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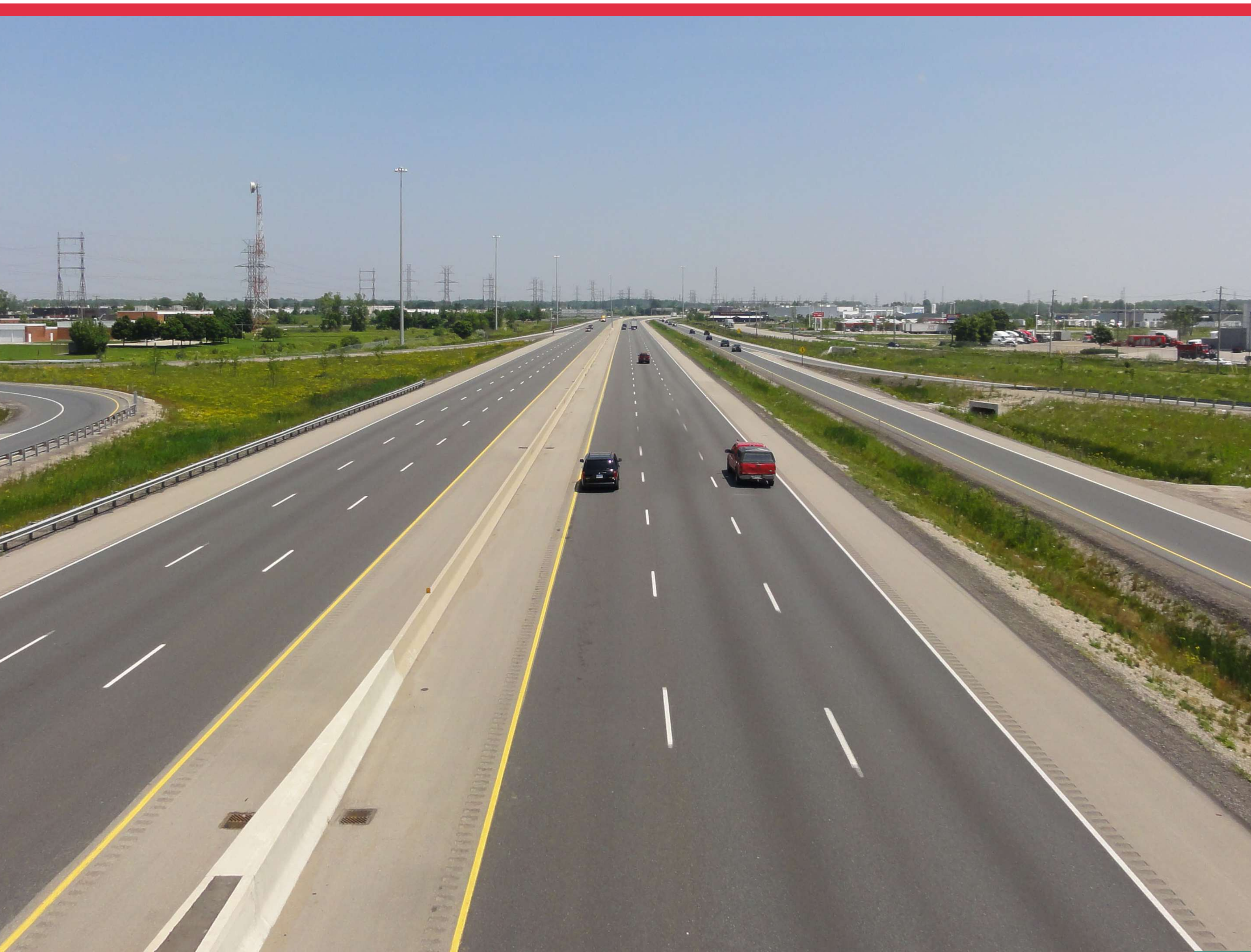
A white paper on Road Sector in India by CRISIL & PHD Chamber



