory think tank that would generate ideas and share global and domestic best practices in crafting well-balanced risk-sharing partnership frameworks. This body should also consider autonomous regulation in each sector which does not automatically translate into independent sectoral regulators; other regulatory options like regulation by contract and multi–sectoral

regulators may also be explored. It can also be responsible for capacity building of various stakeholders and counter parties in the ecosystem. Well balanced and nuanced frameworks tend to allocate both risk and returns more equitably between the public and private sectors, and can be helpful in enhancing private sector interest, while at the same time maximising efficiency in provisioning of infrastructure. A 3P institution was announced earlier. Given that most infrastructure is still implemented by the public sector, the mandate of the proposed institution may be expanded to cover all infrastructure (and not just PPPs). Also, rather than setting up a new institution, one of the existing national institutions could be considered for development into a national infrastructure centre.

DFIs can consider infrastructure as an investible asset class. First, this can increase availability of funds (liquidity) from both domestic and international providers of capital. Second, this can increase the scale of investment by bundling together individual projects and providing a portfolio of products in which such providers of capital can invest. Third, this can address the governance and capability gaps that often hinder private-sector investment.

The Task Force recommends that SBI, one of the largest lenders to the infrastructure sector, needs to strengthen the infrastructure vertical and take steps to enhance the liquidity of its exposure to the infrastructure sector. Efforts in collaborating with IDFs in take-out financing and developing the market for asset-backed securitisation needs special attention.

The Task Force also notes that a working group be set up to review the role and functioning of existing central public sector DFIs, such as PFC, IREDA, NHB, HUDCO, etc, and state DFIs. State governments may also be roped in with regulators.

The Task Force also recommends a differential licensing system with an enabling regulatory framework to encourage setting up DFIs in the infrastructure sector, with domestic or foreign capital. It is recommended that a working group may be set up by the RBI to consider this option.

The Task Force also recommends a differential licensing system with an enabling regulatory framework to encourage setting up DFIs in the Infrastructure sector with domestic or foreign capital. It is recommended that a working group may be set up by RBI to consider this option.

The Task Force recommends that the IIFCL, which has received sanction for additional infusion of Rs 15,000 crore as capital, needs to ramp up its role in infrastructure financing as well. The Task Force recommends that IIFCL needs to bring in top talent to build its capacity in infrastructure project appraisal and advisory.

The Task Force also welcomes the announcement in Union Budget 2020-21, sanctioning Rs 22,000 crore for capitalisation of IIFCL and infrastructure NBFC of NIIF.

External Aid – Multilateral and Bilateral

India's major development partners include ADB, AFD, the JICA, KfW, and World Bank. The Asian Infrastructure Investment Bank and the New Development Bank are new multilateral funding agencies. These development partners focus predominantly on infrastructure, including social infrastructure (health and education).

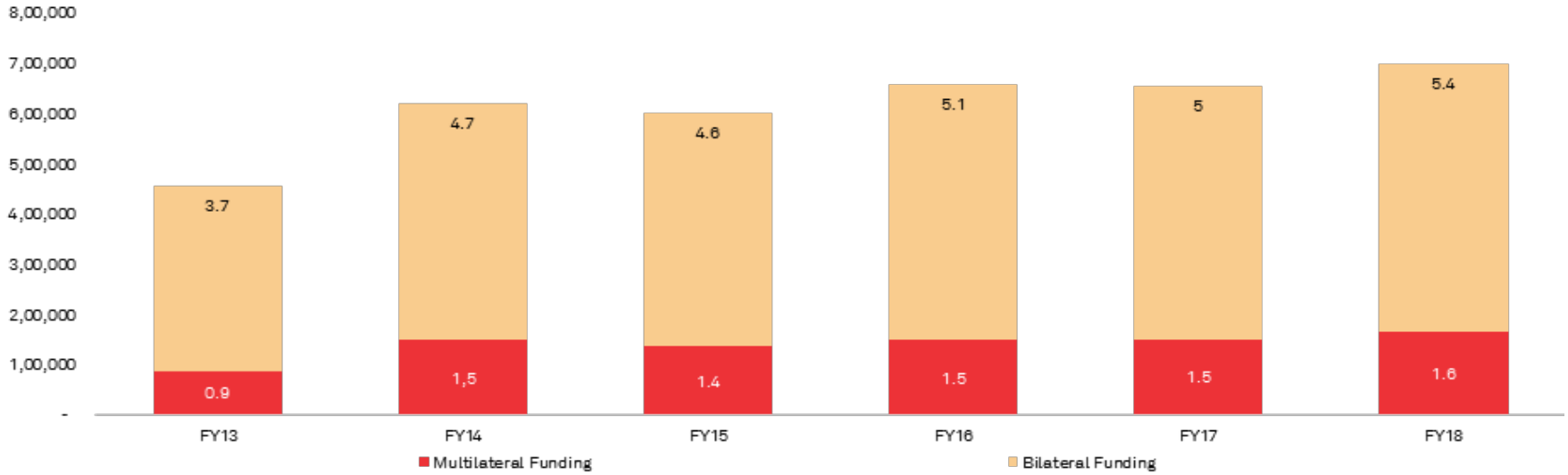
Further, United Nations agencies also provide support in social and environmental sectors. The Ministry of Finance is the government's nodal agency that coordinates and consults with India's development partners to ensure that effective and prioritised assistance is provided,

in sync with the country's development agenda and the priorities of the Centre and state governments, and sectors.

External aid from these development partners helps fund infrastructure, aiding finance projects with relatively lower commercial returns but large developmental effects, due to their lower cost of funding. This project finance supports select projects in the development stage that would otherwise not receive commercial funding. Using own funds, these provide both loans and equity finance to private sector projects that meet their internal appraisal criteria, but that cannot get financing from other sources on reasonable terms. These also offer quasi-equity and financial risk management products. In general, though, these lend on market terms, and do not compete with, but rather complement, private capital.

In many instances, by using credit-enhancement techniques, such as the issuance of partial-credit guarantees and first-loss guarantees, the development partners are able to crowd-in investment from the private sector that would otherwise not have participated in infrastructure lending. For instance, infrastructure projects in sectors as diverse as renewable energy (Porbandar Solar Private Ltd, backed by IIFCL guarantee and back-stopped by ADB guarantee) to urban water and sanitation sector (Tamil Nadu and Karnataka WASH SPVs, backed by USAID guarantees) have been able to tap the bond markets.

