CHAPTER-V

TOLL PROJECTS FOR ROAD SECTOR IN INDIA: CASE STUDIES

CHAPTER-V

TOLL PROJECTS FOR ROAD SECTOR IN INDIA: CASE STUDIES

5.1 INTRODUCTION:

It is evident that PPPs are attracting Governments world over as an off government balance sheet provider of infrastructure by means of allocating construction risk and demand risk to the private sector. BOT (Toll) types of concession agreements are flourishing in India and overseas with variations. The road ministry is no more "spending ministry" and it is now facilitating private investment in infrastructure building. But PPPs are only a part of the financial toolbox, not a panacea to address the extensive needs of Central, State and local governments since the private partner will come into play only when profits are evident. The PPP market exists on the recognition that the Government and private sector each have different relative strengths and motivations. The Government stresses timely service delivery and seeks to balance financial and non-financial (economic) measures of success. The private sector is profit and efficiency-oriented with the goal of delivering superior customer service and maximizing shareholder value. The private-sector interests are aligned with public-sector goals through market incentives in terms of concession agreement. The PPP route is in fact guided by concession agreements. In the transition from "Do every thing" to "Do nothing" scenario, role of planners is expected to design concession agreements in such a way profit incentive remains but does not overpower public concern of Government. Straightway, if balance is not plausible, Government shall produce the public goods traditionally.

This chapter is devoted to actual implementation of concession agreements in PPP projects taking case studies in subsequent sections. Before reaching to actual case studies, issues related with concession designs for BOT (for simplicity, BOT term is considered in general to imply toll based except specified) are discussed in early subsections. The whole chapter is divided into three sections: Section-I (Background For Case Studies); Section-II (Discussion And Analysis Of Case Studies) and Section-III (Private Project Financing Aspects) and is presented below.

SECTION-I: BACKGROUND FOR CASE STUDIES

5.2 DESIGN OF CONCESSIONS AND BIDDING CRITERIA FOR BOT PROJECTS:

BOT projects are generically different than traditional cash contracts. In a cash contract, the bidders bid for lowest cost under given project conditions. The public authority pays the contractor as the work progresses (mostly monthly progress basis) and the payment is practically done full when the construction is completed. Hence, material/labour suppliers to the contractor do not demand interest and wait till the contractor gets monthly payments. The tenure of construction period is on average two to three years and the contractor invests & recoups on monthly basis within this limited period. Thus practically a well equipped contractor bears no financial risks and is not accounting interest during construction. During such short period, inflation based escalation of input material/labour is assured under contract. The only worries of contractor are time overrun and cost overruns due to himself as compared to his offer price for that project and thus viability of such projects is basically under purview of prudent practices of civil engineering. Due to lowest risks and established practices, the open competition among the contractors (competition within the field) controls the profit and keeps around 10 % to 20%. The public body has strong reliable database of estimated cost of such works and that helps in curbing contractor's profits to modest levels as above. The situation under BOT is very different as payment for work done is not only delayed but also linked to demand from users under specified monopolistic concession agreement. The tenure of BOT projects could be generally around 10 to 30 years and recovery of cost incurred with expected returns over such long period is beyond purview of established civil engineering practices. When a bidder will bid for BOT project, his set of assumptions will be quite different than cash contract.

5.2.1 Cash Flow Estimation While Bidding For BOT Road Project:

A BOT road project will generate a stream of cash flow over its construction and toll period which will typically involve huge upfront cost for construction of facility and then yearly maintenance cost (including day to day maintenance and periodic repairs, toll collection expenses, maintenance of utility services at project site etc. collectively

termed as O&M cost) as a cash out flow. The cash inflow starts once the facility is constructed and put to commercial operations. The revenue from tolling the users will depend on day to day traffic volume and applicable toll rates. The investor's decision for debt and equity ratio will decide cost of funds and hence desirable discount rate for future stream of cash flow.

As far as construction cost is concerned, bidder shall have same assumptions like cash contract. But for revenues, the day to day traffic volume and applicable toll rates will decide the future revenues. The traffic volume generally considered to be reflection of State or national economy, and will also depend upon future division (among alternative routes or modal division between alternatives to road transport) and diversion of traffic. Thus traffic factor will be most uncertain parameter to be assumed by the bidder. The problem is aggravated by practically non existent reliable traffic census figures for past years at the point of proposed toll plaza. Notwithstanding all limitations, a bidder shall estimate future cash flow and use suitable method to arrive at investment decision at bidding stage.

Standard financial practice uses Discounted Cash Flow (DCF) technique (Pandey 1995). It is considered to be most sophisticated technique for evaluating investment decision and it is not based on operating profit. The DCF technique will require evaluating basically three components: initial investment; annual net cash flow during toll operations and terminal cash flow as per provision of concession agreement.

Initial investments(C_o): This is the cost of mobilizing on the site and procuring plants and equipments (which is generally assumed to be maximum15% of likely civil cost of project) and actual construction cost attributed from payment to a subcontractor on the basis of EPC contract or paying for factor costs of material, labour, and services from consultants. The estimation of initial investment will require some assumptions.

Assumption:

1) After arriving at total civil cost of proposed project, bidder may assume suitable debt/equity ratio. For estimation purposes expenses are assumed uniformly spread over construction period.

2) The working capital adjustments during construction period is assumed to be internalized due to provision of contingency provision in estimating civil cost of the project and interest during construction (IDC) may be assumed at market rate for outstanding debt.

3) The sum of 1) & 2) above is termed as C_0 for cash flow purpose.

Annual Net Cash Flow during Toll Operations:

These are difference between cash receipts and cash payments including taxes. The cash receipts are purely attributed from toll revenues collected from users of the facility. The cash payments are attributed to routine and special repairs, payments for utility services & security services, toll collection charges, insurances etc. This shall be calculated on after- tax basis, as prescribed by standard practices. Following assumptions are made in deriving annual NCF.

1) Using either own traffic survey or Government traffic census, the base traffic is considered in terms of tollable category of vehicles per day (up and down total) at the bidding stage and appropriate natural growth of traffic over the construction period and toll period is assumed. MOSRT&H has published capping rates of tolls which shall be indexed to WPI for year to year toll rates. This will give cash receipts for tolling years. If the concession allow toll rates of choice, bidder may take suitable decision to arrive at yearwise applicable toll rate based on actual benefits reaching to users in terms of savings in vehicle operating cost and travel time.

2) Keeping in view the tax holidays offered by the Government & applicable Minimum Alternative Tax (MAT), the tax for all years of operation with depreciation shield may be worked out to arrive at net tax payable.

3) As an interest excluding principle, interest payable is internalized while discounting the cash flow with suitable discount factor. Hence, interest payment on debt is not derived for net cash flow.

4) In addition to initial investment as above, the road/bridge project may require some reinvestment of cash flow. Since this expenditure is for maintaining revenue

generating capacity of asset, it is considered to be cash outflow for additional capital expenditure for repairs and rehabilitation.

5) Toll collection is generally given on subcontract at 2% of toll collected. Adding for payments for utilities, security services, insurances @ 1% of toll collected, thus 3% of toll collected will be like variable cost of operations.

6) Revenue collected under 1) minus total payments under 4) & 5) will give yearwise NCF estimation. The adjustments required in working capital will not be applicable here because the receipts and expenses are purely in cash form in toll projects.

The standard financial practice (Pandey 1995) defines for discounting purpose NCF= EBIT (1-T) + DEP – NWC - CAPEX which will be merely Revenues-Maintenance-Operation cots for BOT project.

(Where, NCF= Net Cash Flow; EBIT= Earning Before Interest and Tax; T= Tax Rate; DEP= Depreciation; NWC= Net Working Capital and CAPEX= Capital Expenditure.)

Terminal Cash flows:

This comprises of Salvage value (SV) that is market price of the investment at the time of its sale. The BOT toll projects stipulate handing over the facility to Government free of cost and hence the SV will be zero in this case. Another form of terminal cash flow is release of net working capital which is not applicable to toll projects here as explained in above paragraph. Hence, this component of cash flow will be zero for BOT based toll projects.

Now, summing up of Annual net cash flow during toll operations & Terminal Cash flow (generally zero for BOT projects) will provide year wise net cash flows for toll period (say 15 years) and it is termed as C_1 , C_2, C_3, C_4.....C_{15}.

The NPV is found by discounting C_1 to C_{15} at predetermined discount rate (k) and algebraically summing of discounted value of C_1 to C_{15} and C_o. Thus,

$$NPV= \{C_1/(1+k) + C_2/(1+k)^2 + C_3/(1+k)^3 + ...+ C_{15}/(1+k)^{15}\} - C_o.$$

Here, k is opportunity cost of capital which is not a straight forward assumption for a BOT project. If a firm is allowed to earn 10% profit on a cash contract of one year duration, the opportunity cost of holding up for 15 years can be varying for all the bidders. It is not the only time period, but risk of loss of revenues due to traffic division or diversion and like any industry, macro economic factors bother the investors to think of higher rate of discount. More importantly, the friction with facility users may not be acceptable to cash contract contractors. Hence, BOT concessionaire will demand some premium (may be 2% to 3%) over market rate of borrowing.

The DCF technique also provides important tool named Internal Rate of Return (IRR) by equating NPV with zero. When NPV is zero, the corresponding rate of discount is called IRR. Alternatively a bidder may check his bidding proposal for possible IRR under his set of assumptions. Under crude approximation, a bidder may equate cash out flow and inflow for each year of concession period and he may calculate every year interest over unrecovered project cost as cash out flow. This may give quick estimate of payback period while bidding for shortest concession period.

Thus bidder is estimating a lot over and above cash contracts which is beyond purview of established civil engineering practices. Most importantly he is in need of estimates of time value of investment that was not required under cash contract. Conversely, the public body designs concessions based on same mathematics to be exercised by bidder.

5.2.2 BOT Concession Designs:

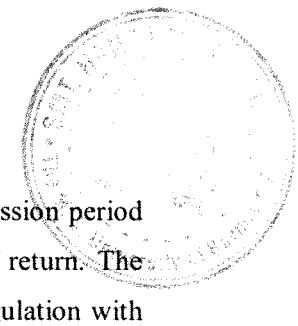
The design of concession for infrastructure is found based on either **Rate of Return** regulation or on **Price Cap** (here it is toll cap) basis (Kerf et al. 1998). In case of Rate of Return regulation, it ties the revenues of a utility to its costs, measured as expenses (operating expenses, depreciation, and taxes) plus the return on the capital committed to its operations. Here objective is to limit the utility's revenues so that it is able to recover its expenses and to earn a specified rate of return on its invested capital. Theoretically, the prices shall be varied to maintain the specified rate of return. The second way of designing a concession is found under Price Cap regulation. Instead of limiting the operator's revenues to restrict him to specified rate of return on its

investment, the regulator fixes the ceiling on price that can be charged for long periods of time according to a formula that takes into account future inflation and future efficiency gains expected from the utility. As noted under chapter-IV, all NH are tolled at specified toll rate after four lanning, hence the Price Cap regulation is the basis of concession design for NH. However, some unsolicited PPP proposals are also accepted mainly on State highways under Rate of Return regulations where toll period is ending on attaining the agreed rate of return on investments made in the project. Due to assured returns, concessionaire has lowest incentive to attract traffic or to achieve efficient expenditure pattern and hence not favoured by planners. Also, the main issue in Rate of Return regulation is about ascertaining actual expenses and revenues for arriving at actual rate of return achieved in an accounting year. In case of Price Cap the case is simplified. The revenues and returns are unrestricted and hence, a concessionaire either earns heavily or loses badly thus raising the issue of viability. Hence, traffic guarantees, capital grants (equity support) revenue shortfall loans and revenue sharing (negative grants and increasing annual concession fee to be paid by concessionaire) kind of clauses are required in the concession agreement for sustainability and reasonability of Price Cap based projects.

5.2.3 Bidding Criterion for BOT Concession:

After deciding on type of regulation, second major aspect in granting of concession is related to bidding for concession rights. Since, Rate Of Return based concession agreements are generally unsolicited, competitive bidding and hence bidding criteria are out of scope in their design. The definition of project cost to be recovered and expected rate of return being main factors of such agreements, theoretically, bidding could be made for lowest rate of return and/or lowest cost of project.

For Price Cap projects, bidding has been traditionally invited for shortest concession period. The public authority is least bothered for project cost as the concession agreement is not providing assurance on recovery of investments or returns. Under a typical BOT project for construction of road/bridge, the bidder (who is potential investor) is asked to quote or offer concession period (which includes construction period) just sufficient to earn him desired rate of return and project is awarded to the bidder offering shortest concession period. The bidder will estimate concession period adequate to ensure positive NPV for his desired discount rate as compared to



alternative investment opportunities. Alternatively, he will bid for concession period till he assures IRR of proposed investment equals his required rate of return. The MOSRT&H and State Governments have been practicing Price Cap regulation with bidding criterion of concession period.

Since 1999, NHAI has switched over to concession agreements with fixed toll period but bidder shall bid for capital grant required or negative grant to be offered to NHAI and lowest cost to NHAI shall win the award. For a given scope of a project, if the traffic is strong enough, bidders will like to offer shorter concession period if that is the criterion or in case of fixed concession period, bidders will tend to offer negative grant if that is the criterion. Alternatively, if a project has weak potential of revenue generation, bidders will like to quote higher concession period if that is the criterion or in case of fixed concession period, bidders will demand more capital grant if that is the criterion. By fixing the concession period beforehand, public authority is attempting to control the revenue stream and bidder is asked to check up the project cost that he could invest for given revenue stream. The excess of return over investment shall become negative grant and deficit shall be capital grant and public authority is serious about definition of project cost. Broadly it can be seen that keeping fix concession period is like getting closer to fixed Rate of Return regulation. The problem is, in case of untoward incident, concessionaire is compensated in terms of extension of toll period and not in cash terms which is like distorting the proximity with Rate of Return regulation.

Presently, NHAI and other Government agencies are using these bidding criteria in-discriminatorily. Hence, a bidder can come across any of these criteria while bidding for BOT project. Since the longer toll period means prolonged responsibility of O&M and diminishing present value of revenue with increase in time, for a project with weak revenue potential, bidder will prefer to invest less by means of capital grant demand than opting for longer toll period. On the contrary for a project with strong revenue potential, bidder will like to offer shorter concession period than opting for upfront negative grant to public authority. Risk wise, longer concession period and negative grant option will be distractive for bidder. Thus for a bidder, the choice among available options of bidding criterion (concession period based or plus/minus capital grant based bidding) will depend upon project characteristics. Regardless of

bidding criterion once the project is awarded, all the three facets of Concession agreement namely- Private concessionaire, Government and Road users (Public) have the same operational characteristics. The operational characteristics in fact do not differ for type of regulation being followed if estimated parameters are actually realized. Similarly, since a public authority has negligent role in a BOT project, the operational aspects are same for NHAI/MOSRT&H or State Government projects. Keeping in view above discussed aspects of concession design, following case studies are selected for this study that is mainly guided by type of regulation being followed. Of course, access to project details respecting commercial confidentiality of projects also governs the selection of case studies.

5.3 SELECTION OF BOT PROJECTS FOR CASE STUDY:

As a population, 25 BOT projects by MOSRT&H and 55 BOT projects by NHAI and thus 70 projects are so far awarded in NH segment during last decade but more than half of them are yet to get in to operation stage or has just begun to collect tolls (Paragraph **4.8.5** Chapter-IV). Hence, effective population is around 35 projects for NH segment. The BOT statistics at State level is yet not officially available but can not be more than twenty as found from discussion with officials in this field. Gujarat State has completed five projects on BOT basis on State Highways out of which four are under tolling and one has completed the tolling stage. Except few projects (mainly by IL&FS), almost all projects on NH and State Highways are based on Price Cap regulation.

Under this back ground, four case studies are selected in this chapter. Two of them are for National Highways (based on Price Cap regulation) and remaining two case studies are on State Highways (based on rate of return regulation). The case studies start with one of the first batch of BOT projects(1995-1996) undertaken by MOSRT&H and ends with recent case study on NH explaining evolution of more elaborative concession agreements and related issues. The concession agreements based on rate of return regulation are designed by Infrastructure Leasing & Financial Services (IL&FS) and are pioneering work when private investment at institutional level was difficult to visualize. For example, the Delhi- NOIDA Toll Bridge project by IL&FS was taken up on PPP basis in 1992 before any NH project on PPP basis was talked about.

The four projects under case study are as follow:

Case 1: Construction Of Four Lane Road Over Bridge In Lieu Of Level Crossing Near Village Chalthan On NH No.-8 in Gujarat State (Chalthan project)

Case 2: Construction of Delhi –NOIDA Toll Bridge in NOIDA (UP State)-IL&FS project (NOIDA Project)

Case 3: Construction Of Four Lane Vadodara –Halol Road SH No.-87 with access control divided carriage and Service roads km 8/300 to 40/00 IN Gujarat State- IL&FS project (Vadodara- Halol project)

Case 4: Construction Of Additional Two Lane Bridge Across River Narmada With Approaches on NH No.-8 km 192/0 to 198/0 in Gujarat State (NICE project)

For all of them, important aspects of BOT project-the project back ground/formulation, provision in concession agreement, actual operations and financial viability are studied and relevant issues are discussed. The case studies are evenly divided in to Rate Of Return base regulations and Price Cap regulations. The broad objective of this chapter is to study planning and management issues in both category of projects so as to arrive at design of sustainable PPP project.

SECTION-II: DISCUSSION AND ANALYSIS OF CASE STUDIES

As discussed in preceding paragraph, four case studies are selected for the purpose of discussion and analysis. The selected case studies involve both type of regulations i.e. Rate of Return and Price Cap. The two cases of IL&FS are related to Rate of Return regulation whereas remaining two are related to Price Cap regulation. The discussion of each case study is divided in following parts to have proper comparative analysis.

(a) Project background and formulation

(b) Main aspects of respective concession agreement

(c) Actual operations and issues including within its purview financial plan, financial performance, issues due to lacunae (if any) in concession agreement and special issues like litigation if any. And lastly,

(d) Policy implications

5.4 CASE-1: CONSTRUCTION OF FOUR LANE ROAD OVER BRIDGE IN LIEU OF LEVEL CROSSING NEAR VILLAGE CHALTHAN ON NH NO.-8:

5.4.1 Project Background And Formulation:

Undoubtedly National Highway No.-8 passing through Gujarat between Vadodara-Mumbai is busiest corridor and hence Government has implemented four lanning back in late nineties and now six lanning is in progress in this stretch. In 1994, when this busiest corridor was got managed by State PWD of Gujarat, the existence of level crossing on Surat-Bhusaval broad gauge railway line at km 261/2-4 of NH No.-8 was significant bottleneck. The Railways were closing the gate for 38 times per day with average halt of 15 minutes. The traffic intensity was nearing 40,000 PCU per day which any way required free flow four lane section. Ministry in principle approved the project of construction of four lane Road Over Bridge (ROB) and almost four km long four lane approach road on BOT basis at estimated cost of Rs. 820.68 lacs in 1994 and bids were invited on BOT basis by State PWD in month of October 1994. This was the period when NHAI was not in real action and project formulation for Golden Quadrilateral was underway. The Ministry took many months to approve the lowest bid (bids were received in December 1994) for this work and offer was accepted by Ministry in April 1996 whereas concession agreement was signed in Sept 1996. The project site was part of Golden Quadrilateral later on. This project was among very first three toll projects approved by Ministry in beginning of PPP era: first contract was signed on 9-12-1995 for Thane – Bhivandi (Maharashtra) bypass at estimated project cost of Rs. 103 crore ; second was signed on July 1996 for Udepur (Rajasthan) at estimated project cost of Rs. 24 crore and ;third contract was signed on 19-9-1996 for this ROB at Chalthan (Gujarat) on BOT basis.(Economic Survey 1998-99). The bid of ASHVIKA Construction Pvt. Ltd. was approved amounting Rs. 996.74 lacs inclusive of his profit and interest on capital employed allowed at 18% rate of interest. The concessionaire has used interest rate of 18% in his bid for interest

during construction & on residual capital to be recovered while preparing year wise cash flow. The concept was to recover this cost through specified toll fees from users of facility. The entrepreneur was awarded for shortest concession period of 23 months and 5 days from completion of construction. This period was inclusive of 59 days granted for price variation for delays over original proposal.

Major milestones of the project are as below.

Table: V-1

Chalthan ROB on NH-8: Major Events

Event	Date
Bids were invited on BOT basis by State PWD for Ministry	October 1994
Bids were received	December 1994
Bid offer was accepted by Ministry	April 1996
Concession Agreement signed	Sept 1996
Name of concessionaire	Ashvika Const. Pvt. Ltd. Vadodara
Construction period(stipulated)	18 months
Toll Period (bidding criterion)	23 months and 5 days

(Source: GOG offices)

As far as project formulation is concerned, this project had proven financial viability due to heavy interstate traffic and hence bidders were able to bid for very short period of concession that was beyond predecided construction period. At that time, the concession period was meant to imply toll period only which is now inclusive of construction period in later projects. Hence planners kept construction and toll period separately. The construction period was treated like cash contract and toll period was simplified like recovering cost of project with interest. The toll rates were capped but revenues were not capped. The project economics were so strong, whole investment was possible to be recovered within 2 to 3 years as compared to total economic life of more than fifty years for the structure. The small size of project was most convenient to regular construction firms and hence the bidding was done by such companies and it was awarded to a company established by established civil contractors of State PWD. The project formulation was good for selection of project but detailing of project missed some operational aspects and the concession emerged out as an incomplete contract.

5.4.2 Main Aspects of Concession Agreement:

This Concession Agreement (CA) is found more or less like cash contract. The reason could be non availability of well-versed concession agreement available to Government to address all the issues other than construction. Also, the very purpose behind inviting private sector was to pass on investment requirement to the entrepreneur (i.e. concessionaire) at the direct cost to the users. The following similarities were found with cash type contracts.

1. One of the qualification criteria for bidders interested in this work is for past similar work (not on toll basis) and adequacy of man power/machineries. Specification and quantities are predefined. The material selection (source of material) is also predefined. No design flexibility, mainly due to involvement of railway structure. No aspect is linked to toll operation capacity of bidder. Thus bid assessment is like cash contract and only change is terms of payment to entrepreneur. No consideration for debt component or leverage is included in CA. The Government (specifically it is State PWD) is strong in verifying construction cost estimate and any superfluous profit is curbed by screening and negotiations by Government using vast data of rate analysis and experienced practices. This is not the case in verifying cash flows on payback or discounting basis. The CA does not include any benchmarks or standards for financial performance. Hence the whole CA seems like broad cash contract with detailed covenants on construction only. Here, the Entrepreneur is supposed to show how he arrived at toll period (in months) but the veracity of such cash flows is not obligatory for Government since the viability is treated as entrepreneur's purview. This indifference or incapacity to verify cashflow given by bidders would actually mean loss of negotiation capacity from Government side.
2. The construction period & stage wise progress is predefined and delay is linked to punishment of recovery of Liquidated Damages (LD) subject to maximum 10% of project cost.
3. Any quantity variation or revision in scope is assessed based on State PWD Schedule of Rates (SOR). Thus time overrun and cost overrun are treated more like cash contracts.

4. The CA declares Steering Group (STG) as a technical authority on all technical matters, only after issuance of completion certificate by STG the work is deemed completed. The railway portion is supervised by Railways and remaining by State PWD. The entrepreneur has to pay for this supervision. Thus the scope for coercion is present to major extent like cash contract.
5. All the laws (e.g. labour laws) are similarly applied like cash contracts. Hence, the entrepreneur has to satisfy all related departments of sovereign and no relief is available from Government though it is in a sense partner in such projects. Any permission required from any department is to be obtained by entrepreneur himself.
6. The construction material requirement and its availability are to be ensured by the entrepreneur.
7. Like any cash contract, the testing and quality assurance is controlled by State PWD. The design for safety and workability is stated to be onus on entrepreneur but his designs need nod of STG/Railways. The stipulations are like the entrepreneur shall do every thing under approval of Government/STG but if any thing goes wrong the entrepreneur shall bear full risk. Any approval of STG does not indemnify the entrepreneur from responsibility of design & execution aspects. So that way the CA is helpful to Government in transferring construction risk fully to the entrepreneur and still maintaining hold over the execution. Surprisingly, the structure like ROB is handed over to Government within two years of construction free of cost. Like cash contracts, indemnity (except performance guarantee) for remaining designed life is missing here.
8. Similar to cash contracts, the performance guarantee @ 5% of project cost is to be deposited by entrepreneur but here the term is covering toll period plus two months.
9. Like many short term cash contracts, price escalation within stipulated 18 months of construction period is borne by the entrepreneur.
10. No mobilization advance is provided which was like then practice of cash contract. But two months are allowed for mobilization of plant, man power and machineries which is too large even for cash contracts.
11. Like cash contract, the land is handed over for construction purpose and only innovation in this case is extension of this land holding term up to end of toll period. Like cash contracts no ownership or alternative use of land or earning of rent (only innovation is allowing toll receipts) is allowed.

One can understand that if the toll project is basically designed on cash contract lines, the bidders of regular contractor category will only come in to play. Here, the all bidders were routine contractors and the selected entrepreneur was a consortium of two big routine contractors of State PWD who joined hands for this project & formed a special purpose entity. Practically, any road concession will compel the entrepreneur to think of two major aspects: Construction costs and Toll revenue. Both have to be anticipated over the concession period being quoted in his offer. Here, the CA has almost plugged the construction cost economies and for toll revenue, the CA is silent for any dynamics. Of course the size of investment was very small & the project is on busiest corridor and hence duration of toll period was also small and hence the project risk was quite reasonable. In this case, the contractors might have feeling of routine cash contracts in receiving payments under such short toll period projects. Because often in cash contracts, payments are delayed in want of money some times by a year or more.

Under this background, the CA for this work is explored as below. For comparative purpose the study of concession agreement (CA) has been divided in to following sections[1].

16. **Bidding Criteria**: As discussed above, the shortest concession period (here it is only toll period) is accepted as a concession period. The bidding requires submitting estimates of civil costs as supporting information.

17. **Base Case Submission by Bidders**: The bidders shall bid in an open competitive bidding with base case financial model indicating how he will recover his investment. The agreement expects to get constructed a four lane facility of ROB at the expense of entrepreneur and in return it allows him to recover the cost of construction & maintenance, cost of traffic management and fee collection all with interest @ 18% (essentially it is as per Concessionaire's assumption for project cost & its recovery) from charging vehicles using the vehicles at prescribed rates. It is noteworthy that Government is not assuring any returns despite accepting cash flow of the Concessionaire worked out at 18% interest. Because Government is merely satisfying itself to establish that the Concessionaire is proving the financial

viability of his offer through his financial model albeit not getting liable to Concessionaire's assumptions.

18. **Grant Amount To Concessionaire**: This is a concession agreement based on Price Cap regulation without any capital support or revenue sharing mechanism.

19. **Responsibilities of Government:** The Government has not been assigned any contractual obligation/penalties for not timely completing obligations related to project. This is because; land was available for construction without any hurdles.

20. **Construction & Maintenance of Facility:** The CA is elaborative for civil works like cash contracts as discussed in earlier Paragraphs. Since, it is a short period agreement, maintenance is not the issue. The control on construction is maintained by Government and concept of independent engineer is not used.

21. **User Fee**: The user fee or toll rates are as per Ministry's directives to toll permanent structures. The toll rates are effective from date 19-7-1998(because construction was completed by 18-7-98) to 17-6-2000 as below but with out any escalation. More over, the user passing bridge more than once in a day shall have option of daily pass at 1.5 times one trip fee. Similarly, for frequent visitors, monthly pass at 30 times of single trip fee shall be allowed. More over vehicles carrying VIP, emergency service vans and Government vehicles are exempted from paying tolls. These fee rates are for users passing over the bridge. The toll rates for each category are depending upon the size of vehicle but yet not strictly so.

Table: V-2

Toll Rates Specified For Chalthan ROB

Vehicle Type	Rate of Fee (Rs.)
Two wheelers	Nil
Car/taxi, Jeep, LCV, Auto Rixa with or with out trailor	5.00
Bus/Truck loaded/unloaded & with or with out trailor	15.00
Other heavy vehicles e..g. cranes, dozers etc.	20.00

(Source: concession agreement)

Now, this is concession agreement based on Price Cap regulation and hence, for given price cap, the concessionaire or the entrepreneur would try to maximize his returns but there is no permission to attract traffic based on any toll dynamics or any supplementary development. Also, the concession period was short and CA did not provide for review of toll rates for any revision, not even for inflation.

22. **Free Service Roads For Local Traffic**: The local traffic is not identified in project design. Hence, the local traffic is charged at par. Since it is a bridge work, free alternative routes are not envisaged under scope of contract. For convenience of local people, CA permits construction of approaches to the properties adjoining the road length.

23. **Traffic Risk**: CA provides traffic census figures on nearby traffic count post but it is not binding to Government for actual traffic on site. A major stipulation is- the entrepreneur should carry out his own traffic studies and assessment independently to arrive at the likely volume of traffic. Hence, concessionaire shall assess tollable traffic in base year and for future but Government is not assuring any traffic volume. Adversely, CA is not assuring any cover against future division or diversion of traffic.

24. **State Support Agreement and Construction of Additional Tollway:** CA also states that no restriction of any kind will be imposed by the entrepreneur on the existing or future traffic routes or facilities to be provided by the Government or others. It is also stated that, no specific developments will be undertaken or proposed development will be altered to suit the proposal. This is very conflicting with present trend of procuring State support agreement for

competing routes. The clause shall not have material effect on viability of project as far toll period is very small.

25. **Financial Aspects, Subsistence Revenue and Revenue Shortfall Loans:** The CA is not specific for financing of project. It states to make arrangement for financing the scheme from entrepreneur's own resources or from open market borrowing such as from banks and financial institution against security of its right to collect the fee for use of the said facility. No Government guarantees are given for repayment of loans or debentures issued by entrepreneur. Additionally, no advance or loans are provided for the project by the Government.