Road Sector in India

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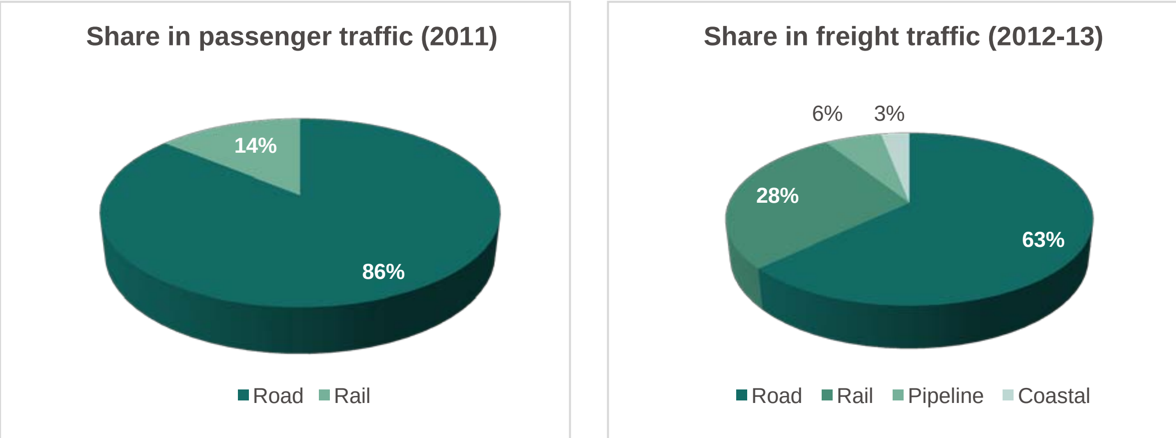
Road transportation in India - outlook

Roads in India have come a long way from pug dandies (created due to frequent walks) of earlier times to a grand system of national highways, state highways and the roads that run endlessly within cities. Today, India has a large and extensive road network aggregating to around 4.8 million kilometers, the second largest in the world after USA. Road transportation is the dominant mode of transportation in India in terms of traffic share. It carries almost 86% of the passenger traffic and 63% of the total freight traffic. *In 2010, road transport accounted for a share of 5.4 percent in GDP, whereas the overall share of the transport sector was 6.4 percent of GDP.*

Figure 1: Share of roads in passenger and freight traffic

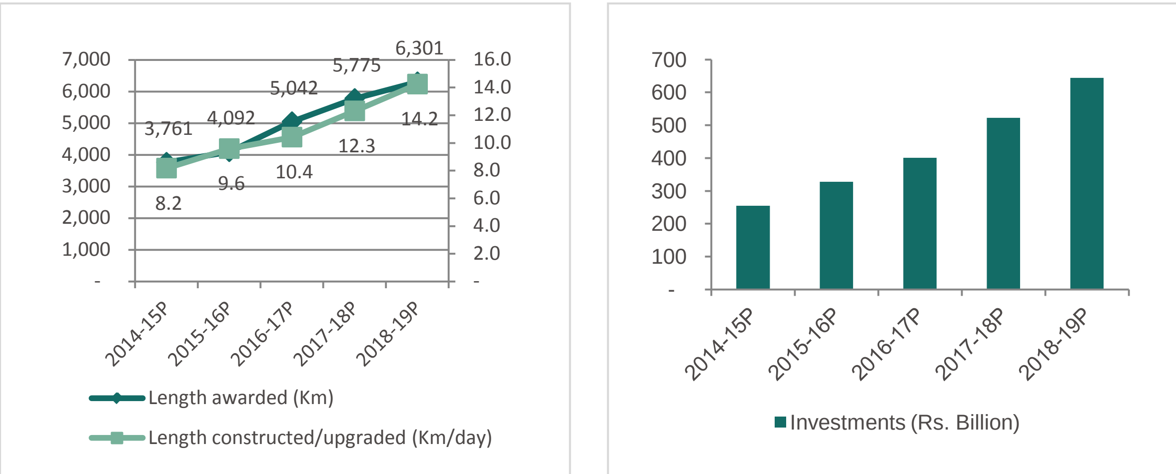


National highways

The execution of National Highway Development Project (NHDP) has declined sharply to 3.2 km per day during Apr-Oct 2014-15 vis-à-vis 4.3 km per day during the same period of the previous year. This sharp decline could be primarily attributed to the termination of a large number of stalled projects.

It is expected that around 3,761 km of national highways would be awarded in 2014-15, with 3/4th of the length to bid out on the EPC mode. The trend shall continue till 2015-16, post which greater participation from the private sector is expected because of improved financial conditions.