Figure 107 External-aid financing in India between fiscals 2013 and 2018 (Rs lakh crore)



Source: RBI, Ministry of Statistics and Programme Implementation

Foreign Investments

FDI inflows in the infrastructure sector in India

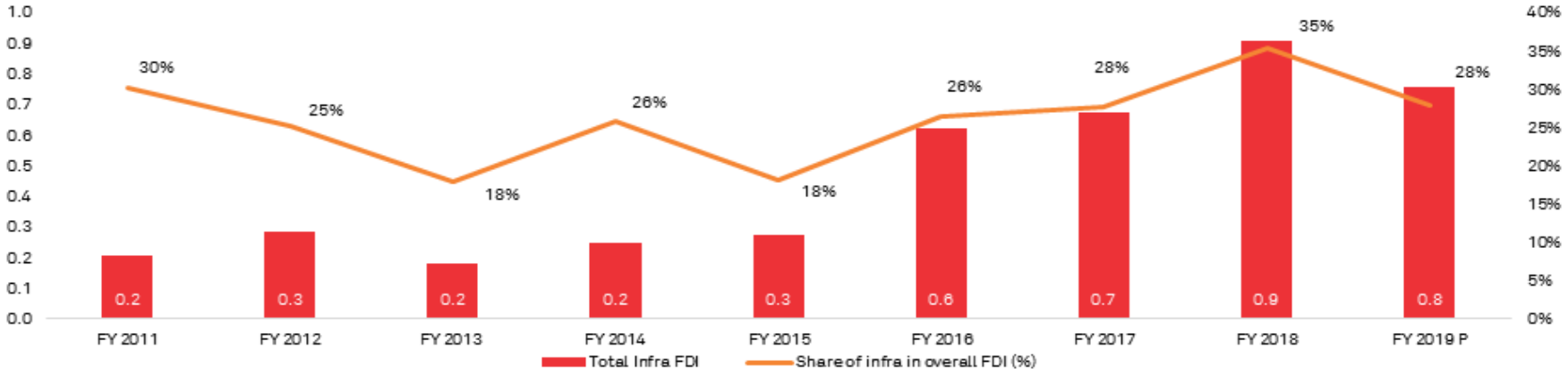
FDI in the infrastructure sector, or any other industry, brings in an alternative source of funds and also helps in bringing modern technologies, skills and knowledge, which assist in completing a project efficiently. FDI in the modern era is considered to be a critical vehicle for transfer of advanced technologies, resources and innovations from one nation to another. Further, there is a direct correlation among FDI inflows, infrastructure development and economic growth.

As infrastructure is considered a critical sector for aiding economic development, it requires large investments and liberal policies from the point of view of ease of doing business, thus augmenting foreign investments in this sector. As a positive step towards encouraging FDI inflows in infrastructure sector in India, the Government of India has brought in most of the key infrastructure sectors listed under the harmonised list of infrastructure sectors in India under eligible sectors that can have 100% FDI under the automatic route.

Figure 108 shows that FDI inflows in infrastructure sector have grown from Rs 0.2 lakh crore in fiscal 2011 to Rs 0.8 lakh crore in fiscal 2019, logging a healthy CAGR of ~19%. However, growth in FDI inflows in the infrastructure sector during fiscals 2011 to 2015 was almost flat, but picked up from fiscal 2016, which is a trend observed in overall FDI inflows in India.

This can be attributed to a number of reforms undertaken by the government, such as an increase in the investment caps for certain sectors, and non-sensitive activities placed under the automatic route. During this period, 21 sectors covering 87 areas of FDI policy have undergone major reforms resulting in higher FDI inflows.

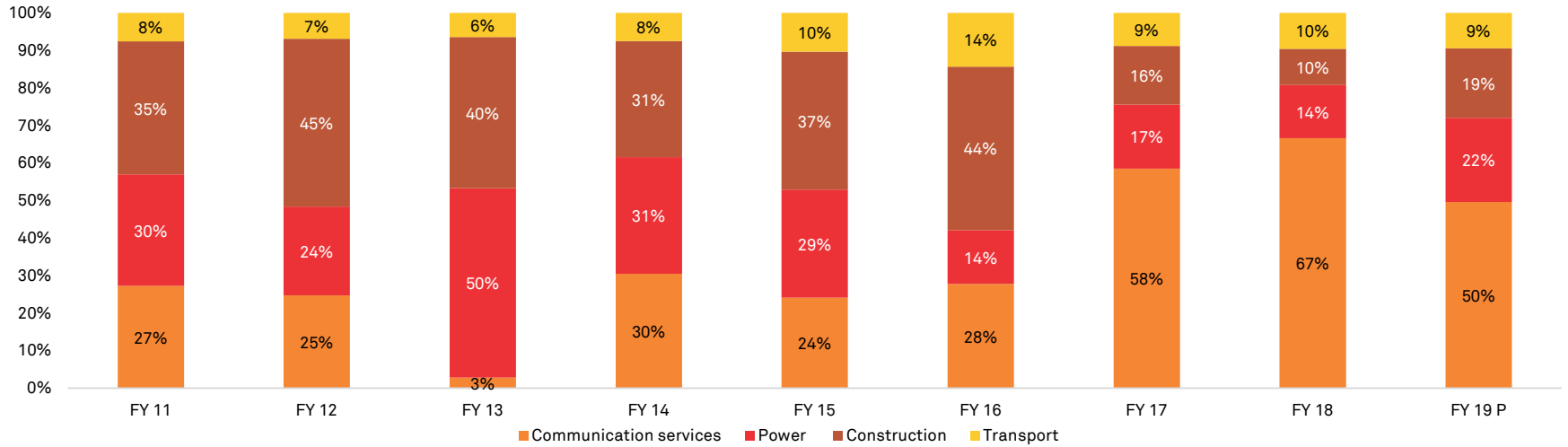
Figure 108 FDI inflows in infrastructure sectors in India between fiscals 2011 and 2019 (Rs lakh crore)



Source: RBI Annual Reports

The following figure shows that among the infrastructure sectors, FDI inflows to the infrastructure sector were mainly in communication services and power sectors.

Figure 109 FDI in various infrastructure sectors in India, FY11-19



Source: RBI Annual Reports

Investment by NRIs and NRI-held entities

More than 2.8 crore people, including NRIs, persons of Indian origin and overseas citizens of India (OCIs) stay overseas. For allowing these NRIs to participate in the Indian growth story and further the infrastructure development in India, FDI policies have been amended to facilitate investments by these NRIs.

NRIs in India can make investments in India under various schedules of the Foreign Exchange Management (FEMA) Regulations, 2000. Schedule 1 of these regulations permits 100% NRI investments under the automatic route in sectors, such as townships, housing, built-up infrastructure and construction development projects, only when the contribution is on a non-repatriation basis and investments are done as an inward remittance or out of NRE/FCNR (B)/NRO accounts. Further, investments made by NRIs under Schedule 4 of FEMA Regulations, 2000, on a non-repatriation basis is considered to be domestic investment at par with the investments made by the

residents. Special dispensation of NRIs is available to companies, trusts and partnership firms that are incorporated outside India and are owned and controlled by NRIs.

NRIs can also invest in shares/convertible debentures of any Indian company under FDI, subject to terms and conditions. An NRI can sell and purchase shares/convertible debentures of any Indian company on both repatriation and non-repatriation basis under the Portfolio Investment Scheme (PIS). The ceiling for investment for NRIs is 10% of the paid-up capital of an Indian company and 20% in case of public sector banks. This ceiling can be raised to 24% of the paid-up capital, subject to the approval of general body of the company.

Investments by global sovereign wealth funds and global pension funds

Sovereign wealth funds and global pension funds are characterised by interest in longer term returns, with focus on stable, predictable cash flows, especially on dividend flows. Sovereign wealth funds tend to invest in greenfield projects and in developing countries. These have managed risks through co-investment in partnership with domestic sovereign wealth funds and institutional investors. For the most part, sovereign wealth funds take minority positions and do not intervene in the management of the infrastructure project or company acquired abroad, leaving the oversight to expert partners. Sovereign wealth funds have long had a specific asset allocation to infrastructure in their portfolios, but the latest trend is also to set up sovereign funds dedicated to investing in domestic infrastructure in partnership with foreign institutional investors, notably other sovereign wealth funds. This is the case of the National Investment and Infrastructure Fund in India.

