

Role of Public Private Partnership in India's National Highways

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Abstract: In this paper, the author has studied the private sector participation in road projects being developed as a part of the National Highways Development Programme (NHDP). Our data set is by far the largest and covers all of road projects that have been taken up for up gradation under various phases of the NHDP so far. We have discussed various issues related to the PPP policy and its limited success. We have analyzed the efficiency properties of PPP contracts. However, the focus of the study is on the following questions: Why have some projects attracted private investment while others have not? Why are PPPs more successful in some states and not so in the other states? We have shown that the richer states have attracted more PPPs than the poorer states. Other things remaining the same, the probability of PPP is higher for projects located on national highways connecting richer states, and those located closer to mega cities. Similarly, ceteris paribus, states with better governance index and projects located in them have higher probability of attracting private investment. Empirical evidence in support of these claims is conclusive and robust. In the light of our findings, we have answered the following questions: Is PPP a viable and desirable public policy for development of infrastructure in poorer states? What are the lessons emerging from the Indian experience with PPPs so far?

Keywords: Public Private Partnerships, PPPs, Roads, National Highways, India, NHDP.

1. INTRODUCTION

The National Highways Authority of India (NHAI) awarded an all time high of 48 Public Private Partnership (PPP) projects for a length of 6380 km. This has been a consequence of a journey of evolving a PPP framework through an appropriately designed Model Concession Agreement (MCA) since the mid nineties. By 1995-96, road had become the dominant mode of transport with 60% share in freight and 80% share in passenger traffic. 38,500 kilometers (km) of National Highways (NH) formed about 1.93% of the nearly two million km total road network, but carried about 40% of total road traffic [1]. With liberalisation of the Indian economy, it was felt that road infrastructure had to be strengthened. India witnessed great strides in road development especially after the inception of National Highway Development Programme (NHDP) in 1999. Of the 55,448 km of two/four/six/eight lanes earmarked under NHDP Phases I to VII, 14,740 km has been completed, and 9,628 km is under implementation by 2010-11. Among NHDP projects, PPP in the form of Build Own Transfer (BOT) (Toll) projects picked up well since 2005. The share of BOT (Toll) mode of delivery in NHDP projects increased to 89% and 74% respectively in 2009 and 2010 [2]. Increased adoption of BOT (Toll) was facilitated by policy initiatives of Government of India (GoI) and the evolution of MCA for BOT (Toll) road projects into a well balanced document. This paper discusses the various policy initiatives taken by the GoI to improve NH through PPP from early nineties till 2009 and the evolution of MCA for BOT (Toll) projects.

One set of issues concern the efficiency properties of these contracts. In particular, are contracts signed between the government and the consortia governed by efficient rules? In this paper, we undertake economic analysis of these laws to find out whether these are 'good' laws. We have argued that while the governing laws for PPP contracts have several desirable and efficiency enhancing features, the enforcement of these laws is far from satisfactory. Apart from streamlining the institutional framework for PPPs, since 2005 the government has taken several initiatives to attract private investment in roads. Therefore, a study on the performance of these policy initiatives is called for. As far as the success of PPP is concerned, our analysis reveals that policy initiatives undertaken during 2005 and 2006 have made a favorable impact on private sector participation in roads. Since 2005, the number of PPPs has gone up significantly. However, this increase in private sector investment is attributable to other factors, like learning effects and economic boom as well.

However, there is something very striking about the distribution of PPPs on national highways. PPPs are not uniformly distributed; they are concentrated in only some parts of the country. Some states have been more successful in attracting PPP contracts than the others. To put this observation in perspective, started in 1999, the National Highways Development

Programme (NHDP) is an ambitious seven-phase programme undertaken for expansion and up gradation of national highways. So far NHAI has started work only on Phases I, II, III and V. National highways (NHs) covered under these phases span across most states in the union of India. Therefore, the up gradation work on NHs has been (is being) undertaken in most states. Wherever possible the NHAI has tried to award Up gradation works on PPP basis. However, some states have attracted more PPPs than others. That is, investors have shown preference for some states over others. On its face, this outcome may appear somewhat intriguing. First of all NHDP is sponsored by a single agency, that is, NHAI. Moreover, this programme is governed by the laws that are made at the level of the central government and are uniform across the country. If so, why have some projects attracted private investment while others have not? Why are PPPs more successful in some states and not so in the other states? These are important questions, which we will discuss and answer in this paper.