26. **Risks, *Force Majeure* and Termination of Agreement:** The CA provides for relief on *Force Majeure* events during toll collection. Typically it includes events of fire, earthquake, floods, storm, war, and strikes at larger level, riots, legal injunction and closure of bridge for more than 24 hours in want of major structural repairs etc. The compensation formula is not worked out in CA but it is left to decision of Steering Group (that is a technical body made of representatives from Ministry, State PWD and entrepreneur for mutual resolution of disputes and for making technical decisions) for deriving loss of toll revenue & interest thereon to be compensated. If it is not possible to extend concession rights to compensate for revenue shortfall/loss, cash payments are made. The risk matrix is not detailed in CA but can be derived from CA as below.

Table: V-3

Risk Allocation as Per Concession Agreement for Chalthan ROB

Type of Risk	Who Bears Risk
Commercial or Revenue Risk	Entrepreneur
Natural Force Majeure	Insurance & residual by GOI
Sovereign Risk	Government of India
Legal risk	Government of India
Political Risk	Government of India
Time Overrun and Cost Overrun	Entrepreneur
Project Risk	Entrepreneur
Financial Risk	Entrepreneur
O&M Risk	Entrepreneur

(Source : Derived From Concession Agreement)

As per CA, the estimated project cost on completion of construction and all the calculations of cash flow are not assured to be recovered and strictly the revenue risk is entirely borne by Concessionaire. Since lenders are not having recourse to assets and Government is not assuring any repayment of debt incurred by entrepreneur, financial risks are borne by entrepreneur. Though the project is embedding fully financial operations after construction is over, the inflation or interest fluctuations are not recognized by CA and hence financial risk is only borne by entrepreneur. The project formulation is based on traffic census and importance of NH-8 as a interstate link. However, loss of revenue due to shift in development through NH-8 to another route or mode other than road vehicles is project risk which is not recognized by CA and hence borne by entrepreneur. Any change in law (legal risk) or change in status of Sponsors for their capacity to offer concessions (Sovereign risk) or political decision to stop or limit concessions are borne by GOI though not explicitly committed in CA. But a problem discussed in subsequent Paragraph due to interpretation of law as encountered by this Entrepreneur is questioning effectiveness of Sovereign in protecting interests of Entrepreneur. Since CA is not recognizing any sub layer of Entrepreneur, O&M risk and construction related risks are borne by Entrepreneur.

A clause allows suspension of work up to one month with out any compensation to the entrepreneur in case STG desires so for any reason including for reduction in scope. Even reduction in scope does not attract any compensation to entrepreneur. Any suspension exceeding 30 days leads to approval of adequate extension of time limit but with out mention of price escalations. Any suspension of part of work due to poor quality will mean equivalent reduction of project cost. In case of limited control of entrepreneur on toll revenues, such events can prove fatal for viability of project.

Regarding termination due to *Force Majeure* event, it is not mentioned in the CA for paying any compensation from Government but it could be in the purview of Steering group. However, CA has very unilateral understanding for termination of agreement. The Government reserves absolute **right to take over the facility at any time** after compensating the entrepreneur to the extent

of his unrecovered investments and interest liabilities including cost of toll collection, maintenance costs etc. till that point of time. The compensation for civil cost is to be worked out on the basis of State PWD SOR. If the entrepreneur is asked to abandon the work midway then cost of completed civil work will be compensated on quoted rates basis. If entrepreneur abandons the work in full or in part, the Government will get it completed at the risk and cost of entrepreneur and the cost incurred by Government will be treated as dues from the entrepreneur. This amount will be recovered from entrepreneur's deposits, by selling of equipments unused material available on site and amount remaining will be treated as arrears of land revenues. The termination due to entrepreneur's fault is not compensated as a simple rule.

27. **Lender's Recourse**: The CA is not recognizing lenders and in case of termination, lenders have no recourse under concession agreement.

28. **User's Recourse**: The CA is not mentioning any road side facility to users and not guiding for making complaint for inconvenience. The CA directs to see that no bottleneck conditions arise at project site and road surface is maintained at specified limit of roughness. But value for money that is after paying for facility the user actually is benefited or not is not ascertained.

29. **Dispute Resolution Mechanism:** The CA provides scope for amicable mutual understanding under provision of agreement though Steering group mechanism. In case of dispute the matter is referred to Arbitration tribunal.CA provides for appointment of nominee of Secretary (MOSRT&H) as a Sole Arbitrator subject to Delhi Court jurisdiction. Any further reference can be made to law Secretary, GOI whose decision is stated to be final & conclusive. Generally, disputes referred to Sole Arbitrator attract certain costs per sitting and readings which shall be borne equally by both the party. In practice, the entrepreneur generally pays first full amount if he has claims and share of government is adjusted with claim amount.

5.4.3 Actual Operations and Issues:

This small size BOT project was supposed to be smooth sailing for the entrepreneur. The nature of agreement resembled with traditional cash contract and looking to the heavy traffic volume, operational aspects were expected to be comfortable to the

entrepreneur. The entrepreneur opted for following estimation of project cost and financing plan.

5.4.3.1 Financial Plan of Concessionaire:

The project cost of construction is estimated by entrepreneur here as below while submitting cash flow for deriving toll period at bidding stage..

Table: V-4

Chalthan ROB Project Cost Estimated By Entrepreneur

Sr. No.	Cost component	Estimated Cost (Rs. in lacs)
1	Bridge Structure cost (incl. predecided supervision charges paid to railway amounting Rs. 42.88 lacs)	202.88
2	Road portion cost (incl. pre decided 5% supervision charges paid to PWD amounting Rs. 30.00 lacs)	630.00
3	Construction cost for toll plaza with vehicles, amenities	40.20
3	18% Interest during construction period of 18 months (Rs. 830.20 for 9 months & Rs. 42.88 lacs for 18 months)	123.66
	Total project cost (Estimated)	**996.74**

(Source: GOG offices)

The single diversion in estimating project cost in above case vis-à-vis routine cash contracts is accounting for interest during construction (IDC). In cash contracts, State PWD is preparing estimates and they do not take in to account IDC though construction time limit may be as lengthy as 2 years. Here, entrepreneur is bidding with this project cost to be recovered. The available details of operations suggest that the project is funded through Rs. 3.40 crores of equity funds and Rs.4.46 crores of loan funds which meant D/E standing at 1.31:1 only. The loan funds were accessed mainly from IDBI (Rs. 4.32 crores) while equity was basically share capital from promoters.

Here, the entrepreneur estimated monthly revenue amounting @ Rs. 59.00 lacs (after assuming suitably for revenue losses due to allowing daily and monthly passes) and his estimates expected monthly surplus @ 40.00 lacs after paying for toll operation cost @ 9.5% of toll revenue & interest at 18% on total capital of approx. 1000 lacs (i.e. equity also considered to earn at 18% per year). Hence, even a drastic revenue fall of 50% was not really to affect liquidity of cash flow in any month.

5.4.3.2 Financial Performance:

The financial performance of this project is summarized as below. The Table:V-5:A depicts operating performance and Table:V-5:B summarizes movements in the long term sources of finance of this project. The company is using toll asset as inventory in its financial accounting and operational outcome is carried to this inventory account to recover its cost. Surprisingly, the operational performance shows loss in recovering cost of ROB despite project income of total Rs.1331.19 lacs in 700 days of operation (19-7-98 to 17-6-2000). The above income is @ Rs. 58.00 lacs per month and it is very much matching with estimates. Similarly, operating surplus is totaling to Rs. 1169.45 lacs that is Rs.50 lacs per month. This is in fact above the estimated surplus of Rs. 40 lacs per month. The actual cost of project including IDC up to FY 1998 is Rs. 718.27 lacs and remaining construction cost of Rs.550.93 totals the cost at Rs. 1269.2 lacs or say Rs. 1270 lacs vis-à-vis estimate of Rs. 996.74 lacs. This actual cost includes supervision charges to railways and PWD. As per supervision charges of Rs. 15.40 paid to the GOG during FY 1998 to FY 2001, the cost of approach road portion works out to be Rs. 308 lacs only (estimated cost was Rs. 600 lacs) i.e. there is huge excess in cost other than road portion. As per CA, Government is not supposed to verify actual expenditure of above said amount. The excess in project cost is the only factor that has led to report loss in the account books. The project did not see time overrun.

Table: V-5: A

Operational Performance of Chalthan ROB (Rs. in Lacs)

Financial Year	Total Income	Interest paid	Depreciati-on of fixed assets excl. ROB	Operating expenses (excl. Interest & Depreciation)	Operating surplus	Construction expenses	Net surplus carried to bridge account
1999	510.66	57.51	0.28	20.87	432.00	550.93	-118.93
2000	614.23	67.01	0.67	5.38	541.17	0.07	541.1
2001	206.30	0.50	0.52	9.00	196.28	0.38	195.90

(Source: Annual reports of Chalthan ROB)

Table: V-5:B

Movements in the Long Term Sources of Finance of Chalthan ROB

(Rs. in Lacs)

Financial Year	Secured loans (mainly IDBI)	Unsecured loans (from promoters only)	Owner's Equity (Paid up shares only as there are no reserves)	Cost recovery for ROB		
				Opening balance	Net surplus carried to bridge account	ROB as inventory
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1999	435.00	11.78	340.76	718.27	118.93	837.21
2000	97.56	11.78	340.76	837.21	-541.10	296.12
2001	0.00	11.78	340.76	296.12	-195.90	100.22

(Source: Annual reports of Chalthan ROB)

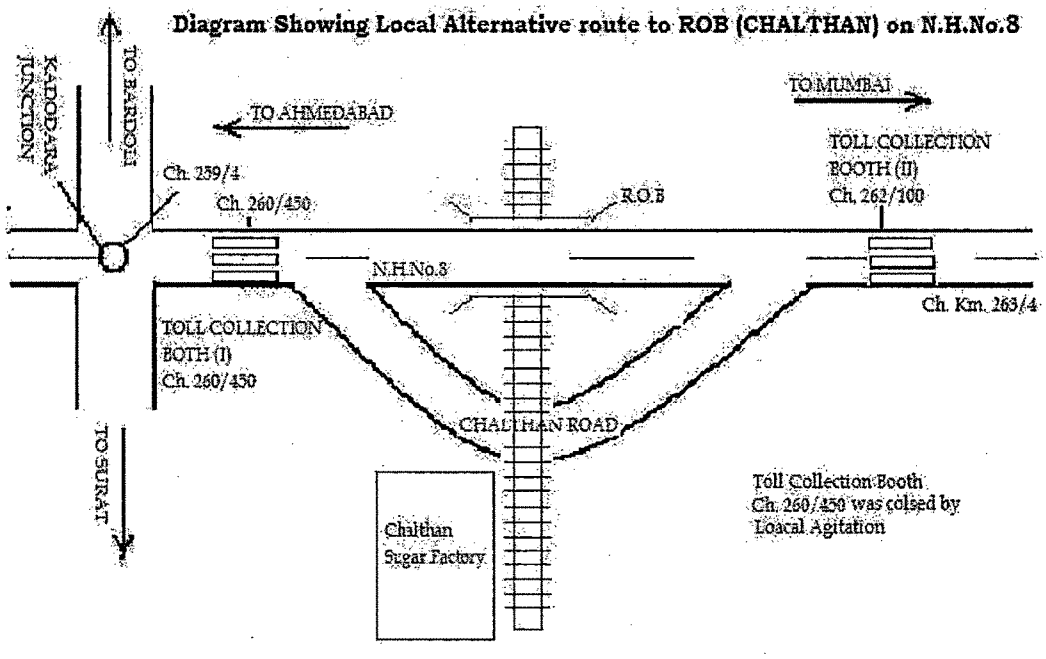
5.4.3.3 Litigation on Free Passage to Local Traffic:

A major reason for selecting this project is for demonstration of legal risk faced by the entrepreneur owing to incomplete contract provisions. The issue was, bid documents did not specify location of toll booths except indicating that one side of ROB, toll plaza will be constructed. The Ashvika Const. Pvt. Ltd (entrepreneur) also submitted bid with this limitation. But at advance stage of construction, entrepreneur got approval to construct toll plaza on both sides of ROB to catch traffic entering project site but escaping to local bypass through another level crossing near Chalthan sugar factory. This bypass was serving as an alternative free link and the entrepreneur was interested to trap this traffic. It was also only way for reaching village Chalthan from both sides of ROB on NH and was useful for local villagers to reach the sugar factory and residential property. The site situation is illustrated in figure-V-1. The public resistance was faced from local road users on Kadodara side of ROB. The toll booths were ransacked on its first day of operation and later a local group admitted contention in local court for levy of tolls on users who actually used very small length of approach road before getting diverted for Chalthan sugar factory. The entrepreneur was forced to operate from only one toll plaza from Mumbai side. The court passed an injunction on levy of toll on such local users based on provisions in the CA. This was confirmed in final order from court that only those who actually cross railway line using bridge structure shall be tolled. This was against the interests of entrepreneur

who was helpless in want of definition of tollable traffic in the CA. The entrepreneur attempted for compensation through Steering group who partially agreed for this issue. When entrepreneur took recourse of Arbitration, the Court order prevailed in the decision of Arbitration.

Figure-V-1

Diagram Showing Local Alternative route to ROB (CHALTHAN) on N.H.No.8



(Source: Drawn From Site Conditions)

In above case, the traffic data provided by GOG (April 1994) at bidding stage was for Kadodara junction point and hence it involved local and through traffic both. The entrepreneur used State data and assumed this traffic to grow at 5% per annum. But as per GOG traffic census, the number of cars (and 3 wheelers) grew at 45% between April1994 to Oct 1999; the number of buses grew at 300% between April1994 to Oct 1999; the number of trucks grew at 20% between April1994 to Oct 1999. The erratic nature of traffic census is observed in Year 2000 and hence the growth of traffic is also compared with average traffic during April 1998 to Oct 2000 i.e. covering toll period. Then this average number of cars (and 3 wheelers) shows growth of 24% from datum (April 1994); average number of buses shows growth of 200% from datum (April 1994); and same is 9% for trucks. Hence the traffic growth was above the expectations of the entrepreneur. Though the entrepreneur realized monthly income almost as per his estimates, entrepreneur argued that this similarity was due to overall

growth in traffic which was not fully accessible due to leakage as explained above. The entrepreneur claimed that due to injunction from court, a huge portion of traffic leaked out and actually tollable traffic was significantly below the above census figures. The contention of entrepreneur was, respecting the court order would require compensation from the Government. The Arbitration took cognizance of CA stipulation that, the entrepreneur was supposed to confirm local conditions himself through surveys and GOG details were for reference only. Thus, court injunction did not get coverage under *Force Majeure* for compensation to the entrepreneur.

Table:V-6

Average Daily Traffic at Kadodara Junction Km 259/4-6 On NH-8

Month/ Year	Car / Jeep / 3 wheelers	Bus	Truck	Other Heavy	PCU (Considering all 2,3,4 & more wheel & animal driven vehicles)
April1994	5886	920	13738	659	54933(data during inviting tender)
Oct 1994	7073	1429	15141	93	61499(data accessible before submitting bid)
Oct 1995	7347	2285	15714	0	67714
April1996	7463	2625	16019	0	70089
Oct 1996	7293	2789	15942	0	70328
April1997	7947	3091	15981	283	72031
Oct 1997	7535	3044	16188	327	72734
April1998	8130	3270	16166	0	73906
Oct 1998	7938	3320	16607	431	76040
April1999	8498	3620	16518	457	77145
Oct 1999	8541	3697	16578	0	77713
April 2000	5237	1343	12685	0	48119
Oct 2000	5426	1576	11477	82	52467
Average daily traffic during operations (4/98-10/2000)	7295	2804	15005	162	67565

(Source: Traffic data from GOG traffic census)

5.4.4 Policy Implications From Case Study:

During the tenure of this project, the Government was very keen to take up BOT project but in want of experience, the CA was framed in line with cash contract that focused more on input to civil works. As the CA was designed on Price Cap regulation, the Government did not attend the details like actual cost incurred or actual toll received by the entrepreneur. Hence, evidently viable project recorded

losses in account books. The bidders submitted financial plan which was agreed by Government only as a lowest offer. After the transfer of assets, the departmental tolling continued as per NH rules for permanent structure. Hence, following points are raised from study of concession agreement and available relevant details for its practical implication in construction and operation. The lacunae pointed out in this CA are leading to suggest appropriate corrections for future works.

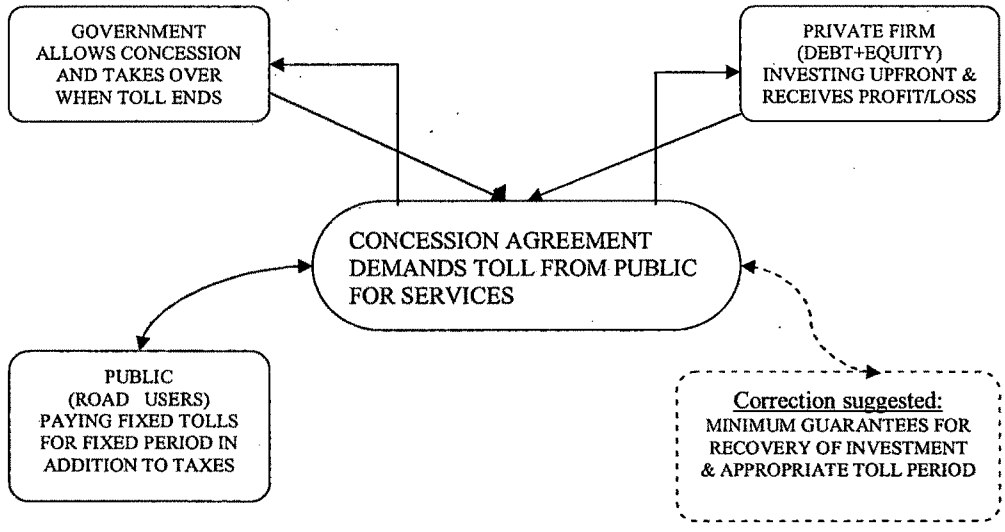
1) The present format of traffic census is very general and hence project specific decisions are not possible from such data. The traffic is essence of BOT project and hence, at least Government shall have traffic figures ready at bidding stage in terms of **tollable traffic** so that Government knows beforehand probable toll period for given project. This information can give good negotiation power to Government like Schedule of Rates serves in finalizing cost of civil work. The Model Concession Agreement (MCA) 1999 & MCA 2006 have provided for traffic sampling during toll period but at project formulation stage, traffic is mystery even for Government.
2) From the case of Chalthan ROB it emerges that the **location of toll booth** shall be most critical design parameter for BOT projects. Generally every toll road covers some intersections in terms of access to local villages, temples etc. which are costly to avoid by constructing grade separations. The issue is managed in case of access controlled expressways but in small projects it remains as a headache to the entrepreneur. Due to such intersections, alternative free routes are developed in pieces and they help in sneaking through tolled facility. Hence, entrepreneur is compelled to deploy extra personnel to check such pilferage which is unforeseen aspect of many toll projects. Government as a partner ignores such public issue in project design and passes the risk to the private sector as a commercial risk.
3) Government has addressed issue of **local traffic** differently for the case of local users using the project length in part or full. Government has rebated heavily (only 25% of toll fees to be levied for local users using private vehicles and 50% of toll fees to be levied for commercial vehicles) as per MCA 1999 or exempted local traffic as per MCA 2006. But it is difficult to sort out local traffic from heavy volume of throughput. Also, entrepreneur is voluntarily compelled to exempt traffic getting diverted after traveling little on toll road to avoid local friction.

4) After traffic, the **project cost** is a major concern in concession design. As discussed above, Government allows the entrepreneur to work under provisions of CA to achieve what ever cost economy is achievable. In the turn, Government passes time and cost overrun on entrepreneur. Unlike cash contracts, Government does not monitor expenses on project and hence profitability of projects is not known to Government.

5) Under Price Cap regulation, the entrepreneur is allowed to earn or lose under given ceiling on toll rates but within agreed upon limited toll period. Thus for financial viability of project, the cash out (project cost) and cash in (toll income) both attributes are unmonitored leading to dangerous uncertainty to project outcome. As it is already initiated under MCA 1999 and MCA 2006, some **guarantees/relief** shall be available either on traffic count or on debt servicing for sustainable PPP. This will absorb superfluous profits and provide cushion on adverse operating conditions. The conceptual modification to existing concession agreement of Chalthan ROB is illustrated under Figure: V-2.

Figure: V-2

Conceptual Understanding of Chalthan ROB BOT Project



(Prepared based on above case details)

For sustainable PPP, neither unplanned profits nor unplanned hardships shall be allowed by virtue of careful concession agreement. The concession shall not be a **speculation business** considering public nature of the road sector especially when

concessionaire has no direct influence on demand for travel. Also, it should not be literally build-operate- transfer on recovery of investments. As discussed under Chapter-III of this study, Kerf et al. (1998) quotes the famous nineteenth century economist Alfred Marshall for design of concession as- the competition for the franchise shall turn on the price or the quality, or both, of the services or the goods, rather than on the annual sum paid for the lease (i.e. in Indian context concession fees mentioned under MCA 2006). Thus, the concession shall be focused on achieving lower prices to the users or shall render superior services to them instead of focusing merely on passing over investment obligation to private sector. Practically, the Chalthan ROB was handed over back to GOG and GOG collected tolls (which were linked to WPI for revision) departmentally and then through agencies charging own charges at 14% of toll collected. By introducing some guarantee for recovery of investment and in this specific case, by extending toll period appropriately benefits can be realized like - lower toll rate during concession period and hence higher toll acceptance; design risk and long term maintenance is assigned to the same entity for qualitative maintenance; if Government is willing to earn from project then upfront negative grants or enhanced concession fess in later years of tolling can be expected from such projects. The major benefits shall however reach to users in terms of long term qualitative maintenance and reduced tolls.

5.5 CASE-2: CONSTRUCTION OF DELHI–NOIDA TOLL BRIDGE IN NOIDA (UTTAR PRADESH STATE):

5.5.1 Project Background and Formulation:

The Delhi-NOIDA Toll Bridge (also called as Delhi-NOIDA Direct (DND) Flyway) is an eight lane link over the Yamuna River connecting Maharani Bagh (on Delhi side) with Sector 15A/16A on the New Okhla Industrial Development Authority side. The New Okhla Industrial Development Authority (NOIDA, a local authority in UP State) has established a new integrated industrial township (also called 'NOIDA') in close proximity to Delhi. The NOIDA is located east of the Yamuna River and is one of the satellite towns of Delhi. Though any inception report for need of this bridge is not available but after construction of this toll bridge, a project traffic validity study (WSA Engineers India 2003) revealed that aggregate traffic on the four bridges (the traffic between East Delhi, NOIDA and Greater NOIDA is serviced by four bridges, including the Delhi –NOIDA Toll Bridge) was serving heavy traffic of 3, 70,000

PCUs in 2002[2]. The report also stated that approximately 30% of Delhi's population lived across the Yamuna river. NOIDA alone accommodated approximately 4, 50,000 people, approximately half of them commuted to Delhi for work daily. In this case, the Bridge offers advantage in terms of saving in distance and time, vehicle operating cost and convenience as compared to the other toll free options. The Delhi -NOIDA Toll Bridge is designed for average speed of 80 Kmph and average travel time taken between South Delhi and NOIDA via Delhi-NOIDA Toll Bridge is about 6-8 minutes. The bridge saves at least 30 minutes in travel time during the peak hours and reduces the distance by around seven kms.

The project formulation was based on recovering investment through tolls in promising region of NOIDA. It was an unsolicited proposal from IL&FS that was accepted by Government in want of requirement of huge funds in this project. To implement the project Infrastructure Leasing & Financial Services (IL&FS), NOIDA and the Delhi Administration (DA) agreed for the implementation of Delhi-NOIDA Toll Bridge on Build, Own, Operate & Transfer (BOOT) basis. A tripartite Memorandum of Understanding (MOU) was signed between IL&FS, NOIDA, and Delhi Administration on April 7, 1992 for establishing the new bridge and defining the scope and mutual obligation of the various partners. Thus it was a Public – Private Partnership effort whereby IL&FS received a mandate from NOIDA/Delhi Administration. Pursuant to the MOU, a Steering Committee consisting of representatives of Government of Uttar Pradesh, Delhi Government, the Ministry of Urban Affairs and Employment, Government of India, Delhi Development Authority (DDA), NOIDA and IL&FS was established for monitoring the Delhi-NOIDA Toll Bridge and taking decisions relating to the development of the Delhi-NOIDA Toll Bridge. As per Steering Committee recommendation, a special purpose vehicle namely NOIDA Toll Bridge Corporation Ltd (NTBCL) was set up to construct this bridge and run the project. NTBCL was incorporated on April 8, 1996 under the Companies Act, 1956 for the purposes of developing, establishing, designing, constructing, operating and maintaining the Delhi NOIDA Toll Bridge.

Major milestones of the project are as below.

Table:V-7

Delhi-NOIDA Toll Bridge Major Events

Commencing from 30 December 1998

Event	Date
Signing of the Memorandum of Understanding	April 7, 1992
World Bank review and approval	January 1996
NTBCL was incorporated	April 8, 1996
Concession Agreement signed	November 12, 1997
Award of EPC Contract to Mitsui Marubeni Corporation	January 19, 1998
Physical possession of project land handed over to Mitsui Marubeni Corporation	May 8, 1998
Signing of financial agreements & financial close	October 30 1998
Shareholders' Agreement signed	December 9, 1998
Commencement of construction and release of Mobilization advance(Concession period of thirty years starts from this date)	December 30,1998
Appointment of Intertoll as O&M contractor	December 21, 1998
Listing of shares of NTBCL on BSE, NSE and UP stock Exchange	December, 1999
Commencement of Commercial operations (next day of substantial completion of construction)	February 7, 2001
DND Flyway Limited (100% Subsidiary of NTBCL incorporated for property development activities)	Feb 17, 2004

(Source: NTBCL 2005)

Thus IL&FS and Government jointly stood as a sponsor of the project as compared to usual Government Sponsorship. A concession agreement (CA) was entered in to by NOIDA, NTBCL and IL&FS conferring to NTBCL the right of implementation of the DND Flyway project. The NTBCL is thus concessionaire but it has been awarded the project without facing competitive biding. In this project IL&FS has acted as not only sponsor but *de facto* concessionaire making largest equity contribution in NTBCL.

5.5.1.1 Role of IL&FS and World Bank In Project Formulation:

Under newly introduced country assistance strategy (CAS) of World Bank for FY96-98, the Bank proposed to increase its assistance in establishing an environment conducive to efficient private investment in infrastructure giving loans for policy-based investment operations. The Bank noted that IL&FS being a 51% privately

owned finance Company with strong ties to the public sector, selection of IL&FS as the first financial intermediary to receive the Bank's support was appropriate endorsing its exceptional understanding of the synergy required between public and private interests for successful infrastructure development, its highly competent and innovative staff, and its high-quality Board. By supporting IL&FS, the focus of the Bank was to assist first hand in the development of prototype contractual arrangements for private investment in infrastructure thereby facilitating entry of the private sector on a much larger scale in areas heretofore dominated by the public sector. The World Bank used IL&FS as a vehicle for various purposes like- to build up India's capacity to attract private investment in infrastructure, pilot-test institutional and contractual arrangements in a variety of subprojects under various administrative and political conditions, and help establish a track record as a pre-requisite for large-scale private investment in the sector (WB 1996).

The Infrastructure Leasing and Financial Services Limited (IL&FS) was established in 1987 following the amendment of 1983 to the Banking Regulation Act of 1949 allowing Indian commercial banks to enter the leasing business through separate subsidiaries. To promote its leasing activities, Central Bank of India (CBI), a major nationalized commercial bank through a joint venture with Unit Trust of India (UTI), a public sector mutual fund management, and Housing Development Finance Corporation Ltd. (HDFC), the country's leading private housing finance institution set up this non-banking financial Company (NBFC). The IL&FS prepared a five year corporate plan to create commercial infrastructure assets amounting Rs. 275 million in 1995- 1996 to Rs. 9863 million by 2000-01. The aggregate cost of the subprojects in the pipeline (including development costs) to be taken up through IL&FS was estimated at about Rs.58,000 million (US$1.6 billion). IL&FS was expecting real rate of return @14% on investments. The commercial projects to be taken up or in pipe line with many State bodies were including Delhi – NOIDA Toll Bridge, widening Vadodara-Halol & Ahmedabad- Mehsana State Highways in Gujarat etc.

IL&FS moving into the infrastructure sector from leasing meant that the average maturity of its assets will grow & to manage its liquidity risk, the average maturity of its borrowings must also be increased. IL&FS was therefore looking to take up more medium and long-term debt in addition to presently raising medium-term funding

from domestic commercial banks. Looking to limited capacity of such banks to provide longer maturity debt & in the absence of a well-functioning long-term debt market in India, IL&FS had no other option but tap foreign sources for long-term funds. IFC being not in a position to provide additional funds the World Bank was thus considered to be the main source of funds to meet the pressing needs for long term financing. The Bank agreed subject to GOI guarantee for loan of US$200 million to IL&FS, to be repaid over a period of 20 years (including 5 years of grace) at the Bank's standard interest rate for LIBOR-based single currency loans subject to some financial discipline at IL&FS. Proceeds of the Bank loan were to be onlent either (i) in rupees at a market-determined rate. In this case, IL&FS will bear the foreign exchange risk; or (ii) in US dollars at a variable market determined rate to subprojects as listed by IL&FS in pipeline. The tenor of the subloans will vary between 17 and 20 years. The Bank wanted mainly IL&FS to - maintain at all times a debt service coverage ratio of not less than 1.25; and maintain at all times a debt to equity ratio of not more than 6:1. While extending line of credit to such projects, Bank stipulated that there shall not be more than 75% debt (senior and subordinated) and promoter's contribution to represent at least *25%* of the equity. The Bank assured financial assistance maximum 25% of individual subproject cost. Proceeds of the Bank loan were to be onlent only to those projects in which the entire financing package has been finalized (WB 1996).