Figure 2: National highways' outlook for next five years



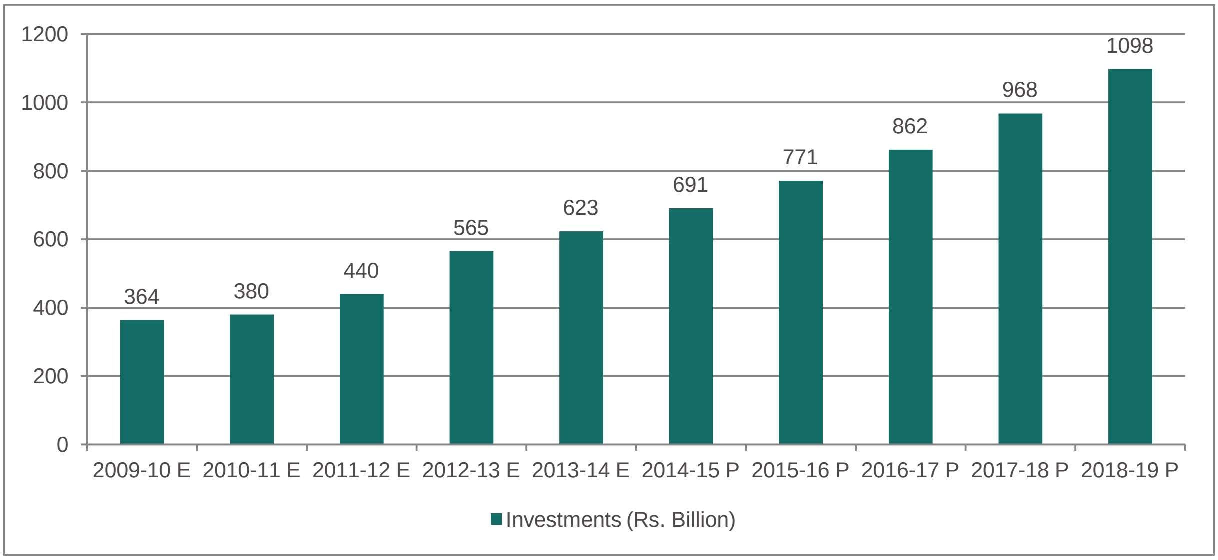
Source: CRISIL Infrastructure Advisory, CRISIL Research

While investments in national highways are expected to increase to 2.2 trillion in the next five years, over half is expected to be by the government in contrast to just about 1/3rd in the previous five years.

State roads

State governments have been increasingly focusing on improving state roads, which in turn has resulted in increased expenditure. The total investments in state roads in the past five years is estimated to be around 2.3 trillion which is expected to increase at 12% on an average in the next five years. Though in the past years, most of the state roads constructed were on the EPC mode, many states have now started to increase private sector participation in road projects via the PPP mode. The states that are extensively evaluating PPP as a preferred mode for road projects wherever feasible include Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Tamil Nadu, Rajasthan and Uttar Pradesh.

Figure 3: Historical and projected investments in state roads



Source: CRISIL Infrastructure Advisory, CRISIL Research

Issues and challenges for road sector

The importance of roads' sector development could not be undermined given the share of roads in the overall transport of goods and passenger traffic. Although the government has been continuously making efforts to accentuate the progress of the sector, several issues and challenges hamper the pace of development. Some of these issues are described below.

Limited financial flexibility of the PPP road developers

Funding constraint and financial stress have thwarted the pace of development in the roads sector. The public-private partnership model for road construction and development acted as a catalyst and provided impetus to the growth of the sector. In the 11th Five-Year Plan, out of the total 10,600 km of national highways completed under NHDP, 50% were funded through the BOT-Toll model and 10% through the BOT-Annuity model. The rise of PPP in the road sector also had some adverse effects. During 2007-2011, which was considered to be the golden age for PPPs in the road sector, road developers bid aggressively to bag more and more BOT-Toll projects.