2. The Evolution of Public Private Partnership

After realising the need to involve the private sector in the development of roads, in 1992, the GoI amended the National Highways Act 1956 to empower GoI to levy fees for services or benefits rendered in relation to the use of sections of NH, in addition to the existing provisions for the use of ferries, temporary bridges and tunnels. To attract private investment, the GoI initiated measures in 1994-95 like declaration of road sector as industry to facilitate borrowing on easy terms and permission for floating of bonds, relaxation in Monopolies and Restrictive Trade Practice to enable large firms to enter the highway sector and reduction in the custom duties of construction equipment. The Expert Group on the Commercialization of Infrastructure Projects headed by Rakesh Mohan in 1995-96 estimated that Rs 32,000 cr was required from 1996-97 to 2000-01 and Rs 63,000 cr from 2001-02 to 2005-06, in the road sector alone.

Meanwhile, Ministry of Surface Transport (MOST) had also estimated that Rs 40,000 cr was required to four lane 14,000 km of two lane NH. These studies confirmed that budgetary support alone was not enough to address the task of building NH on this scale and led to the concept of PPP in the form of BOT (Toll). In BOT (Toll), the private operator built the road, maintained and operated it by levying toll from the user for a period of concession, at the end of which the project was transferred to the GoI. Exhibit 1 shows different modes of delivery in NH projects. In 1995, the GoI amended the National Highways Act 1956 to empower itself to enter into an agreement with any person in relation to the development and maintenance of the whole or any part of a NH and entitled the person to collect and retain fees for services rendered regarding expenditure involved in building, maintenance, management and operation of the whole or part of such NH, interest on the capital invested and reasonable return. To streamline the process and to implement the NH development plans of MOST, National Highways Authority of India (NHAI) was established in February 1995 on the basis of National Highways Authority Act enacted in 1988.

A suitably designed policy can motivate the private sector to invest funds in the construction and maintenance of road facilities. Therefore, PSP can supplement public investment in road infrastructure. In addition to providing financial resources, PSP has potential of bringing in cost efficiency. As compared to the public sector, private sector firms have a better structure of incentives and sanctions. They have stronger motivation to earn good returns on the investment. The private sector also has greater flexibility in adjusting its resources (personnel, equipments and materials) to constantly changing circumstances. Private firms optimize resource allocation among the initial construction phase and the maintenance and operation phases later on. The argument goes that as a result, compared to traditional government funded infrastructure projects, instances as well as magnitudes of time and cost overruns are significantly lower for PPPs. Moreover, there are claims that private firms can manage the demand and supply curves in a more rigorous way than the public sector. Therefore, wherever there is scope for financing a project through direct user-fee, investors can use toll fee to recoup their money. In addition, it is argued that a developing country like India can benefit from participation of foreign firms in infrastructure. Foreign firms are expected to possess superior construction techniques, equipments and cheaper finance.

This note, wherein the principles of four laning, BOT, bidding, government grant, tolling (as long as there existed a 'reasonable' non tolled alternative), etc, were specified, was approved by the cabinet in Jan 1997. Further to the cabinet approval, a High Powered Committee (HPC) was constituted in January 1997, under the Chairmanship of Secretary, MoST to formulate BOT terms and conditions for the approval by the cabinet. The task for HPC was to take one or two pilot projects in the expansion of existing NH and construction of new expressways for evolving standard BOT terms and conditions which inter alia included evolving the MCA. During 1996-97, the GoI took some more measures to speed up NH projects like promulgation of an ordinance for invoking eminent domain for land acquisition, exemption from environmental and forest clearances for widening existing NH, levying toll for road sections funded from the budget,

allowing BOT (Annuity) model, permission for NHAI to become partner in the Special Purpose Vehicles (SPV) created by private players for road development, compensation to the private players for unforeseen circumstances and external assistance from multilateral agencies.

Therefore, the policy essentially provided for two kinds of contracts – BOT toll contracts and BOT annuity contracts. BOT toll contracts are of various types, for example, BOT, DBOT, BOOT etc. The latter types are designed so as to provide greater flexibility to the investors. Under a BOT toll contract, the concessionaire recovers his investment by way of charging toll from the users of the road facility. Therefore, under these contracts the concessionaire bears the entire risk with respect to toll income. Under a BOT annuity contract, the concessionaire is assured a minimum return on his investment. Therefore, under a BOT annuity contract, the government bears the entire risk with respect to toll income. There is yet another form of contracts named as Special Purpose Vehicles (SPVs). SPVs are formed by one or more entities specifically for one project. The (state) government can be one of the partners. As far as the allocation of the risk is concerned, these contracts are similar to BOT toll contracts.

