

# Project Financing - A Case study on Coimbatore Bypass Road Project

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## Background of Project:

Coimbatore is a prosperous and industrial city of Tamil Nadu, is well connected by National and State highways. The National Highway No.47 connecting Salem with Kanyakumari via Trissur, Ernakulam, and Thiruvananthapuram in Kerala, passes through the city. Congestion within the city was causing traffic delays and so there was a need for a bypass. The alignment traversing a length of 28 km was finalized and land for a width of 40-45 m was acquired for this purpose in 1974. However construction was delayed due to lack of funds.

The Coimbatore Bypass was the first road project to be implemented in South India on BOT<sup>2</sup> (Build, Operate and Transfer) basis. The project was a pioneering initiative, which incorporated private sector participation and levy of toll on users to ensure sustainability in the long run. The road ran between Neelambur on the Salem side of NH-47 Tamilnadu and in Kerala<sup>3</sup>, Madukkarai on the Palghat side.

The project involved construction of a 28-km long two-lane bypass road, the 32.2m new Athupalam bridge across the river Noyal, the railway overbridge at Chettipalayam Tamilnadu and the maintenance of the old bridge at Athupalam, all in the state of Tamilnadu. Larsen & Toubro's (L&T)<sup>4</sup> company L&T Transportation Infrastructure Ltd (LTTIL), the BOT operator was authorized to collect and retain the fee from users of the new and old Athupalam bridges. The bypass was expected to ease the traffic congestion in Coimbatore city, Tamilnadu and the Salem-Cochin national highway running between Tamilnadu and Kerala. The shippers, mostly export-oriented units relying on the

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<sup>2</sup> In a typical BOT model, the government entity enters into an agreement with a private sector company to finance, design and build a facility at its own cost. The private company is then given a concession, usually for a fixed period to operate that facility and obtain revenues from its operation before transferring the facility back to the government at the end of the concession period. This enables the project company to receive sufficient revenues to service its debts during this period. In the BOT model, title to the assets of the concession (mainly land) remains with the public authority.

<sup>3</sup> Tamilnadu and Kerala are states of the Indian Union.

<sup>4</sup> Larsen & Toubro is an engineering and construction conglomerate with additional interests in IT, cement and electrical businesses.

Cochin port for shipments, were other major beneficiaries as transportation time could be saved using the new road.

Construction was started in January 1998 and completed in 22 months<sup>5</sup> time. The Athupalam Bridge was opened for traffic in December 1998 and the bypass became operative from January 19, 2000. The project cost was about Rs.1.04 bn. The project concession period was for 12 years, and was expected to set a precedent for assessment of traffic risk patterns in the country for toll-based roads.

However, the project ran into problems when users refused to pay the toll for the old Athupalam Bridge. They argued that the old bridge was already in existence. As for the bypass and the new Athupalam Bridge, they felt that the toll rates were on the higher side. They also complained that L&T had not taken them into confidence before coming out with the toll rates.

The bid was discussed in detail with the state government. Based on the argument that the 27.67 km bypass road, linking the southern (Coimbatore–Kanyakumari) segment of NH 47 with the northern (Coimbatore–Salem) segment of the same NH, was not viable on its own, the state government agreed to enlarge the scope of the project. It included the construction of an additional bridge (to make the two-lane into a four-lane right of way) near the old Athupalam Bridge, across the Noyyal river. The ROB on NH 209 was not considered. Subsequently, a tripartite concession agreement was signed between MoST, the Tamil Nadu State Government and LTTIL on 13 October 1997.

## Scope of Project

The scope of the project thus included two distinct segments,

1. Construction of the bypass, and
2. Construction of a two lane Athupalam Bridge across Noyyal river on NH 47. (A map indicating the location of the Coimbatore Bypass and its adjoining road network is shown in below figure).

This project was the first to be executed on a BOT basis in the state.

1. **Coimbatore Bypass:** Construction of bypass for a length of 27.67 km, having a two lane 7.5 m carriageway with paved shoulders configuration. The alignment of the bypass intersected two major roads which had since been notified as national highways, namely, the Coimbatore

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<sup>5</sup> The project was contracted to be completed within 29 months. However, L&T hurried to complete the construction ahead of schedule, so that it would be able to collect the toll faster.