Government of India in its Union Budget 2020-21 has taken certain bold measures, which are likely to enthuse global pension and sovereign wealth funds' appetite for infrastructure investments. Elimination of dividend distribution tax and 100% tax exemption to their interest, dividend and capital gains income with respect to investment made in infrastructure and other notified sectors before March 31, 2024 and with a minimum lock-in period of three years. It is expected that these measures will provide significant change in the perception of sovereign wealth funds /global pension funds towards infrastructure investments in India and will lead to significant inflows.

The Task Force recommends that measures be also taken by ministries and regulators to simplify the procedural aspects of FDI investment in infrastructure by sovereign wealth funds /global pension funds, improving the ease of investing.

Environmental, social and corporate governance (ESG) considerations by foreign investors

Over their lifetime from development to construction to operation all the way through to the end of the economic life, infrastructure assets will face all kinds of ESG issues. These will vary depending on asset type, sector, size, geographic location and stage in the lifecycle. Some of these issues may originate outside the asset but have impact on its technical ability to operate or on its profitability (e.g. temperature rise, increased water scarcity, changing regulations, tariffs). Other issues may be caused by the asset itself and impact its surrounding environment and communities (e.g. water effluent, quality of life of the communities around it, labour conditions, etc.). In the latter case, we speak of externalities. These can and increasingly will impact the asset's financial performance via various feedback loops (e.g. protests

of the surrounding community). It is thus important to realise that both directions of impact (impact on the asset, and impact from the asset) may have financial consequences for the investors, particularly if they are "universal owners".

Industry standards and guidelines are often the foundation for investors' ESG management systems in infrastructure investing. The World Bank Group Environmental, Health and Safety (EHS) Guidelines & Industry Sector Guidelines, the IFC Performance Standards, Equator Principles, PRI Principles, CDC Toolkit and Infrastructure Sector Profile are commonly cited references. The technical expert group (TEG) advising the European Commission on sustainable finance has, in March 2020, published its final recommendations on the EU taxonomy, including "substantial new user guidance" to help investors and companies meet obligations for reporting against the framework. The taxonomy is a list of economic activities and corresponding performance criteria consistent with the EU's commitment to reach net-zero carbon emissions by 2050.

The Task Force recommends greater understanding of global ESG standards by ministries and implementing agencies to enable them to assess the expected performance outcomes and document the same in DPRs and also lay down mechanisms to measure and disclose performance in line with India's Nationally Determined Commitments for Climate Change. These will enable global investors to assess their interest in investing in such projects, besides enabling India to report the performance against NDC commitments. It is also suggested to set up a working group under the Ministry of Finance to recommend regulatory changes and other policy measures required to enhance the attractiveness of India to ESG focused funds.

Business Models

This chapter discusses the business models typically followed during the construction and operational phases of infrastructure projects in India.

The business models followed by infrastructure projects in India have taken on different structures depending on the roles of the entities involved, and ownership arrangements and allocation of risks among the parties involved. For instance, if a project is fully public-funded, it is typically implemented through the engineering, procurement and construction (EPC) model. However, if a private sector entity is involved in implementation and financing, it can be under any of a number of public-private partnership (PPP) models.

EPC

EPC projects involve infrastructure development contracts in which the responsibility of delivering the project at a guaranteed price within a fixed period and with quality and performance parameters as per predetermined standards is with the contractor.

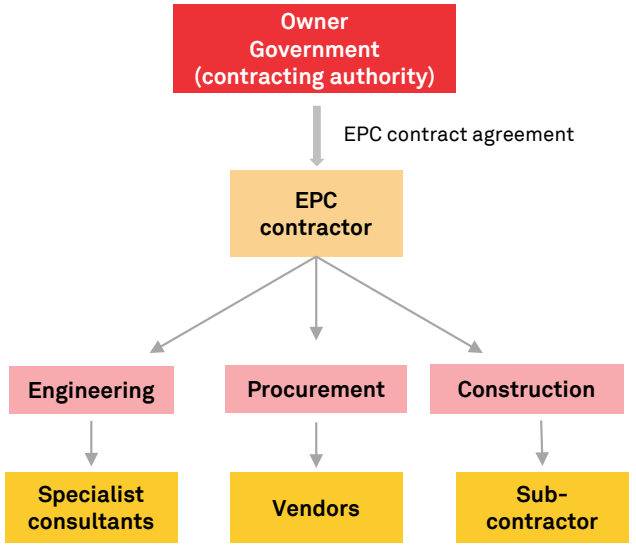
The contractor will undertake detailed engineering design of the project, procure all the equipment and raw materials, and construct the facility in return for a fixed payment from the government/ public sector entity.

The funds to be given to the contractor by the public sector entity (state or central) for delivery of the infrastructure project are provided through budgetary support or directly by internal and extra budgetary resources (IEBR) of state or central PSUs. These payments are linked to the achievement of certain construction milestones.

EPC projects are also known as 'turnkey projects' as the contractor delivers a complete facility/ infrastructure asset to a public sector entity that is ready to start operating the asset. The risks of cost and time overruns are both transferred to the private contractor.

In India, EPC projects are typically undertaken in sectors such as power transmission and distribution, metro rail, expressways and highways, railways, residential constructions, water supply and waste management.

Figure 110 Typical structure of an EPC project



There are five key differences between the EPC and PPP models. These are:

- **Allocation of risks –** In traditional procurement methods such as EPC, the public sector entity bears almost all the risks that can emerge in the operations phase of a project's life cycle. All the risks related to design and construction are borne by the EPC contractor. In case of PPP procurement, there is an optimum allocation of risks between the public entity and the private partner such that a particular risk is allocated to the party that is most capable of handling or mitigating it.
- **Management of the project –** Under the EPC model, the public sector entity is solely responsible for complete O&M of the project after the construction phase, while in case of PPP procurement, the responsibility of O&M of the project is primarily with the private partner for the duration of the concession period.
- **Objective –** In EPC, the objective of the public sector entity is to build an asset, while in case of PPP procurement, its objective is to buy services or ensure service delivery. The public sector entity owns the asset in both cases. The outputs/service-level agreements are explicitly mentioned in the bid documents which the private sector partner is expected to meet in a PPP.
- **Sources of financing –** EPC projects are financed by the public sector entity through its budgetary allocations/ resources. In case of PPP procurement, the private sector can bring in finances in the form of debt and equity and can be supported by the public sector entity through grants/ viability gap funding (VGF).
- **Payments –** The public sector entity is responsible for making frequent and short-term payments to the contractor of an EPC project. These payments are linked to certain construction milestones. In case of PPP procurement, there is a long-term agreement between the private and public entities and the payments are to be made on the basis of the terms and conditions mentioned in the concession agreement.

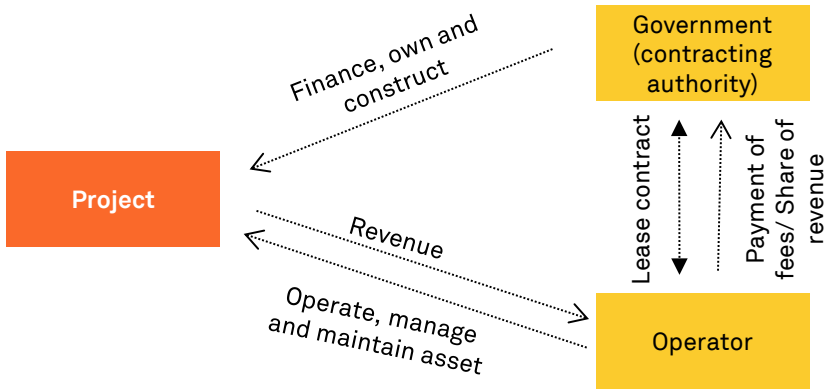
PPP

PPP models were devised in order to encourage the private sector to finance infrastructure development and related services. Various PPP models are in use, with varying parameters governing the ownership of the asset, responsibility for investment, allocation of risks and duration of the contract. In this section, we discuss in detail about these models.