Consequently, the developers faced viability issues with the projects in the later stages. Issues pertaining to subdued financing, lower traffic and delayed execution have stressed the balance sheets of the developers. The gearing level of many players was high due to sizeable portfolios and some company-specific investments in real estate. For major players, the average gearing in roads-BOT was as high as 4.2 times as of 2011-12. PPP toll projects are now unable to attract any further bidders due to the stressed balance sheet of the developers, resulting from unavailability of financing from banks and stuck equity of the developers in the existing projects. As of FY 14, more than 22 PPP projects saw no bidders from the private sector which has forced the government to shift to government-funded EPC/Cash Contract mode.

In the case of EPC contracts, the quality of the roads constructed has been usually poor as the EPC contractor has no stake in the roads constructed by it, once it is handed over to the government. Further, the maintenance of the roads has been poor after handover to the government, as there is no proper accountability on the quality of the roads in the case of state-owned roads. In the case of PPP projects, the developer is bound to maintain the roads in good condition for a longer period of time, i.e., the concession period.

Delays in project execution and resultant cost overruns

Delays in project execution have posed one of the major hurdles in the development of the road sector. Delays lead to significant cost overruns which lower the returns for the developer as well as adversely affect their debt servicing ability. The reasons for the delays are numerous and include:

- Issues in land acquisition
- Environmental clearances
- Forest clearances
- Railway clearances
- Shifting of utilities, religious structures and encroachments

On an average, a PPP project in the road sector faces 20[1] months' delay and the average cost escalation is ~36% with 50% possibility of occurrence[2]. It is observed that the duration of delay and

[1] *Based on internal study done on 10 projects delayed in road sector*
[2] *Based on internal study done on 10 projects delayed in road sector*

project cost escalation is on the higher side for projects involving interstate road construction due to the involvement of different state agencies. Delays due to acquisition of land in the case of interstate highway development projects are 23 months on an average.

Hurdles in bank funding for road projects

Banks are reluctant to fund road sector projects as they are approaching the sector exposure limits. Moreover, to ensure that delays due to land acquisition do not hinder the progress of the project, they demand 80-100% of the land to be available with the developer at the time of the award of the project. Given the dependence of infrastructure projects on banks for funding, the projects are not able to take off due to such funding constraints.

Reluctance to accept toll

India is yet to warm up to the culture of paying tolls for the usage of roads. The Indian population has not yet completely accepted the importance of tolls for the construction of roads and the improvement of service delivery. Also, the appeasement of people through the provision of subsidies has been a major tool for political gains in the country. There have been several instances where people backed by various political groups have opposed toll plazas. Such instances have not only deteriorated the sentiment of the road developers but have also affected service delivery within the sector.

Policies and initiatives for road sector

The government had taken various policy initiatives to accentuate the growth of the roads sector. Some such initiatives and policies are described below.

100% FDI in road sector

The government has facilitated 100% foreign direct investment (FDI) under the automatic route for support services to land transport such as operation of highway bridges, toll roads, and vehicular tunnels; services incidental to transport such as cargo handling is incidental to land transport; construction and maintenance of roads and bridges; and construction and maintenance of roads and highways offered on build-operate-transfer (BOT) basis, including collection of tolls.

Tax holiday for highway projects

Highway-widening projects qualify for the 10-year tax break under Section 80 IA of the Income Tax (IT) Act.

Rural road development

Taking cognizance of the neglect of up-gradation and construction of rural roads, a widespread program known as the Pradhan Mantri Gram Sadak Yojana was initiated by the government of India in 2000. The primary objective of the program was to provide all-weather connectivity to all identified habitations in the core networks in rural areas. The identified habitations include plain areas with above-500 population and hilly areas with population above 250. It is a 100% central-sponsored scheme and is funded by budgetary allocations, market committee fees, Central Roads Fund, and loan assistance from NABARD, ADB and World Bank.

Road Requirement plan for Left Wing Extremism (LWE):

The government had conceived a Road Requirement Plan (RRP) in 2009-10 for the development of 1,126 kilometers of national highways and 4,351 kilometers of state roads in Left Wing Extremism (LWE) affected districts with projects currently under implementation in states of Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha and Uttar Pradesh at a total cost of USD 1.6 billion. Out of total 5469km length sanctioned, works for 4908km length were awarded. As on 11th Jan 2015, 3299 km length (67%) has been completed incurring an expenditure of Rs. 4374 Crore under this plan.