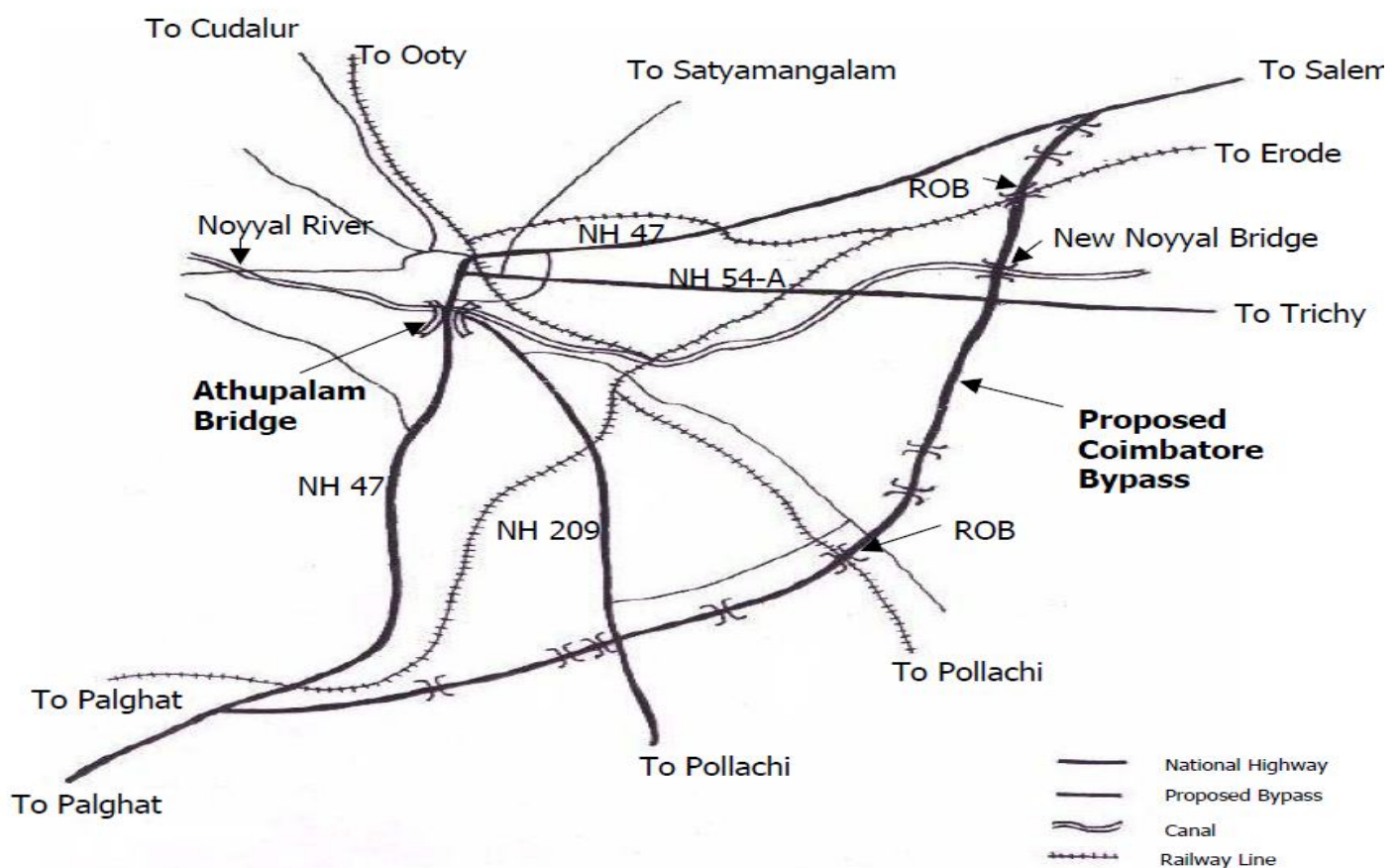
Pollachi Road (NH 209) and Coimbatore Karur Road (NH 54A). The bypass component included construction of two ROBs, one major bridge (across river Noyyal, called Noyyal Bridge), 10 minor bridges and other cross drainage structures.

2. **Athupalam Bridge:** Construction of two additional lanes to the existing bridge over river Noyyal on NH 47 at km 161/8 was proposed as part of the bypass project to ease congestion on the existing bridge.

The cost of the project was estimated at Rs 90 crores (87 crores for the Coimbatore Bypass and 3 crores for the Athupalam Bridge), the recovery of which was proposed through collection of tolls on both the bypass and the bridge.

