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More highways should be built by States

Contrary to general perception, State highways are of better quality, cost less and are built faster than national highways

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In recent times, public-private partnerships (PPPs) have emerged as the preferred approach of the Central government to develop roads in India. The traditional, fully government-driven procurement method of engineering-procurement-construction (EPC) is adopted only when a PPP does not seem to be feasible.

The PPP model itself has undergone several modifications based on bidders' responses. For example, with bidders showing waning interest in the traditional toll or annuity PPP models, the government introduced the hybrid-annuity-model.

Similarly, announcement of the toll-operate-transfer model by the government in 2018 sought to further deepen and refine the PPP approach in the road sector. Have PPPs delivered roads more successfully than the traditional EPC approach?

A comparison (Table 1) shows that roads built using the PPP model are on average longer compared to EPC roads. However, the unit cost (per lane-kilometer) did not show much variation across the two approaches, indicating an apparent absence of economies of scale benefit in the longer PPP stretches.

Where PPPs have scored is in the speed of construction. Private developers have cut down construction time by a whopping 63 per cent compared to what the government takes. In terms of construction performance, while PPPs exhibit lower time overruns, EPC projects have lower cost overruns.

However, our results vindicate the government thinking that use of PPP helps in faster capacity creation. A major drawback of the PPP approach is its restricted applicability:

road projects that suffer from low traffic or revenue estimates, are in politically uncertain environments or hostile terrain and are unlikely to generate the interest of private developers.

Nodal agency matters?

The major roads in India are the national and State highways. National Highways (NH) are built, financed and maintained by the Central government whereas State Highways (SH) are developed by the respective States' public works department.

In recent years, the National Highways Authority of India (NHAI) – an autonomous agency of the government responsible for the development, maintenance and management of national highways, totalling almost 100,000 km in length – has played a major role in developing the country's road network such as the North-South and East-West corridor and the Golden Quadrilateral.

More and more projects are being brought under the ambit of NH programme as funds-starved State governments are finding it difficult to embark on large infrastructure projects. But is that the right approach for highway development?

A comparison of data on national and state highway projects (Table 2) is revealing: State highways show superior construction characteristics than national highways. This is in stark contrast to the common perception that NHAI is more capable and more professionally managed than the highway departments of the States.

Amongst PPP roads, State highway projects cost 42 per cent less and are completed 33 per cent faster than NH projects. In the case of EPC roads, SH projects take as

Table 1
Comparison of PPP and EPC road projects...

Description	PPP Projects	EPC Projects	... and NH and SH road projects			
			PPP Projects		EPC Projects	
			NH	SH	NH	SH
Road length (km)	82	54	84	94	58	49
Project cost (₹ crore)	237	86	476	128	173	46
Unit cost (₹ crore per lane-km)	0.9	0.9	1.2	0.7	0.9	0.6
Time taken to construct one lane-km (days)	6	16	9	6	16	15
Cost overrun	18%	9%	28%	13%	10%	8%
Time overrun	40%	70%	46%	38%	79%	64%

Table 3
Comparison of NHAI and State Highways Department

Description	NHAI	State Highways Department
Institutional structure	Autonomous agency of Government of India	Part of the State Government
Funding	Can raise large volume of funds at low cost due to Government of India guarantee	Largely dependent on the state government's budgetary allocation
Land acquisition and project clearances	Dependent on various State government departments, requiring Centre-State coordination	Dependency lies within the agencies of the State government
Understanding the pulse of the local people	Moderate	High
Systems and processes	Extensive, robust, streamlined and formal. Most of the project info is made publicly available	Relatively less formal. Little project information is shared publicly

long as NH projects, but at 33 per cent lower cost. Further, our regression estimates show that, across both approaches, State highways exhibit lower cost and time overruns, after controlling for State-level differences.

Likely reasons

A comparison of NHAI and the Highways Departments of State governments (Table 3) can point to possible explanations.

First, the development of roads needs several issues to be addressed at a local level. Issues such as land acquisition, replacement of project-affected people, availability of supporting facilities during project development, public hearings and discussion with the local community, and so on, play a significant

role in road projects.

With ears closer to the ground, State governments might be better placed to resolve these issues than Central government agencies.

Second, many of the clearances that need to be obtained for highway projects fall within the purview of the State government. Co-ordination across different departments of the State government to obtain these clearances appears easier compared to co-ordination between the Central and State governments.

And, finally, State highway departments do not have access to capital to the same extent as the NHAI and, therefore, might be inclined to use their limited budgets more efficiently.

Irrespective of the exact reason

for the superior construction of State highways, the empirical evidence on construction performance forces us to look at highway development in our country in new light.

The strengths of the State highway departments, which seem to have been overlooked in recent years, should be recognised. Whether PPP or EPC, it appears that more projects could be brought under the domain of State highway departments.

The footprint of more cost-effective State Highway projects can be enlarged, while reining in the expansion of NHAI.

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