Leasing

In lease contracts, the infrastructure asset owned by a public entity is leased out to a private partner. These contracts are typically for medium term, i.e. 10-15 years and may involve some capital investment by the private partner. The private partner, as per the contract, charges a user fee from consumers and does not receive any fixed fee from the public authority, as in the case of management contracts. A portion of the receipts of the user fee charged is provided to the public entity owning the asset as a lease fee and the balance retained by the private partner

Figure 111 Typical structure of a lease contract



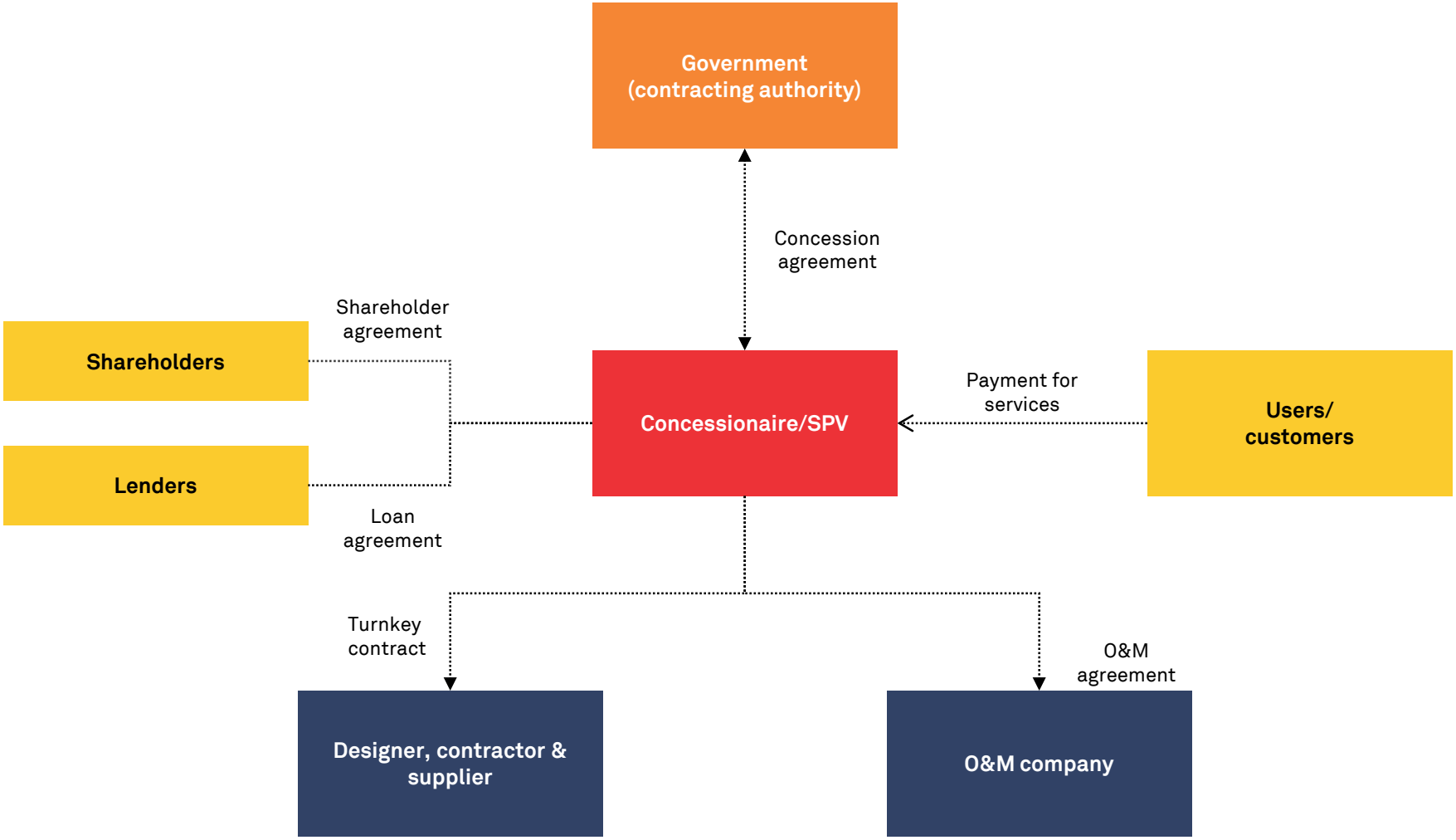
The model has several variants, including:

- Leasing involves the public sector entity leasing the asset it owns to a private sector partner for the purpose of O&M and management. Here, the revenue will be collected by the private sector partner and a part of it will be shared with the public sector entity. For instance, leasing of retail outlets at railway stations by the Indian Railways and sub-leasing of commercial real estate by a private airport operator to private players / mall operators / offices
- Build-lease-transfer (BLT) and build-own-lease-transfer (BOLT) involve the private sector building and owning a facility (in case of BOLT), leasing it to the public sector entity and transferring the facility to the public sector entity at the end of the lease period. In this variant, during the lease period, the public sector entity will make monthly or annual lease payments to the private sector entity for using the facility and as a means to repay the investment made. Here, the asset is owned by the private sector entity and then transferred to the public sector entity at the end of lease period
- Build-transfer-lease (BTL) involves the private sector partner building an asset, transferring it to the government and then leasing it back. In this variant, the private sector delivers the service, assumes demand / traffic risk and collects user charges from consumers. Such user charges can have an inflation-linked component to serve as a partial or full hedge against inflation. Here the asset is owned by the public sector entity. Rajiv Gandhi Container Terminal is an example

BOT

BOT model has a public sector entity, the contracting authority, defining and granting rights to a private sector partner to build and operate an infrastructure facility/ service for a fixed duration or concession period (typically a long period of 15-30 years). At the end of the fixed duration/ concession period, the asset and its operations are transferred to the contracting authority. The BOT model is generally applicable to development of greenfield assets and in some cases brownfield assets too, in which risk allocation to the private sector may be significant. In the BOT-toll model, the construction and demand risk is borne by the private sector partner, which collects the tariff revenue/ user charges from the consumers and may share a portion of it with the public sector entity. In the case of the BOT-annuity model, the construction risk is borne by the private sector partner, but the demand risk is borne by the public sector entity. Here, the private player mainly bears the counterparty risk with respect to timely annuity payments from the public sector subject to the former maintaining the asset as per predefined performance standards. In certain cases, in order to make the project commercially viable/ reduce the commercial risk taken by the private sector, the public sector entity may provide funds in the form of VGF, a type of grant, to the private sector partner. In some cases, there can also be an element of revenue share or negative grant / premium to be shared with the concessioning authority during the concession period – either upfront negative grant payable or premium to be shared on a monthly basis with the concessioning authority. This model is more prevalent in the transportation sector, especially in the roads and highways and ports sub-sector in India. Examples of BOT-toll projects are Nhava Sheva Container Terminal, Amritsar Interstate Bus Terminal, Delhi Gurgaon Expressway, Hyderabad Metro, etc. An example of BOT-annuity project is Tuni Anakapalli Road Project.