However, not much success was achieved. For example, out of the total 7507.97 Kms of national highways marked under first phase, only 1349.72 were upgraded through PPP contracts.

Models of PPP adopted in India

The two models of PPP adopted in India for the development of National Highways are BOT (Toll) and BOT (Annuity).

(a) BOT (Toll) Model: In the BOT (Toll) model, the Concessionaire recovers his investment by charging toll from the users of the road facility. This model reduces the fiscal burden on the government while also allocating the traffic risk to the Concessionaire. This is the model used for most of the projects and can be regarded as the default model for highway projects.

(b) BOT (Annuity) Model: Under a BOT annuity model, the Concessionaire is assured of a minimum return on his investment in the form of annuity payments. The Concessionaire does not bear the traffic risk and the Government bears the entire risk with respect to toll income.

Table 1. Projects awarded under BOT (Toll) and BOT (Annuity) during Eleventh Five Year Plan

Year	BOT (Toll)		BOT (Annuity)	
	No of Projects	Length (km)	No of Projects	Length(km)
2007-08	8	1,109	1	36
2008-09	8	643	-	-
2009-10	34	3,085	3	177
2010-11	28	3,057	20	1,577
2011-12	47	6,231	2	247
Total	125	14,126	26	2,037

3. Performance of PPP policy

Table 1 provides year-wise breakup of the number of PPPs that have come up on national highways. The first PPP on national highways was construction of a railway over bridge (ROB) at Kishangarh located in the Ajmer district of Rajasthan. This segment was formed in March 1998 on NH 8 and was developed on BOT basis. Since then the number of PPPs has been increasing gradually over the years. It has significantly picked up since then. Seemingly, the policy interventions made in 2005 and 2006 to woo private investment in road projects have had a desirable impact on the

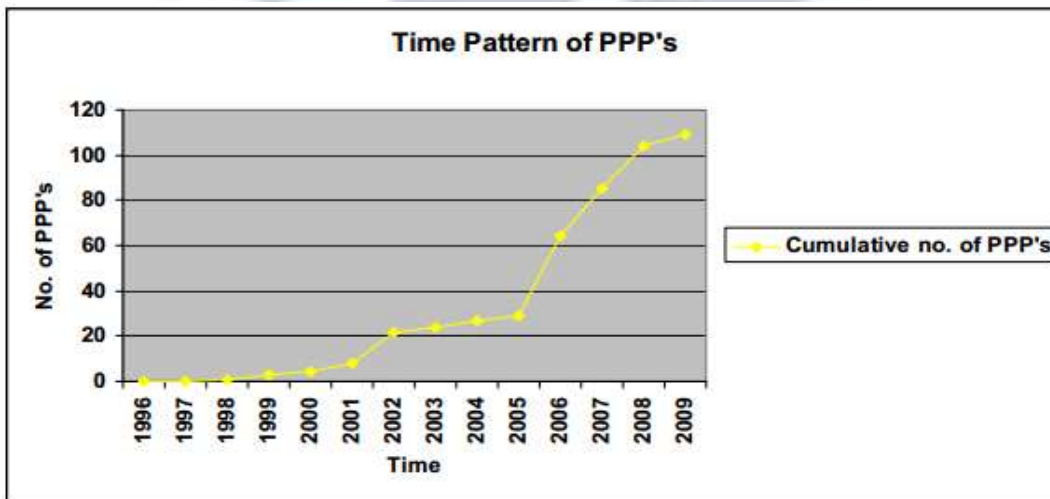
investors. Alternatively, the spurt in PPPs since 2006 might have been triggered by the exuberance generated by an unprecedented growth of Indian economy in the recent years. In the next section, we will investigate plausibility of these and other possible explanations for the growth and the distribution of PPPs across Indian states.

TABLE 2: Growth of PPPs projects in Roads over the years

TIME	NO. OF PPP's	Cumulative no. of PPP's (BOT Toll + BOT annuity + SPV)
1996	0	0
1997	0	0
1998	1	1
1999	2	3
2000	1	4
2001	4	8
2002	14	22
2003	2	24
2004	3	27
2005	2	29
2006	35	64
2007	21	85
2008	19	104
2009	5	109

The PPP Database

This is one of the important prerequisite for the PPP projects. The PPP database is collection of project information on PPP projects undertaken in India. The database is maintained, on regular basis, on the sectors namely Airports, Education, Health Care, Ports, Power, Railways, Roads, Tourism and Urban Development. The data for the same is collected from various PPP nodal agencies of the Government and from project owners or investors. The database contains general information about the project like, location, sector, type of the PPP project, status, bidding information (such as contract award method, contract signing date, financial closure etc.), project benefits and costs, legal instruments and financial information about investor holdings, total debt and equity etc. The database captures all the PPP projects on the sectors from 1996 in India and is updated regularly with any new development – in the existing and under construction projects. The new projects are updated as and when they are in the public domain. The database covers only those projects that are approved by the Government of India, State Governments or local bodies.