As per the agreement, LTTIL was given a concession to levy toll for a period of 20 years on the Athupalam Bridge and 30 years on the Coimbatore Bypass. The agreement clearly specified that while the traffic risk was with LTTIL, the risk due to non-payment of tolls would be with the state government.

**Map Indicating the Location of Coimbatore Bypass Project**



## Financing of the Project

In the 1970s, the Tamilnadu government planned the Coimbatore bypass road to ease the traffic congestion in Coimbatore and the NH-47 between Salem and Cochin. However, due to paucity of funds, the project had to be dropped.

In 1995, the Government of India (GoI) liberalized its policies and opened up the road sector for private investments. In September 1995, the GoI through its Ministry of Surface Transport (MoST)<sup>6</sup> invited tenders from the private sector to finance and implement the construction, operation and maintenance of the Coimbatore bypass road project on BOT (build, operate and transfer) scheme. As the project was not viable on its own, the GoI after studying the various options, widened the scope by including the construction of an additional two-lane bridge on river Noyal on the NH-47.

A concession agreement for the integrated project of bypass and a bridge at Athupalam on NH-47 was signed on October 3, 1997 between the MoST, the government of Tamilnadu and L&T. L&T set up a special purpose vehicle (SPV) - L&T Transportation Infrastructure Ltd. (LTTIL), to implement the project. L&T held 100% equity in LTTIL. LTTIL implemented the project on BOT basis, with the revenue accruing directly to it.

The project was constructed by L&T-ECC (Engineering Construction Corporation) group, the largest construction organization in India. L&T-Ramboll Consulting Engineers, a joint venture between L&T and Ramboll of Denmark, was employed for quality control supervision and review of the critical pavement design.

The project was financed by share capital of Rs 416 mn and term loan of Rs 620 mn, with a debt-equity ratio of 1.5:1. As per the agreement with the Tamilnadu government, L&T had to hold a minimum equity of 26% at the end of 30 years.<sup>7</sup>

The debt financing was done by State Bank of India (SBI), L&T Finance, Housing and Urban Development Corporation (HUDCO), Housing Development Finance Corporation (HDFC), and

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<sup>6</sup> MoST decides the policies regarding the transportation sector, while National Highways Authority of India (NHAI) implements these policies.

<sup>7</sup> In the concession agreement signed between MoST and L&T, the government allowed the project promoters to bring down the equity to as low as 26% during the operational phase. However, the financial institutions insisted that the equity dilution below 51% will be permitted only after full repayment of debt dues.

Industrial Development Bank of India (IDBI). IDBI had sanctioned Rs.300 mn for the project in the form of infrastructure bonds. The loan was given in two tranches of Rs.150 mn each at 15% interest each. Principal repayment was to begin from the eighth year onwards.

SBI loaned Rs.300 mn to the project. Infrastructure Development Finance Corporation (IDFC) had structured a “liquidity support” arrangement to help SBI in emergency situation. This support enabled SBI to approach IDFC for refinancing in case it failed to raise the money from other sources. For IDFC, liquidity support was different from the take-out financing<sup>8</sup> since it was lending on condition that the bank was unable to raise the money. Moreover, IDFC would not take the project risk even if it lends to the bank. IDFC would only be carrying the bank risk as it had given the money to the bank and not the SPV.

### Financing Options Matrix

Sr.No	Characteristics of Infrastructure	Projects	Issue(s)
1	Capital intensive	Scarcity of Resources	<ul style="list-style-type: none"> <li>•Multilateral financing</li> <li>•Consortium/Syndication</li> <li>•Federal Govt. Guarantee with financial support</li> </ul>
2	Long Gestation period	Asset Liability Mismatch	<ul style="list-style-type: none"> <li>•Take out financing</li> <li>•Long Term Borrowing</li> <li>•Securitisation of receivables</li> </ul>
3	Working Capital requirements based on Project Phasing	Overlapping of project implementation schedules	<ul style="list-style-type: none"> <li>•Flexible financing delinking construction stage from post-construction phase</li> <li>•Cash flow financing</li> </ul>
4	Inadequate returns and uncertainty on returns	High cost of funds,	<ul style="list-style-type: none"> <li>•‘Take or Pay’ Agreements</li> <li>•Escrow Accounts</li> <li>•Tax Incentives</li> <li>•Priority Sector Lending</li> <li>•Sub-ordinate debt finance</li> <li>•Firm tariff policy</li> <li>•Sinking funds</li> </ul>