Figure 112 Typical structure of a BOT project



Design-build-finance-operate-transfer (DBFOT)

DBFOT is a variant of the BOT model with additional flexibility for the private partner with respect to undertaking detailed design of the project during the construction period, based on the output specifications defined upfront in the concession agreement. In case of DBFOT also, the private partner builds, finances and operates the facility for a fixed duration or concession period, and then, the asset is transferred to the public sector authority. Throughout the concession period, the asset is owned by the public sector entity and operated by the private sector partner. Examples of DBFOT model are four-laning of Goa/Karnataka border to Kundapur section of NH17 in Karnataka under the National Highways Development Project (NHDP) IV, six-laning of Vijayawada-Gundugolanu section of NH5 in Andhra Pradesh, a 104.7 km stretch on NH73 under NHDP III in Haryana, etc.

Rehabilitate-finance-operate-transfer (RFOT)

RFOT is similar to other BOT variants. Under this model, a public sector entity enters into a contractual arrangement with a private sector partner to refurbish an existing facility or infrastructure asset, finance, operate and maintain it for a defined period. On expiry of such period, the legal title of the asset is transferred back to the public sector entity. This model is only applicable for brownfield projects. Compared with a greenfield project, the demand/ revenue risk will be low as the facility/asset's demand history will be available and help understand the base-year cash flows. This model is applicable for facilities/ infrastructure assets that require significant capital investment for capacity expansion/ upgradation.

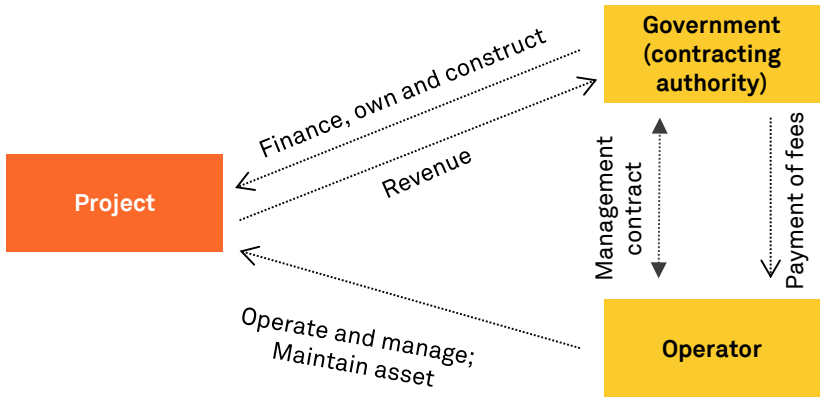
Build-own-operate (BOO)

BOO is also a variant of the BOT model and has a similar structure. Here, the private partner is responsible for construction and O&M of the asset. It also has the responsibility of providing the service/ facility to the users. The ownership of the asset is perpetually with the private partner. This model is mainly applicable for large-scale greenfield projects but is not common in India.

Management contracts

This is a contractual arrangement between a public sector unit and a private sector entity, where the public sector entity owns a particular infrastructure asset and the private sector entity is responsible for the O&M of a part or the whole of the asset/ facility or service. Under the management contracts, the obligation to provide service remains with the public authority, but the day-to-day management of the asset is vested with the private sector. The duration of the arrangement is typically 3-5 years.

Figure 113 Typical structure of a management contract



JV

Typically in PPPs, special purpose vehicles (SPVs) are set up by the private concessionaire, who contributes the long-term equity capital and leads the implementation of the project. In some cases, the public sector entity/ concessioning authority also contributes long-term equity capital in the SPV for a minority share. In such cases, the SPV is established as a JV company between the private and the public sector entity and also can be established between two PSUs, like in gas pipelines. This model is used in cases where the government/ public sector entity wants to have a continued interest in the management and operations of infrastructure assets of strategic importance or assets that require significant financial contribution from the government. The private sector entity will be responsible for financing, designing, constructing, and managing the operations of the project, while the public sector partner will contribute by providing fixed assets such as land, buildings or facilities/ shareholder capital. Examples of this model are international airports in Hyderabad and Bengaluru and some ports.

Public Private Partnership Appraisal Committee (PPPAC)

To streamline the appraisal process for PPP projects, the Cabinet Committee on Economic Affairs (CCEA) approved the procedure for appraisal and approval of PPP projects. The appraisal mechanism for PPP projects is streamlined to ensure speedy appraisal of projects, eliminate delays, adopt international best practices and have uniformity in appraisal mechanism and guidelines. The PPPAC, with Secretary (Economic Affairs) as the Chairman and CEO, NITI Aayog, Secretary (Expenditure), Secretary (Legal Affairs) and Secretary of the department sponsoring the project as members, has been set up with the objective to fast-track the appraisal and approval of PPP projects of all sectors, where the capital costs or the underlying value of the assets is Rs 250 crore or more (except ports and NHDP, where the delegation of powers has been amended). NHDP projects (with civil construction cost above Rs 1,000 crore) and port projects having cost of more than Rs 1,000 crore (under the PPP mode) would need PPPAC appraisal and CCEA approval.

VGF scheme

The scheme for financial support to PPPs in infrastructure (VGF) is administered by DEA, Ministry of Finance, and provides financial support in the form of grants, one-time or deferred, to infrastructure projects undertaken through PPPs with a view to make them commercially viable. The scheme provides VGF up to 20% of the total project cost (TPC). The government or statutory entity that owns the project may, if it so decides, provide additional grants out of its budget up to further 20% of the TPC. VGF under the scheme is normally in the form of a capital grant at the stage of project construction. The scheme requires the project authorities to seek 'in-principle' approval of the Empowered Institution/Empowered Committee prior to seeking bids and obtain the final approval after the selection of the bidder. The actual disbursement of VGF takes place once the private entity has expended its portion of the equity. VGF up to Rs 100 crore for each project may be sanctioned by the Empowered Institution, subject to the budgetary ceilings indicated by the finance ministry. The Empowered Committee is responsible for sanctioning VGF more than Rs 100 crore up to Rs 200 crore for each project, subject to the budgetary ceilings indicated by the finance ministry. Amounts exceeding Rs 200 crore may be sanctioned by the Empowered Committee with the approval of the Finance Minister.

Table 6 broadly captures the major differences between various models (traditional and PPP), though the features mentioned here are indicative and can have further variations depending on the strategic importance and complexity of the project.