GRAPH 1: Growth of PPPs in Roads over the years

Profile of Concessionaires in PPPs

Table 2 shows nationality-wise break-up of PPPs on national highways. For example, out of a total of 134 PPPs, 43 have been formed by Indian firms. The table also provides nationality-wise break-up of the distance covered by PPPs on national highways. As is clear from the table, many investors in PPPs are Indian firms. About one third of all PPPs have been formed by Indian firms; together accounting for at least one fifth of the distance covered by all PPP projects. As far as foreign participation is concerned, it is dominated by Malaysian and American firms. In most cases of foreign participation, the foreign firm and an Indian firm form a consortium to bid for projects. The bidding rules have encouraged Indian firms to opt for joint venture with foreign firm(s). The rules for the Request for Qualification as well as for the final Request for Proposal stages provide weights to prior experience and financial soundness of the bidders. Foreign firms generally have longer experience and easier access to capital in international market. Therefore, a consortium of foreign and Indian firms stand better chances of qualifying the short listing criteria as well as winning the bid. The following shows the profile of major Indian players in PPPs.

4. The beginning of Faster Construction of National Highways

The Ministry of Road Transport and Highways has decided to adopt the Engineering Procurement and Construction (EPC) mode for National Highways which are not viable on Public-Private Partnership (PPP) basis. The Twelfth Five-Year Plan envisages the construction of 20,000 km of 2-lane National Highways projects through EPC mode. The Government has adopted the EPC mode of construction to ensure implementation of projects to specified Standards with a fair degree of certainty relating to cost and time and with a view to enabling a transparent, fair and competitive roll out of National Highway projects. The EPC mode is different from the conventional Item Rate Contracts. Experience has shown that such contracts are prone to excessive time and cost over runs. The EPC mode assigns the responsibility for investigation, design and construction to Contractors for a lump sum price awarded through competitive bidding, wherein provision for index based price variation is made³⁰ As per this initiative, training programmes on the EPC mode of construction for the officials of the State PWDs, shall also be organized in all the States along with the review meetings. The Ministry of Road Transport and Highways has also decided to conduct critical review meetings of the National Highway works, in the respective States. The new initiative has been adopted to resolve the hindrances in the

Conclusions

A paradigm shift in favour of BOT (Toll) is evident over the last two decades. This is mainly due to strong framework developed in the form of PPP. The key contribution of PPP in various aspects of Toll projects is summarised as follows:

The idea that private provision of infrastructure represented a way of providing infrastructure at no cost to the public has now been generally abandoned; however, interest in alternatives to the standard model of public procurement persisted. In particular, it has been argued that models involving an enhanced role for the private sector, with a single private-sector organization taking responsibility for most aspects of service provisions for a given project, could yield an improved allocation of risk, while maintaining public accountability for essential aspects of service provision.

PPPs are organized along a continuum between public and private nodes and needs as they integrate normative, albeit separate and distinct, functions of society—the market and the commons. A common challenge for PPPs is allowing for these fluctuations and reinforcing the intended partnership without diminishing either sector. Multisectoral, or collaborative, partnering is experienced on a continuum of private to public in varying degrees of implementation according to the need, time restraints, and the issue at hand. Even though these partnerships are now common, it is normal for both private and public sectors to be critical of the other's approach and methods. It is at the merger of these sectors that we see how a unified partnership has immediate impact in the development of communities and the provision of public services..

With the introduction of revenue sharing model in lieu of upfront negative grant, the road projects implemented under BOT (Toll) have become the perennial source of revenue for the government. This also ensured that the windfall profit is shared among the concessionaire and government and the reduced revenue for unexpected reasons did not affect the concessionaire much.

By and large, the delay in projects is mainly due to delayed availability of site for construction. By insisting 80% availability of project site on the appointed date and ensuring that the authority accepted this clause, the MCA assured there was no delay in projects due to site handover.

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