Thus, IL&FS with WB credit line pioneered private sector participation on financial front in the field of infrastructure (including roads) when the MOSRT&H and State Governments were yet not prepared for discussion on this policy change. NTBCL was the first private sector Build-Own-Operate-Transfer road project in India and the first project to be funded by a World Bank credit line of $200 million through IL&FS. The World Bank has thus participated in the financing of this project through a line-of-credit granted to IL&FS out of which IL&FS used US$13.5 million (Rs 600 million) for providing a rupee term loan facility to the NTBCL.

5.5.2 Project Details:

The Toll project has following physical and contractual features.

5.5.2.1 Salient Features of Delhi-NOIDA Toll Bridge:

This is a world class toll way with many innovations like, first project built solely by using dredged river sand instead of the conventional method of earth-fill through road transportation. This resulted in substantial saving of time and cost as well as prevention of dust and noise pollution that would have resulted from transportation of earth-fill by 700 to 800 trucks per day. It is first 8 lanes, 552.5 m long continuous bridge with expansion joints only at the abutments and uses technique of external prestressing. The salient features are:

- ✓ An Eight Lane link across the river Yamuna
- ✓ A 552 meter long main bridge and 3 minor bridges
- ✓ 8 lane approach road
- ✓ Tree Plantation and arboriculture
- ✓ Noise Barriers
- ✓ Grade separated interchanges at either side
- ✓ Average Design speed: 80 Kmph
- ✓ Average travel time (NOIDA to Lajpat Nagar, New Delhi): 8 minutes
- ✓ River training works
- ✓ Flyover at Ashram Crossing

For Toll Plaza:

- ✓ Location: NOIDA
- ✓ No. Of lanes: 27
- ✓ Total width: 300 meters
- ✓ Method of payment: Cash/ Prepaid/Electronic Toll Collection (ETC) systems

5.5.2.2 Main Aspects of Concession Agreement:

This BOOT project is assigning job of Design-Build -Finance-Operate (DBFO) to the concessionaire. The structuring of this project is better understood in terms of

provision under concession agreement. This pioneering project was crafted by IL&FS on Rate of Return regulation basis and was outcome of unsolicited initiatives from IL&FS for Public- Private Partnership in road sector. Modifying structure adopted in earlier case study to the requirement of this project, various aspects of actual provisions under the CA for this project are discussed below.

1. **Bidding Criteria**: As discussed above, no bidding was done for award of monopoly under CA. Thus **competition for field** was avoided by sponsors.

2. **Base Case Submission by Bidders**: The concession agreement accepts base case financial model prepared by NTBCL and it is useful like benchmark for any variation in project cost and toll revenue. Here, definition of project cost holds huge importance. The project cost including civil cost and IDC is certified by Independent Engineer (IE) and Independent Accountant (IA) at the end of construction. Then every year, IE/IA determine residual project cost to be recovered based on revised cost of project due to additional expenditure(beyond base case)and deficit in assured returns. The concession period is extended accordingly to recover the shortfall in returns.

3. **Grant Amount to Concessionaire**: Theoretically, any project based on Rate of Return regulation can be assumed to demand capital grant if toll revenues are low to fit in reasonable length of concession period. Similarly, a sound project can earn upfront negative grant or yearly concession fees to the Government if for given toll structure or concession period the project has very promising cash in flow. Here, sponsors have assumed that variable concession period will take care of abnormal profits and also viability concerns.

4. **Responsibilities of Government:** The Government has not been assigned any contractual obligation/penalties for not timely completing obligations related to project. The existing and future problems related to utilities and land acquisitions are left to the Government. Indirectly, any delay from Government on account of delayed clearances is going to increase project cost.

5. **Construction & Maintenance of Facility:** The CA is referring to EPC for civil works like cash contracts. The IE/ IA play major role in determining actual expenditure incurred on the project and its admissibility to project cost

to be recovered. Similarly, these two consultants determine quality related decisions and time overruns admissible for project cost. The IE/IA shall be appointed for the entire term of the Concession Agreement. The Independent Auditor shall approve the format for the maintenance of accounts, the accounting standards and the method of cost accounting to be followed by the Concessionaire. The Independent Auditor shall audit, on a quarterly basis the Concessionaire's accounts. The Independent Auditor shall also certify the Total Cost of Project outstanding and compute the returns thereon from time to time on a per annum basis. The technical approvals and certifications are done by IE.

For maintenance, a separate O&M Contract provided that (i) for the period until 2011, Intertoll India shall be entitled to a fixed fee of 11% of the actual gross tolls collected from users of the bridge, and (ii) thereafter Intertoll India shall be entitled to a fee of Rs 0.725 per vehicle crossing the Delhi NOIDA Toll Bridge and a fixed fee of Rs 2.656 million (US$59,725) per month to be escalated annually in line with the Consumer Price Index using a base of November 1998. The costs of periodic maintenance are reimbursable additionally.

6. **Project Cost and Returns**: The total project cost shall be the aggregate of – Civil cost of original work with IDC; Major Maintenance Expenses; Shortfalls in recovery of Returns in a specific financial year. The Project Cost has to be determined on the Project Commissioning date by the Independent Auditor with the assistance of the Independent Engineer. The amounts available for appropriation by NTBCL for the purpose of recovering the total project cost and the returns thereon shall be calculated at annual intervals from the Effective Date in the following manner:

Total Revenues to be appropriated =

Gross revenues from Fee collections, income from advertising and development income

Less: O&M expenses

Less: Taxes (excluding any customs or import duties because these taxes are attached to item cost of equipment or material in civil work and hence already accounted for.

7. **Extension of Concession Period** :The Concession Period shall commence on 30 December 1998 (the Effective Date) and shall extend until the earlier of: a period of 30 years from the Effective Date; the date on which the Concessionaire shall recover the total cost of the project and the returns as determined by the independent auditor and the independent engineer through the demand and collection of fee, the receipt, retention and appropriation of development income and any other method as determined by the parties. In the event of NTBCL not recovering the total project cost and the returns thereon within the specified time the Concession Period shall be extended by NOIDA for a period of 2 years at a time until the total project cost and the returns thereon have not been recovered by the Concessionaire. The CA is not mentioning cash transaction for making good the deficit in assured returns.

8. **User Fee**: The Concession Agreement had determined the Base Fee Rates as on base year 1996 and shall be revised to determine the initial fee to be applied to the users of the project on the Project Commissioning Date (the "Initial Fee Rate"). The following are the Base Fee Rates:

Table:V-8

Base Toll Rates on DND Flyway (Rs/Trip)

Vehicle Type	One Way Fee in Rs.
Earth moving / construction vehicle	30
For each additional axle beyond 2 axle	10
Truck – 2 axles	30
Bus – 2 axles	30
Light Commercial Vehicle	20
Cars and other four wheelers	10
Three wheelers	10
Two wheelers	5
Non-motorized vehicles	-

(Source: CA for NTBCL)

The inception stage fee rates are given by

IFR = CPI (I)*Base Fee Rate/CPI (B)

Where,

IFR = Initial Fee Rate

CPI (I) = Consumer Price Index for the month previous to the month of setting the Initial Fee Rate

CPI (B) = Consumer Price Index of the month in which this Agreement is entered into

These rates are referred to actual landed project cost and willingness to pay results for upward revision only.

The Fee Rates are to be revised annually by the Fee Review Committee. A Fee Review Committee is established which comprised of one representative each of NOIDA, the Concessionaire and a duly qualified person appointed by the representatives of NOIDA and Concessionaire who shall also be the Chairman of the Committee. Fee rates are revised as per the following formula:

RFR = CPI (R) * IFR / CPI (I)

Where,

RFR = Revised Fee Rate

CPI (R) = Consumer Price Index for the month previous to the month in which the revision is taking place

CPI (I) = Consumer Price Index for the month previous to the month of setting the initial fee rate

IFR = Initial Fee Rate

Thus the CA is relating toll levels with CPI instead of NH practice of indexing with Whole Sale Price Index (WPI). The revision of tolls over the years is given under Table:V-9. The toll levels are not capped but the increase is also not linked to CPI as found from Table-V-9. The reason for irregular fee increase is as under.

As per CA, the Fee Review Committee shall take all steps to ensure that the revenues from the Project are maintained at levels sufficient to recover the Total Cost of Project and meet the Concessionaire's Returns thereon. When determining whether a revision to the Fee is warranted, the Fee Review Committee may consider, among other circumstances, (i) the benefits to the Users, (ii) traffic flow over the Project, (iii) any increase in any cost of expense in relation to the Project owing to the occurrence of an event under subsection I above, and (iv) the Concessionaire's Debt Service obligations. The inadequacy of project cashflow governs the decision for practical purpose.

Table: V-9

History of Toll Rate Revisions on DND Flyway (Rs/Trip)

Class	2001 (Inception)	2002	2003	2004	2005	2006
Two Wheelers	7	7	8	8	8	9
Cars/Jeeps/3W	15	15	15	16	17	18
LCV	30	30	30	30	35	35
Buses/ Trucks	35	35	40	40	40	45
Large Vehicles	50	50	55	55	60	60
Extra Large Vehicles	60	65	70	70	75	80

(Source: NTBCL Traffic Study 2006)

9. **Free Service Roads For Local Traffic**: Since it is a bridge work, free alternative routes are not envisaged under scope of agreement..

10. **Traffic Risk**: Since it is a project based on assured returns, traffic or any such risks are not identified and allocated to the NTBCL. The NBTCL is proactive to the traffic level on the project and has engaged consultants to revalidate traffic assumptions made earlier. Accordingly project has been rectified. One provision of grant of development rights of surrounding project land is helpful to NTBCL to mitigate risk of traffic plying lower than estimated.

11. **Special Rights to Concessionaire**: The concessionaire has been given the right to mortgage its interest in the project assets, including the project site. This is unusual looking to the public nature of such land. However, the BOOT contract includes ownership aspects and hence such rights are available with Concessionaire.

The Concessionaire is also provided another BOOT based right to develop land as explained hereunder. Upon reference by the NTBCL (i.e. company), if

the Independent Auditor determines that the Project is not generating sufficient revenues for the Company, then the Company may request that NOIDA grant or cause the Governments of Uttar Pradesh or Delhi, as the case may be, to grant to it Development Rights (i.e. additional rights, property and assets which are not part of and not anticipated to be part of the Project as on the date of the Concession Agreement, which may include without limitation the provision of advertising services, the right to develop hotels, or other facilities) for the purposes of generating income. In this regard, NOIDA has the sole discretion to grant Development Rights in favour of the Company. The project has assigned 65 acres of land in Delhi & 34 acres in NOIDA for this purpose.

12. **State Support Agreement and Construction of Additional Tollway:** The Concession agreement required signing Support Agreement by State Authorities Establishing bilateral monopoly between the Government and the concessionaire. This included not to allow construction of any other passage across the Yamuna which is toll free or charges lower toll than the NOIDA Bridge within a radius of 5 kms from the Delhi -NOIDA Bridge site for a period of 10 years or till the Delhi-NOIDA Bridge achieves full rated capacity (defined as 16,000 passenger car units during a peak hour) , whichever is later, without the written consent of NTBCL. In the event of any breach of the Support Agreement Government of UP and/or Delhi Government shall compensate NTBCL and/or NOIDA for any costs incurred by them and the Lenders pertaining to the project. Now, even by 2007 the DND flyway has not seen projected traffic & hence full rated capacity is likely to reach much after stipulated 10 years. The CA assures designated rate of returns hence provision for competing routes and State support are actually not relevant.

13. **Financial Aspects, Subsistence Revenue and Revenue Shortfall Loans:** The CA is not specific for financing of project. The CA is not making any reference to subsistence level revenue or revenue shortfall loans.

14. **Risks, *Force Majeure* and Termination of Agreement:** The Concession Agreement provides for three different classes of *Force Majeure*, namely "Natural *Force Majeure* Events", "Direct Political Event" and "Indirect Political Event". The CA is not distinguishing occurrence of events during

construction and toll period. The remedies and compensation under each class of events is explained below.

Natural *Force Majeure* Events: Events such as earthquakes, epidemics, natural disasters and floods etc, will be treated as "Natural *Force Majeure* Events" under the Concession Agreement. If the *Force Majeure* events continue beyond a period of 14 days, the IE/IA shall submit a detailed report dealing inter alia, with the effect of the *Force Majeure* event including that on the financial viability of the Project and the steps that can be taken to mitigate such effect. Within two days of receipt of such report, the parties are required to submit the same to the Project Oversight Board for determination as to what steps should be taken by the parties. If the Project Oversight Board determines that the Delhi-NOIDA Toll Bridge project is no longer viable as a consequence of the *Force Majeure* events, the affected party has a right to terminate the Concession Agreement. If either the Company or NOIDA elect to terminate the Concession Agreement NOIDA shall pay to the Company an amount equivalent to the aggregate (as determined by an Independent Auditor) of the Lenders' dues, the cost of transferring the Project assets to NOIDA (or any agency nominated by NOIDA) less the Debt Service Reserve (provided the reserve has been utilized for the purpose for which it was created) and less the Insurance proceeds.

Direct Political Event: Events such as any change in law, or any decisions or orders of the Court restraining all or any part of the activities or any discriminatory revocation or refusal to renew any clearance, which may be required by the Company, are treated as "Direct Political Events". If the *Force Majeure* events continue beyond a period of 14 days, the procedure for referring to Oversight Board is same as above. If the Project Oversight Board determines that the Delhi-NOIDA Toll Bridge project is no longer viable as a consequence of the *Force Majeure* events, the affected party has a right to terminate the Concession Agreement. If either the Company or NOIDA elect to terminate the Concession Agreement on the continuance of a Direct Political Event, NOIDA shall pay to the Company amount (as determined by an Independent Auditor) equivalent to the aggregate of the Lenders' dues, the cost of transferring the Project assets to NOIDA (or any agency nominated by

NOIDA) and a 20% equity return less Debt Service Reserve (provided the reserve has been utilized for the purpose for which it was created) and less the Insurance proceeds.

Indirect Political Event: Events such as war, strikes, lockouts etc will be treated as an event of *Force Majeure* under the head "Indirect Political Event" under the Concession Agreement. If the *Force Majeure* events continue beyond a period of 14 days, the procedure for referring to Oversight Board is same as above. If the Project Oversight Board determines that the NOIDA Toll Bridge project is no longer viable as a consequence of the *Force Majeure* events, the affected party has a right to terminate the Concession Agreement. If either the Company or NOIDA elect to terminate the Concession Agreement NOIDA shall pay to the Company an amount (determined by an Independent Auditor) equivalent to the aggregate of the Lenders' dues, the cost of transferring the Project assets to NOIDA (or any agency nominated by NOIDA) and a 10% equity return less the Debt Service Reserve (provided the reserve has been utilized for the purpose for which it was created) and less the Insurance proceeds.

Temporary Control of NOIDA: Under the Concession Agreement, NOIDA can assume temporary control of the Delhi -NOIDA Toll Bridge in the event of national or state emergency. If NOIDA fails to return control of the Delhi-NOIDA Toll Bridge within the specified period of three days, or if such national or state emergencies extend beyond three months, it will be treated as an event of *Force Majeure*. NOIDA terminate the contract electively by paying off project costs with designated returns at any time.

NOIDA Event of Default: Events or circumstances to the extent not caused by a default of the Company or *Force Majeure* shall be considered a "NOIDA Event of Default" and if not cured within the time period permitted, the Company shall have the right to terminate the Concession Agreement as provided therein. A NOIDA Event of Default shall include events or circumstances involving (i) changes in law or change in policies by NOIDA having a material adverse effect or materially affecting the Lenders, (ii) any breach of NOIDA's obligations under the Concession Agreement which has a material adverse effect, (iii) any breach of representations and warranties by

NOIDA which affects adversely NOIDA's ability to perform its obligation under the Concession Agreement, (iv) any repudiation of the Concession Agreement by NOIDA, and (v) any breach by either the Government of Uttar Pradesh or the Government of Delhi of the terms of their Support Agreement materially affecting the Company. In the event that the Company terminates the Concession Agreement upon a NOIDA Event of Default, NOIDA is obligated to pay the Company the aggregate of all sums due to the Lenders, the Total Project Cost and the 20% return thereon outstanding as on the date of termination and the costs of transferring the project assets after deducting the aggregate of any cash reserves created for debt service obligations of the Company (provided such reserves have been utilised for the purpose for which they were created) and the proceeds from insurance.

Company Event of Default: Events or circumstances to the extent not caused by a default of NOIDA shall be considered as a "Company Event of Default" and if not cured within the time period permitted, NOIDA shall have the right to terminate the Concession Agreement as provided therein. A Company Event of Default shall include events or circumstances involving (i) any breach of the Company's obligations, representations and warranties by the Company which affects adversely its ability to perform its obligation under the Concession Agreement, (ii) any repudiation of the Concession Agreement by the Company, (iii) the Independent Engineer notifying the parties of a failure by the Company to operate and maintain the Delhi-NOIDA Toll Bridge in accordance with the operating practices laid down, (v) suspension by the Company of the performance of its obligations under the Concession Agreement for a period exceeding 90 consecutive days (except during the subsistence of an event of *Force Majeure*), and (vi) any liquidation, dissolution, winding-up, amalgamation, reorganization or reconstruction of the Company so as to materially bring about a change in the ownership which has a materially adverse effect on the project. In the event that NOIDA terminates the Concession Agreement upon a Company Event of Default, it shall pay the Company a sum equivalent to the aggregate of all sums due to the Lenders and the costs of transferring the project assets after deducting the aggregate of any cash reserves created for debt service obligations of the Company (provided

such reserves have been utilized for the purpose for which they was created) and the proceeds from insurance.

The risk matrix is not defined under agreement but practically no risk is borne by the NTBCL due to assured returns. The Government has equity in NTBCL and hence any risk borne by NTBCL has impact on Government too. If NTBCL has taken up any risk significantly that is financial risk (attached to raising of equity and debt). But the lenders are safe guarded by Sovereign guarantees for every event. Similarly in natural *Force Majeure* event ,the loser is NTBCL for losing investment through equity but lenders are compensated by Government and hence Government of UP & Delhi are attached to this risk.

Table: V-10

Risk Allocation as Per NTBCL Concession Agreement

Type of Risk	Who Bears Risk
Commercial or Revenue Risk	Government of UP & Delhi
Sovereign Risk	Government of UP & Delhi
Natural Force Majeure	NTBCL & Insurance (Debts Served By Government)
Political Risk & Legal Risk	Government of UP & Delhi
Indirect Political Events	Government of UP & Delhi & NTBCL (Debts Served By Government)
Time Overrun and Cost Overrun	EPC Contractor
Project Risk	Government of UP & Delhi
Financial Risk	NTBCL
O&M Risk	O&M Contractor

(Source: Derived from Concession Agreement)

The concession agreement does not spell out the penalty payments or sanctions on Concessionaire for not adhering to performance specifications/standards. Such penalties are covered under agreement between O&M contractor & Concessionaire

15. **Lender's Recourse**: Pursuant to the terms of the Concession Agreement, the Company has entered into an agreement (the "Direct Agreement") with NOIDA and IDFC, on 22 December 1998, for obtaining, holding and enforcement of the security created under the various loan agreements entered

into by the Company with the Lending Banks and the Lending Institutions, and other rights granted to the various persons providing secured or unsecured credit facilities to the Company ("Lenders") including *inter alia*, the Lenders' Step-In Rights and the Lenders' Rights to Appoint a Substitute Entity, as have been granted under the Concession Agreement. Under the terms of the Direct Agreement, IDFC, as a Security Agent, acting for itself and as agent for Lenders, is entitled to exercise the Lender's rights under the Concession Agreement. The Company has undertaken that it shall be bound by the actions taken by NOIDA or the Lenders or the security agent, IDFC, acting for or on behalf of all the Lenders, in pursuance of or as a consequence of the Direct Agreement. Further, NOIDA has consented to execution of a 'consent and novation agreement' required by the Senior Lenders, at the request and to the satisfaction of IDFC acting as security agent, for the due substitution of the Company by a substitute entity and for the vesting of the Project and all residual rights under the Concession Agreement with the substitute entity. Due to this direct agreement, NOIDA assumes loan repayment to all lenders if project does not generate sufficient cash inflow.

The Company, IDFC and IL&FS entered into the agreement for the purposes of a takeout of the Deep Discount Bonds (DDBs) issued by the Company at the end of the fifth year and at the end of the ninth year from the date of allotment. Upon a takeout IDFC and IL&FS have the right to convert the DDBs to a term loan or income bonds. IDFC and IL&FS are also granted first ranking *pari passu* security with all the other Lending Banks and Lending Institutions. In the interest of lenders, an agreement has been entered into between the Company, IDFC, IL&FS ("Take-Out Lenders") and Karvy Computer Share Private Limited for the purpose of facilitating the process of the Take-Out of the Deep Discount Bonds by the Take-Out Lenders.

Additionally, if the Company commits a default in payment or repayment of three consecutive installments, certain of the Lending Institutions (namely IFCI, IDBI and LIC India) have the right to convert, at their option, the whole of the outstanding amount of the loans or a part (such part, particularly in the case of IFCI, not to exceed 20% of the loan amount disbursed), into fully paid-

up equity shares of the Company, at par. In addition, certain Lending Institutions (namely IFCI, IDBI, IDFC and LIC India) are entitled to appoint and remove, from time to time, one whole-time nominee director on the board of directors of the Company. Thus IL&FS has detailed lender's recourse but finally the Government is liable for repayments.

16. **User's Recourse**: The CA is not mentioning any road side facility to users and not guiding for customer's inconvenience. The CA sees that no bottleneck conditions arise at project site and road surface is maintained at specified limit of roughness. But value for money that is after paying for facility the user actually is benefited or not is not ascertained.
17. **Dispute Resolution Mechanism:** The CA discusses role of consultants for amicable resolution of disputed issues. The usual Arbitration tribunal (Indian Arbitration and Conciliation Act 1996) is the last recourse as per agreement.

5.5.3 Actual Operations and Issues:

The concession agreement reviewed above is quite methodical to account the project cost year to year, securing designated returns with full comfort to lenders. But due to its inbuilt provision of secured rate of return, many planning and management issues are faced by the company and the planners. The traffic, a common critical factor for all BOT/BOOT projects has affected the cornerstones of the concession design that stretches concession period indefinitely in absence of provision for cash transaction upfront or during operations for deficit/surplus revenues in the project. However, it is worth mentioning that today, NTBCL is the only listed toll road/bridge in India – listed on both the local stock exchanges as well as the AIM (Alternate Investment Market) Exchange, London. The equity shares of NTBCL are publicly traded in India on the National Stock Exchange and Bombay Stock Exchange. NTBCL launched the issue of global depository receipts (GDRs) represented by equity shares in March 2006. The GDRs of NTBCL are traded on Alternate Investment Market (AIM) of the London Stock Exchange. Hence on financial front, NTBCL (effectively IL&FS) has illustrated commercial strength of such projects supported by Sovereign guarantees.

5.5.3.1 Financial Plan of Concessionaire:

Though exact financial plan/estimates at signing of concession are not available, what has been implemented to construct and put the facility open to traffic is discussed hereunder. Initially the debt structure proposed by the NTBCL was of around Rs 270 crores. This debt amount was raised to Rs.285 crores in financing the construction. The major change was, Indian Financial Institutions and commercial banks were given major role than thought before financial close

Table: V-11

Original Debt Structure (1997-98) Proposed For NTBCL

Debt Source	**Debt Amount (Rs. in crores)***
World Bank line of Credit to IL&FS	71.43 (27%)
Deep Discount Bonds (DDB's) (Risk participation shared between IL&FS and IDFC)	57.14 (21%)
Multilateral Debt	71.43 (27%)
Indian Financial Institutions e.g. IDBI, IFCI,	47.62 (18%)
EPC Contractor – Mezzanine Finance	19.01 (7%)
Total	**266.63** **(100%)**

* The fraction is due to original data available in US$.

** This attribute was proposed to gather Rs.14.30 to 23.81crores and hence average of this range is taken.

(source: IL&FS 2002)

The financial plan as per financial close is given under Table: V-12. The financing structure of project is embedded with concept of back ended Deep Discount Bonds that suits to long gestation period of such projects. The IL&FS has actually worked like creating a holding Company for garnering equity from pure financial institutions primarily based on Government guarantees and reasonably applied leverage over equity funds.

Table: V-12

Financial Plan of NTBCL (Rs inCrores)

Debt	Banks	114.0 (40%)
	Financial Institutions	61.7 (22%)
	IL&FS (World Bank line of Credit)	60.0 (21%)
	Deep Discount Bonds	50.0 (17%)
Total Debt (70%)		**285.7** (100%)
Equity	Industrial Finance Corporation of India	5.0 (4%)
	NOIDA	10.0 (8%)
	O&M Operator	10.6 (9%)
	Fully Convertible Debentures	20.8 (17%)
	IL&FS	36.0(30%)
	Equity funds-I	20.0(16%)
	Equity funds-II	20.0(16%)
Total Equity (30%)		**122.4 (100%)**
Total Funds (100%)		**Rs. 408.10**
Total Project Cost envisaged at financial close = Rs.414.00 Crores		**Debt/Equity Ratio = 2.33 : 1 or 70:30**

(Source: IL&FS 2002)

Another diversion in financing is debt anticipated from EPC contractor is (that is like delaying cash payment to contractor) is avoided and equity support (i.e. partnership) is assumed from Operation and Maintenance contractor. This is logical since O&M contractor shall have long term association in the project. The estimated project cost was Rs. 414 crores which was in general maintained at completion as detailed under Table: V-13 hence, need to revise financial plan did not arise on this account. The construction of project was completed four months ahead of schedule(i.e. within 25 months instead of 29 months) in January end 2001. This has reduced interest during

construction than it was estimated. The EPC contract was completed almost without cost overrun. Hence, as far as construction portion of project cost is concerned, though it is largest attribute, NTBCL could avoid cost overrun and achieved earlier completion for such a large project.

IL&FS has been awarded a gold trophy at the hands of the President of India in 2005 for being the most Innovative Organization that has successfully implemented a number of replicable and high impact infrastructure projects (including DND Flyway) that are models for other Agencies to follow.

Table: V-13

Project Cost of Delhi-NOIDA Toll Bridge (Rs. in crores)

Attributes to Project Cost	Estimated	Actual
Engineering Procurement Contract(Main civil work)	215.48	205.33
Contingencies (including Inflation etc.)	40.29	45.81
Design supervision & management charges	11.24	17.33
Interest during construction	71.33	55.19
Environmental & social management plan – Land /Rehabilitation &Reconstruction(R&R)	10.14	11.67
Other Expenses	66.38	81
Total	**414.86**	**416.33**

(Source: IL&FS 2002)

5.5.3.2 Financial Performance:

5.5.3.2.1 Poor Revenue from Tolls:

The financial performance of any BOT/BOOT project will depend upon traffic volume being served as compared to estimates. Like any Greenfield project, NOIDA Toll Bridge Company Limited (NTBCL) promoted by IL&FS faced generic problem with actual traffic realization vis-à-vis estimated traffic projections in initial years. The Company attributed (NTBCL 2005) following reasons for this shortfall in operations.

1. The major problem areas had been the shifting of growth impetus from NOIDA to Gurgaon and non usage by commercial traffic resulting in lower average revenue per vehicle.
2. General slow down in economy during FY 2002 and FY 2003.
3. Delay in commissioning of link of Ashram Flyover.
4. The major competition to Delhi- NOIDA Toll Bridge was (& remains) from the parallel bridges viz. Nizamuddin Bridge and Okhla Barrage, primarily because these are free to use. The Delhi- NOIDA Toll Bridge connects NOIDA to Maharani Bagh in South Delhi across the river Yamuna. By 2006 there were 7 bridges connecting East Delhi and NOIDA to various other parts of Delhi. Among these 7 bridges, 2 bridges, namely, Nizamuddin Bridge and Okhla Barrage materially influence the Delhi NOIDA Bridge. Nizamuddin Bridge is approximately 3 km upstream of DND Flyway and the Okhla Barrage is about 1 km downstream of DND Flyway. The Nizamuddin Bridge and Okhla Barrage cater to about 135,000 and 85,000 PCUs per day respectively (which is more than double of PCU per day handled by DND flyway.
5. The average realization per vehicle was also lower than projected (Rs. 16 projected vis-à-vis Rs. 12) because of initial promotional discounts offered by the Company to attract more traffic. The Company however is optimist about growth potential for reasons like- emergence of major shopping and recreational activities with the opening of the Centre Stage Mall/Multiplex in NOIDA; various other recreational and commercial projects to be completed in near future; existing BPOs and Call Centers have inspired major expansion plans and new BPOs and other IT related companies in NOIDA; as per Company's estimate approximately 77,000 new dwelling units along the NOIDA-Greater NOIDA Expressway and within Greater NOIDA are likely to be constructed by 2009 end. Hence, Company conservatively estimated that these dwelling units once fully occupied will provide an incremental traffic of 25,000 to 30,000 trips per day. The development of the Mayur Vihar District Centre & commissioning of the Srinivaspuri Flyover would give positive impact on the traffic on the DND Flyway. But till then, the Company faced revenue shortfall right from inception. These losses had constrained the Company from servicing its existing borrowings.

Table:V-14

Shortfall in Traffic As Compared To Estimated On Delhi-NOIDA Toll Bridge

Period	Traffic (Million Vehicles)		Total Revenues (Rs. in Lacs)		% (Actual revenue on projected
	Projected	Actual	Projected	Actual	
2000-01*	-	0.91	-	11.60	-
2001-02	35.43	8.17	4666.00	1180.79	25%
2002-03	37.90	14.04	6467.00	1873.45	29%

*There were 53 days of operations in the FY 2000-01.

