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theirview

The conundrum of PPP road projects

The government should focus on making the project development ready at the time of award to attract more private sector interest, rather than changing the concession model

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Developing road networks in a timely and cost-effective fashion plays an important role in economic development. In recent years, the government has extensively adopted the public private partnership (PPP) approach in road development. Today, India has the distinction of having the largest PPP programme globally in the roads sector. More than 560 road projects comprising a total length of 45,000 km with an estimated investment exceeding ₹200,000 crore have been awarded on PPP basis so far by the Centre and various state governments.

PPP road projects broadly fall in one of the two categories of toll or annuity, though many recent projects are being implemented under a hybrid annuity model. Toll and annuity projects vary mainly in the way the developers recoup their investment. In the former, the road developer collects toll from the users, whereas in the case of the latter, the developer receives predefined annuity payments from the government. While the private developer assumes the demand risk in toll projects, it is not the case with annuity projects. With more than 75% of the PPP projects being implemented using the toll model, it remains the preferred approach for policy makers.

A basic difference between the toll and annuity projects is in the risk-reward equation. In the case of annuity projects, the developer does not assume any demand risk, but the upside is capped. However, in toll projects, the private developer assumes the demand risk, but would also benefit if the traffic growth is more than what is assumed.

INVESTMENT IN TOLL PROJECTS

While PPP in roads has multiple objectives, the fundamental reason for going for the PPP route in India is that it helps to attract private sector capital. Private developers will consider bidding for toll-based PPPs if they see a sensible risk-reward balance, because the private sector by its very nature will pursue the path of higher returns rather than settle for modest returns. If the scales can be tipped towards private sector investing in toll projects, it would reduce the fiscal burden on the public sector. Under what conditions would private sector invest in toll projects? A comparison of toll and annuity projects provides some pointers (see table).

Toll projects in general are characterized by longer stretches, and therefore higher project costs. They also have more structures as compared to annuity projects, indicating that they could have a higher degree of complexity. But the estimated unit project costs are lower, indicating that developers are able to achieve economies of scale associated with longer stretches. The average value of state domestic product indicates that toll projects are seen in those states that are more developed and where economic activity is higher, indicating the possibility of higher toll collections. It shows that annuity projects have higher debt levels indicating that lenders perceive a lower risk in such projects. But, more importantly, we can also see that private developers are willing to invest higher equity provided the expected returns from the project are also higher. The higher number of toll projects bears further testimony to the willingness of private developers to undertake the risk.

WHAT HAS GONE SOUR?

In the last few years, it has been an open secret that the response from developers to new projects has been poor. Since many of the PPP road projects have begun operations only recently, it is too early to comment on the gap between the actual and projected traffic estimations made by the developers. However, what has happened is that the estimated project costs have significantly escalated in the case of toll projects, hitting the project economics. The chart gives a comparison of cost and time overrun between toll and annuity projects that have begun operations.

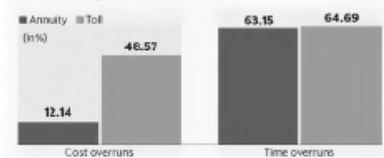
While there is negligible difference in the case of time overruns, the difference in the case of cost overruns is quite significant. A comparison of the actual unit costs is even starker: the average actual unit cost for toll projects has been ₹2.94 crore per

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Comparison of toll and annuity road PPPs

Characteristic (average values)	Annuity	Toll
No. of projects	48	154
Length (in km)	68.84	95.32
Lane (in km)	130.86	197.08
Total number of structures in the stretch (major bridges, minor bridges, culverts, flyovers)	134	177
Concession period (in years)	18.2	22.9
Estimated project cost (in ₹ crore)	320.44	392.11
Unit project cost (in ₹ crore per lane-km)	2.84	2.18
Debt to equity ratio	6.57	2.68
Net state domestic product (in ₹ crore)	17,846.91	27,380.11

Percentage of overruns



Source: NHAI and Ministry of Statistics and Programme Implementation

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lane-km, whereas for annuity projects, it is lower by 32% at ₹1.99 crore per lane-km.

WAY FORWARD

As the government embarks on the next phase of road development by adopting the hybrid annuity model, treating the disease is more important than curing the symptoms. If the objective is to trigger renewed interest for private sector investment in road projects, changing the concession structure should not be the first action taken. It is more important to understand the reasons behind the cost escalations. While it would be easier to criticize the private sector for their optimistic bias behind aggressive bidding, our results indicate otherwise.

The toll projects are not as investment ready at the time of project award as compared to that of annuity projects. For example, toll projects took an average of 12.29 months to begin construction from date of award while the corresponding figure for annuity projects was 10.05 months. The duration from the request for quotation to project award was 13.84 months for toll projects, whereas it was 10.71 for annuity projects. These indicate that toll projects are not sufficiently ready at the time of bidding, hinting at insufficient planning. This results in the private sector assuming or handling much of the pre-development phase risks—such as clearances, land acquisition, and so on, leading to increases in cost overruns. Ideally, these risks are better managed by public authorities. So, the crux of the matter is this: the government should focus on making the project development ready at the time of award to attract more private sector interest, rather than changing the concession model. That would lead to sustainable results, else the euphoria of the hybrid annuity model will be short lived too.

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