National Highways and Infrastructure Development Corporation (NHIDCL)

Recently in July 2014, the Ministry of Road Transport & Highways through a fully owned company, National Highways and Infrastructure Development Corporation, has taken up the initiative to promote, survey, establish, design, build, operate, maintain and upgrade National Highways and other infrastructure including interconnecting roads particularly in the North Eastern region and strategic areas of the country. Around 10,000 km of roads including both National and state highways have been identified for up-gradation. The vision will help to boost cross border trade and commerce and help safeguard India's international borders.

Central Road Fund

The Central Government has created a dedicated fund, called Central Road Fund from collection of cess from petrol and diesel. Presently, Rs.2 per litre is collected as cess on petrol and High Speed Diesel (HSD) Oil. The fund is distributed for the development and maintenance of the National Highways, state roads, and rural roads and for the provision of road over-bridges/under-bridges and other safety features at unmanned railway crossings as provided in the Central Road Fund Act, 2000. The FY15 budgetary allocation from CRF towards various initiatives and grants is envisaged to be to the tune of INR 26,151 crores.

Infrastructure Debt Funds (IDF)

IDFs are investment vehicles which can be sponsored by commercial banks and NBFCs in India in which domestic/offshore institutional investors, specially insurance and pension funds can invest through units and bonds issued by the IDFs. IDFs would essentially act as vehicles for refinancing the existing debt of infrastructure companies, thereby creating fresh headroom for banks to lend to fresh infrastructure projects. IDF-NBFCs would take over loans extended to infrastructure projects which are created through the Public-Private Partnership (PPP) route and have successfully completed one year of commercial production. Such take-over of loans from banks would be covered by a tripartite agreement between IDF, the concessionaire and the project authority for ensuring a compulsory buyout with termination payment, in the event of default in repayment by the concessionaire

Partial Credit Guarantee Scheme

The partial credit guarantee scheme is a mechanism of credit enhancement to tap the bond market for infrastructure funding. In such schemes, a higher rated (AAA) entity provides a guarantee to lower rated bonds which in result enhance the credit rating of the guaranteed bond. The enhanced credit rating of the bonds facilitates channelizing of long-term funds from untapped resources such as insurance companies and pension funds. Currently, IIFCL (India Infrastructure Finance Company Ltd.) is conducting pilot PCG transactions.

Other recent developments and initiatives

- The Ministry of Road Transport and Highways has proposed to infuse funds in projects stuck due to cost overruns. There are around 26 such highway projects where the developer is 20-30% short of the revised project cost. The ministry has proposed to allow developers to borrow additional funds from the National Highway Authority of India (NHAI), required to complete stalled projects at a rate lower than that offered by banks. Upon implementation, the policy will help the roads ministry keep up construction activity in the sector, and also reduce the backlog of stuck projects, thereby improving connectivity for users.
- The second proposition is to amend the model concession agreement or the contract signed between NHAI and a developer to build a road, to address issues affecting private sector participation. Other measures also include a policy for rescheduling premium dues a developer owes the government for building highways, and collecting toll from users to provide relief to developers in the backdrop of the economic slowdown.
- Provision of duty-free import of specified modern high-capacity equipment for highway construction

Recommendations

Hybrid PPP models

Though the EPC route for road construction is the immediate solution for current disinterest among developers, PPP is a better long-term solution due to its following implications:

- additional capital
- better management and implementation skills
- value added to the consumer and the public at large
- better identification of needs and optimal use of resources

New hybrid PPP models are also introduced by various agencies to address different issues pertaining to road construction in the PPP model. One such model is "Operation and Performance-Based Road Contracts" (OPRC) that has been introduced by the World Bank. The OPRC model involves payments and incentives for the developer or the contractor on the basis of the quality of the output provided and the extent of achievement of the desired output.

OPRC contracts

OPRC contracts are based on the life-cycle of the project, to address all the concerns related to asset management. The OPRC contracts may extend from the construction phase to the operation and maintenance of the road assets.

An OPRC contract may or may not involve the construction of a road asset. It normally relieves the awarding authority from the liability of maintaining the road assets once the construction is completed and handed over to the awarding authority. Also, if deemed necessary, the concessionaire could be awarded the contract along with the construction of the road projects as well as for operations and maintenance or the asset could be built over EPC mode and then awarded for operation and maintenance to an another bidder. The bids asked for OPRCs include quotations for the following aspects of road asset management.