(Source: NTBCL 2005)

5.5.3.2.2 Financial Distress in Debt Servicing:

Evidently, after incurring project cost of more than Rs.400 crores the poor turn out of traffic put the company in doldrums. The Company had raised Rs 50.0 crores of deep discount bonds (DDBs) through Initial Public Offering in October 1999 with an effective annual interest rate of 16.3%. A total of 100,000 DDBs were issued by the Company in November 1999 with a face value of Rs 5,000 each. Each DDB was stated to have a maturity value of Rs 45,000 per bond in November 2015 (the maturity value of all the DDBs being Rs 450.0 crores in aggregate). Pursuant to a "take-out" financing arrangement made by the Company with IDFC and IL&FS, the holders of the DDBs were given the option to sell the DDBs issued by the Company in November 1999 to IDFC (60%)/IL&FS (40%) at predetermined prices of Rs 9,500 per bond at the end of 5th year i.e. November 2004 (at a yield of 13.7% per annum) and Rs 16,500 per bond at the end of the 9th year i.e. November 2008 (at a yield of 14.2% per annum). In addition to this liability, the remaining debt portion (i.e. term loans with banks, financial Institutions and World Bank credit) were carrying interest payable at average 14.8% having about average 12 years of term. The project accepted public money in terms of Fully Convertible Debentures (FCD) in addition to DDBs through Initial Public Offering in October 1999. The Fully Convertible Debentures received for equity carried 14% coupon rate with conversion period of 36 months from date of issue. The financial performance for initial years of operations presented in Table:V-15is reflection of distress condition of NTBCL.

Table:V-15

Actual Versus Projected Financial Performance of Delhi-NOIDA Toll Bridge

(Rs. in crores)

Particulars	As on 31.03.2002		As on 31.03.2003		As on 31.03.2004	
	Projections	Actual	Projections	Actual	Projections	Actual
Total Revenue	50.75	11.8	69.86	18.73	82.51	25.86
Total O&M Cost	8.56	6.48	11.05	8.23	12.44	8.24
Gross Profit	42.19	5.32	58.81	10.50	70.07	17.62
Depreciation	2.03	6.18	2.25	6.33	2.50	0.16
Interest Paid	42.82	42.59	49.02	33.72	46.36	34.59
PBT	-2.66	-44.98	7.54	-31.06	21.21	-18.64

Note:

1. The above projections were published by NTBCL in 1999-2000 for issue of DDBs.
2. while The Company has obtained an approval from Department of Company Affairs for not charging depreciation for a period of 3 years (moratorium) w.e.f. 2003-04 on the Bridge. No depreciation is therefore provided on the Bridge but other assets are continued to be depreciated during this period. Depreciation was assumed under Sinking Fund Method, while making the projections. However, the Company has adopted Straight Line Method of depreciation

(Source: NTBCL 2005)

Owing to less than estimated traffic and high cost of borrowing, the Company approached lenders for restructuring of debt through Corporate Debt Restructuring (CDR) route. State Bank of India as a monitoring agent in consultation with the NTBCL, IDBI and IL&FS prepared the debt restructuring proposal and submitted in July 2002. The approval of Empowered Group was received in Oct-2002 & the lenders have revised the terms of repayment and interest rate chargeable on the restructured loan effective from date April 1st, 2002. Meanwhile, the company recorded erosion of equity upto FY 2005 as illustrated in yearwise financial performance and movement of long term resources in Table: V-16:A and B. The same is depicted under Figure-V-3 and 4 also.

Table: V-16: A

Operational Performance of Delhi-NOIDA Toll Bridge

(Rs. in crores)

Financial Year	Total Income	Interest paid	Depreciation	Operating expenses (excl. Int. & Dep.)	PBT	Reported EPS(Rs.)
2001	1.3	4.97	0.88	0.82	-5.58	-0.63
2002	11.81	42.6	6.18	6.48	-44.98	-4.43
2003	18.73	33.72	6.33	8.23	-31.06	-2.34
2004	25.86	34.59	0.16	8.24	-18.64	-1.72
2005	31.74	37.36	0.23	9.12	-16.5	-1.35
2006	40.67	23.25	2.54	11.86	2.61	0.14
2007	49.12	18.07	7.8	10.86	11.06	0.59

(Source: Derived From NTBCL 2005& Annual reports 2005-06 & 2006-07)

The operational performance of NTBCL presented in Table:V-16:A and B reveal huge interest charges and O&M charges as compared to project revenue during initial years. For example, O&M charges in collecting the toll and maintaining the facility were as high as 63% during FY 2001 and around 50% of total income in next two financial years. Similarly, interest charges were almost four times of total income in first two financial years and then from FY 2003 it started gradually reducing reaching to one third of total income in FY 2007. This is condition of ramping up from lower income facing higher obligations is expected when traffic is not realized as expected and debt conditions are not flexible to match with stabilizing process of traffic. This is basically representation of failure of envisaged financial plan of NTBCL (essentially IL&FS).

Table: V-16: B

Movements in the Long Term Sources of Finance for Delhi-NOIDA Toll Bridge

(Rs. in crores)

Financial Year	Secured loans	Owner's Equity (Paid up shares +reserves)	Accumulated net of P/L A/C carried to reserve & surplus	Misc. Exp. Not Written off	Adjusted Net worth
(1)	(2)	(3)	(4)	(5)	(6=3-4-5)
2001	249.09	101.62	-5.58	-7.36	88.67
2002	316.85	101.62	-50.56	-5.85	45.21
2003	331.39	122.40	-81.62	-4.33	36.45
2004	352.01	122.40	-100.27	-2.81	19.31
2005	358.51	122.40	-116.77	-1.30	4.33
2006*	323.52	311.68	-114.25	-11.19	186.24
2007*	186.0	330.56	-103.39	-9.94	217.23

Note:

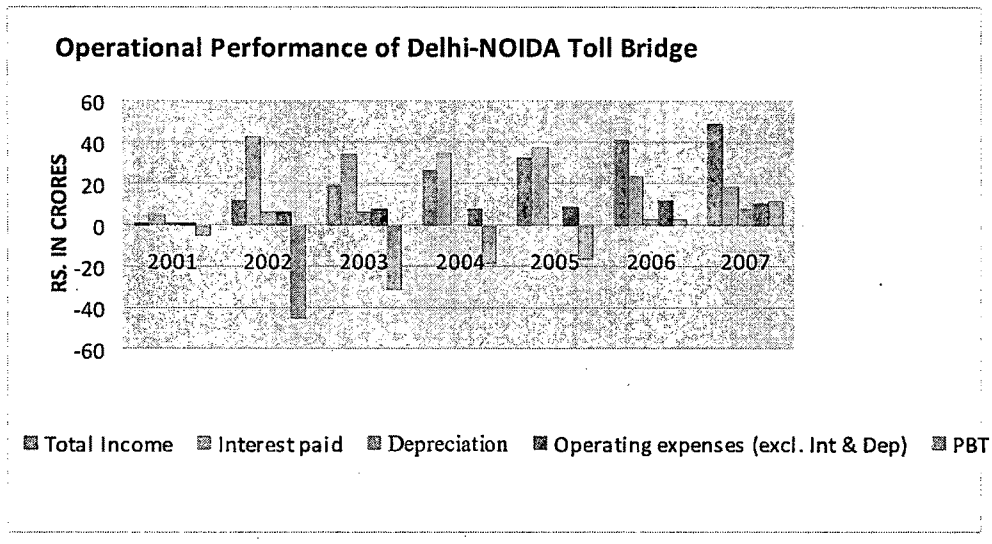
a) In Year 2003, the FCD were converted in to equity shares & hence the increase in equity was noticed.

b) In finding adjusted net worth on consolidated basis as available in under given source, the Company has not considered reserve due to valuation amount of land transferred to own subsidiary for development. The Company had during the year 2003-04 carried out revaluation of Land for 34 acres on NOIDA side (original cost Rs 5,719,849 and written down value Rs 5,519,581 as on April 1, 2003) for which the value has been increased by Rs 1,345,044,007. After obtaining approval from the Shareholders and the Lenders, the Company had sold 30.493 acres of revalued land to its wholly owned subsidiary in the year 2003-04 at the revaluation amount Rs. 102,99,50,327. This had been transferred from the Revaluation Reserve to the General Reserve in the year 2003-04 as seen in Annual report for 2005-06.

* These figures are derived from annual reports based on Company's consideration not to take in to account land related reserves.

(Source: Derived From NTBCL 2005& Annual reports 2005-06 & 2006-07)

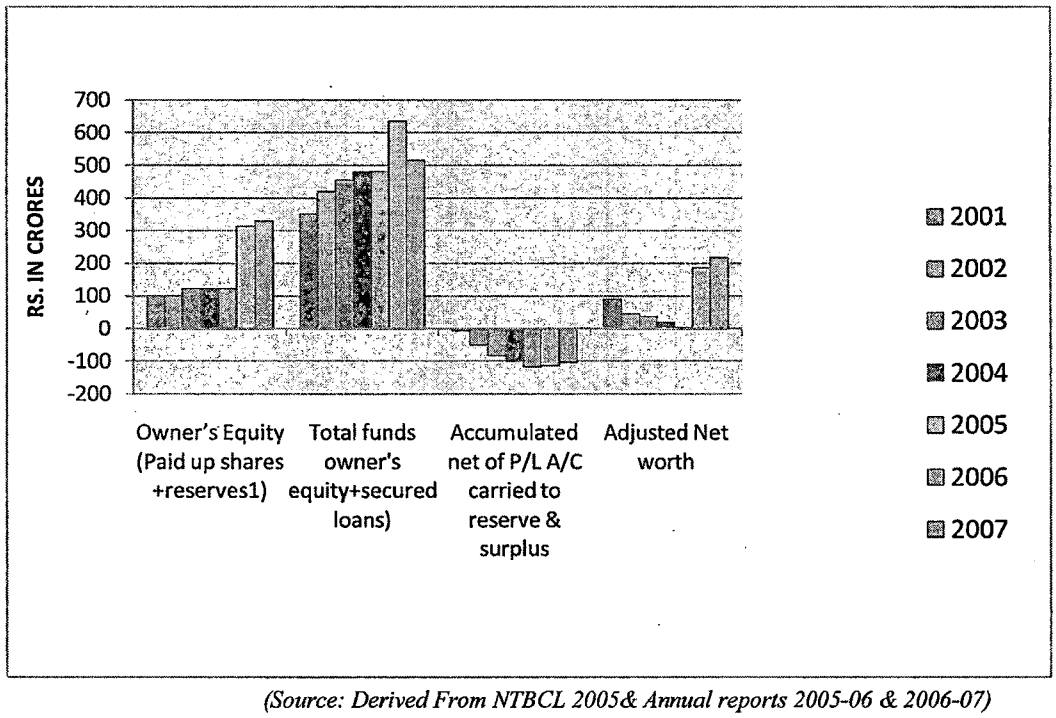
Figure-V-3



(Source: Derived From NTBCL 2005& Annual reports 2005-06 & 2006-07)

Figure-V-4

Movements in the Long Term Sources of Finance for Delhi-NOIDA Toll Bridge



(Source: Derived From NTBCL 2005& Annual reports 2005-06 & 2006-07)

5.5.3.2.3 Financial Restructuring of NTBCL:

Pursuant to the approved Debt Restructuring package, the Company has been bailed out as per following terms of restructuring.

- ✓ Reduction of the rate of interest to be paid to the Banks and Financial Institutions but with following provisions. Thus average rate of interest to be paid was reduced from 14.7% to 8.5 %. The restructuring facilitated debt servicing by deferred interests.
- ✓ Bifurcation of outstanding loans of the FI of Rs.102.77 crores into two equal parts: Issue of Zero Coupon Bonds (ZCBs) (Series A) and secured term loan at 12.5%.Issue of Zero Coupon Bonds (ZCBs) (Series A) aggregating to Rs 51.385 crores to Financial Institutions against conversion of 50% of Term Loan repayable in two installments (each of Rs. 25.69 crores) by March 31, 2005 and March 31, 2006. The Company paid first installment in 2005 but for next installment due in 2006, it issued Offer Letter for rights shares in 2005 end.
- ✓ For remaining 50% of outstanding loans of FI, it was structured as 12.5% term loan to be repaid in quarterly installments from FY2010-11 to 2013-14. But interest in cash payment at 4%, 8% and 11% per annum in first three years respectively and then onwards 12.5% p.a. The balance interest of 8.5%, 4.5% & 1.5% to be converted to a funded interest term loan and shall be paid without interest in 2006-07.
- ✓ For Banks, the loans are restructured at an interest rate of 8.5%. For outstanding bank debts of Rs. 133 crores, the restructuring required 16% to be paid back to banks in 2005 & further 16% in 2006 and then in easier schedule. The Company paid first 16% in 2005 and for next installment due in 2006, it issued Offer Letter for rights shares in 2005 end. Here also, cash payment of interest is payable for initial three years is @ 2%, 4% & 5.5% p.a. and at 8.5 % p.a. thereafter. Balance interest at 6.5%, 4.5% and 3% in the first three years shall be funded by adding to the principal and repaid along with the original term loan at 8.5% p.a.
- ✓ Income from land development rights shall be used to repay the restructured debt as well as sacrifice made by the lenders towards reduction in interest

rates. The repayment/redemption shall be affected out of the estimated development income of Rs. 100 crores and would be shared between the banks and FIs in the ratio of 48.6% & 51.4% respectively. Issue of Zero Coupon Bonds (ZCBs) (Series B) aggregating to Rs. 55.5422 crores for the sacrifice in the rate of interest differential to the lenders is provided herein. As per the restructuring proposal these ZCBs shall be secured by way of first charge on the surplus lands in the possession of the Company and development income arising there from. The ZCBs will be redeemed in March 31, 2014 or earlier only out of the realization of sale proceeds of the development rights of the land adjacent to the DND Flyway over and above Rs. 100 crores.

✓ DDB are payable in November-2015 but carry put option & hence applied restructuring as below. Under the debt restructuring, there were two options available to the DDB holders, to be exercised by 7th February 2006, namely:

Option I – DDB holders would be entitled to the contracted rate of interest of 13.70% per annum till the Appointed Date of 31 March 2002 and thereafter the effective yield would stand reduced to 8.50% per annum. The bonds would mature on 3rd November 2015 and maturity value of the bond would be as per the revised interest. However, NTBCL would have the right to call/ purchase DDBs from the holders at any time after effective date of 24th November 2005 with interest calculated @ 13.70% per annum till 31 March 2002 and at 8.5% per annum thereafter up to the date of the payment.

Option II – Encashment of bonds by submitting the DDBs to the takeout lenders (IL&FS and IDFC). This is as per the original takeout offer for the first takeout i.e. 3 November 2004 (5 years from date of allotment) where the takeout lenders would buy the DDBs at a predetermined price (subject to deduction of tax, if applicable) on the first takeout date plus an interest @8.5% p.a. for delay if any thereafter up to the date of payment.. All DDB holders who opted for this option would be paid within the period of 60 days of the Record Date.

As on 7 February 2006 the all the original DDB holders opted for the options as follows:

Table:V-17

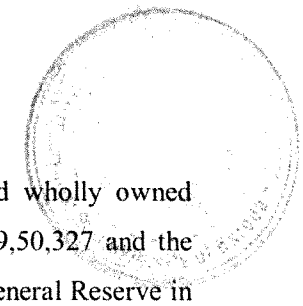
DDBs Redemption Exercised By NTBCL

	Number of Bonds
Option I	10,815
Option II	52,087
DDB with the takeout lenders due to DDB holders exercising Put Option on November 3, 2004	37,098
Total	100,000

(NTBCL 2006)

- ✓ The Company appointed M/s Wilbur Smith Associates (WSA) in mid 2001 (i.e. well in inception of shortfall) to undertake a comprehensive study of the traffic in the catchments zone of the Delhi NOIDA Bridge Project with a view to ascertaining both the reasons for the short fall between the projected traffic and the actual traffic and to suggest network improvements which would augment the traffic on the Delhi NOIDA Toll Bridge. Based on fresh traffic counts and established traffic modeling techniques WSA concluded that the total candidate traffic for the project was 69,000 vehicles per day as against actual average of around 41500 (March, 2003) vehicles per day. M/s WSA proposed the new feeder links to increase traffic on the Delhi NOIDA Toll Bridge. The restructuring process insisted to take up these works by infusion of Equity Capital.

The post restructuring scenario has shown quite expected results though yet lagging to estimated values. The other than toll income has remained around 2.0 crore and hence total operating income in Table:V-16:A essentially shows good rise in toll income. However, the assured return of 20% is yet a liability to be borne by Sovereign as far as operating income does not reach to post tax yield 20%. It is pertinent to mention that the Company created a Wholly Owned Subsidiary Company, namely, DND Flyway Ltd during the year 2003-04 after obtaining the approval of the Lenders as well as Trustees to the Debenture holders and the Shareholders of the Company for commercial exploitation of land appurtenant to the Bridge in case of shortfall in revenues. Delhi NOIDA Link Bridge includes value of Land appurtenant to the Bridge on both sides of Delhi and NOIDA measuring 65 acres of land in Delhi & 34 acres in NOIDA. After obtaining approval from the Shareholders and the Lenders, the



NTBCL had sold 30.493 acres of revalued land to its above said wholly owned subsidiary in the year 2003-04 at the revalued price of Rs. 102,99,50,327 and the same amount was transferred from the Revaluation Reserve to the General Reserve in the year 2003-04. But practically commercial benefits of this land to the project are yet to be exploited and hence the provision of such land development under BOOT has not really worked so far even by year 2007.

To reduce the debt servicing and hence to deleverage the Company and to meet the cost of Mayur Vihar Link (a feeder link to supply traffic to project), the Company launched a Global Depository Receipts (GDR) in the UK market in the month of March 2006 to raise new equity capital through 11,363,636 GDRs (each GDR representing 5 Ordinary Shares of Rs 10 each). The GDR was placed for US$ 45 (equivalent @ Rs. 200 crores) with following plan for use of net proceeds(after deducting expenses) : US$11.3 million (Rs 501.5 million) to repay and prepay term loans falling due on 31 March 2006; US$23.2 million (Rs 1,032 million) for the prepayment of loans to reduce interest costs along with any agreed prepayment charges; and US$7.9 million (Rs 350 million) to fund the construction of the Mayur Vihar link to the Delhi-NOIDA Toll Bridge. The construction of the Mayur Vihar link could not be commenced before June 2006 in want of approvals; the Company reportedly used all these funds for the repayment and prepayment of loans (NTBCL Admission Report 2006 and NTBCL 2006).

The GDR proceeds could fetch Rs. 56.82 crores in equity and in April 2006 additional equity at 10% of this amount was received from overpayment money to GDR issue. The Table: V-18 narrates equity infusion after March 2005 that is from Rs. 122.4 crores as per financial plan. The equity infusion is evidently dominated by Global Depository Receipts (GDR) & remaining is Employee Stock Option wherein shares have been granted to directors, senior executive and general employees.

Table: V-18

Equity Infusion as a Restructuring process of NTBCL

Equity Infusion through	No. of Shares (Rs. 10.0 each) & Date of Allotment	Equity infusion Rs.	Cumulative equity Rs.	Rise over Total equity as per financial plan (Rs. 122.4 crores)
Issued pursuant to Employee Stock Option Plan 2004	4,76, 000 No. August10, 2005	**47,60,000**	1,22,87,60,070	0.4%
Issued pursuant to employee stock option plan 2004	7,03,500 No. October 18th, 2005	**70,35,000**	1,23,57,95,070	0.6%
GDR [US$ equivalent 0.225)	56,818,180 No. 21 March 2006	**56,81,81,800**	1,80,39,76,870	46%
Issued pursuant to employee stock option plan 2004	15500 No. 29 March 2006	**1,55,000**	1,80,41,31,870	0.01%
As received from over allotment to GDR	5,681,815 No. 10 April 2006	**5,68,18,150**	1,86,09,50,020	4.6%
Issued pursuant to employee stock option plan 2004	100,000 No. 9 May 2006	**10,00,000**	1,86,19,50,020	0.08%
Total Rs.		**63,79,49,950**	i.e. Total Rise in equity =**51.69%**	

(Source: Derived From Annual Reports NTBCL)

Owing to reduced debts and increased equity the Debt/ Equity ratio changed dramatically as illustrated in Table:V-19. As shown in Table:V-19 basically the funding of NTBCL changed from project recourse debt financing to equity based funding just within first six years of operations. The owner's funds have risen from 28.98% from first year of operations (i.e. 2000-2001) and grown to 64% by 2006-2007. Alternatively, Debt/Equity ratio has reduced from 2.45 (FY 2001) to merely 0.56(FY 2007). Hence, the actual operations proved the financial plan chalked out by financial wizards of IL&FS inadequate right from onset and the relief was found when restructuring of debts was made associated with substantial deleveraging.

Table: V-19

Leverage Ratio for Delhi-NOIDA Toll Bridge

Financial Year	Debt/Owner's Equity Ratio	Debt/Net worth Ratio	Owner's funds as a % of total funds
2001	2.45	2.81	28.98
2002	3.12	7.01	24.28
2003	2.71	9.09	26.97
204	2.88	18.23	25.80
2005	2.93	82.80	25.45
2006	1.04	1.74	49.07
2007	0.56	0.86	63.99

(Source: Derived from Table: V-16:B)

5.5.3.3 Analysis of Issues Due To Lacunae in Concession Agreement:

Though the approach of IL&FS was award winning, pioneering and innovative while making ground for private sector participation in infrastructure with long term financial obligations, certain provisions were actually too much securing interests of private parties. Hence, following points are raised from study of concession agreement and available relevant details for its practical implication in construction and operation. The lacunae pointed out in this CA are leading to suggest appropriate corrections for future works.

1) In fact IL&FS managed to set up NTBCL in April1996 but it took one and half year to sign concession agreement with Government (November 1997). For achieving financial close, NTBCL took further twelve months (October 1998) but CA did not focus on such delays.

2) At broad level, the CA for Chalthan ROB and NTBCL both are designed assuming some returns on total investments. The Chalthan case assumed 18% rate on outstanding project cost but did not assure returns on any aspect of project. Here, 20% of return on residual project cost every year is assured. Looking from financing perspective, the provision of assuring returns is more relevant when private debt comes in to play which is not the case here. As a simple principle, when private equity is pumped in to project capital, the private sector hopes that revenue will exceed forecasts and returns yield greater than expected. This in turn transforms the project genetics from entity tasked to provide a public good (may be tolled) to one that wants to maximize profit. Hence, equity participation from private sector vis-à-vis private debt is

the critical decision in framing the project. But the planners did not differentiate these two diverse sources of funds in stipulating the sources of funds. Virtually, the CA is silent over debt component.

3) The provision of designated fixed post tax returns at 20% has remained cynosure for allowing risk free operations but providing no incentives for efficiency and economy from private sector. More importantly, returns are calculated on total investments (debt plus equity) that is total project cost in this project. This assurance has benefited NTBCL due to nondiscrimination over debt and equity sources. The company started with heavy debts with average costs at 14.7% and hence net of 20% minus 14.7% was available as an extra benefit to the company on debt component. Hence, 70: 30 debt: equity could yield actual[4] benefits of 23.71% that is more than 20%. Since the benefits are compounded in early years of operation owing to shortfall in revenues to cover up the designated returns, the actual benefits are excessive in terms of stretching the concession period beyond specified 30 years. As per CA, the returns at 20% shall accrue through operations only and hence it requires extension of concession period for shortfall in assured returns.

4) The uncapped definition of project cost is like cash contract wherein so far Government was able to vary the cost as per day to day requirements subject to certain (irrespectively of efficiency factor) approvals. The cost overruns are typical for cash contracts. Here the Independent Engineer (IE) and Independent Auditor (IA) are playing role to confirm any costs to be added to the project in most technical and reasonable manner but in absence of capping, the actual cost of completion is subject to huge variation. The exact costing and expenditures are not accessible to verify any gold platting of project if any existed. But some issues are like, "Other Costs of Commissioning" is too liberal term under CA and many cost related to Government transaction also added to project cost. The net preoperative expenditure incurred during the construction period (i.e. up to 7 February 2001) was Rs. 19,679.50 lacs. Subsequently, the Ashram Flyover i.e. one of the link to main project was opened to the public for traffic on 30 October, 2001 for which a separate agreement was entered into with the Government of the NCT of Delhi which is co-terminus with the main Concession Agreement. Costs incurred on this project were also subsequently capitalized W.E.F. 30 October, 2001. All

expenses incurred from 8 April, 1996 (the date of incorporation of the Company) up to 7 February 2001 (the date when the bridge was opened to the public) were capitalized as part of the bridge and other assets (NTBCL 2005 & 2006). There is no incentive to minimize costs (i.e. cost of EPC, periodic maintenance and operational costs) since costs are completely passed on to road users. The assured return on such open ended understanding of project cost could lead to endless tenure of this BOOT concession.

5) The restructuring of NTBCL has effectively helped in reducing the cost of debt funds but the losses of lenders are compensated. It is not clear if it has been added to the outstanding project cost. Most striking is, the CA is not providing any sharing of such gains by State body from refinancing.

6) The project has invited severe criticism from Planning Commission itself (Pargal 2007). A study for Planning Commission has estimated that if there are no returns during the first four years, the addition of the deficit in returns (i.e., 20% of total project cost) to the initial project cost of approximately Rs. 408 crores (US$ 100m) would result in the total project cost that has to be covered more than doubled, i.e., exceeding Rs. 816 crore (US$ 200m). Now returns of 20% would be payable thereafter on this revised (enhanced) total project cost. Pargal has noted that the Independent Auditor have already determined accrued return as designated under the Concession Agreement and such amount due to the Company till March 31, 2006 is reported amounting to Rs. 9,533.92 million (US$ 234m) as on March 31, 2006, inclusive of project cost. Pargal has quoted the AIM Admission Document (2006) wherein the Directors estimate that the concession period would be in excess of 70 years, as a result of the shortfalls in the recovery by the Company of the Total Project Cost and the Returns to date. Starting with a Total Cost of Project of Rs. 953.4 crores in 2006, the Admission Document reports even if the entire operating surplus were allocated to payment of returns there would still is a shortfall in returns each year, with the result that the total project cost in 2021 could be about Rs. 11,817.54 crores. Hence Pargal foresees this **concession in perpetuity** unless significant Development Rights or increases in toll rates or both are granted. And in fact the concessionaire has requested the grant of Development Rights under the concession agreement and has received 'in principle' approval for the same. The DND Flyway Limited, a fully owned

subsidiary of NTBCL, was incorporated with the object of carrying out development activities on the surplus land around the Delhi NOIDA bridge so that the issue of pending returns could be sorted out. Pargal observes, the transfer of the land to DND Flyway Ltd which is not party to the concession agreement, makes it unclear whether NOIDA can ensure that the benefits of real estate development will be applied for reduction in the total project cost of the bridge for purposes of returns and repayment.

7) Second noteworthy comment from Pargal is similar to what is analyzed for actual rate of return in early Para of this subsection. She has also questioned rising returns on equity in case of deficit in return on project cost is observed and compensated. She illustrates supposing that debt was 70% of the total capital cost of the project with a capital base of Rs. 100 crores and a rate of interest of 14.7% per annum, the interest payment due the first year would be 0.14.7*70 = Rs. 10.29 crores. Now, out of the total return on capital cost being Rs. 20 crores (20% of Rs. 100 crores), Rs. 9.71 crores would be available as return on equity, which amounts to a rate of return of approximately 32% to equity (Rs. 9.71 crores on an equity base of Rs. 30 crores). Under these circumstances, the reduction of cost of debt from 14.7% to 8.5 % effected by debt restructuring would further add to return on equity. Assuming a capital base of Rs. 100 crores and retaining a 70:30 debt to equity ratio, Pargal notes that the interest payment due would now be Rs. 0.085*70 = Rs. 5.95 crores. Thus, of the total return on capital cost of Rs. 20 crores (20% of Rs. 100 crores), Rs. 14.05 crores would be available as return on equity, which amounts to a rate of return of approximately 47% to equity (Rs. 14.05 crores on an equity base of Rs. 30 crores).

8) The CA is similarly not capping toll rates or toll period. The CA states that NTBCL can determine, demand, collect, retain and appropriate a Fee from users of the Delhi- NOIDA Toll Bridge and apply the same in order to recover the Total Cost of Project and the Returns thereon. The outcome of this provision is summarized under Table:V-20. As shown in this Table, toll rates are basically driven by motive to match up with financial constraints & it is approved by Fee Review Committee which is comprised of one representative each of NOIDA, the Concessionaire and a duly qualified person appointed by the representatives of NOIDA and Concessionaire who shall also be the

Chairman of the Committee. The hike in toll rates is in excess of CPI growth (which is average 7 to 8% per year) & the Committee is empowered to approve so.

Table: V-20

Hikes in Toll Rate as compared to base rates (1996) on DND Flyway (Rs/Trip)

Class	2001	2002	2003	2004	2005	2006
Two Wheelers	40%	40%	60%	60%	60%	80%
Cars/Jeeps/3W	50%	50%	50%	60%	70%	80%
LCV	50%	50%	50%	50%	75%	75%
Buses/ Trucks	17%	17%	33%	33%	33%	50%

Note: base toll rate for large & extra large vehicles seems containing error in source data and hence hike for them not derived here.

(Source: Derived From NTBCL Traffic Study 2006 and NTBCL 2006)

9) The NTBCL provides toll paying facility through Electronic Toll Collection (ETC) system and also through transponders called On Board Unit (OBU) which is more sophisticated. The NTBCL offers discount on use of such mode of payments. The revenue shortfall and excessive operational cost are passed on to the user as provided in CA.

10) The basic difference between Build- Operate-Transfer (BOT) & Build- Own-Operate-Transfer (BOOT) is provision of development rights under CA. In case of revenue shortfall NTBCL can invoke development rights for which project assigned 65 acres of land in Delhi & 34 acres in NOIDA. The land development potential in this project is enormous as compared to typical land available under rural regions of highways. A major benefit of such clause is that Concessionaire need not wait for extension of Concession term to adjust for revenue short fall. But CA is not mentioning any formula/method to correlate revenue shortfall with type and level of development of such land. Economists refer it as matter of Eminent Domain whereby Public body maintains right over land use & transaction. Keeping the public sector in charge of eminent domain decisions is one way to ensure that the public interest is being served. Here, the land is not developed in right time which in turn increased revenue shortfall (to be borne by Government) & probably land is hold for speculations which shall not be a planner's choice.

11) NTBCL can restrict the use of the Delhi- NOIDA Toll Bridge by pedestrians; cycle Rickshaws etc from the Delhi-NOIDA Toll Bridge. This stipulation spurs issues of equity in benefits of such projects.