Table 6: Comparison among various models available for implementing infrastructure projects in India

Model	Asset ownership during contract	Concession period	Capital investment focus & responsibility	Private partner revenue risk	Compensation for the private sector	Responsibility of the private sector	O&M responsibility	Key differentiating features
EPC	Public	Not applicable	Capital investment borne by the private player and this investment is compensated by the public sector	Variable (depending on the counterparty risk of the concessioning authority)	Payment from public sector/ concessioning authority depends on achievement of predetermined construction milestones	Construction of infra projects as per predefined specifications and performance standards to be met during defect liability period. Others include detailed design, procurement of equipment and raw materials, etc.	Public sector (can be outsourced to third-party contractor on a case-by-case basis)	• Private partner risk is limited to construction phase of the project lifecycle • Funded by public sector through budgetary allocations or directly through IEBR of state-owned PSUs or central PSUs • Used for greenfield (and in some cases brownfield) projects where there is significant demand/ revenue risk leading to viability issues • Construction risk (risk of time and cost overruns) is passed on to the EPC contractor if the EPC contract is on fixed cost basis with liquidated damages

Model	Asset ownership during contract	Concession period	Capital investment focus & responsibility	Private partner revenue risk	Compensation for the private sector	Responsibility of the private sector	O&M responsibility	Key differentiating features
Leasing (for assets which are already constructed and only O&M is to be under taken, except for some variants such as BOLT which are detailed below)	Public	Typically 10-15 years	Nil to low capital investment to be undertaken by the private sector entity (except for BOLT which is detailed below)	High	Revenue from operations/ fee charged to users	Managing, operating and maintaining the asset	Private partner	• Asset is leased out to private partner for O&M • Private partner typically shares a percentage of the annual / monthly revenue from operations with the public sector entity • Leasing contract can also be executed between two private entities • Applicable for brownfield projects

Model	Asset ownership during contract	Concession period	Capital investment focus & responsibility	Private partner revenue risk	Compensation for the private sector	Responsibility of the private sector	O&M responsibility	Key differentiating features
BOT	Right to operate and maintain the asset, besides the collection of user fee, vests with the private player in some sectors such as roads and airports; the public sector entity owns the asset	Varies with projects. Typically long term, 15-30 years, in order to ensure project viability from collection of user fee over a sufficiently long concession period	High capital investment to be undertaken by the private partner	High in case of BOT-toll or BOT-annuity, involves only counterparty risk to be borne by the private player	• Tariff revenue in case of BOT-toll for toll roads projects • Annuity revenue in case of BOT annuity for annuity projects • Revenues from development rights, e.g., non-aero revenues of privatised airports • Termination payment for pre-defined events of termination for various events of default and force majeure events	Financing, building and operating the asset	Private partner	• Advanced form of PPP; produces value for money for public sector if structured well • Private sector optimises life-cycle costs • Applicable for greenfield projects where the demand/ revenue risk is low to high

Model	Asset ownership during contract	Concession period	Capital investment focus & responsibility	Private partner revenue risk	Compensation for the private sector	Responsibility of the private sector	O&M responsibility	Key differentiating features
DBFOT	Similar to BOT	Similar to BOT	Similar to BOT	Similar to BOT	Similar to BOT	Designing, financing, building and operating the asset	Private partner	• Variant of the BOT model, with additional flexibility available to the private sector for asset construction / design based on output specifications defined upfront in the concession agreement • Applicable for greenfield projects where the demand/ revenue risk is low to high
RFOT	Similar to BOT	Similar to BOT	Medium to high capital investment to be undertaken by the private partner	Low as the demand history of the asset will be available	Revenue from operations/ fee charged to users	Refurbishing, financing, operating and maintaining the asset	Private partner	• Applicable for only those brownfield projects where there is need for major maintenance/ capacity expansion

Model	Asset ownership during contract	Concession period	Capital investment focus & responsibility	Private partner revenue risk	Compensation for the private sector	Responsibility of the private sector	O&M responsibility	Key differentiating features
BOO	Private	Perpetual	High investment to be undertaken by the private partner	High	Revenue from operations/ fee charged to users	Financing, building and operating the asset	Private partner	• Asset is perpetually owned by the private partner • Responsibility of providing service/ facility is with the private partner
Management contract	Public	Short to medium period, typically 3-10 years	Nil to low capital investment, to be undertaken by public or private entity	Nil to low	Predetermined fee with performance incentives, in case of normal management contracts	Managing, operating and maintaining the asset	Private partner	• Private partner is responsible for managing, operating and maintaining the asset • Public sector pays management fee to the private partner for managing the asset • Applicable only for brownfield projects

Model	Asset ownership during contract	Concession period	Capital investment focus & responsibility	Private partner revenue risk	Compensation for the private sector	Responsibility of the private sector	O&M responsibility	Key differentiating features
JV	Public and private	20-30 years	High, to be undertaken by the private partner	Medium to high	Revenue from operations/ fee charged to the users	Financing, building and operating the asset	Private partner	• Project company formed is a JV between private and public partners • Applicable for strategic, large-scale, politically sensitive projects • Applicable for greenfield/ brownfield projects

Financing the NIP

The NIP would be financed through sources as shown in Table 7. About 18-20% of the pipeline is expected to be financed through the Centre's budget; About 24-26% is expected to be financed through the state's budget; ~31% would be raised through debt from bond markets, banks and NBFCs; equity from private developers, external aid multilateral and bilateral agencies and internal accruals of PSUs would comprise 4–10%.

The existing sources would be able to finance 83–85% of the capital expenditure to be incurred between fiscals 2020 and 2025. Some proportion of the financing gap can be filled through establishing new DFIs and using asset monetisation as a tool to monetise operational assets at both central and state levels.

Table 7 Sources of funding for NIP projects

Rs crore	Assumptions to projections	Share of NIP being financed
Centre's budget	Centre's budgetary outlay on capital investments is expected to be around 1.25% of GDP	18-20%
State's budget	State's budgetary outlay on capital investments is expected to be around 1.7% of GDP	24-26%
Internal accruals - PSUs	Projected to suffice for the funding requirements of NIP	1-3%
Banks	Expected to grow at an average rate of 8%	8-10%
Infra NBFCs (PFC, REC, IRFC, IREDA, IIFCL and private sector NBFCs)	Expected to grow at an average rate of 12% for public sector NBFCs and 15% for private sector NBFCs	15-17%
Bond markets	Expected to grow at an average rate of 8%	6-8%
Equity	Expected to grow at an average rate of 15% due to NIIF stepping up pace of investments	2-4%
Multilaterals/bilaterals	**Expected to constitute half of the external aid flows**	**1-3%**
Others		**3-5%**
Total		**83-85%**

NIP required outlay – (A)		Rs 111 lakh crore
Total sources of financing– (B)		83-85%
Financing gap– (C) = A-B		15-17%
Bridging the gap -- (D)= (a)+(b)+(c)		6-8%
From new DFIs --(a)		2-3%
Asset monetisation-Centre --(b)		2-3%
Asset monetisation-States– (c)		1-2%
Shortfall-E= (C) –(D)		8-10%

Key assumptions and rationale used to finance the NIP

1. The Centre's budgetary outlay on capital investments is expected to grow at 10% in view of available fiscal space of government. It is growing at CAGR of 13.2%, during fiscal 2018 (A) to fiscal 2021 (BE). As a consequence, as a share of GDP, it is expected to be around 1.25% of GDP between fiscal 2020 and fiscal 2025

2. State's budgetary outlay on capital investments is expected is expected to grow at 10%, it has grown at CAGR 12%, during fiscal 2016 (A) to fiscal 2019 (RE). As a consequence, state's budgetary outlay on capital investments is expected to stay steady as share of GDP, at around 1.7%. Very few outlier states spend more than 2% of state GDP

3. Bank credit to infrastructure has is expected to grow at 8% (it has grown at 3.8%, on average, during fiscal 2016 to fiscal 2019, due to de-growth in fiscal 2017 and fiscal 2018, before rebounding in fiscal 2019)