<sup>8</sup> A take-out financing agreement involves three parties – in this case, IDFC, SBI (or a participating bank), and the project company. The debt funds were provided by SBI for five years at the end of which SBI had the option to either continue or call back the principal. IDFC at that point would take-out SBI for the principal amount of the loan. The project companies therefore were able to avail themselves of longer tenure funds of over 10 years. Banks could assume full credit risk, partial credit risk or no credit risk in the initial period, with the variable being the interest premium. In this structure, both the bank and the IDFC would be able to participate in the credit risk for principal and interest respectively. This structure could enhance the flow of investments from commercial banks to the infrastructure projects. The other projects to be financed through takeout financing were Bharati Telenet, and Narmada Bridge in Gujarat.

## Revenue Generation

L&T pointed out that the project helped vehicles save fuel and vehicle operating costs due to reduction of distance by 2.5 km and free flow traffic, besides time. Other benefits to the bypass users included less pollution, pleasant drive, good wayside amenities and lastly, safety.

L&T gave special emphasis to safety aspect of the road. Crash barriers were provided on the high embankment of the road, along with thermo plastic road markings. Traffic signals were erected at the junctions of Neelambur (Tamilnadu), Madukkarai (Kerala), Trichy Road (Tamilnadu), and Pollachi Road (Kerala). Speed breakers were erected at suitable locations on the major district roads crossing the bypass to regulate the speed of vehicles. Retro reflective signboards were also provided to illuminate junctions for better visibility at nights. L&T also set up trauma care with ambulance facility at the bypass.

**Table-I**  
**Toll charges for using the Coimbatore bypass road**

Type of Vehicle	Toll Charged (Rs.)
Car, jeep & Van	19
Light Commercial Vehicles	28
Heavy commercial vehicles	56
Multi-axle vehicles	84

Source: Government of Tamil Nadu

The Indian Railways asked L&T to build a rail over bridge instead of a crossing for the bypass<sup>9</sup>. However, L&T successfully argued that it was not part of the original project. In order to recover the additional costs, an alternative funding method had to be selected to keep the fixed costs to be recovered from the project at low. Hence, with the consent of the state government, L&T decided to toll the old Athupalam Bridge, which did not come within the route of the bypass (Refer Table II).

**Table-II**  
**Toll charges for using the old Athupalam Bridge**

Type of Vehicle	Toll Charged (Rs.)
Car, jeep & van	5
Light Commercial Vehicles	15
Heavy commercial vehicles	15
Multi-axle vehicles	2

Source: Government of Tamil Nadu

<sup>9</sup> As a policy decision, Indian Railways had upgraded the construction of railway crossings to rail over bridge.

L&T also intended to provide necessary amenities for travelers such as petrol pumps, parking facilities, service stations, restaurants, drinking water facility, public telephone booths etc. The development of the real estate was to be taken up soon. Toll plazas of international standards were another attraction.

## Challenges

As can be seen from the traffic profile, trucks and buses are the most important in order to increase toll revenues. However, in India, a typical problem that is faced is the mentality of Truck drivers to avoid toll. Car drivers tend to be much more flexible because the value of time tends to be high. It is hoped that over a period of time, the mentality of truck drivers changes and they pay much more attention to the vehicle operating cost and also the opportunity cost of time.

The challenges faced by LTTIL include the following:

- **Project structuring:** Only one private party bid for the project. This was mainly due to deficiency in project structuring, both scope wise and financially. LTTIL bid for the project with the condition that the Athupalam Bridge segment should be bundled with the bypass segment to make it financially viable.
- **Public consultation:** Neither any demand or willingness to pay surveys were carried out nor any initiative was taken towards preparing the users for a high class facility that saved on operational costs like time, fuel, wear and tear, etc. There was no prior public consultation or discussion with opinion makers before deciding to levy toll on the bridge.
- **Biased revenue analysis:** Revenue projections were expected in the ratio of 40:60 from the bypass and the bridge, whereas the investment towards the construction was in the ratio of 87:3. The bridge users were supposed to cross subsidize the bypass users.
- **Delays due to queuing:** The tolling on the bridge had its attendant queuing and waiting time. The public looked upon this as a hindrance instead of improved levels of service.
- **Local traffic:** The Athupalam Bridge was located close to the city limits of Coimbatore. The volume of local traffic was very high. There was an unwillingness to pay toll, especially since they had not paid tolls for the bridge crossing prior to the construction of the new two lane bridge.