12) Once the targeted return has been achieved, the project facilities would revert to NOIDA for a nominal value of Re.1. The Independent Engineer has certified the useful life of the Delhi- NOIDA Toll Bridge as 70 years. But the CA is not relating concession period with economic life of the assets. The design of CA with longer span of CA will have different economics which is not materialized in this project however; the assured returns are pushing the future of this project towards the same length concession period.

13) As far as risk allocation is concerned, the concession design has been too secured for NTBCL. The CA is fully relieving the Concessionaire of commercial risk by assuring returns. Practically, due to assured returns, NTBCL (or in broad sense IL&FS) has almost got inbuilt caveat (it is more than State bailouts) to shun any losses due to such risks. Hence rhetoric argument of distributing risk to them who can manage it best is not realized. For example, if it is time overrun, the IE/IA will decide the causes and cost implications. If it is Force Majeure, EPC contractor will be allowed to run delayed with cost to ultimate road users (Public) and any design change is admissible to get extension of time from IE/IA. Practically, it is easy to claim on either ground for extension of time and if approved, EPC contractor can avail price escalation due to such delay and his own prolongation cost.

14) In the event NOIDA decides to repudiate the agreement, it would be obliged to pay the concessionaire an amount equal to the total project cost and returns thereon outstanding till the termination date. The spiraling of project cost with pending returns makes NOIDA more & more impossible to end the agreement from Public side as time passes. Similarly in case of termination of agreement in the event of Concessionaire's default, during construction stage or operational stage, NOIDA is anyway liable to pay back lenders with due interest. Thus during construction, Concessionaire is relieved of construction risk to large extent.

15) The users are viewed as customers of a commercial service. Because, the concession design is no where putting user's recourse at the stake. A planner is expected to design concessions on public utilities that costs minimum to the public. This aspect is absolutely missed in the framing of this PPP Concession.

16) Though the toll period is very lengthy (at least 28 years), CA is not allowing any review and it expects continuation of terms of CA. The Government is part of such framework and Public is quite away from Project structuring in rush for assuring specified returns.

17) The Concession Agreement for this project was signed on November 12, 1997 but the concession for the Delhi- NOIDA bridge project was not awarded competitively as evident from CA. The Steering Committee decided that the Project should be implemented by a corporate entity promoted by IL&FS and incorporated in the State of Uttar Pradesh for the purpose of developing and implementing the Project. The complexities arise from the fact that IL&FS had multiple role of- Sponsor; Concessionaire; to considerable extent Lender who has very good recourse in agreement and it has remained most influencing party in design and implementation of project. These express conflicting roles among themselves and even cash contracts executed by Government avoid such interface. Similarly, the NOIDA or UP Government has been prevented from acting as a public oversight body by accepting conflicting business partnership with IL&FS. Actually role of Sovereign under PPP projects needs due isolation from private concern to keep alive Public concern.

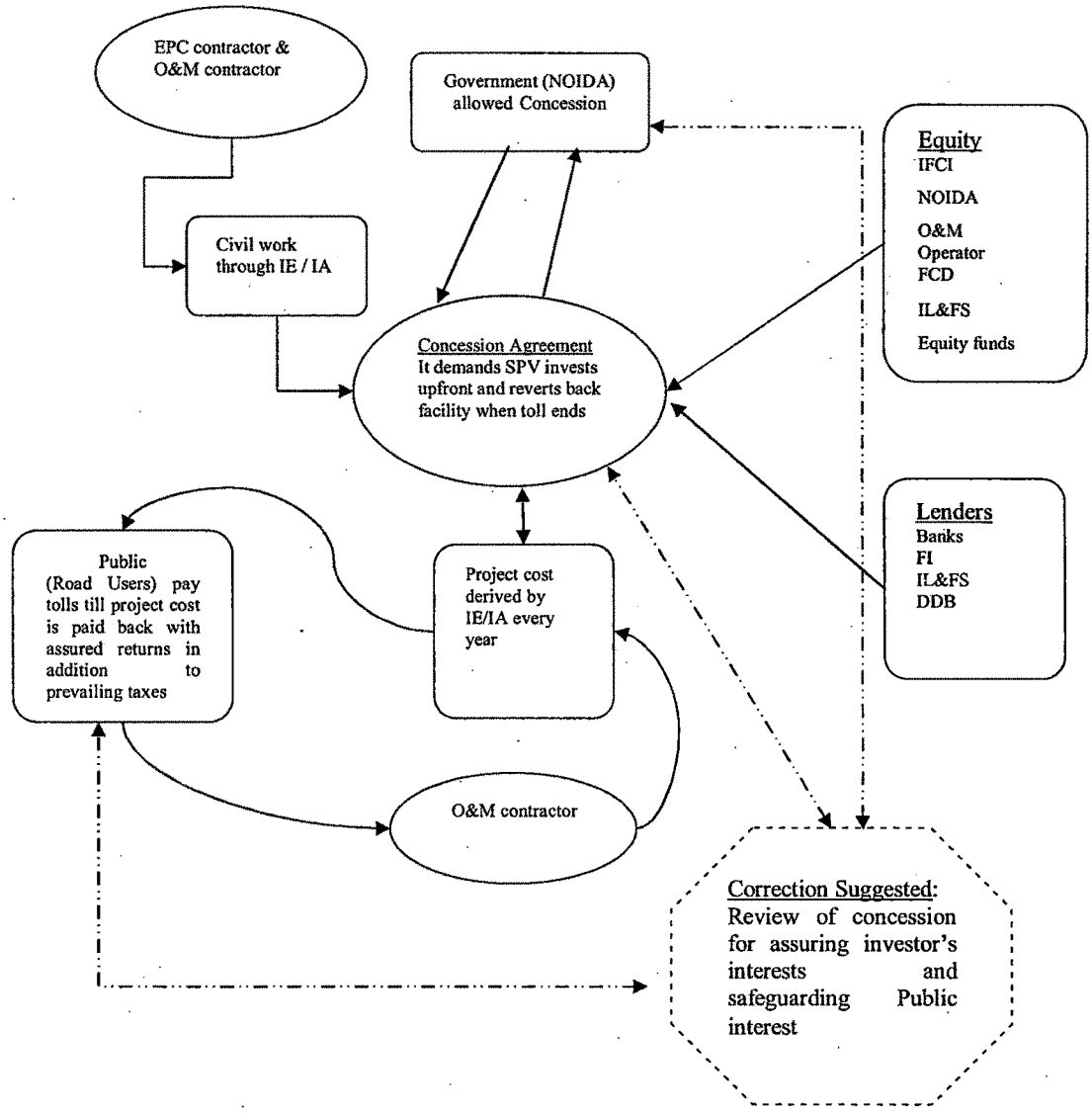
5.5.4 Policy Implications from Case Study:

The design of concession agreement for PPP projects has never been simple stroke as experienced by planners world over. As far as long term concessions are concerned, the confusion and controversy surrounding long-term concession agreements has surfaced world over because they have been promoted as silver bullets, as essentially free money provided by the private sector that will not require new taxes or fees. The concession approach to project financing has many advantages over traditional methods and as many concerns with these nontraditional techniques. Buxbaum and Ortiz (2007) have noted that at this point, very few people have a complete picture of

the short- and long-term implications of different approaches and elected officials are bombarded with ideologically laden lobbying from both sides. However, the long-term concession agreement or Public Private Partnership (PPP) has emerged as a potential source of significant **new revenue** for transportation. Perhaps it is in the nature of toll road concessions that they rarely turn out to be financially dull. More often than not, they are either extremely profitable, or are financial failures (Mayer 2007). In a run behind this new source of revenues, the concession is designed to avoid extreme profits or financial failures to concessionaire. Consequently, the structure of this project is such, any inefficiency or shortfall at any actor or stakeholder level can in general simply add up in the project cost to be recovered at given point of time rendering it a risk free project. The working of this concession is depicted in a conceptual model developed under Figure: V-5. As shown in this figure, the Government signs Concession Agreement with a SPV to invite upfront payment for construction of facility. Now SPV (that includes Government also) behaves like Sovereign and engages civil contractors for construction and maintenance on cash contract basis. Every gain due to efficiency of various stakeholders shall affect the project cost and hence tolling regime for road users. The CA is transferring every risk ultimately to Government or making liable public to longer period of toll period to recover project cost at assured rate of returns. Even the debt obligations to lenders are indirectly guaranteed by Government.

Figure: V-5

Project Structuring Of NTBCL under Rate of Return Regulation



(Prepared based on above case details)

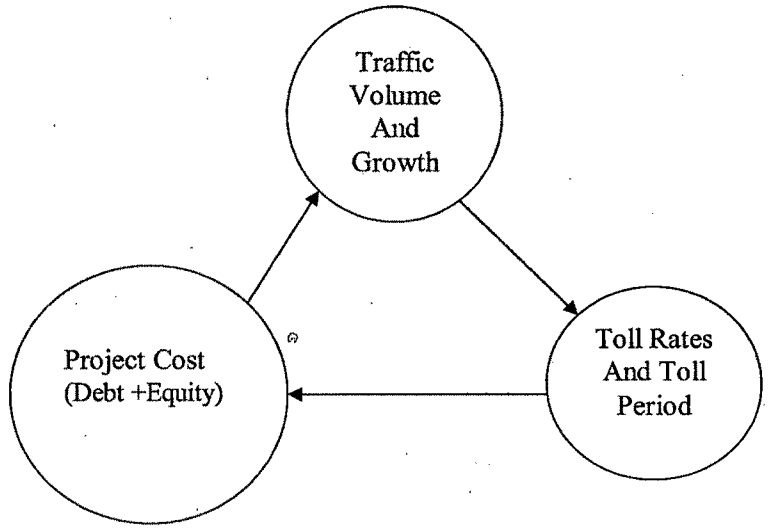
The schematic presentation of NTBCL concession design is provided with suggested correction in dotted box. The suggested correction is for incorporating periodic review of concession operations to safeguard investor's interests without surrendering Public interests. The scope for such review is discussed hereunder which require to understand structural mechanism of this CA.

5.5.4.1 Cornerstones of NTBCL Concession:

In above model, the concession design is found resting upon three corner stones. These are – **Project Cost**; **Traffic Volume** and **Tolling Terms** (Toll period and Toll levels).

Figure: V-6

Cornerstones of NTBCL Concession Agreement



(Source: Conceptualized From This Case Study)

Here, unlike Chalthan Case, traffic growth, toll period and toll rates are linked to recovery of project cost which it self is variable. Hence, a cyclic reaction as shown in Figure: V-6 decides fate of Public who pay tolls at rates and for period suitable to residual project cost of NTBCL. The PPP project of Chalthan ROB was not only Price Capped but also Toll period capped. But such cappings together exposes the concessionaire to those uncertainties mainly traffic which is having public nature but not under control of Government. It is worth discussing all three cornerstones for their role in concession design under Rate of Return regulation. Since it is expected that MCA (2006) will be most widely used in road sector under PPP route, the MCA (2006) is also discussed for comparative analysis.

Project Cost: The project cost is very important in Rate of return based regulations. In fact MCA (2006) has also touched this aspect by providing capital grant/negative grant that an entrepreneur will need to achieve his desired returns under Price Cap and

toll period cap regulations. The CA prepared by IL&FS is really Methodical in recognizing importance of project cost for securing the returns. Every possible variation in construction and operation is suitably accommodated in outstanding project cost of NTBCL. The recognizing of project cost relieves the concessionaire for establishing any claim for losses in estimated gains and vice versa for leveling in gains if Government wishes. The MCA is not considering project cost as parameter of attention once the project is awarded. The project cost is met from debt and equity sources but neither IL&FS nor MCA (2006) discriminate for these two different sources of funds. As seen in case of NTBCL, the highly leveraged financial plan was reduced to highly equity funded project. If the financial base case was prepared with due care to leverage gradually as the project revenues were capable to take up the interest charges, it was in interest of project and Government that was missed in concession design. It is suggested that the sponsors of concession shall have own estimates of financial plan for estimated project cost so that debt/equity proportion could be guided atleast during earlier "**Ramp Up**" period before reaching a smooth level ground of operations. For loaned funds, indexation like price escalation paid in civil costs shall be exercised to monitor the actual costs of funds to the concessionaire. This will require good base work from Government using techniques like sensitivity analysis for arriving at probable base case scenario with estimated debt and equity mixture on year to year basis. The detailed work like this can put the sponsors in a capacity to negotiate for best deal in Public interest. These suggestions are applicable to both – Rate of Return and Price Cap regulations.

Traffic Volume and Growth: While running behind this new source of revenue, a fundamental question is worth repeating that was raised for Chalthan ROB case- "How wise it is to keep concession business a speculative business by transferring traffic risk on private investors?" The traffic has less of commercial character than Public owing to Public nature of commodity itself. Hence, it sounds reasonable to decrease the traffic risk so that cost of funds can be expected to be lower and hence discount rates required by the concessionaire could be lowered. The MCA (2006) has embedded this aspect partially and has accepted full monitoring of actual traffic as compared to estimates. The NTBCL has not guaranteed traffic but has opted for assured returns and hence made all three cornerstones to act in a (vicious) cycle and all inefficiencies are also coming in to play. Keeping in view these observations, it is

suggested that a concession shall incorporate atleast partial traffic guarantees for initial years of operations for Rate of Return and Price Cap regulations. Only matter is how these guarantees are converted in to lower cost to Public. There should be a negotiation for the guarantees hence the financial base case prepared by bidder shall be with and without such guarantees. The MCA (2006) (which is basically a Price Cap based model) incorporates provision of capital grants and revenue short fall loans but that is not intended to curb the traffic speculations in the design of concession agreement. As a standard sensitivity analysis practice, 15% of variation in traffic count for initial years or in gradually decreasing basis traffic guarantee is suggested as required case to case basis depending upon base case requirements. These will require monitoring of traffic volume that is hitherto neglected by Government and meaningful preparation of base case for its periodical review.

Toll Rates and Toll Period: The Government is generally fixing toll rates as per actual saving in Vehicle Operating Cost due to said improvement in service standards at feasibility level. The simple NH Fees Rules(1997) are based on these calculations. At feasibility level, willingness to pay such tolls is generally ascertained. When the toll rates are revised, IL&FS has opted for Consumer Price Index whereas NH segment of GOI uses Wholesale Price Index. In fact Government shall insist on indexation of tolls on WPI basis rather than retailer level CPI. More importantly, actual benefits to users for proposed revision of fees shall be cross checked for rationalization of increase in this burden to users. Such User's recourse shall be embedded in the concession design.

Regarding toll period, it is worth to consider economic life of structures in fixing toll periods. As per present policy, after transfer of assets to Government under BOT/BOOT format, Government continues departmental tolling but then operations and maintenance again falls prey to the **efficiency of Government**. A case of NH-8 BOT project for construction of additional bridge on River Mahi Sagar is noteworthy here.

An additional two lane bridge was built on NH-8 near Vasad on Vadodara-Ahmedabad Stretch using BOT format. The estimated project cost was Rs.42 crores and concession period of 95 months was approved by MOSRT&H in 1997-98. The concession agreement did not provide price escalation for tolls and hence base tolls

were fixed for full concession period. At the end of concession period, NHAI took over the facility and applied tolling based on NH Fees Rules (1997) but with escalation from retrospective effect. The users faced steep hike in fees without addition to their benefits as detailed in Table:V-21.

Table: V-21

Toll collection on Mahi River Bridge on NH-8

Sr. No.	Month of Collection	Amount of average daily toll collected (Rs. in Lacs rounded off)	Remarks
Toll Rates For BOT agreement : Car/Jeep= Rs.10.0; LCV= Rs. 20.0 Bus/ Truck = Rs. 25.0 MAV= Rs. 75.0			
1	Average of Jan06 to Dec-06 Note: lowest of year= 2.87 lacs per day in Aug 06 & highest in Feb 2006=4.6 lacs per day	(4.19+4.6+4.35 +4.43+4.5+4.2+ 3.66+2.87+3.2+ 3.64+4.2+3.93) / 12=3.98	Toll collected by private BOT project concessionaire (toll period of 95 months ending in December 2006) who collected tolls at constant rates without even inflation based rise
2	October 2006	3.64	-do-
3	November 2006	4.2	-do-
4	Dec 06 (Up to 18-12-2006)	3.93	-do-
5	January 2007	3.45	NHAI Operations with same toll level
6	February 2007	3.52	-do-
7	March 2007	3.45	-do-
8	April 2007	3.44	-do-
9	May 2007	3.68	-do-
10	June 2007	3.80	-do-
11	July 2007	3.00	-do-
12	August 2007	3.00	-do-
Toll Rates Revised By NHAI(Sept 2006) Car/Jeep= Rs.20.0; LCV= Rs. 55.0 Bus/ Truck = Rs. 75.0 MAV= Rs. 155.0			
13	**September 2007**	**9.45**	NHAI raised toll level for all vehicles.
14	October 2007	9.55	NHAI Operations
15	November 2007	8.60	-do-
16	December 2007	9.57	-do-
17	January 2007	9.00	-do-

(Source: Collected from GOG & NHAI Offices)

Hence the toll collection enjoyed by a private BOT project concessionaire could not be achieved by NHAI when toll level was same. The NHAI could not reach the yearly

average of Concessionaire's toll collection before raising the rates. The BOT project concessionaire reported recovery full project cost with constant toll rates but NHAI raised toll by 100% to 200% under the provision for tolling permanent bridges on national highways within nine months from taking over. Had MOSRT&H agreed to some of the claims of Concessionaire and extended the toll period under the provision of agreement, the road users could have kept on paying at agreed toll rate of Concessionaire.

Right from inception of BOT projects and in MCA (2006) also, Government has set policy to relieve the concessionaire at earliest through smaller toll period. Perhaps due to public nature of road sector, Government is not willing to hand over assets to private concern in perpetuity or longer terms. Keeping in view need of life time modifications and periodical repairs, it is hereby suggested to adopt longer concession period with periodical reviews of performance and user's concern. The concession can be periodically put to rebidding with preemptive offers to original concessionaire in order to incorporate modifications in facility and benefits of competitive pricing to the users.

5.5.4.2 Remedy To NTBCL Concession Agreement:

Eduardo Engel, Ronald Fischer and Alexander Galetovic (2005) have observed that where the Government guarantees a level of toll revenue, they weaken the incentives to screen projects for white elephants, because firms do not bear the costs of investing in bad projects. Second, guarantees shift obligations to future periods and administrations (by extending toll periods). These contingent liabilities are seldom valued, and they are typically not included in the year-to-year budget or counted as Government debt. Engel et al.(2005) feel that it is therefore tempting for politicians to give generous guarantees to stimulate investments, collect the political benefits and then pass the bill to future administrations. The remarks of Engel et al. (2005) are very much sensible for NTBCL case.

Keeping in view then circumstances of PPP environment, concession agreement for NTBCL can be understood as a stepping stone for further development of PPP with amendments in balancing manner. But the basis flaw in planning of this project was avoidance of **competition for the field** which is suggested after understanding the

problems with this project. The efforts of Government and IL&FS were pioneering but after passage of decade, the concession can be exposed to market forces to stimulate **competition for the field** and hence Demsetz auctioning of project economics is suggested as a remedy. The concession granted to NTBCL was based on Rate of Return regulation and hence if project cost at designated return is paid back, the concessionaire can be relived and amended concession agreement can be introduced. It is beyond doubt that the NTBCL has set toll levels using discretionary powers provided by CA. The perils envisaged by Demsetz are apparent in this case which requires establishment of user's recourse as an outcome of this exercise. After debt restructuring, the project is earning satisfactorily through toll operations alone but still lagging to catch level of assured 20%. Thus neither road users, nor Government is comfortable during tenure of this CA atleast going to last up to year 2030. The CA for NTBCL has severe flaws and any delay in curbing ever-increasing residual project cost could mean perpetually vesting the assets and lucrative chunk of land to private concern that has no user's recourse. If the concession period is prolonged to cover even 75% of economic life (that occurs when concession ends around year 2050) huge recurring cost is expected that will stretch the concession further with new issues. As a prudent practice, it is suggested to end such agreements by paying back dues as per agreement. This is feasible through re-auctioning of concession looking to the potential of future cash flow estimated by the company using international consultancy services.

5.5.4.3 NPV of Future Cash Flow & Future Financial Management:

Halcrow (a consulting firm appointed by NTBCL) has derived cash flow from 2006 to 2021 because the issue of GDR in March 2006 was to carry tenure of 20 years and Halcrow was keen to establish that Project was worth investing looking to cash flow from 2006 to 2021 (NTBCL Traffic Study 2006).

Table:V-22:A

Cashflow Statement projected by Halcrow up to 2021(Rs. in million)

Year ending 31st March	Toll Revenue	Total O&M Cost	Income Tax/MAT	Operating Surplus	Total Capital and Periodic Expenditure (Overlays)	Net Cash Flow
2006	353	104	0	249	0	249
2007	421	109	0	312	300	12
2008	553	131	4	419	0	419
2009	671	140	18	512	51	461
2010	791	150	26	614	0	614
2011	912	161	37	714	0	714
2012	1085	173	50	863	0	863
2013	1225	185	60	981	0	981
2014	1376	199	70	1108	69	1039
2015	1505	213	71	1222	0	1222
2016	1674	228	84	1362	0	1362
2017	1854	245	98	1511	0	1511
2018	2043	263	122	1658	0	1658
2019	2227	282	136	1809	92	1718
2020	2419	302	150	1966	0	1966
2021	2621	324	719	1577	0	1577

NPV at 9.5% discount rate for cash flow from 2008 up to 2021 is calculated by Halcrow at Rs. 7450 million

Source: NTBCL Traffic Study 2006)

Assumptions of Halcrow:

1. Toll rates are escalated at 6% per annum which is a conservative assumption since CPI has grown at 7.7% during 1991 to 2005.
2. O&M escalation is considered at 8% per annum.
3. The construction schedule for the Mayur Vihar link is being considered for 9 months, such that this facility is operational from 1 January 2007.
4. Income tax as 30 % of base rate, surcharge of 10 %, education cess of 2 %, effective rate of 33.66 %, minimum alternate tax of 7.65%. The project being in the infrastructure sector covered under section 80 IA of the Income Tax Act

is eligible for a tax holiday for a continuous block of 10 years to be opted by the Company within the first 20 years. The NTBCL is carrying forward significant amount of business loss and unabsorbed depreciation, there will be no tax payable till FY 2010. The Company is assumed to benefit from the tax holiday during the period FY 2011 to 2020 (years 11th to 20th from start of operations) and only MAT will be payable during this period. Tax at normal tax rate has been provided in FY 2021. The rate of depreciation for tax computations has been assumed @ 10% per annum on written down value basis with a salvage value of 5%.

5. The periodic overlay expenses has been escalated at the assumed rate of CPI inflation i.e. 6% and establishment and other O & M expenses of the Company have been projected using the estimated costs for 2006 provided by the Company as the base with an annual escalation of 8% per annum.

6. Discount rate used for the DCF analyses is the cost of capital of the Company & is derived as below by Halcrow. The cost of equity for the Company has been determined using the capital asset pricing model. The prevailing yield on the 10 year G-Sec has been taken as Risk-free rate which works out to 7.2%. The Market return is determined by averaging the annualized growth rate in NSE Nifty and BSE Sensex over last 10 years which works out to 10.75%. The beta (β) for the Company is 0.91. Thus cost of equity is worked out to approximately 10.5% by Halcrow. Assuming a debt equity ratio of 1:1 and cost of debt @ 8.5% pa. for similar projects, the weighted average Cost of Capital is calculated as 9.5%.

Accepting above assumptions, the NPV of Rs. 7450.00 million is realizable on March 2007 with main decision of keeping discount rate at 9.5%. If the discount rate is raised to 20% the NPV reduces to Rs.3849 million. These both are inadequate to pay back NTBCL having reported much higher residual project cost as on 31-3-2007. The total amount to be recovered up to March 31, 2007, aggregates to **Rs. 11091.17 million** (Annual reports of NTBCL 2006-07). For above proposed re-auctioning let the cash flow calculations begin from 1-4-07 and end on 31-3-2030, i.e. end of term for NTBCL. The Table:V-22:B is for assessing cashflow up to original term of concession added with first extension of two years i.e. up to FY 2030.

Table: V-22:B

Extension of Halcrow calculation for Cash flow & NPV for full term up to 2030

Year ending 31st March	Toll Revenue	Total O&M Cost	Income Tax/MAT	Operating Surplus	Total Capital and Periodic Expenditure	Net Cash Flow
2021	2621.00	324.00	719.00	1577.00	0	1577.00
2022	2778.26	349.92	762.14	1666.2	0	1666.20
2023	2944.96	377.9136	807.868	1759.17	0	1759.17
2024	3121.65	408.14669	856.341	1857.17	125.16	1732.00
2025	3308.95	440.79842	907.721	1960.43	0	1960.43
2026	3507.49	476.0623	962.184	2069.24	0	2069.24
2027	3717.94	514.14728	1019.92	2183.88	0	2183.88
2028	3941.01	555.27906	1081.11	2304.63	0	2304.63
2029	4177.48	599.70139	1145.98	2431.8	170.29	2261.51
2030	4428.12	647.6775	1214.74	2565.71	0	2565.71

Note: NPV at 9.5% discount rate for cash flow from FY 2008 up to FY 2030 is found from above Tables :V-22:A&B = Rs.10720 million.

(Source : Derived based upon given assumptions)

The above derivation for year beyond 2021 under Table:V-22B is prepared from calculations made by Halcrow under Table:V-22:A up to 2021. Since Halcrow did not foresee any significant growth of traffic beyond 2021, revenues are projected with escalation of 6% and all other expenses projected @8% as per earlier assumption. For taxes, the tax is increased from 2021 at 6% (i.e. at the rate of increase of toll revenue) which is some what conservative assumption made herewith. Further, the Table:V-22:B is extended with safer assumption of keeping Toll income rounded up and kept constant from 2030 (and hence the tax) and Table V-22: C is prepared. The Table:V-22:C is for cash flow considering thirty years from FY 2008 so that a new concession could start from FY 2008 for next 30 years. The other assumptions are maintained as per Table:V-22:B. Here, it is now new term of 30 years from year 2008 up to 2037 and it yields Rs. 12150 million NPV.

Table: V-22: C

Extension of Projected Cashflow Up To 2037

Year ending 31st March	Toll Revenue	Total O&M Cost	Income Tax/MAT	Operating Surplus	Total Capital and Periodic Expenditure	Net Cash Flow
2029	4177.48	599.70139	1145.98	2431.8	170.285579	2261.51
2030	4428.12	647.6775	1214.74	2565.71	0	2565.71
2031	4450.00	699.4917	1225.00	2525.51	0	2525.508
2032	4450.00	755.45104	1225.00	2469.55	0	2469.55
2033	4450.00	815.88712	1225.00	2409.11	0	2409.11
2034	4450.00	881.15809	1225.00	2343.84	231.671651	2112.17
2035	4450.00	951.65073	1225.00	2273.35	0	2273.35
2036	4450.00	1027.7828	1225.00	2197.22	0	2197.21721
2037	4450.00	1110.0054	1225.00	2114.99	0	2114.99458

Note: NPV at 9.5% discount rate for cash flow from 2008 up to 2037 is found from above table = Rs. 12,149.62 million.

(Source : Derived based upon given assumptions)

Summing up from Table:V-22:A,B &C, if it is assumed that the DND Flyway is offered for sell for remaining term of the concession, it shall at least fetch Rs. **Rs.10720 million** on March 2007 (Table:V-22:C). The proceeds of the deed could be useful to payback almost of the total project cost at the end of March 2007. In fact, the total amount to be recovered up to March 31, 2007, aggregating to **Rs. 11091.17 million** can get reduced further if residual project cost and returns attributing to Government equity of Rs.100 million is forgone by Public Authority. Thus it is very much possible to terminate the concession to get rid of non conventional provision of assured return @ 20% by sale proceeds receivable from takers of new concession. This will benefit to Government and ultimately the users.

However it is logical to check up validity of Halcrow assumption for traffic because viability of above work out hinges upon future traffic predicted by Halcrow. Fortunately, the actual traffic has been realized during 2006-07 almost as envisaged by Halcrow.

Table: V-23

Achievements in Daily Traffic during 2006-07 Compared To As Envisaged By Halcrow

Class	2-Wheelers	Cars	Trucks / Buses	Total
Projected	19662	49192	1518	70,372
Actual	18446	48,876	1302	68652
Achievement	94%	99%	86%	98%

Note: The maximum capacity of the Delhi- NOIDA Toll Bridge is approximately 222,000 vehicles per day.

(Source: Annual report of NTBCL 2006-07)

5.5.4.4 Objective of Instating New Concession:

The above exercise has confirmed pay back to NTBCL from calculations based on escalation of future tolls indexed to CPI from FY 2006. The bidding for sell off (which will be basically long term lease wherein term of lease will be as per actual calculations since the effective life of the structures of the project is given 70 years from Year 2000) should be targeted to reduce the toll level at present or for future years. If necessary, at a policy level, tax holiday can be extended for such toll reducing re-bid exercise in BOT/BOOT projects in India. The sale off can generate immense response because with 'DND Flyway to Mayur Vihar' opening up, the actual traffic is almost as envisaged by Halcrow in its validation study (NTBCL Traffic Study 2006).

An illustrative exercise of reducing tolls for various cases-at 10% for all years; from 5th year; 10th year and 15th year of operation when new tolling starts from 1-4-07 are given below.

Table: V-24

Effect of reducing tolls on estimated NPV for sell out

Options	Toll reduction Assumed from	NPV as on 31-3-07 Rs. in million for cash flow 2008-2030	% Reduction in NPV estimated earlier i.e. Rs. 10720 Mn
Option-1	Reduce toll for all users by 10% from first year starting from 1-4-07	9,410.11	12%
Option-2	Reduce toll for all users by 10% from fifth year starting from 1-4-11	9,633.84	10%
Option-3	Reduce toll for all users by 10% from tenth year starting from 1-4-16	9,975.99	7%
Option-4	Reduce toll for all users by 10% from fifteenth year starting from 1-4-21	10,311.13	4%

Note: Year wise estimated toll revenue is reduced by 10%to drive NPV from Table:V-22.