4. Capital outlay by infra NBFCs (PFC, REC, IRFC, IREDA, IIFCL and private sector NBFCs) is expected to grow at 12% for NBFCs in public sector and 15% for NBFCs in private sector. While the credit stock of public sector infra NBFCs has grown at 12% from fiscal 2016 to fiscal 2018, the credit stock of private sector infra NBFCs has grown at 20% from fiscal 2016 to fiscal 2018, given lower base

5. Bond markets have supplied funds to the infra sector (corporates) at the rate of ~Rs 95,000 crore per annum over fiscals 2015-2018, with growth rates of 35% on average, though it has de-grown by 25% in fiscal 2018. We have assumed growth rate of 8% - given the de-growth in recent past, because these issuances are lumpy, and concentrated amongst few issuers and hence may vary from year to year, the pool of high credit rating issuers are limited and therefore incremental supply of credit through the bond markets may be tempered

6. Equity from FDI and step up in NIIF investments have been assumed to grow at 15%. At NIIF, a substantial increase in investment have been assumed, as it picks up pace. FDI flow of funds to the infra sector is ~Rs 9,500 crore per annum over fiscals 2016-18

The Task Force also notes that significant sums of money are spent on infrastructure through central sector schemes and finance commission grants. These are often provided to state governments/ UTs under the revenue heads of accounts. The Task Force recommends that the Budget division may develop a comprehensive method of mapping infrastructure grants and budgetary support on an annual basis and publish the same as part of budget documents.

The Task Force notes that an Inter-Ministerial Steering Committee on Financing the NIP has been set up in February 2020 with orders of the Finance Minister. The Task Force recommends that the Inter-Ministerial Steering Committee (IMSC) should be used effectively to enable and accelerate private investments in NIP. The Task Force recommends that government grants under the budget should be effectively used as equity multiplier to syndicate domestic equity sources and leverage debt in the market. This could be possible if the budgetary support is channelised through commercial bodies corporate like NHAI. This would make possible achieving the yearly financing target of Rs 20 lakh crore.

Given the massive fund requirements in various infrastructure sectors in the coming years, innovative ways of financing need to be explored. One potential avenue could be more efficient usage of the Central Road and Infrastructure Fund (CRIF), which is earmarked for various infrastructure sectors such as transport (road and bridges, ports, shipyards, inland waterways, airports, railways, urban public transport), energy, water and sanitation, communication and social and commercial infrastructure, as per the provisions of the CRIF Act, 2000, amended by the Finance Act, 2019. The funds for various infrastructure sectors are to be earmarked as per the provisions of the abovementioned Act. The CRIF received Rs 1.13 lakh crore in fiscal 2019 and Rs 1.2 lakh crore in fiscal 2020. The CRIF is a significant source of equity for infrastructure. Since the CRIF is singularly dependent on petroleum product surcharges on excise duty and taking into account the long-term negative outlook on oil consumption, a futuristic plan to strengthen and diversify sources of revenue for CRIF needs to be planned with a view to providing a robust long-term revenue stream for financing the NIP. Hence, the Task Force recommends setting up a Working Group headed by Joint Secretary-Budget (JS-Budget) to study various additional sources of revenue for the CRIF and make suitable recommendations.

Way Forward

Governance Structure and Monitoring

The NIP suggests a governance framework with escalation matrix where monitoring is to be based on threshold levels of TPC, delay in project completion, and delays in land acquisition, and receipt of key approvals/ clearances. This will help all stakeholders in monitoring the implementation of projects by comparing actual progress vis-a-vis initial estimates for each of the NIP projects, which will facilitate timely project implementation. In addition, PRAGATI platform has already been set up by the PMO to follow up implementation of key projects.

This section describes the monitoring and evaluation tool developed with an objective to help all stakeholders monitor the implementation and actual progress vis-à-vis the initial estimates of the NIP projects. The basic elements of the monitoring and evaluation framework are highlighted in Table 8 below.

A. Projects under implementation

a. Mobilisation of project manager, key management personnel and adequate manpower physical resources by developer/ contractor to enable timely completion

b. Projects that are under implementation can be monitored on the basis of actual year-wise capital expenditure incurred with respect to the scheduled annual capital expenditure and key potential issues stalling timely completion such as timely availability of environment and forest clearances, competent authority approval, land acquisition, etc.

c. Further, monitoring key potential issues stalling timely completion mentioned above, can help identify any delay that can happen in implementation of a project due to delay in obtaining any of the clearances/ approvals.

d. Key monitorables can also include the number of projects and expenditure for projects currently under implementation in the NIP. These can be undertaken by monitoring results, tracking against pre-defined milestones and reporting actual progress. Also, using this monitoring tool, key issues can be identified that may stall projects under implementation, the party responsible and the required plan of action

e. By comparing actual financial progress with scheduled financial progress, projects (number of projects and the value of project expenditure) can be categorised in to projects that are ahead of their schedule, projects that are on schedule and projects that are delayed

f. Check potential reasons for time overrun and subsequent cost overruns such as progress in land acquisition, especially progress in availability of unencumbered land and compliance of key conditions subsequent such as availability of forest, CRZ, rail over bridge, and rail under bridge clearances, affecting a particular section of the project

g. Highlight such key issues to concerned line ministries, regulators, etc., and in case key project areas continue to be affected by hindrances, non-availability of clearances, etc., then timely action to be taken by concerned regulators and stakeholders to de-scope the affected area of land from the project and ensure timely completion. This will minimise time and cost overruns

B. Projects achieved financial closure (FC), yet to drawdown funds

a. Such projects should involve monitoring of key conditions subsequent such as clearances obtained/ not obtained and other conditions such as pending land acquisition, for the

hindered area of the project, thus estimating the delay in proceeding to the implementation stage

b. The action plan for this category of projects to include establishing project teams and steering committees to drive smooth preparation and implementation of the project, creation of work-plan based milestones/ project design, robust governance structures and managing risk mitigation activities

c. Ensure timely fulfillment of conditions precedent (CP) and conditions subsequent

d. Completion of designs

e. Timely procurement decisions by GCA and developer/ contractors

C. Projects under development

a. Appointment of project chief executive and key management personnel

b. Projects that are under development can be monitored on the basis of completion of feasibility studies or DPRs, approval from competent authority, clearances obtained/ not obtained and other conditions fulfilled which form a part of the CPs, thus estimating the time required by individual projects for achieving FC

c. Monitor approval from the competent authority and other key clearances that can impact achievement of FC for the project

d. Monitor status of and actual progress in compliance of all CPs and key issues

e. Analysing designs and financing options

f. Maximising private investment through PPP

D. Projects at the conceptualisation stage

a. Projects at the conceptualisation stage can be monitored based on the annual number of projects and annual value of project expenditure for projects at the conceptualisation stage

b. Task Force to monitor progress of projects at the conceptualisation stage

c. The action plan for this category of projects should include tracking preparation of feasibility report and DPR, tracking the status of necessary clearances and approvals

d. Proper analysis of technology choices and cost-benefit analysis

e. Stakeholder and primary user consultations

Table 8 Elements of monitoring and evaluation framework

Category	Project category	Key monitorables	Action plan
I	Projects under implementation	• Monitor actual achievement of project milestone against planned milestone • Monitor financial progress – actual progress in disbursement of debt, grant and equity against stated milestones • Close monitoring of critical issues for timely project completion • Timely highlighting of issues to concerned line ministries and stakeholders	• Results monitoring, tracking against pre-defined milestones, reporting progress • Resolution of key issues stalling progress, required intervention and responsible party • Timely action to be taken by concerned stakeholders as per governance structure and escalation matrix provided in Table 9 • Plan for commissioning project - safety, service levels, staff training, etc. • O&M plan – ToT procurement or own operations
II (a)	Projects under development - Projects achieved FC, yet to drawdown funds	• Compliance of all conditions subsequent specific to relevant milestones and key issues stalling compliance • Monitor contractor/ developer resource mobilisation and staffing • Monitor detailed design finalisation	• Establishing the project monitoring tool – project milestones (cost and time) • Establish steering committee comprising representatives from stakeholders such as lenders and equity investors and assign responsibilities • Facilitate commencement of construction • Training for project team for project implementation • Public stakeholder management