Table 1: Quotations parameters for OPRC contracts

Sr. No.	Quotation	Unit
1	Management & Maintenance Services	Rupees per month
2	Rehabilitation works	Rupees per kilometer per month
3	Improvement works	Rupees per kilometer per month
4	Emergency works	Bill of quantities

The bids are evaluated on the basis of the net present value of the sum of the above-given quotations.

Benefits of OPRC contracts:

- Better quality of roads for the same level of expenditure
- Reduction of administrative efforts of the awarding or implementing authority
- Incentives for the contractor in respect to the output achieved which make road maintenance an attractive business for road contractors
- Ensured funding for road maintenance
- Satisfaction for road users

OPRC contracts in India:

OPRC contracts are in a nascent phase in India. While states such as Karnataka and Andhra Pradesh have already awarded road contracts under OPRC for some road projects, other states such as Himachal Pradesh, Rajasthan, Tamil Nadu, Gujarat, Punjab and Bihar are still in various stages of awarding under OPRC contracts. Bihar has also drafted a model bidding document for long-term OPRCs.

Shadow tolling

Shadow tolling is one of the mechanisms that have been highly successful in European countries like U.K. and Spain. A shadow toll is a payment mechanism in which the road users do not pay any user fee or toll, rather the concessionaire collects the revenue from the government in proportion to the number of vehicles using the road asset. In such a mechanism, the government may increase the road tax for the user or may impose cess on fuels like diesel or petrol. The shadow tolling system makes the service free for the users whereas the burden on the government is also reduced as the source of the funds for the operational and maintenance expenditure is the cess that is imposed on the fuel or the incremental road tax levied. Shadow toll is also considered very effective as the imposed cess on fuel is minimal since it gets distributed amongst all the citizens purchasing the fuel; also, the road traffic is not affected by high increase in the tolls. The given attributes of the shadow tolling system makes it economically and socially beneficial. Also, shadow tolls could be an important mechanism in intra city roads where the users do not have an ability to pay toll or where the acceptance of toll is less.

Encouraging new financial schemes to reduce stress on bank funding

As discussed, one of the issues that hampers the growth of the roads sector is the financing of road projects. Given the deterrence of banks from lending to road sector projects, new financing arrangements should be made to encourage developers to take up the projects. Bank finance is the prime source of funds for infrastructure projects in India especially in the context of PPPs. In order to relieve the sector from financial constraints, the government has taken various initiatives such as setting up infrastructure debt funds (IDF) and launching a partial credit guarantee scheme (PCG) by IIFCL to fund operational infrastructure projects. However, banks are usually reluctant to sell the loans of operational projects, as they feel that they are less risky. This is because banks in India do not follow risk-based pricing and charge the same interest rates during the construction and operational phases. Encouraging banks to follow the risk-based pricing model and use new initiatives such as IDF and PCG will reduce the stress on the banking system and provide alternative sources of funds to developers. Some of the other financing mechanisms that could be considered to improve access to finance to enable easier access to finance road projects are discussed below

Subordinated lending from dedicated public funds to improve access of developers to debt finance

Dedicated funds could be set up using contributions from the government and / or multilateral institutions to enable developer’s access to finance from financial institutions/bond markets. The subordinated debt provides more cushion for banks, and would thus encourage them to lend to developers in the current stressed scenario. This will help the developers to bid for more projects and enhance their debt servicing ability which would result in incremental awarding and construction of roads.

Promoting bond guarantee funds to increase access to bond market

Currently, infrastructure projects are predominantly financed through banks in India. Another alternative channel for sourcing infrastructure finance is the bond market in India. A well-functioning corporate debt market could play a critical role by supplementing the banking system to meet the requirements of the corporate sector for long-term capital investment and asset creation. However, bond investors are credit-risk averse and prevented by regulations and / or internal investment policies from investing in issuances rated less than AA. Infrastructure projects, often, are rated below AA, thereby restricting their access to bond market.

In this context, a bond guarantee fund could be created to work as a credit enhancement mechanism, providing guarantees to long-term bond issuances by entities in the infrastructure sector of issuers with credit rating less than AA (category); through this credit enhancement, these bond issues would achieve a structured rating of AA or above and would therefore be able to attract bond market investors. Globally, funds such as Credit Guarantee and Investment Facility and Danajamin, Malaysia provide guarantee against debt instruments. CRISIL Infrastructure Advisory has been appointed by ADB to ascertain the feasibility and design such a fund in India.