(Source: derived from Halcrow data as in above tables)

Thus the toll rebates under various options still gives huge estimate of NPV with trivial reduction in NPV especially when rebates are given on later date. For public acceptance of PPP policy *per se*, an introductory rebate in toll levels will always invite appreciation.

The bidding criteria of such re-auctioning will require bidders to bid for highest toll rebates over present toll levels in addition to upfront paying for relieving NTBCL as per residual project cost. Considering prosperous cashflow estimates, Rate of Return regulation may not be needed to attract the bidders of such re-auctioning. Following MCA (2006) the toll period can be kept fixed as estimated from detailed base case at Government level. However considering the concept of NPV, with out assuring for NPV, monitoring of NPV may be required for further negotiations. Since, there is no construction involved; non engineering firms will also form potential bidders for such re-auctioning. The case is simpler because the project has gone through all problems related to construction period & traffic "Ramp Up" period required in initial years. Now it is only job of financially managing the toll revenue which does not require the bidder versatile capabilities. The reinviting bids will also resolve problems with lumpy investments required at construction stage. No wonders if NTBCL or IL&FS wins the bid with highest offer on toll rebate for continuation of its established operations. The exercise is worth attempting since any failure in achieving beneficial bid will only mean continuation of existing concession to NTBCL. Of course, the new concession shall incorporate review of loss/gains to new concessionaire over his term for various aspects of project cost and traffic growth as discussed in preceding subsections. Any further re-auctioning will be embedded in the new concession agreement either to relieve the loss making concessionaire or to wipe off excessive profits when the concessionaire attains substantial amount of his estimated NPV or when scope of facility requires huge new investment to accommodate new needs. Here it is relevant to recall (Paragraph: **2.4.4 Chapter-II)** selling off public assets namely Chicago skyway and Indiana Toll Roads in US to private parties resulted in to windfall for local Governments who were owners of these assets and were facing resource crunch even to perform debt servicing. This is a positive aspect of such deals. In any case, working out of a detailed financial plan and base case will be required to proceed once the most importantly, political will is prepared.

5.6 CASE-3: CONSTRUCTION OF FOUR LANE VADODARA – HALOL ROAD SH NO.-87 WITH ACCESS CONTROL DIVIDED CARRIAGE AND SERVICE ROADS KM 8/300 TO 40/00

5.6.1 Project Background and Formulation:

This was the pioneering work at State level in Gujarat State where a State Government initiated to introduce tolling concept on State Highways by converting a State Highway passing through rural area in to an access controlled superior highway. Similar to earlier case of Delhi-NOIDA Toll Bridge this is also IL&FS endeavor to induce Private Sector Participation in road development. In absence of Tolling legislation on State Highways, the Gujarat Amendment to Bombay Motor Vehicles Tax Act (1958) in 1994 enabled to levy tolls on motor vehicles utilizing State Highways in Gujarat that have been either constructed, reconstructed, upgraded or repaired by private enterprises which have been specifically authorized by the State Government to do so. This was followed by GOG entering into a Memorandum of Agreement (MOA) with IL&FS on 31st October 1995 for implementation of development, upgradations, repair, operation and maintenance of road projects on a commercial basis through private participation utilizing private financial resources. The GOG identified and formulated Vadodara-Halol Road project for implementation under the terms of MOA with IL&FS.

The selection of project was convincing because the GOG was incurring heavy expenditure every year to maintain the existing two lane State Highway between Vadodara- Halol. The underlying crust was rigid concrete cracked pavement which required heavy expenditure to remove the old crust and any renewal was not sustaining in such case. The traffic intensity was good enough (approx. 16000 PCU per day in 1996) but the route was not popular for interstate traffic due to persistent impaired condition of road. In fact the route between Vadodara-Halol (SH – 87) and its continuity on Halol - Godhra - Shamlaji (SH-5 which is part of Eastern State Highway between Vapi to Shamlaji running parallel to NH No.-8) is providing shorter alignment between Vadodara to Shamlaji (and hence Vadodara- Delhi) as compared to Vadodara- Shamlaji connected through NH-8 for Delhi bound traffic going through Rajasthan. At that time Vadodara- Ahmedabad Expressway was not constructed but even after construction of Expressway, the project corridor is part of shortest link to Shamlaji and Delhi. In any case, traffic between Vadodara & Halol

was always important to cater to industries in these two cities and to the traffic reaching Godhra, Dahod, Zalod, Banswada (Rajasthan) and Indore. The interstate traffic starting from Vadodara. for Delhi (via Godhra-Shamlaji); for Indore (via Godhra- Dahod) and for Banswada (via Godhra- Zalod) must pass through Vadodara-Halol Stretch. The poor riding quality on all the stretches joining Gujarat border and unsafe tribal zones were deterring the interstate traffic to use Vadodara- Halol route.

Table: V-25

Alternative Routes to Vadodara-Halol- Shamlaji Road

Sr. No.	Route	Route length difference & traffic aspects
1	Vadodara-Ahmedabad (Expressway)-Himmatnagar- Shamlaji Road(NH-8)	25.0 km longer than Vadodara-Halol-Shamlaji. But involves interface with urban traffic & Expressway tolls are high.
2	Vadodara - Dakor - Asundra - Bayad - Modasa - Shamlaji Road (Except Vadodara - Vasad on NH-8 all State Highways)	5.0 km shorter than Vadodara-Halol-Shamlaji but involves interface with urban traffic at several places. Still it is known as competitive route in view of improved condition of State Highways. The toll to be spent is less as only Mahi toll bridge is faced.
3	Vadodara-Nadiad-Kapadvanj-Bayad- Modasa-Shamlaji Road (Except Vadodara- Nadiad on NH-8 all State Highways)	10.0 km longer than Vadodara-Halol-Shamlaji & involves interface with urban traffic at several places. Still it is known as competitive route in view of improved condition of State Highways The toll to be spent is less as only Mahi toll bridge is faced.

(Source: Derived from State route maps)

The four lanning of Vadodara- Halol stretch was taken up on PPP basis and subsequently strengthening of remaining route to Shamlaji(for Delhi) was taken up under World Bank assisted Gujarat State Highways Project (GSHP). Later on, Godhra to Dahod (for Indore) and Godhra to Zalod (for Banswada) were declared as National Highways and thus platform was created to attract interstate traffic on Vadodara-Halol Road. Actually, Vapi-Shamlaji link is capable of competing with NH-8 to serve traffic for Delhi, Banswada and Indore emanating from Vapi and it avoids NH-8 between Vapi-Vadodara and hence Vadodara- Halol. The whole link is improved under World Bank assistance but Vapi to Halol link is passing through mainly tribal, scanty populated region of East Gujarat. Hence commercial traffic shuns such link

and prefers NH-8 at least between Vadodara-Vapi except diverted by the authority on this route. Hence, all the way the route between Vadodara-Halol shall remain important route for interstate traffic as far as link beyond Vadodara-Halol remains **toll free** yet of comparable standards.

5.6.1.1 Structuring Of Vadodara- Halol Toll Road Project:

Like any PPP project, this project was also structured based on feasibility studies. The detailed feasibility report submitted by Kirloskar Consultants (VHTRL 1996) discussed three options for this toll project based on segregation of local traffic from through put.

They were:

Option: I. Strengthening & widening existing 2 lane to 4 lane along with limited length of service road at selected locations & thus no alternative to toll road

Option: II. Same 4 lane toll road but with alternative toll free service road with lower service standards abutting carriageway of toll road

Option: III. It is like option-II but differential toll rate on service road (still local however traffic using limited length of service road are not tolled) abutting carriageway segregating local trips and slow moving vehicles.

Table: V-26

Cost Comparison for three options (Rs. million per km)

Sr. No.	Description	Option-I	Option-II	Option-III
1	Base construction cost	25.69	36.31	29.60
2	Total landed project cost	38.11	53.73	43.88

(Source: VHTRL Feasibility Report 1996)

The final outcome was modification of Option II&III and service roads were designed in full length to separate out local vehicles and to be tolled if vehicles were found traveling from one end toll booth to another end toll booth i.e. service roads can not be free alternative and are tolled at same rate. Practically due to resistance from road users for availing free alternative, many vehicles kept using service road free till Vadodara-Halol Toll Road Company (VHTRL) got strict from April 2003.

For implementation, pursuant to Memorandum of Agreement (1995) with IL&FS the GOG decided to implement this project on Build-Own-Operate-Transfer (BOOT) basis with the assistance of IL&FS. The IL&FS assisted GOG in incorporating a special holding Company called Gujarat Toll Road Company Ltd (GTRL) later known as Gujarat Toll Road Investment Company Ltd (GTRIL). The GTRL was accepted as concessionaire in unsolicited manner who operated through a special purpose vehicle namely Vadodara- Halol Toll Road Company (VHTRL) under the management of GTRL. The GTRL or VHTRL are not listed on capital market for the reason not going public so far. This fact has some impact on getting information for this case study. The Gujarat Toll Road Company Ltd (Concessionaire) was in fact a corporate entity having equity held by GOG, IL&FS and companies set up by Contractors for civil works namely Punj Lloyd & IRCON International ltd. The brief account of civil works and major events of this project are as below.

Table: V-27

Civil Cost Related Features and Major events Of the Project

Scope of Work	31.7 Km Long Road Widening & Strengthening Of Existing 2 Lane To Four Lane ; Two Service Roads; 3 Major Bridges; 3 Minor Bridges; 53 Cross Drainage Works; Two Toll Plaza
Project Engineer(Designs)	Lea Associates Ltd., Canada
Independent Engineer(IE)	Frischman & Prabhu (India) Pvt. Ltd.
Independent Auditor (IA)	A.F. Fergusson & Associates
Civil Contractor	Punj Lloyd & IRCON International ltd. JV
Type of Construction Contract	Lump Sum Fixed Cost Contract
Construction Cost	Rs.119.00 crore
Construction Period	18 Months
Defect Liability Period	18 Months
Date of Commencement of civil work	1-3-1999(Stipulated & Actual)
Date of Completion of civil work	31-8-2000 (Stipulated)
Substantial Completion Achieved on Date	15-9-2000 (Revised Date Of Such Completion As Per Revision Of Scope)
Date of Completion as certified by IE	23-10-2000(i.e. toll starts next day)
Payment Schedule	Milestone Basis
Mobilization Advance	30% of Construction Cost
Date of signing concession agreement	17-10-1998
Date of signing O&M contract	22-1-1999

(Source: GOG offices)

The civil cost of project was found Rs. 119.00 crores as was estimated but it was added by Rs. 2.61 crores of additional works hence the civil cost was Rs. 121.61 crores. After adding for social-environmental, land acquisition, preoperative & preliminary expenses incurred by IL&FS before award of civil work, Interest during construction, this cost was landed at Rs. 156.05 crores which was added by notional cost of shareholders' funds and hence landed project cost was derived at Rs. 170.94 crores. The notional cost of shareholders' funds was derived as per provision in Concession Agreement (CA) i.e. 20% on equity / preference share capital & 3% on term loans provided by shareholders. The 3% was due to difference between prescribed 20% and actual interest paid as per books of account. The break up of these Rs. 175.00 crores was envisaged as below and is almost adhered as per actual cost:

Table: V-28

Estimated Landed Project Cost (Rs. In Crores)

Attributes To Project Cost	Amount of Attribute	% of Attribute To Project Cost
Construction Cost	119.53	68.30%
Social & Environmental Cost	4.49	2.60%
Preliminary & Preoperative Expenses	7.44	4.20%
Interest During Construction	12.10	6.90%
Fees	7.1775	4.10%
Sinking Fund	3.95	2.30%
Debt Service Reserve	13.55	7.70%
Contingency Provision	6.76	3.90%
Total	175.00	100%

(Source: GOG offices)

This project cost definition is not only restricted to construction cost as it was in cash contracts. Unlike cash contracts, interest during construction and many such attributes build up the cost to be paid from public funds which is tolls in this case.

5.6.2 Project Details:

The Toll project has following physical and contractual features.

5.6.2.1 Salient Features of Vadodara- Halol Toll Road:

This is an access control State Highway with superior features like Expressways. The silent features are:

- ✓ Widening and strengthening of existing 31.7 Km long road from two lanes to four lanes divided carriageway and continuous service roads on either side. Grade separation where ever required.
- ✓ Construction of new bypasses at village Jarod, Asoj and Baska 2 Nos.
- ✓ Main Toll Plazas one Vadodara side and other Halol side at Km 8+970 and Km 39+750 respectively and one intermediate toll plaza at Savli – Waghodia Junction.
- ✓ 3 major bridges and 3 minor bridges.7 Nos. Underpasses of size of 5 m x 3 m.
- ✓ Retro-reflective signboards to improve road safety with very good riding quality to enhance user comfort.
- ✓ Embankment Repairs and Turfing to stabilize the slopes.
- ✓ Round-the-clock Highway Patrolling 24 hours Ambulance services.
- ✓ Extensive tree plantation and transplantation of trees. Provision of roadside arboriculture and landscaping.
- ✓ Provision of bus-bays, bus-stops, passenger shelters and truck lay-bys along the project road.
- ✓ Smart Card technology is optionally used for regular users to facilitate ease of transaction

5.6.2.2 Main Aspects of Concession Agreement:

The concession design for Vadodara-Halol Road is same as NTBCL case, based on 20% assured returns on total investments. The NOIDA and Government of UP are replaced by Government of Gujarat and NTBCL is here GTRL (For study purpose GTRL and VHTRL names are used invariably here).As per BOOT format, rights to develop land are also incorporated. The concession period is not fixed and it is earlier of (a) 30 years from date of starting of toll operations & (b) the date on which the Concessionaire shall recover the total cost of project and the returns thereon @ 20% from toll revenues, income from development of project length or any agreed means. The roles of Independent Engineer and Independent Auditor are the same as NTBCL case. If at the end of 30 years of tolling, the project cost is not recovered with specified returns as certified by IA, the concession period can be extended by 2 years at a time till it is accomplished. The GOG can also see that in such case the increased

toll rate or revising any terms of CA may help in accomplishing the returns. The GOG may extend capital grant for the end of concession at that time. However among minor changes over NTBCL case, here concession period allows 30 years of toll period itself whereas NTBCL concession agreement considers no separate toll period. In NTBCL case, concession period is thirty years from effective date (starting date of construction) or date on which assured returns on investment are attained. Practically, this difference has no meaning looking to the 20% assured rate of return in both the cases.

Figure: V-7

Project Span for Vadodara- Halol Toll Road

←	**By definition in CA, Concession period starts from signing CA and ends after tolling is over. GOG shall hand over vacant land within first six months.**		→
After signing CA **appointment of Contractor** within three months	**Construction shall start** within three months	18 months of construction period (max. two years to achieve **substantial completion**)	30 years of **toll period** or extended till project cost with 20% return is achieved by the Concessionaire

(Source: Conceptualized from Concession Agreement of VHTRL)

1. **Bidding Criteria**: As discussed above, no bidding was done for award of monopoly under CA. Thus **competition for field** was avoided by sponsors.
2. **Base Case Submission by Bidders**: The concession agreement accepts base case financial model prepared by GTRL. Similar to NTBCL, every year, IE/IA determine residual project cost to be recovered based on revised cost of project due to additional expenditure (beyond base case)and deficit in assured returns.
3. **Grant Amount to Concessionaire**: As discussed in NTBCL case, this is not applicable when toll period varies to suit to assured returns.
4. **Responsibilities of Government:** The Government has not been assigned any contractual obligation/penalties for not timely completing obligations related to project. The existing and future problems related to utilities and land acquisitions are left to the Government. Indirectly, any delay from Government on account of delayed clearances is going to increase project cost.
5. **Construction & Maintenance of Facility:** The CA is referring to EPC for civil works like cash contracts. The IE/ IA play major role in determining

actual expenditure incurred on the project and its admissibility to project cost to be recovered as explained for NTBCL case. For maintenance, a separate O&M Contract with EPC contractors is signed that requires paying Rs. 4.8 crores per annum (Rs. 3.1 crores for toll collection and Rs. 1.7 crores for repairs, both linked to CPI).

6. **Project Cost and Returns**: The total project cost shall be the aggregate of – Civil cost of original work with IDC; Major Maintenance Expenses; Shortfalls in recovery of Returns in a specific financial year. The Project Cost has to be determined on the Project Commissioning date by the Independent Auditor with the assistance of the Independent Engineer. The amounts available for appropriation by VHTRL for the purpose of recovering the total project cost and the returns thereon shall be calculated at annual intervals from the Effective Date in the following manner just like NTBCL case:

Total Revenues to be appropriated =
Gross revenues from Fee collections, income from advertising and development income or other income as specified
Less: O&M expenses
Less: Taxes.

7. **Extension of Concession Period** :The Concession Period shall commence on 17th October 1998 (the date of signing CA) and shall extend until the earlier of: a period of 30 years from the starting date of tolling; the date on which the Concessionaire shall recover the total cost of the project and the returns at 20% as determined by the independent auditor and the independent engineer through the demand and collection of fee, the receipt, retention and appropriation of development income and any other method as determined by the parties. In the event of VHTRL not recovering the total project cost and the returns thereon within the specified time the Concession Period shall be extended for a period of 2 years at a time until the total project cost and the returns thereon have not been recovered by the Concessionaire. The CA is not mentioning cash transaction for making good the deficit in assured returns but it is plausible.

8. **User Fee** : Like NTBCL case, CA allows restricting the use of the toll road to motorized vehicles and diverts all tractors, bicycles, cattle driven vehicles,

cattle, pedestrians, cycle rickshaw type of vehicles which in the opinion of the Concessionaire are likely to affect service levels on the toll road to the service roads. This is significant power to discriminate the users for use of main carriageway. Similarly it empowers to enforce the collection of toll from delinquent users or impound the vehicles with out being liable for consequences. The Concession Agreement had determined the Base Toll Rates as on base end of FY 1997 and shall be revised to determine the initial Toll to be applied to the users of the project on the Project Commissioning Date (the "Toll Rate"). The following are the Base Toll Rates:

Table: V-29

Base Toll Rates for VHTRL (Rs/Trip)

Vehicle Type	One Way Fee in Rs.
Two Wheelers	2
Three wheelers (Auto Rickshaws)	5
Cars/ other three wheelers	20
Light Commercial Vehicle	33.6
Bus – 2 axles	48
Truck – 2 axles	48
For each additional axle beyond 2 axle	12

(Source: CA for VHTRL)

Like NTBCL case, same CPI based formula for deriving toll level at inception level(i.e. Initial Toll rates) and for annual revision are applicable. The Toll Rates are to be revised annually by the Toll Review Committee. The Toll Review Committee is established which comprised of one representative each of GOG and the Concessionaire. The remaining third representative is a duly qualified person appointed by the representatives of GOG and Concessionaire who shall also be the Chairman of the Committee.

The revision of tolls over the years is given under Table:V-30. The toll levels are not capped but the increase is also not linked to CPI as found from Table-V-30. The reasons for irregular toll increase are more focused on viability of project as elaborated for NTBCL case.

Table: V-30

Actual Toll Rates on Vadodara- Halol Toll Road

(Toll Started From 24-10-2000)

Effective Period	Trucks		Bus	LCV	Car & Other LCV	Rixa	2 Wheeler
	2 Axle	Every Additional Axle					
As Certified by IA on inception	60	15	60	45	25	10	5
From 24-10-2000 to 31-3-01	50	15	50	30	20	10	5
From 3-4-01 to 31-3-03	65	20	65	45	30	10	5
From 25-4-03 to 31-3-04	70	50	70	50	30	10	5
From 29-11-04 to 31-3-06	75	50	75	40	25	10	5
From 1-4-06 to 31-3-07	85	55	85	45	30	15	10
From 1-4-07 onwards (up to 10-6-08)	90	60	90	50	30	15	10
% Increase over BTR	**87.5%**	**400%**	**87.5%**	**48.80%**	**50%**	**200%**	**400%**

(Source: Derived from GOG notifications & Progress reports submitted by Concessionaire to GOG)

9. **Free Service Roads for Local Traffic**: Unlike latest ruling of allowing local traffic at free of cost under MCA (2006), here any traffic using full length of service road is deemed to be tollable at par.

10. **Traffic Risk**: Like NTBCL case it is a project based on assure returns, traffic or any such risks are not identified and allocated to the VHTRL. But no traffic revalidation studies are conducted to monitor and catch additional traffic for viability of project. The development rights granted on this project has no

commercial value owing to barren rural surrounding on both sides of project road.

11. **Special Rights to Concessionaire:** Like NTBCL case the concessionaire has been given the right to mortgage its interest in the project assets, including the project site. This is unusual looking to the public nature of such land and assets . However, the BOOT contract includes ownership aspects and hence such rights are available with Concessionaire.

12. **State Support Agreement and Construction of Additional Tollway:** The Concession agreement requires support from State Authorities in establishing bilateral monopoly between the Government and the concessionaire. The agreement abides GOG not to propose, recommend, implement or develop, establish, finance, construct, own, manage or operate any new road or change in any way the operation of any existing road or permit any other person to do so which in the reasonable opinion of the Independent Auditor would adversely affect the traffic flow or revenue streams of the project road or affects rights and interests of the Concessionaire. The CA provides scope to challenge decision of IA in the Arbitration but the monopoly component is not contended by the GOG. To substantiate the viability concern, CA requires from GOG not to levy any toll or fee/taxes on the users of the facility or on the users of any connecting road which is within 50 km to this project or divert traffic from such roads so as to adversely affecting the viability of project. In such case of diversion of /closure of feeder roads, the IA shall calculate the losses to the Concessionaire and that is added to the project cost to be recovered through tolls. This relief is thus over & above assured returns. The agreement has identified few upcoming projects (e.g. Vadodara- Ahmedabad Expressway) nearby this project site and declared them to be excluded from such clause. Also, the CA does not allow toll exemption to any class of users and if GOG wishes, it can be done with cost to be reimbursed to the Concessionaire. In the event of extension of Municipality limits on either side of project length, the CA ensures from GOG side to exclude this stretch from being covered under such extension of jurisdiction.

The CA asks GOG to waive unconditionally and irrevocably any immunity to execute GOG under provision of agreement and to treat this agreement as commercial act instead of public or Governmental act. This is like taking Sovereign at par and recognizing this project as commercial project. But the provisions of CA on other hand is asking Sovereign guarantee to play major role in extending comforts to the lenders. Further, the land and asset is transferred to Concessionaire, and then also, the CA is trying to single out GOG to take responsibility for all unfavourable events.

13. **Financial Aspects, Subsistence Revenue and Revenue Shortfall Loans:** The CA is not specific for financing of project. No financial indicators are checked or specified. The CA is not making any reference to subsistence level revenue or revenue shortfall loans. In fact, IL&FS being financial expert, inbuilt mechanism to identify and assure subsistence was required to be provided in terms of some contingencies on atleast smaller scale.

14. **Risks, *Force Majeure* and Termination of Agreement:** The Concession Agreement provides for three different classes of *Force Majeure*, namely "Natural *Force Majeure* Events", "Direct Political Event" and "Indirect Political Event". The CA is not distinguishing occurrence of events during construction and toll period. The remedies and compensation under each class of events are similar to NTBCL case only difference is, except "Direct Political Event" in all events the GOG pays for outstanding debts only and it pays directly to the lenders. The risk matrix is not defined under agreement but it can be derived as following that explains all the risks are basically borne by the GOG. In case of termination due to VHTRL default, the compensation is, only debts are assumed by the GOG and in case of Government's default, project cost with assured returns is payable to the concessionaire just like NTBCL case.

Table:V-31

Risk Allocation as per VHTRL Concession Agreement

Type of Risk	Who Bears Risk
Commercial or Revenue Risk	Government of Gujarat
Sovereign Risk	Government of Gujarat
Natural *Force Majeure* & Indirect Political Events	VHTRL & Insurance (Debts Served By GOG)
Political Risk & Legal Risk	Government of Gujarat
Time Overrun and Cost Overrun	EPC Contractor
Project Risk	Government of Gujarat
Financial Risk	VHTRL
O&M Risk	O&M Contractor

(Source: Derived from Concession Agreement)

The concession agreement does not spell out the penalty payments or sanctions on Concessionaire for not adhering to performance specifications/standards. Such penalties are covered under agreement between O&M contractor & Concessionaire

15. **Lender's Recourse**: Pursuant to the terms of the Concession Agreement, the GOG has to enter into an agreement (the "Direct Agreement") with lenders obtaining, holding and enforcement of the security created under the various loan agreements entered into by the VHTRL. Due to this direct agreement, GOG assumes loan repayment to all lenders if project does not generate sufficient cash inflow. The lenders recourse is same as NTBCL case with provision of Step in rights and novation of agreement. Similarly for IDFC and IL&FS entered into the agreement for the purposes of a takeout of the Deep Discount Bonds (DDBs). Thus IL&FS has detailed lender's recourse but finally the Government is liable for repayments.

16. **User's Recourse**: The CA is not mentioning any road side facility to users and not guiding for customer's inconvenience. The CA sees that no bottleneck conditions arise at project site and road surface is maintained at specified limit

of roughness. But value for money that is after paying for facility the user actually is benefited or not is not ascertained.

17. **Dispute Resolution Mechanism:** The CA discusses role of consultants for amicable resolution of disputed issues. The usual Arbitration tribunal (Indian Arbitration and Conciliation Act 1996) is the last recourse as per agreement.

5.6.3 Actual Operations and Issues:

The concession agreement reviewed above is quite methodical similar to NTBCL case to account the project cost year to year, securing designated returns with full comfort to lenders. But due to its inbuilt provision of secured rate of return, many planning and management issues are faced by the company and the planners. The traffic, a common critical factor for all BOT/BOOT projects has affected the all three cornerstones (Figure: V-6) of the concession design that stretches concession period indefinitely in absence of provision for cash transaction upfront or during operations for deficit/surplus revenues in the project. The VHTRL has also opted for very similar financial plan to implement the project.

5.6.3.1 Financial Plan of Concessionaire:

Though exact financial plan/estimates at signing of concession are not available, what has been implemented to construct and put the facility open to traffic is discussed hereunder. During signing of Shareholder's agreement (i.e. on date 21-6-1999), the estimated project cost was envisaged at Rs. 178.39 crores and initially the debt structure proposed by the VHTRL was of around Rs 124.90 crores (Debt/Equity Ratio=2.33). The proposed equity structure amounting Rs. 53.5 crores expected Rs. 11.5 crores of equity support from O&M contractor, Rs. 15.0 crores from IL&FS, hefty equity funds of Rs. 22.0 crores from specialist market funds and Rs. 5.0crores from GOG. On financial close, the equity stake of Government of Gujarat was raised from 5.0 crores to 15.0 crores by transferring proposed 10.0 crores of debt into equity. On other side, IL&FS reduced its debt from Rs.44.60 crores to Rs.20.0 crores however equity was maintained at Rs.15.0 crores as proposed earlier.

Table: V-32

Original Debt Structure (Before Financial Close) Proposed By VHTRL (Project Cost Estimated Rs.178.39 crores)

Debt Source	Debt Amount (Rs. in crore)*
Government of Gujarat	10.00 (8%)
World Bank line of Credit to IL&FS	44.60 (36%)
Deep Discount Bonds (DDB's) (Risk participation shared between IL&FS and IDFC)	20.00 (16%)
Institutional Bonds	10.90 (9%)
Indian Financial Institutions e.g. IDBI, IFCI,	39.40 (31%)
Total	**124.90 (100%)**

(Source: GOG and VHTRL Offices)

The financial plan as per financial close is given under Table: V-33. The financing structure of project is embedded with concept of back ended Deep Discount Bonds that suits to long gestation period of such projects. The IL&FS has actually worked like creating a holding Company for garnering equity from pure financial institutions primarily based on Government guarantees and reasonably applied leverage over equity funds. On actual implementation, project cost was reduced to 160.0 crores on completion of civil work (as certified by independent IA/IE) but as discussed above, IL&FS managed to reduce lesser exposure to the financing of project. Similarly, financial institutions of India were exposed to debt of Rs.75 crores as compared to earlier estimates of Rs 39.40 crores. Thus, major chunk of debt was availed from financial institutions and banks on the basis of most secured lender's recourse embedded in the agreement.

Table:V-33

Actual Financial Plan (on Financial Close) for Estimated Project Cost of Rs.175. 0 crores

(Rs. In Crores)

Equity	Holding Company	GOG	Equity	5.0(9%)
			Preference Share Capital	10.0(18%)
		IL&FS	Equity	15.0(27%)
		American Infrastructure Group (AIG) Indian Sectoral Funds	Equity	10.0(18%)
	Punj Lloyd (EPC & O&M Contractor)	Spectra Infrastructure	Equity	11.5(21%)
		Manav Investments	Equity	3.5(7%)
Total Equity(31%)				**55.0** (100%)
Debt	IL&FS		Subordinate debt	10.0(8%)
			Term loan (W.B. Line of Credit)	10.0(8%)
	IDBI		Term Loan	19.727(16%)
	IFCI		Term Loan	19.727(16%)
	SBI		Term Loan	11.852(10%)
	CBI		Term Loan	7.898(7%)
	BOB		Term Loan	7.898(7%)
	GIIC		Term Loan	7.898(7%)
	With Take out Guarantee by IL&FS And IDFC		DDB	25.0(21%)
Total Debt(69%)				**120.0**(100%)
Total Funds(100%)				**175.00**
Total Project Cost envisaged at financial close = Rs.175.00 Crores				**Debt/Equity Ratio = 2.20 : 1 or 69:31**

(Source :GOG offices)

For Deep Discount Bonds (DDB), the take out guarantee was provided by IL&FS. Later take out finance for DDB was shared by IDFC for Rs. 20.0 crores & Rs. 10.0 crores by IL&FS and it was decided to issue DDB for Rs. 30.0 crores. These DDBs were having option of call and put after eight years from issue in 2000-2001. Hence, if at all take out is needed, it shall come in 2008-2009 and take out money shall be converted in to a term loan as decided in terms for take out financing. It was thought

to reduce term loans by Rs. 5.0 crores from financial institutions by increasing DDB. This was the period around 1998-99 when bank rates were @18% and lenders were not interested to finance such projects owing to uncertainty of toll revenues, vague understanding for lender's recourse to toll operations and absence of tolling experience. In such circumstances, IL&FS could manage hefty debts from financial institutions/banks and was able to attract AIG equity funds. Initially IL&FS suggested for holding Company structure for Concessionaire Company looking to the secured returns. The proposal of setting up of a holding Company with specific goal to invest in the equity /quasi equity investments required by highway projects was approved by GOG with equity of total Rs. 30 crores at starting. However, this being a single purpose Company and project generating fixed type of returns only in later stages return point of view equity investors found it less attractive. Also, typically equity investors would like to exit through the listing of Company in the capital market and such exits are not provided in such projects. However, sectoral funds set up for investments in infrastructure are in search of larger scale of investments which is suitable for such large toll projects. Under this format, IL&FS received commitment of Rs 10 crores from the India Sectoral Equity Fund sponsored by American International Group and could attract debts through private placement of DDBs.