Category	Project category	Key monitorables	Action plan
II (b)	Projects under development - Projects identified and DPR prepared, but yet to achieve FC	• Administrative approval of competent authority • Monitor land acquisition/ environment and forest clearance • Monitor compliance of all CP and key issues • Approval of phasing of financial allocations	• Set up Empowered Committee (in case of large projects) for clearances • Delegate powers to SPV • Negotiate with the government and financial institutions for financial allocations • Conduct detailed financial appraisal and risk management • Design of risk mitigation strategies • Execute procurement processes - EPC and PPP • Hire competent managers for SPV- depends on construction and O&M plan
III	Projects at the conceptualisation stage - Projects announced and approved recently but little visibility on project award, land acquisition, etc.	• Monitor progress in completion of feasibility studies/preparation of DPR • Organising and staffing the project SPV	• Project formulation stage • Map key clearances: environment, CRZ, forest clearance etc. • Monitor the status of land acquisition • Economic, environment and social appraisal • Procurement strategy- EPC/PPP etc • Risk and sensitivity analysis • Technology choice analysis – disaster resilience, inclusiveness • O&M philosophy – ToT, own maintenance • Stakeholder consultation

This section highlights review mechanism and escalation matrix required for various issues plaguing infrastructure projects forming part of the NIP.

Table 9 Suggested governance framework for elimination of cost and time overruns with escalation matrix

Sr. No.	Concerned authority	Focus	Total project cost per project (Rs crore)	Delay in project completion (revised vs original estimated COD)	Delay in pending land acquisition – vis-à-vis initial estimates	Delay in receipt of key approvals/ clearances
1	Cabinet Secretary/Committee of Secretaries	Time and cost overruns	Above 500	Above 6 months	Above 6 months	Above 6 months
2	Inter-Ministerial Steering Committee headed by Secretary of the line ministry	Time and cost overruns	All projects forming a part of the NIP	Any delay	Any delay	Any delay
3	Inter-Ministerial Steering Committee headed by Secretary, DEA, for financing NIP	Financing NIP projects	All NIP projects			

As per Table 9 above –

a) Projects with TPC above Rs 500 crore and having a delay in project completion, land acquisition, or key approvals of greater than six months may be monitored by the Cabinet Secretary headed the Committee of Secretaries

b) All projects forming a part of the NIP will be monitored by the Inter-Ministerial Committee headed by the Secretary of the concerned ministry

c) For infrastructure projects implemented by state governments (without central financial assistance) and the private sector, the same Inter-Ministerial Steering Committee headed by the Secretary of the concerned line ministry, will provide facilitation, essentially focusing on any central clearances and policy reforms required

d) An Inter-Ministerial Steering Committee on Infrastructure Financing has been set up with the Secretary, DEA, as the chair and participation of Secretaries of Financial Services, Expenditure, key line ministries such as MoRTH, Water Resources, Railways, and Chairman SEBI, DG RBI, Chairman SBI, CEO NIIF and market players in the financial sector as required to unlock access to finances for NIP from banks, financial markets and global investors.

Annexure

Annexure 1 – Details of ULB Expenditure

In view of limitation of data, given that most of the ULBs do not maintain books of account, the following methodology is used to estimate the ULB investments:

Table 10 Details of ULB expenditure

Particulars*	Source	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19
A: Growth in urban population (%)	World Bank		2.39%	2.36%	2.35%	2.34%	2.33%	2.32%	2.34%	2.34%
B: Urban population (crore)	12,336	21,281	21,882	17,146				12,166	6,420	230,537
B = Urban population in previous year*(1+A)	All India Census 2011	37.71	38.61	39.52	40.45	41.40	42.36	43.35	44.36	45.39
C: Annual average inflation (%)	RBI				9.4%	5.8%	4.9%	4.5%	3.6%	4.5%
D: Per Capita capita urban expenditure by ULBs (Rs)										
D = Per capita expenditure for previous year * (1+C)				1,130	1,236	1,308	1,372	1,434	1,485	1,552
E: Total capital expenditure by ULBs (Rs crore)										
E = D * B (For FY14 – FY19 and FY13 is actual number)	14th Finance Commission Study			34,188	50,007	54,145	58,122	62,146	65,888	70,435

Note: Red numbers are actuals/ data points, while the other values are derived estimates

Annexure 2 – Key Clearances and Approvals Required

Table 11 Details of key clearances and approvals

Sr no	Legislation/Regulation	Authority
1	Environment (Protection) Act, 1986	Ministry of Environment, Forest and Climate Change (MoEFCC)
2	Forest Conservation Act, 1980 (diversion of forest land for non-forestry purposes - forest clearance)	MoEFCC, state forest department
3	Water (Prevention and Control of Pollution) Act, 1974	Central Pollution Control Board of India (CPCB), state pollution control board (SPCB)
4	Noise Pollution (Regulation and Control) Rules, 2000	CPCB, SPCB
5	Air (Prevention and Control of Pollution) Act, 1981	CPCB, SPCB
6	Environmental Impact Assessment Notification, 2006	MoEFCC, state environment impact assessment authority (environment clearance)
7	Wildlife Protection Act, 1972	MoEFCC
8	Coastal Regulation Zone Notification, 2018	MoEFCC
9	Manufacture, Storage and Import of Hazardous Chemical Rules, 1994; Amendments, 2000	MoEFCC
10	Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016	CPCB, SPCB
11	Tree felling	State forest department
12	Guidelines/criteria for evaluation of proposals/request for ground water abstraction by Central Ground Water Authority	State ground water authority
13	Water (Prevention and Control) Act, 1974; Amendments, 1988 (consent to establish and consent to operate)	
14	Private land acquisition - Right to Fair Compensation and Transparency in Land Acquisition Resettlement and Rehabilitation Act, 2013 Guidelines/policies/rules/statutes for acquisition of land on consent basis by various state governments	Central and state governments

Sl. No.	Legislation/Regulation	Authority
15	License under Factories Act, 1948	Department of Factories, Boilers, Industrial Safety & Health
16	Contract Labour Regulation Act, 1971	Labour department
17	Child Labour (Prohibition and Regulation) Act, 1986 as amended in 2016	Labour department
18	Minimum Wages Act, 1948 and Rules 1980 Payment of Wages Act, 1936 Equal Remuneration Act, 1976	Labour department
19	Workers Compensation Act, 1923 Maternity Benefits Act, 1961 Public Provident Fund Act, 1968 Employees State Insurance Act, 1948	Labour department
20	Explosive and petroleum licences under explosives and petroleum Acts	Petroleum and Explosives Safety Organisation (PESO), Nagpur
21	Public Liability Insurance Act/Rules, 1992	MoEFCC