Establishment of dedicated road fund by states

It has been observed that the lack of funding is one of the key factors that lead to poor maintenance of state roads built especially on the EPC mode. To resolve this issue a dedicated road fund could be created by various states in order to eliminate the funding constraints for maintenance of the roads as well as the construction of new roads. The revenue sources for such funds shall include transfers from the central road fund, infrastructure cess, additional levies on diesel and petrol, road tax and other surcharges, state’s share of toll revenues or market borrowings. The fund could also be empowered to issue bonds for raising funds. The states can establish such fund with dedicated funding mechanism for the road sector through appropriate legislative action.

Protection against uncontrollable factors that lead to delays

It has been observed that a large number of infrastructure projects are stalled due to issues that are not in control of the developers. A project completion risk guarantee facility that could cover the developers by providing a guarantee to infrastructure projects against risk factors such as land acquisition issues, delay in obtaining environmental and forest clearances, local protests, delay in provision of right-of-way etc. should be established. Indonesia has established such a fund called the Indonesia Infrastructure Guarantee Fund to guarantee projects against completion risks. The establishment of such a facility can encourage developers and can rejuvenate the attractiveness of road projects as a business. Currently, the Asian Development Bank has appointed CRISIL Infrastructure Advisory to evaluate the possibilities of developing a project completion risk guarantee facility in India.

Awareness programs for acceptance of toll

The government should conduct awareness programs for citizens to make them understand that tolls are essential for ensuring high-service quality. There needs to be political will to gradually remove subsides from the road sector. It could be started with roads with high economic / traffic potential and gradually extended to projects with lower traffic potential.

About PHD Chamber of Commerce and Industry

PHD Chamber of Commerce and Industry, established in 1905, is serving the Industry for last 110 years. It's a proactive and dynamic apex organization working at the grass-root level with strong National and International linkages. It has direct and indirect membership of about 48,000 companies. PHD Chamber acts as a catalyst in the promotion of industry, trade and entrepreneurship and has been actively contributing to the policy making exercise of Government of India as well as organizing seminars and interactive meets to facilitate in-depth solution oriented discussion on topical issues. We are also in regular touch with over 75 counterpart Chambers abroad.

In its endeavor towards capacity building in the country, PHD Chamber organizes focused entrepreneurial development training programmes in cooperation with the Konrad Adenauer Foundation of Germany. Through the support of its members, the Chamber has been regularly contributing in cash and kind towards relief and rehabilitation of the victims of natural calamities and disasters. In keeping with the motto adopted 'Ethics is Good Business', PHD Chamber confers Awards for Excellence annually.

At last but not the least PHD Chamber's offices at New Delhi, Chandigarh and Lucknow provide modern conferencing and catering facilities for corporate events, board meetings, training programmes, etc. With a modern auditorium, several conference and meeting rooms to suit different requirements and also a business centre, while the ambience is international, the cost is economical.

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CRISIL is a global analytical company providing ratings, research, and risk and policy advisory services. We are India's leading ratings agency. We are also the foremost provider of high-end research to the world's largest banks and leading corporations.

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CRISIL Infrastructure Advisory is a leading advisor to regulators and governments, multilateral agencies, investors, and large public and private sector firms. We help shape public policy and enable infrastructure development. Our services span a wide array of infrastructure development activities. Our work in the areas of policy formulation, regulation, design and implementation of public-private partnership (PPP) frameworks and infrastructure financing mechanisms helps create a vibrant ecosystem for infrastructure development. Our services at the project level include bid process management, valuations and due diligence to enable investment decisions. We are known for our core values of independence and analytical rigour combined with deep domain expertise. Our teams have expertise across the complete range of infrastructure sectors - urban development, energy, transport and logistics, natural resources, education, and healthcare. We have a rich understanding of PPP and financing related issues. We operate in India and 22 other emerging economies in Asia, Africa, and the Middle East. CRISIL Infrastructure Advisory is a division of CRISIL Risk and Infrastructure Solutions Limited, a wholly owned subsidiary of CRISIL Limited.

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