5.6.3.2 Financial Performance:

The financial performance of VHTRL is no different from NTBCL case, mainly hampered by poor turn out of traffic. Similar to NTBCL, debt servicing overweighed the project revenues and debt restructuring was executed to bailout the company within three years of operations.

5.6.3.2.1 Poor Revenue from Tolls:

The actual traffic realization on this old time existing State Highway was not adequate enough after incurring huge project cost for four lanning the road. The detailed feasibility report of this project expected high industrial growth of Vadodara- Halol stretch and spur in interstate traffic over the coming years. The consultant observed more than 16000 PCU of traffic on this corridor during survey stage while preparing feasibility report during 1996. The share of goods vehicles was around 45% and in that 80% of goods movement was originated by this corridor itself. The consultant

expected this 16000 PCU to grow by 38% by year 2000, i.e. around slightly more than 9% per annum due to perhaps better riding quality being offered associated with doubling two lane to four lane divided carriageway and increase in speed of traffic flow. The Consultant has estimated traffic on his assumption of 8.8 % of growth rate for first few years then around 7.7% which did not match right from inception and the lagging has accumulated to cross 60% of shortfall mark during recent years. In fact the traffic has withered away from observed base traffic of 16000 PCU in 1996 after inducing tolling in year 2000. This is shocking keeping in view positive growth of traffic during1996 to 2000. Hence this is one more example of overestimated traffic by the consultant but supported by full fledged assured returns under CA. The survey results of Consultant & actual traffic turn out are presented in Table: V-34:A.

Table: V-34: A

Survey Results at Feasibility Stage in 1996 for Vadodara- Halol Road

Location	Car (PCU = 1.0)	Bus (PCU= 3.0)	Goods Vehicles (PCU=3.0 for trucks & 4.5 for MAV)	2 Wheeler (PCU = 0.5)	Auto Rixa (PCU =1.5)	Bicycle (PCU = 0.5)	Total (incl. carts)	Total PCU per day
Km 9/200 i.e. Vadodara side end	1883	523	3981	1640	239	619	8911	16035
Km 38/800 i.e. Halol side end	1817	543	4001	1961	792	578	9778	16974

Note: Figures are average daily traffic from seven day survey.

(Source: VHTRL Feasibility Report 1996)

Table:V-34:B

Short Fall in Traffic on Vadodara- Halol Road

Year	Actual PCU per day	Estimated PCU per day on main c/w	% of short fall of estimated PCU per day of respective year
2000	14189	22144	36%
2001	12949.25	24081	46%
2002	11530.58	26190	56%
2003	12696.08	28485	55%
2004	11774.17	30984	62%
2005	13211.92	33704	61%
2006	19667.75	36289	46%
2007*	22744.78	39075	42%

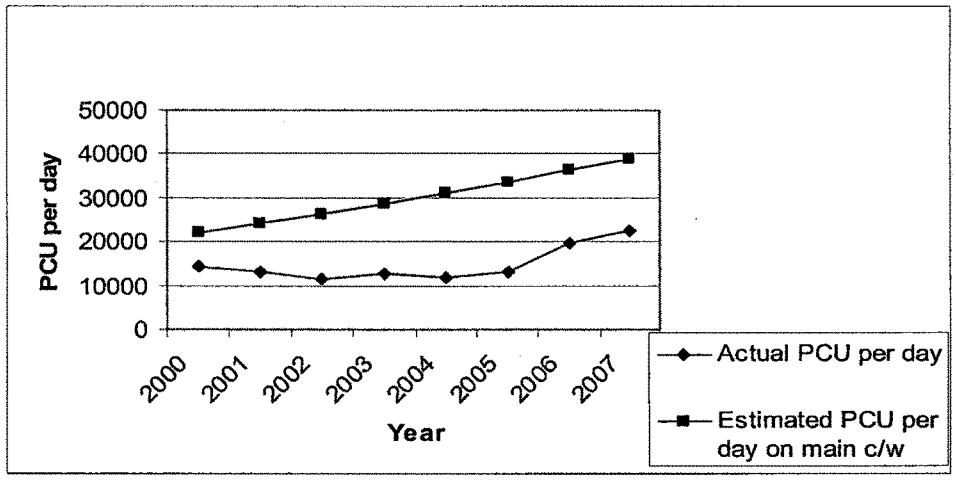
*Up to Sept 2007

(Source: VHTRL Feasibility Report & Actual operations from Reports in GOG offices)

Monthly variation of traffic and shortfall over estimated traffic are typical for any BOT/BOOT project and are noticed for this project also. The poor traffic and its erratic pattern are depicted in Figure: V-8 and V-9.

Figure: V-8

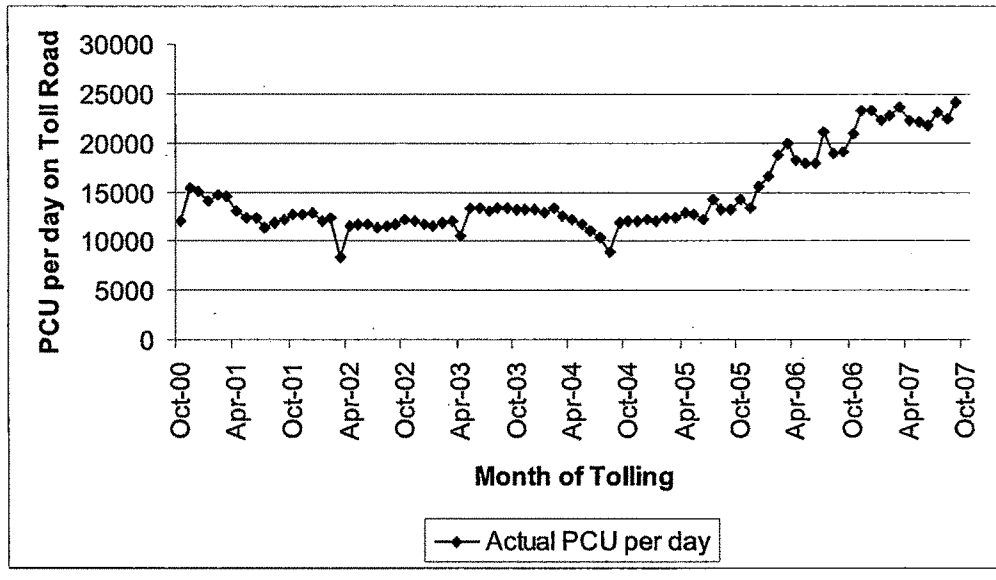
Traffic Shortfall on Vadodara- Halol Toll Road



(Source: Based on Table:V-34:B)

Figure: V-9

Monthly Traffic Variation on Vadodara- Halol Toll Road



(Source: Based on Monthly Progress Reports availed from GOG offices)

Reasons of Shortfall: The above shown traffic realization may raise the basic question of need to provide four lanning on this corridor before actual traffic growth. A planner may find it advisable to construct two lane road with lower toll level and then addition of capacity when required. Not only base traffic survey during feasibility stage but traffic by March 2007 (i.e. after seven years of tolling) has been around 20000 PCU that is well served with two lane carriage way with paved shoulders. Such deferment of investment would have given very different financial scenario. From user & investor perspective, the unnecessary untimely investment has resulted in to higher financial cost and higher tolls and spiraling revenue shortfall. In sum, the growth of traffic was seen only after Nov 2005 otherwise it did not reach the base volume of 16,000 PCU till then. The reasons could be sorted out as 1) Alternative routes to Godhra via Savli or Via Dahoi - Bodeli might have worked in avoiding this toll road showing initial resistance to tolling concept; 2) Withdrawal of backward area subsidies to industries in Halol compelling many units to relocate from here; 3) A similar political event of levying State Entry Tax on overloaded vehicles entering Gujarat by GOG during initial years of inception diverted traffic through Madhya Pradesh; 4) leakage of through traffic on Service roads; 5) more valid reason could be excessive toll rates on this road as compared to other routes and no

continuity of good riding quality beyond Halol. Because, Halol - Godhra stretch of almost same length was under reconstruction during first three years where as Godhra to Shamlaji (real source of interstate traffic for VHTRL) was under reconstruction after improving Halol - Godhra up to starting of year 2006. That means after paying handsome toll to VHTRL, the road users were to travel majority of their remaining leg of journey under substandard conditions. After monsoon 2007, the continuous length of about 200 km is available in good condition starting from Vadodara to Halol- Godhra- Shamlaji (i.e. Gujarat border) and only tolled by VHTRL.

For correcting the shortfalls, VHTRL made survey of traffic on service roads and found that more than 80% of traffic on service road was throughput traffic which cross the toll booths on both the ends. Hence, it got permission from Government on April 2003 to toll all through traffic using service road under the guise of local traffic. However, except some rise on revenue collection mainly due to tolling higher and covering through traffic on service roads, cash flows were inadequate to serve the operating & interest costs. It started operations from October 2000 and accumulated losses were at Rs.400 million as on 31st March 2003. The Company had to work out debt restructuring to reduce cost of debt from 15.5 % per annum to around 10% per annum like NTBCL. The VHTRL also went for merger of its operations of with similar loss making Company created by IL&FS with GOG (AMTRL) for BOOT project of Ahmedabad- Mehsana road. AMTRL (Ahmedabad Mehsana Toll Road Company Limited) started operations from Feb 2003. The merging of VHTRL & AMTRL was effective by 2005.

5.6.3.2.2 Financial Distress in Debt Servicing:

The above traffic volume and hence toll revenues were quite inadequate right from inception for VHTRL to pay back the interest on debt as evident from illustrative data presented in Table:V-35.

Table:V-35

Loan Repayment Default of VHTRL

Sr. No.	Type of lenders	Aggregate of defaulted amounts (Rs.)	Period of default (Range in days)
		2003-2004	
1	Loans from Banks	Rs 27,697,740.00	1 to 108 days
2	Loans from financial institutions	Rs 37,192,093.00	1 to 183 days
		2006-2007	
1	Loans from Banks	Rs 20,394,537.00	1 to 30 days
2	Loans from financial institutions	Rs 922,523.00	2 days

(Source: Annual Reports of VHTRL 2004 & GTRIL 2007)

The VHTRL also made accumulated losses exceeding paid up capital during FY 2003-2004 and cash losses during FY 2002-2003 & 2003-2004. The debt/equity ratio started with 1.92 & owing to diminishing adjusted networth, it reached to 10.84 in 2003 and then indefinable during 2004. The operational performance and movement of long term assets are traced from annual audited reports of VHTRL inTable:V-36:A & V-36:B. Since the VHTRL has now merged with GTRIL, any financial reports from 2005 onwards are not revealing actual operations of VHTRL separately.

Table: V-36:A

Operational Performance of VHTRL

(Rs. in crores)

Financial Year Ending 31st March	Total Income	Interest paid	Depreciation	Operating expenses (excl. Int & Dep)	PBT
1	2	3	4	5	6=2-3-4-5
2001*	4.41	7.72	0.11	2.41	-5.83
2002	9.15	18.46	3.65	5.53	-18.49
2003	8.15	20.17	2.58	3.72	-18.32
2004	10.55	21.96	2.58	4.86	-18.85
2005**	33.30	35.78	7.72	8.92	-19.12
2006**	38.77	38.20	7.77	10.64	-17.84
2007**	47.39	33.14	9.10	9.52	-4.37

Note:*It is from 24-10-2000.

** From 31st March 2005, balance sheets of VHTRL & AMTRL are consolidated as GTRIL adjusting accounts as if merger was effective from 1st October 2003.

(Source: VHTRL & GTRIL Annual Reports)

Figure: V-10

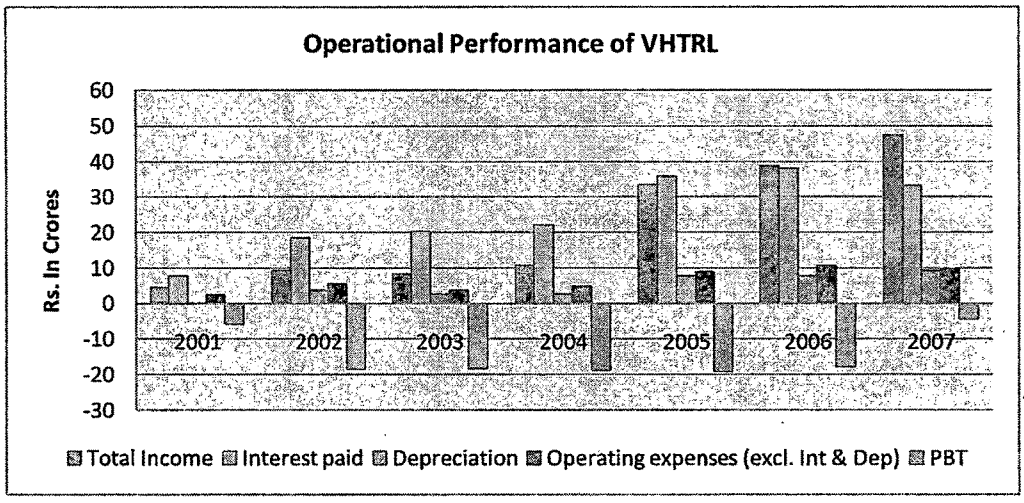


Table: V-36: B

Movements in the Long Term Sources of Finance for VHTRL

(Rs. in crores)

Financial Year Ending 31st March	Secured loans	Owner's Equity (Paid up shares + reserves)	Accumulated net of P/L A/C carried to balance sheet*	Misc. Exp. Not Written off	Adjusted Net worth
(1)	(2)	(3)	(4)	(5)	(6=3-4-5)
2001	105.86	55.00	5.84	0.0	49.16
2002	107.56	55.00	24.34	0.0	30.66
2003	134.90	55.00	42.56	0.0	12.44
2004	148.02	55.00	61.41	0.0	-6.41
2005**	361.46	264.47	36.60	0.0	264.47
2006**	313.15	320.35	55.72	0.0	320.35
2007**	309.39	315.99	60.08	0.0	315.99

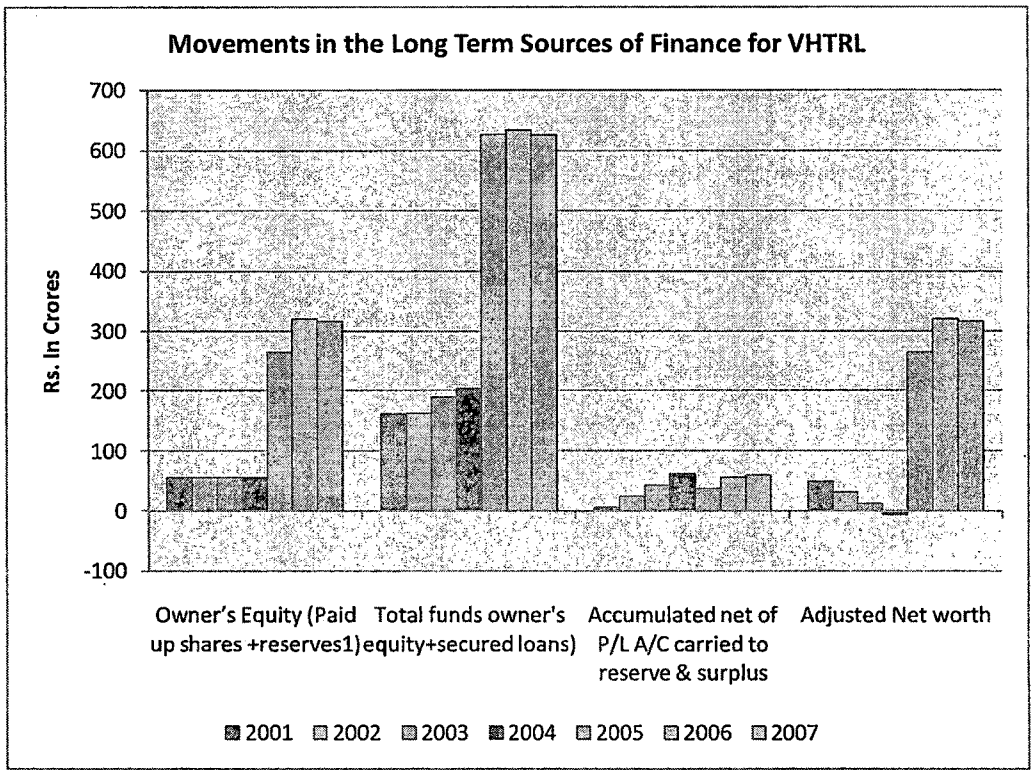
Note:

*The earlier shortfall in revenue was met from Line of Credit of Rs. 150 Mn approved by IL&FS.

** From 31st March 2005, balance sheet of VHTRL & AMTRL are consolidated as GTRIL adjusting accounts as if merger was effective from 1st October 2003. The accumulated losses from FY 2005 are adjusted from toll equalization reserve of Rs.144.53 crores. The net reserve shall be Rs.144.53 crore- Accumulated Losses as per col.(4) for every FY. Before merger the reserve was not created.

(Source: VHTRL & GTRIL Annual Reports)

Figure: V-11



(Source: VHTRL & GTRIL Annual Reports)

Table: V-36: C

Leverage Ratio for VHTRL

Financial Year	Debt/Owner's Equity Ratio	Debt/Net worth Ratio	Owner's funds as a % of total funds
2001	1.92	2.15	34.19
2002	1.96	3.51	33.83
2003	2.45	10.84	28.96
2004	2.69	-23.09	27.09
2005*	1.37	1.37	42.25
2006*	0.98	0.98	50.57
2007*	0.98	0.98	50.53

* From 31st March 2005, balance sheet of VHTRL & AMTRL are consolidated as GTRIL

(Source: Derived from Table:V-36:B)

The Table:V-36-C depicts selection of improper debt and equity proportions by IL&FS leading to reduction of debts for survival through equity (reserves) infusion mainly from GOG. It also explains failure of project in inviting private funds at reasonable terms. The owner's funds were required to be increased from modest 34% to 50%.

5.6.3.2.3 Financial Restructuring of VHTRL:

Like NTBCL, the financial engineers of VHTRL (essentially it is IL&FS) decided for restructuring of debts and it was associated with merger plan. In response to Company's application for restructuring/merger plan to Corporate Debt Restructuring (CDR) cell housed at IDBI, the CDR Empowered Group approved the package of restructuring and merger in May 2004. The approved plan was different from NTBCL case. Here, three IL&FS projects were proposed for merger one of them was based on Annuity based on NH. The idea was to extend the term loans with reduced rate of interests and reduce O&M costs etc.

The essential features of this approved package were:

- ✓ The entire undertaking of VHTRL & AMTRL including all assets (with rights of assured returns through tolls) & liabilities were deemed to be transferred to GTRIL with effect from 1st October 2003. Hence profit/loss of VHTRL & AMTRL from 1st October 2003 was treated as income/expenditure of GTRIL.
- ✓ All assets & liabilities of VHTRL & AMTRL were to be recorded at their respective book values. Any excess/deficit between the share capital issued to the shareholders of VHTRL & AMTRL and the book value of net assets taken over shall be credited/debited as the case may be to the General Reserve. This was calculated as Rs. -38.05 crores for VHTRL & Rs. -20.78 crores for AMTRL & thus total of Rs. 58.83 crores were debited from General Reserve of GTRIL.
- ✓ VHTRL & AMTRL stood dissolved with out winding up with effect from 1st October 2003.NKEL was to be merged with GTRIL in near term.
- ✓ **Most importantly**, the entitlement of VHTRL & AMTRL up to 30th September 2003 to recover the shortfall in the assured return as per the terms of CA were accounted to be recognized with the corresponding credit to the General Reserve Account. The value of shortfall in the assured return which were calculated at Rs. 1,359,133,000 for VHTRL & Rs. 674,363,000 for AMTRL leading to credit of aggregating to Rs. 2,033,496,000 into the General Reserve Account of GTRIL. This was available amounting Rs. 144.53 crores (after deducting Rs. 58.83 crores for excess value of shares) to absorb losses from FY 2005.

- ✓ Interest rate on borrowing was reduced from the contracted average rate of 15.5% to 10% and penal interest/compound interest/liquidated damages had been waived by lenders. Repayment terms of loans were rescheduled by lenders. Promoters were asked to bring in additional capital and provide other support.
- ✓ As per approved restructuring package, the lenders have a right to recompense over the difference between amount of interest calculated at the contractual and amount payable as per now agreed rate over the repayment period of the respective debts in the event the project cash flows are in excess of the revised debt servicing requirement. Hence it is like readjusting the repayment schedule of debts to suit to initial problems of deficient revenue.

The proposal was also having plans to merge a third IL&FS venture of annuity based toll project namely North Karnataka Expressway Ltd (NKEL) on Belgaum-Maharashtra border on NH-4. This was a NHAI project for four lanning & strengthening NH-4 from km 515 to 592 with assured fixed annuity payable to NKEL amounting Rs. 1010.34 million per annum for 15 years. The annuity period was to start from 20th December 2004 to 19th December 2019 if construction was completed as per schedule i.e. by 19th December 2004. The projected cashflow of NKEL were surely to be profit making from inception and were estimated to payback own project debt by end of FY 2017. But even by end of FY 2008, the NKEL is not merged with GTRIL. Hence, the survival power has not come from this attribute as it was expected in the restructuring plan.

GOG Paid Most: Even after merger of AMTRL & VHTRL, the default in loan repayment has continued (Table: V-35). Merger has also required GOG & IL&FS to pump in more capital. Specifically, GOG has paid shortfall in returns to VHTRL (& AMTRL) before stipulated end of concession period which is Rs. 135.91 crores for VHTRL alone within operations of 36 months. This contribution is in addition to residual project cost as on 30th September 2003. In absence of data, this residual project cost is estimated[5] to be Rs.186.00 crores on 30th September 2003 on proportionate basis.

In fact the AMTRL & VHTRL were created by GTRIL for separate project recourse and AMTRL started toll collections from 20th February 2003 with similar poor

revenue collection. The merging of AMTRL & VHTRL with GTRIL was tantamount to merging AMTRL with VHTRL. The AMTRL made accumulated losses of Rs.19.32 crores by March 2004 i.e. within only 13 months of operations. AMTRL had owner's equity of Rs. 76.33 crores and Rs. 195.37 crores of debt as on 31st March 2004. Thus merging with AMTRL was not going to add any survival power to VHTRL. Hence a major survival was only from GOG who paid Rs.2,033,496,000.00 as a Toll Equalization Reserve during FY 2005 which was total dues payable to VHTRL & AMTRL by end of September -2003 under the concession agreement provision for assured return of 20% on project cost as certified by IA/IE.

Thus Sovereign has already paid Rs. 179.35 crores to VHTRL that includes -GOG equity of Rs. 15 crores; Rs.28.44 crores toll collected from road users up to 30th September 2003 and; compensating amount of Rs. 135.91 crores. This is more than the landed project cost on starting date of toll operations. Still, the GTRIL remains entitled to recover project cost as on 30th September 2003 amounting Rs. 186.0 crores as derived above with some assumptions. The issue of merger and survival of a concession at assured returns at 20% without restructuring the CA itself needed some negotiation by GOG before giving nod to the merger process. It was an opportunity to terminate the agreement by paying back project cost to VHTRL after selling out the Toll Road to some private concessionaire as is worked out for NTBCL. Alternatively, GOG could have considered providing itself some annuity based payment to sustain the VHTRL (on the lines of proposed similar aid from NKEL project) for some years.

5.6.3.3 Analysis of Issues Due To Lacunae in Concession Agreement:

All the arguments discussed for NTBCL case are applicable as discussed under subsection **5.5.3.3** of this chapter. Most noteworthy aspect is **competition for the field** is avoided by IL&FS in handing over monopolistic concession to GTRL. Thus here also the conditions for **Demsetz Auction** (or also alternatively referred as Demsetz Auctioning) are avoided by IL&FS which were required to be fulfilled for Public interest. Hence, following points are raised from study of concession agreement and available relevant details for its practical implication in construction and operation. Since concession agreement for this case is same as NTBCL, the arguments made in case of NTBCL are also become relevant here. The lacunae pointed out in this CA are leading to suggest appropriate corrections for future works.

1) Unlike NTBCL case, a variation in definition of concession period found in this case where thirty years of tolling is counted from operational date hence, construction period is not under pressure being separated out from toll period. In VHTRL case, construction started as late as on date 1-3-1999 though concession was started from date 17-10-98. It is worth appreciating that main civil work was completed almost within stipulated time. But in terms of concession design, construction period shall be part of total concession period. However, efficient construction schedule has not given appreciation to the EPC contractor due to assured returns to the concessionaire. The EPC contractor faces liquidated damages but that does not help in incentivizing concessionaire to construct the work earliest.

2) The civil work is assigned to EPC contractor on competitive basis but the execution of civil work is not assigned to GOG (the Government State PWD) though it is a major share holder. The supervisory role of State PWD is also handed over to expert design & Supervision consultants after the State PWD has removed all hindrances in the project site and land is totally acquired.

3) Due to structure of concession agreement, any cost overrun is explainable to IE and can be made part of total project cost ("Gold platting"). There is no liability on design consultant, supervision consultant and EPC contractor to stick to estimated costs which as derived after paying huge sum to the consulatants.CA is not framed to review budgeted civil cost vis-à-vis actual expenditure like cash contracts.

4) The CA provides for appointment of Independent Engineer (IE) for determining & ensuring compliance of technical requirements, performance standards and cost of works and any variations. The appointment of IE is done by mutual agreement among Concessionaire and GOG. However, CA directs GOG to issue completion certificate for completion of civil work though it is prepared by IE. It thus imposes liability on GOG for compliance of all codal requirements though GOG does not have any kind of control on the civil works.

5) All the payments to IE are part of project costs. As per CA, concessionaire can appoint his own consultant to cope with requirements of IE at the cost of the project. The GOG is not given such scope as per its role in the project.

6) The toll rates are stipulated in CA as on end of financial year1997 and are called Base Toll Rates. The Table: V-37 shows comparison of these base rates with four lane NH as stipulated by MOSRT&H in the same period. The NH rates are also ceiling rates stated on per km basis and annually indexed to Whole Sale Price Index. The NH rates are not linked various category of vehicles. Otherwise, NH rates are on lower side than the rates framed on Vadodara- Halol state highway.

Table: V-37

Base Toll Rates for Project Road and NH Four lane

Type of Vehicles	Max. Toll (Rs.) Per One Way Trip(BTR) for VHTRL	Toll Ceiling By MOSRT&H As On June 1997
2- Axle Trucks	48.0	31.7 KM x1.4= 44.38
For Each Additional Axle Beyond 2-Axle	12	No Extra Toll Per Additional Axle
2- Axle Bus	48.0	31.7 KM x1.4= 44.38
Light Commercial Vehicles	33.6	31.7 KM x0.7= 22.19
Cars & Other LCV	20	31.7 KM x0.4= 12.68
Auto Rixa	5	0.0
Two Wheelers	2	0.0

(Source: Derived from CA and MOSRT&H circular)

7) In case of disagreement with toll revision formula or revised toll rates, both parties shall refer the case to Toll Review Committee (TRC). TRC is constituted of three members and each party appoints qualified person and these two collectively select third one who will be chairman also. Interestingly, TRC shall keep in view following factors while toll rate revision disputes: a) the benefits to the users; b) reduced traffic flow over the facility; c) any increase in cost to Concessionaire due to increased cost of maintenance, debt servicing due to increased rate of interest, any *Force Majeure* event like revised laws or rate of inflation in India exceeds 50% in any quarter; d) Concessionaire's debt service obligations and; e) willingness to pay of users. For calculations, the CA provides formulae to revise toll rates based on Consumer Price Index. The above toll increments are in excess of 100% in many cases which are basically based on joint decision of GOG &

Concessionaire to cope up with low revenue than estimated & are irrespective of price indices. The toll for every additional axle added to 2-axle truck seems attracting exorbitant tolls which is unusual. Because the additional axles are in fact beneficial as per Government policy to reduce axle load and in turn overloading for durability of roads. On other hand, cars and LCV are spared from higher rate of tolling. In fact cars &LCV have seen reversal of toll rates in end of 2004.

8) The toll rates could be compared with nearby Vadodara- Anand-Nadiad-Ahmedabad expressway (NE-1). The toll rates on NE-1 at present Jan2008 are as below. As per this comparison, the Toll level at Vadodara- Halol is marginally higher than totally access controlled Expressway NE-1(which is more comfortable for four and above wheelers because of exclusion of slow vehicles like Rixa and Two wheelers). But the NE-1 is punishing Multi Axle Vehicles (MAV) as compared to Vadodara- Halol which is not felt equitable looking to the less road damaging structure of MAV.