- **Multiple trips:** The agreement provided for collection of tolls only on the basis of single trips made across the bridge. It ignored the users that made multiple trips per day. Such users found trip wise toll charges an expensive affair.
- **Toll on existing bridge:** The agreement provided for collection on the existing two lane bridge. After the construction of the new two lane bridge, each bridge was being used uni-directionally. Public objected to the toll being levied on the existing bridge for which LTTIL had not made any additional investment.
- **Enforcement:** Local taxi operators, bus operators, and commercial fleet operators had formed associations to protest against toll collection and were refusing to pay toll. Despite public protest, toll collection continued, but with poor/low compliance. LTTIL had appealed to the government to suitably amend the Motor Vehicles Act to empower a private entrepreneur to enforce toll collection and regulate traffic flow for users refusing to pay the toll charges.

L&T faced problems with the tolling of the old Athupalam Bridge, which did not come within the route of the bypass. This bridge was an already existing facility being used by the incoming traffic from Kerala to Tamilnadu. Transport operators had initially refused to pay the tolls. The bulk users of the bridge including the state transport corporations of Tamilnadu and Kerala had refused to pay the tolls.

The Tamilnadu state government too backtracked and sought concessional tariff for state transport buses on the plea that the transport department was in the red. The Tamilnadu government was willing to pay only Rs.50 per bus for making more than three trips a day instead of the originally planned Rs.15 per bus per trip. L&T agreed to the subsidized toll rate on the condition that the state government compensated the revenue losses sustained by the company<sup>10</sup>.

The Coimbatore District Bus Owners Association (CDBOA) and the Lorry Owners Association refused to pay even the subsidized tariff. The CDBOA had even taken the issue to Madras<sup>11</sup> High Court against the tariff but the Court directed the private operators to pay the toll charges. However, they refused to comply with the court's orders.

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<sup>10</sup> About 230 buses made a minimum of 2,180 trips a day. L&T claimed that it would sustain a loss of Rs.20,000 per day on government vehicles alone.

<sup>11</sup> Madras (renamed Chennai) is the capital of Tamil Nadu.



Since December 1998, L&T was unable to collect the tolls from road users and this resulted in a loss of Rs.74.1 mn as of June 2000. This included Rs.11.4 mn due from the Tamilnadu government towards reimbursement of losses incurred out of the subsidized toll payment for the state transport buses.

N R Naramsimhan, GM (developmental projects)- L&T felt that unless the state government gave L&T powers to deal strictly with the non-payers, it would be impossible to recover the investment. He felt L&T might even request the state government to take over the project. L&T contemplated on invoking the force majeure clause<sup>12</sup> and pulling out of the project. L&T was also under tremendous pressure from the financial institutions, which had lent money, to create additional securities. MoST had asked the state government to take a quick decision, as a delay would have an adverse impact on other BOT projects in the state.

### Key Takeaways of the Coimbatore Bypass Case Study

In the Coimbatore Bypass case, in spite of the government being responsible for the payment risk, it is not fulfilling its role by taking action towards ensuring toll compliance or compensating for the losses. If the response from the government remains so, future public private road projects would be in jeopardy, as already feared for the forthcoming BOT bridge projects in Kuzhithurai on NH-47, Vaniyambadi and Pachakupam on NH-46 in Tamil Nadu [Financial Express, 2000].

There is no clarity between the government and the developer on the resolution of problems, if the project does get into unanticipated problems. This would be a major deterrent for private players to invest in road development projects. Other fundamental deterrents are perceived risk due to problems in estimating traffic demand and willingness to pay.

Tolls based road projects are demand sensitive. This is more so in urban roads where the willingness to pay is almost nil. Also, the extent of homework to identify various user segments (for example, single trip versus multiple trip users) and develop an appropriate tolling structure is significant. The consequence would be that the construction and maintenance of city roads would be ignored under the toll based road development concept.

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<sup>12</sup> Force majeure is an event or accident beyond any person's control. It includes natural disasters (or acts of God), mass acts of human agency, such as war and civil strife.

## Questions for Discussion:

1. Discuss the implications of the state government's poor support to the project, on the future investment in the concerned state? Give reasons.
2. What is the role of innovative financial instruments like takeout financing in the infrastructure sector?
3. Discuss project-financing options for similar future projects of L&T.

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