Table:V-38

Comparison of Vadodara – Halol toll rates with NE-1

Vehicle category*	Vadodara- Halol Toll Road	National Expressway-1	
		Vadodara-Anand	Vadodara-Ahemdabad
Car/Jeep	30 (0.95 Rs. per km)	25	67 (0.72 Rs. per km)
LCV	50 (1.58 Rs. per km)	44	117 (1.26 Rs. per km)
Bus/Truck	90 (2.84 Rs. per km)	87	235 (2.53 Rs per km)
Multi Axle Vehicles	150** Rs. per km)	187	503 (5.41 Rs per km)

Note: * Rixa and 2 wheelers are not allowed on expressway

**Rs. 150.0 is for 3 axle and add Rs. 60.0 per No. of additional axle.

(Source: Compared from both toll plaza notifications)

9) Referring toll rates with different perspective, toll rates are not matching with PCU based proportions. The vehicle wise traffic is not available for analysis for this project. But standard engineering practice uses Passenger Car Unit (PCU) as a measure for explaining traffic flow. Traffic flow or volume is

measured in terms of number of vehicles per unit time. IRC-64-1990-Guidelines for capacity of roads in rural areas recommends equivalent passenger car unit (PCU) for converting heterogeneous traffic into measurable traffic flow. The PCU is used for estimating future traffic and PCU is in fact representative of road space requirement or level of service on existing roads. The toll level if derived (based on total toll for bus/truck+ LCV+ car+ 2wheeler + rixa divided by total PCU of 7.5) based on PCU the toll per PCU was Rs. 15.33 on opening date 24-10-2000 ; it was Rs 22.0 per PCU on 30th September 2003 and now stands at Rs.26 per PCU. The toll rates are hiked from Rs. 15.33 to Rs. 26 per PCU that is 70% hike in seven years or 10% per annum. But actual toll rates are differing from this approximation e.g. present toll rate for bus is Rs. 90.0 though it has PCU=3.0. Thus the actual toll rates are not following PCU basis either.

10) As per CA, the revised toll rates shall be effective from every 1st April and any delay from GOG side for issuing notification or reduction in toll rate is compensated fully by GOG to the Concessionaire in terms of revenue lost by Concessionaire due to such event. For example, on inception itself, GOG reduced the rates proposed by IA and this rebate was borne by GOG in terms of addition to project cost.

11) A strange clause is establishing the records of toll receipt from road users available at toll plaza as final & conclusive to derive any compensation due to any loss of revenue. For example, delay in issuing toll revision notification can cause revenue loss to concessionaire and it shall be compensated based on road users data on toll plaza. GOG is instructed to send representative at toll plaza for satisfying itself. This can be dangerous. The GOG is not having any representative on permanent basis to verify toll receipts at project site.

12) The CA provides for limits on surface roughness and & specifies for other civil engineering aspects of road section. It also limits maximum 5 vehicles to queue up beyond first vehicle at window for avoiding chaos at toll booths. It also provides facility for break down conditions and accidents. The CA does not give any stipulation for service standards on traffic flow. In case of temporary closure of lanes (may be for repairs) beyond 24 continuous hours, the IE may confirm the real problem for closure and if found suitable he can

direct to open such lanes. But there is no provision for maintaining any congestion level or travel time. However, looking to the pioneering work under this agreement such aspects can be expected to be taken care of by commercial dynamics of such projects.

13) Since the project is going to stand for at least year 2030, the requirement of further widening and junction improvements etc. will need due attention in coming years and CA is not providing for this. As per feasibility report at the end of project in 2030, the main four lane toll length is estimated to carry 1.25 lacs of PCU & 15, 000 PCU by service roads which hints requirement of some development to maintain service standards and acceptance of toll levels in those days. If all of a sudden, traffic rises to abnormal level and design capacity is reached before end of concession, CA is not providing any recourse and lacks vision for such events. MCA (2006) has addressed this issue and has stipulated to end concession with out compensation when facility reaches design capacity.

5.6.4 Policy Implications from Case Study:

Since this concession agreement is also based on Rate of Return regulation, the corner stones identified for NTBCL case i.e. **Project Cost**; **Traffic Volume** and **Tolling Terms** (Toll period and Toll levels) are equally relevant for this case as well. All policy implications discussed under subsection **5.5.4** are equally valid like NTBCL case and hence are not repeated here. However, certain aspects are worth discussing. The concession for VHTRL is designed by IL&FS and it works as given in a conceptual model in Figure V-12. The suggested correction is for incorporating periodic review of concession operations to safeguard investor's interests for earning Public interests. The scope for such review is discussed hereunder.

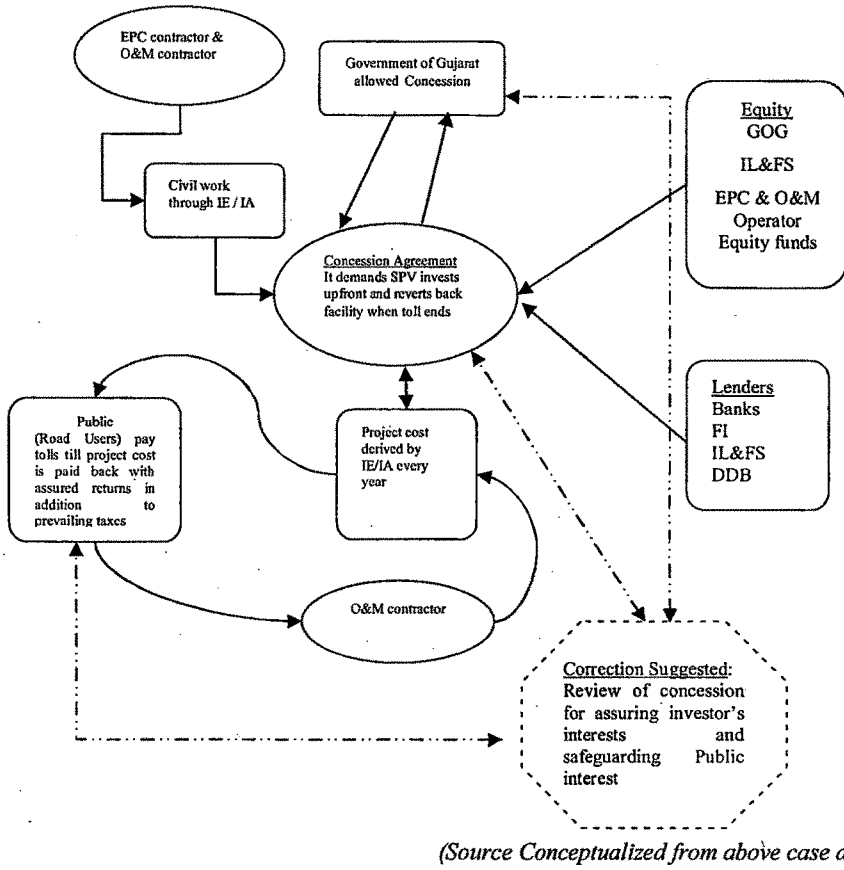
5.6.4.1 Remedy To VHTRL Concession Agreement:

Keeping in view then circumstances of PPP environment, concession agreement for VHTRL can be understood as a stepping stone for further development of PPP with amendments in balancing manner. The concession granted to VHTRL was based on Rate of Return regulation and hence if project cost at designated return is paid back, the concessionaire can be relived and amended concession agreement can be

introduced. The decision of adopting Rate of Return regulation is evident. In a pioneering endeavor, returns were required to be assured. But IL&FS has not attracted equity holders or designed debt instrument tallying with estimated cashflow. The IL&FS could only manage term loans that did not match with project cash flow and loans were availed on the basis of direct loan agreements with GOG and not based on potential of project. The actual operations revealed that IL&FS was wrong in selecting the project for four lanning. IL&FS was supposed to work out and assert supporting developments like strengthening of further links to attract interstate traffic instead of State support agreements for avoiding competing routes. Due to untimely or wrong selection of project, IL&FS created an entity that required high toll levels to sustain. After debt restructuring, the project is earning satisfactorily through toll operations alone but still lagging to catch level of assured 20%. Thus neither road users, nor Government is comfortable during tenure of this CA atleast going to last up to year 2030. The CA for VHTRL has severe flaws and any delay in curbing ever-increasing residual project cost could mean perpetually vesting the assets and chunk of land to private concern that has no user's recourse. Arguments offered by Pargal (2007), a consultant associated with the World Bank are straightway admissible for VHTRL also questioning nature of privatization & non conventional assured returns. The pavement condition of project road has already shown distress and huge reconstruction costs are anticipated probably before FY2030. If the concessionaire succeeds to cross original milestone of FY2030, all the expenses to reconstruct the pavement and rehabilitation of structure would add heavy sum in residual project cost.

Figure: V-12

Project Structuring Of VHTRL under Rate of Return Regulation



(Source Conceptualized from above case details)

As a prudent practice, it is suggested to end such agreement by paying back dues as per agreement. This is feasible through re-auctioning of concession looking to the recent favourable operational results of VHTRL. A simple exercise to work out strength of projected future cashflow similar to NTBCL case is made hereunder for verifying possibility of paying back GTRIL for termination of concession agreement.

5.6.4.2 NPV of Future Cash Flow & Future Financial Management:

Like NTBCL case, a simple exercise is worked out with simpler assumption for toll rate growth, O&M costs and income tax in absence of any estimates available for future cash flow. Following conservative assumptions are made to understand potential of the toll income for future years and NPV at various discount rates. :

1. The known contract value of Rs. 27.0 crores of toll collection through franchise for 2007-08 is adopted as a base value. The toll revenue is increased

every year by 6%(for inflation) applying assumption of Halcrow for NTBCL though the CPI indices suggest more than 7.55% growth during 1991-2005. This is in fact very much underestimation of toll revenue for VHTRL case. Because, Halcrow had taken into account some traffic growth rate over & above yearly toll rate revision due to inflation. In this case, no growth of traffic is expected beyond 2007 and that is very safe big underestimation considering growing importance of Vadodara- Halol- Godhra- Shamlaji link as a alternative to NH-8 to enter Rajasthan en route Delhi. In fact GOI has approved the link between Halol to Shamlaji for four lanning under Viability Gap Funding (VGF) scheme assuring central assistance on this State Highway and this four lanning will be having tremendous impact on VHTRL.

2. The O&M for VHTRL has remained so far as high as around 50% of toll income and later turning up around 20%. Here, O&M is assumed at 10% for managing operations and 2% for routine minor repairs. In addition to this, a major renewal program is estimated at every sixth year as per personal experience in this field.
3. The Depreciation was estimated by SLM method by VHTRL during FY 2003 and 2004. The same value of Rs. 2.58 is applied for tax purpose for remaining years.
4. The VHTRL has accumulated losses so far and like Halcrow, it could have been assumed that no taxes applicable up to 2010 and then next ten years being tax holiday but MAT applied at 7.65% and onwards tax at 30% (with surcharges 33.66%). Here, on safer side, the tax is assumed 11% (MAT) up to 2016 for tax holiday between 2007-2016. Then I.T. is taken at 33.66% for remaining years.
5. The net cashflow after deducting outflow is discounted at 9.5% considering Halcrow estimates of cost of capital. Since Planning Commission often considers this rate at 12%, it is also applied as an alternative. Additionally, a rate of 20% is also applied to check up the NPV. Sine the original CA is in vogue up to 2030 atleast, the cash flow is derived for this period. The exercise is extended up to 2035 to see that residual project cost at march 2007 is touched. In all cases, the cash flow from FY 2008 is considered.

The whole idea behind this exercise is to check potential for paying back VHTRL (or in a sense to IL&FS) the project cost derived by IA/IE at FY 2007. Earlier through

quick estimation it was found at Rs. 186.0 crores as on September 2003 and assuming zero return onwards up to March 2007, it leads to get project cost of Rs. 354.0 crore to be recovered by 31st March 2007. Any actual difference of project cost suggested by IA will require further extension of concession period to be proposed for re-auctioning.

Table: V-39: A

Estimation of Future Cashflow for VHTRL
(Rs. in crore)

FY	Toll revenue	O&M Cost#	Periodical maintenance	Depreciation	Income Tax*	Net operating inflow
1	2	3	4	5	6	7=(2-3-4-6)
2008	27.00	3.24	0.00	2.58	2.33	21.43
2009	28.62	3.43	0.00	2.58	2.49	22.70
2010	30.34	3.64	0.00	2.58	2.65	24.04
2011	32.16	3.86	0.00	2.58	2.83	25.47
2012	34.09	4.09	5.00	2.58	2.47	22.53
2013	36.13	4.34	0.00	2.58	3.21	28.58
2014	38.30	4.60	0.00	2.58	3.42	30.28
2015	40.60	4.87	0.00	2.58	3.65	32.08
2016	43.03	5.16	0.00	2.58	3.88	33.99
2017	45.62	5.47	0.00	2.58	4.13	36.01
2018	48.35	5.80	10.00	2.58	3.30	29.25
2019	51.25	6.15	0.00	2.58	4.68	40.43
2020	54.33	6.52	0.00	2.58	4.98	42.83
2021	57.59	6.91	0.00	2.58	5.29	45.39
2022	61.04	7.33	0.00	2.58	5.63	48.09
2023	64.71	7.76	0.00	2.58	5.98	50.96
2024	68.59	8.23	15.00	2.58	4.71	40.65
2025	72.70	8.72	0.00	2.58	6.75	57.23
2026	77.07	9.25	0.00	2.58	7.18	60.64
2027	81.69	9.80	0.00	2.58	7.62	64.26
2028	86.59	10.39	0.00	2.58	8.10	68.10
2029	91.79	11.01	0.00	2.58	8.60	72.17
2030	97.30	11.68	20.00	2.58	6.93	58.69
2031	103.13	12.38	0.00	2.58	9.70	81.06
2032	109.32	13.12	0.00	2.58	10.30	85.90
2033	115.88	13.91	0.00	2.58	10.93	91.04
2034	122.83	14.74	0.00	2.58	11.61	96.49
2035	130.20	15.62	5.00	2.58	11.77	97.81

Note:

O&M taken as 12% of toll income i.e. 10% for managing operations and 2% for routine repairs.

• I.T. taken at 11% (MAT) up to 2016 & then 33.66% .

Knowing the fact that toll income for FY 2008 is about 27 crores, every next year toll income is raised by 6% per annum and above financial statement is worked out.

(Source: Derived based on own assumptions for known value of toll collection for FY2007-08)

The results of NPV for above assumption based cashflow are tabulated as below. The results are having wide variations as expected. Since the re-auctioning is envisaged to shun the 20% returns assured to IL&FS through a unsolicited proposal, the NPV worked out @ 20% may not be a option of planner's choice. However, it is worth noting that this option is fetching around Rs. 150.0 crore under above assumptions provided CA is extended up to 2035. The Table: V-39:B suggests that it will require extending the concession atleast up to 2035 if no growth of traffic is assumed in case of discounting at 12% or 9.5%. Like NTBCL, it can be safely stated that it is easier to terminate the prevailing CA and re- auction the concession on competitive basis for real privatization. Because any bidder would consider traffic growth of atleast 5% for future years which is assumed zero here, any sensitivity test will provide encouraging results than estimated here. Any excess benefit estimated and received by planner through re-auctioning can be utilized to reduce the toll level or freeze the toll level at certain point of time. It is possible that IL&FS itself may like to bid for re-auctioning but shall be allowed under pure competitive market conditions.

Table: V-39:B

Estimation of Future Cashflow for VHTRL (Rs. in crore)

Concession period up to	NPV at 9.5% of discount rate	NPV at 12% of discount rate	NPV at 20% of discount rate
Up to FY 2030	309.43	246.95	139.88
Up to FY 2032	327.49	257.35	141.80
Up to FY 2035	352.12	270.75	143.89

(Based on above assumptions and estimated cash flow)

As an attempt to reduce O&M expenses and for securing higher revenues, GTRIL has started auctioning yearly tolling rights (with out responsibility of maintenance) from 1st August 2005 and first accepted bid was for Rs. 10.56 crores. The next such award was for Rs.19.01 crores effective from 21st August 2006. The recent award is for Rs. 27.27 crores and toll is being collected by a private external party. This auctioning of toll rights has helped in increasing toll revenue and reducing operational cost. Most importantly it has reduced the risk of traffic variation during the year and public resistance is borne by the toll collecting agency bearing all the revenue risk during that year. But all these benefits could only be truly internalized if the complete project is privatized by re-auctioning.

The case study of NTBCL and VHTRL are found relevant to go through comments of Cessar Queiroz (World Bank 2005), Lead Highway Engineer for World Bank. He pointed out following problems with unsolicited PPP proposals to Government:

- It is origin of most controversial private infrastructure projects.
- In theory it seems generating beneficial ideas (during earlier stages) but in practice, it turns up as an unfavourable experience.
- It attempts to avoid competition & there are exclusive negotiations (with out exposed to market forces) behind closed doors. Usually their sole-source negotiations take much longer route than expected.
- Some governments forbid all unsolicited proposals to reduce public sector corruption and opportunistic behaviour by private companies. Some governments are found recognizing a good project idea in the tender by compensating the original project proponent.

The comments of Queiroz are self explanatory keeping in view evidences provided by IL&FS in the two projects studied in this research work. However, it is worth to appreciate that unsolicited efforts from IL&FS were proper during then scenario in road sector. The major problem was debt structure not properly designed by IL&FS to match with project specific cashflow and the problem was aggravated by wrong traffic projections by consultants leading to gamut of issues faced by users and Governments. As an academic suggestion, it is proposed to terminate concession agreement for VHTRL which can be attained from proceeds of re-auctioning as the future cash flow is promising. A new concession can be designed as discussed in subsection **5.5.4.4.** which need not be on "Rate of Return" regulation. The project road has already come out of "Ramp Up" period and hence new concessions with competitive bidding subject to periodical re-auctioning can serve to level up the deficits and surplus profits in such projects. To reiterate, the bidding criteria of proposed re-auctioning and all further re-auctioning of the same project road shall require bidders to bid for highest toll rebates over present toll levels in addition to upfront paying for relieving GTRIL or subsequent concessionaire as per residual project cost or agreed NPV. Hence, user's recourse shall be emphasized and as a core objective.

5.7 CASE-4: CONSTRUCTION OF ADDITIONAL TWO LANE BRIDGE ACROSS RIVER NARMADA WITH APPROACHES ON NH NO.-8 KM 192/0 TO 198/0

This project is one of the typical of BOT agreements presently under operation in India. Of course, some clauses are amended in preparing Model concession Agreement (MCA) year 1999 and 2006. The MCA (1999) concession agreement avails capital grant to the concessionaire whereas MCA (2006) assures some traffic guarantee and is prepared by Planning Commission. Theoretically this one and MCA (1999 and 2006) all three versions are based on Price Cap regulation and restricts concession period and hence are also capping concession period. The projects based on MCA (1999) are yet in infancy and not seen many years of operation. The MCA (2006) is very recent and projects based on MCA (2006) are yet to see operations. In Gujarat all BOT projects at operation stage on NH are approved before MCA (1999). The study of this project however explores issues with an archetypal BOT project in contemporary sense. As studied below, the crux of such agreements is asking the Entrepreneur to invest upfront and collect tolls carrying most of the risks while Government is acting as an Employer & not as a partner.

5.7.1 Project Background And Formulation:

In pursuance of four lanning of NH No.-8 between Vasad (km 93/0) to Panoli (km 218/2) by Seventh Five Year Plan (1985-90), the four lanning of NH length between these two points was taken up by MOSRT&H stage wise. The four lanning of km 192/0 to 198/0 and additional Narmada River bridge were part of this Five Year Plan and it was to be executed by State PWD of GOG for MOSRT&H. The GOG had estimated cost of four lanning of km 192/0 to km 198/0 (excluding Narmada bridge) at Rs.9.50 crores on 1989-1990 Schedule of Rates (SOR) basis and submitted to Ministry. The matter was under compliance with Ministry till 1993-1994. Similarly GOG had estimated cost of additional Narmada Bridge at Rs.35.42 crores on 1990-1991 Schedule of Rates (SOR) basis. Unlike approach roads, bridge work was approved by Ministry & technically sanctioned by GOG during 1994-95 paving way to invite bids for bridge work. But the bridge work was also kept pending along with approaches and the project of New Narmada bridge was put under PPP route in end of 1995. The potential for tolling under BOT contract was evident as per evident traffic

intensity and successful tolling history of existing Sardar Bridge on Narmada River since more than one decade.

Table:V-40

Per Day Average Traffic Flow Near Narmada Bridge Site On NH No.-8

Year of Census	Car/Jeep/ 3Wheelers/Van	Buses	Trucks	Bus + Truck = HMV	Gross Total
April 1993	2941	1239	9878	11117	25175
October 1993	2236	1179	9605	10784	23804
April 1994	2027	1662	11298	12960	27947
October 1994	2571	1104	9484	10588	23747
April 1995	3600	1310	10020	11330	26260
October 1995	2902	1493	11608	13101	29104
April 1996	3653	1505	11344	12849	29351
October 1996	3573	1350	13465	14815	33203

(Source: Traffic Census Results GOG)

The traffic intensity was thus surely in excess of 35000 PCU corroborating need for four lanning. Hence, the project formulation was in fact lagging to implement four lanning and the growth rates of commercial vehicles were higher enough pressing for four lanning urgently. As per this data, commercial vehicles i.e. Bus and Trucks have annually grown by average 7% & 5% respectively from April 1993 to April 1996. Unlike IL&FS sponsored PPP projects, traffic census is the only source of past records to estimate future traffic. No separate feasibility studies are conducted in MOSRT&H cases. The bidders for this project have to trust the above census for past data whereas for traffic data at the time of bidding could be self surveyed for predicting future traffic during concession. The toll collection on adjoining existing old bridge was on Rs. 4.89 crore for 1993-94; Rs. 5.18 crore for 1994-95; Rs. 5.87 crore for 1995-96 (as known from GOG offices) i.e. bidders could expect minimum Rs. 6.0 crore per annum to start the operations around this period. Under this background, invitation of bids, bidding and award of work was done by MOSRT&H itself without involving GOG. The brief account of this BOT project is summarized under Table:V-41.

Table:V-41

Civil Cost Related Features And Major events Of The Project

Scope of Work	4.63 km Long Road Widening & Strengthening Of Existing 2 Lane To Four Lane ; 1.364 km long bridge portion with 13 spans of 96.2 mt & 2 spans of 56.1 mt; one Toll Plaza; important is maintenance of old bridge
Type of Agreement	Build –Operate – Transfer (BOT)
Concessionaire	Narmada Infrastructure Construction Enterprise Limited (NICE), a SPV of L&T group.
Independent Engineer(IE)	M/s Shirish Patel & Associates, Mumbai & State PWD of Gujarat
Independent Auditor (IA)	Not Applicable in NH projects.
Civil Contractor	Concessionaire (Agreement does not recognize any civil work contractor for its management)
Construction Cost	Rs.138.00 crore
Date of invitation of Proposal	5th September 1995
Date of GOI letter of Intent for NICE	12 December 1996
Concession Agreement signed on	21st November 1997
Concession Period	Total 15 Years including Construction period (ends on 21st December 2012)
Construction Commencement date	21st December 1997
Construction Completion date	21st September 2000
Toll started from date	11th November 2000

(Source: NICE & GOG Offices)

Before exploring the case of NICE, it is worth to note a major issue faced by a private toll collection operator on old bridge (Sardar bridge) just during construction period of new bridge.

5.7.1.1 Litigation on Auctioning Of Toll Collection Rights On Sardar Bridge:

The GOG had been collecting tolls on Existing Sardar bridge for MOSRT&H on agency basis since 1981 for recouping cost of said bridge (about Rs. 11.0 crores) and after recovering full cost with some interest, GOG continued to collect toll from same location for other bridges constructed by Ministry funding on NH-8. Just to avoid

problems with toll collection using GOG staff, a radical policy decision was taken to auction the tolling rights with out maintenance to private firms from around 1996-97. One of the firms appointed during 1999-2000 faced hardship probably due to over quoting the bid and failed to remit some installments. This agency was awarded to remit the toll collection at 0.962% of estimated yearly revenue of Rs. 8.62 crore within 104 installments (twice a week) starting from date 8-12-1999. Meanwhile Mr. Kishore Laxminarayan Gaur filed a Special Civil Application No. 4882 of 2000 in High Court of Gujarat demanding quashing of toll on Sardar bridge, stating it arbitrary, illegal and violating the statutes. The Honourable Court first passed Ad-interim–relief on date 12-5-2000 and accordingly the private agency was divested of its contractual obligations till final order of the Honourable Court. Since, the tolling was to be continued, GOG deployed its establishment and filed affidavit for vacating the stay stating that the whole exercise was done under National Highways Act 1997. But Honourable Court observed that contract was allowing "unjust enrichment" of a private party who has not invested any money and is eligible to sweep up excessive gains if traffic exceeds forecasts. The Honourable Court noted that if the private party was allowed to operate, it enables them to "unjust enrichment" and if the contract is abandoned, the State is reaching to "unjust enrichment". The Honourable Court had no objection to state reaching "unjust enrichment" but the State was interested to implement the contract. The Honourable Court passed the ruling on date 29-5-2000 that the private operator may collect the taxes and deposit in a joint account with GOG but they shall be allowed to withdraw to meet with operational expenses from this account till further judgment. Practically, the private operator could not continue the toll collection and the contract was terminated with penalty as per provisions of agreement. The petitioner withdrew the contention but the matter raises main issue of public resistance to toll operations especially under high profit or long tenure tolling. In fact this litigation is evidence of awareness of users (mostly local traffic) for reasonability of commercial operation of concessions and resistance to tolling.

5.7.1.2 Litigation on Tolling Of Existing Bridge:

Another relevant Court matter hints at implications of public resentment for tolling of existing public facility. A new bridge was built on River Mahisagar on NH-8 km 91/5

on BOT basis and was put on operations in year 2000 at the project cost of Rs. 42.0 crores. But the MOSRT&H decided to toll the adjoining existing bridge also to make possibly shorter toll period which was awarded for 95 months. Since the existing bridge was built by Ministry from public funds almost four decades ago and was toll free, the Ministry's decision was challenged in Court by a lawyer in November 2000. The contention was, road users going Ahmedabad from Vadodara were using old bridge with old approaches and no further improvement was made by Concessionaire to impose tolling on old bridge. The matter did not stand in Court of law and tolling continued for full term. But the investors had tough time since the tolling had just begun 15 days before and the contention was faced by the investor as a respondent. The expenses for litigation borne by investor were not compensated by Government.

Hence, project involving maintenance and tolling of old bridge has more resistance to tolling and in such events, Public partner i.e. Government stands as a silent spectator. However, to make project viable within shorter toll period, old bridge was clubbed with new bridge under BOT project and concessionaire has to assume this idiosyncratic risk alone.

5.7.2 Project Details:

The Toll project has following physical and contractual features.

5.7.2.1 Salient Features of New Bridge on River Narmada:

The second bridge on Narmada River was built by Narmada Infrastructure Construction Enterprise Limited (NICE) through Engineering Construction & Contracts Division (ECC) of Larsen & Turbo Limited (L&T) and thus ECC was EPC contractor for SPV of L&T i.e. NICE. Also, DAR Consultants UK were design consultant for NICE. This new bridge was built only 29 mt downstream of existing Sardar bridge. As per Concession Agreement (CA), a private firm was appointed as Proof Consultants & Supervision Consultants. Thus Independent Engineer was available like earlier case of IL&FS but the powers of IE were not recognized above capacity of MOSRT&H and State PWD. The salient features of bridge are:

- ✓ Construction of 1.364 km long bridge (by category it is a major bridge) in perennial Narmada River.
- ✓ Approach road for a length of 4.63 km.
- ✓ Segmental construction adopted for faster and superior superstructure. Segments cast at precasting yard, transported and erected using launching girder.
- ✓ Foundation well sinking by jack down technique that saved considerable construction time.
- ✓ Modern toll plaza with control room and back up power facility
- ✓ Bridge condition monitored using instrumentation systems.
- ✓ River bed protection works with stone crated boulders/Geofabrics.

5.7.2.2 Main Aspects of Concession Agreement:

The Concession for this work is designed similar to Chalthan ROB project and hence on price cap principle and not assuring any returns. The bidders were asked to bid for concession period and CA provides to retain all revenues after recovering project cost up to agreed term of concession. On other side, the revenue shortfall or traffic risk is fully endorsed to concessionaire. This Concession Agreement (CA) is also found carrying detailed stipulations like cash contract. The reason could be to match with existing bridge from construction point of view. The following similarities/relevance was found with cash type contracts.

1. The qualification criteria for bidders interested in this work are for past similar work (not on toll basis) and adequacy of manpower/machineries. Specification and quantities are predefined. The material selection is also predefined. No design flexibility, mainly due to availability of adjoining existing structure. No aspect is linked to toll operation capacity. Thus bid assessment is like cash contract; how much it will cost to Public? Here, the Entrepreneur is supposed to show how he arrived at toll period (in months) but the veracity of such cash flows is not obligatory for Government since the viability is treated as entrepreneur's purview. The only financial stipulation is imposing minimum equity requirement of 51% for NICE up to construction period and then it may be at least 26%. Otherwise, the CA does not include any benchmarks or standards for financial performance.

2. The CA allows construction period of maximum three years but any saving in construction time is like bonus above stipulated toll period of 12 years. The delay is like curtailment in toll period but such delay may invite termination of agreement if Government wishes. So, it is differing to cash contracts for time frame of construction.
3. Any quantity variation or revision in scope is assessed based on State PWD Schedule of Rates (SOR). Thus time overrun and cost overrun are treated more like cash contracts.
4. The CA declares Steering Group (STG) as a technical authority on all technical matters, only after issuance of completion certificate by Supervision & Proof Consultant and approved by STG the work is deemed completed. The entrepreneur has to pay for this private consultant up to Rs. 2.5 crore as a fee and deposit with GOI Rs. 1.5 crore for Government inspection. Thus the scope for coercion is present to some extent like cash contract.
5. All the laws (e.g. labour laws) are similarly applied like cash contracts. Hence, the entrepreneur has to satisfy all related departments of sovereign and no relief is available from Government though it is in a sense partner in such projects. Any permission required from any department is to be obtained by entrepreneur himself.
6. The material requirement and its availability are to be ensured by the entrepreneur. The testing of material is entrepreneur's responsibility but like cash contracts, the Government monitors the process and approval of Consultant is must. Thus, the quality aspect is ensured by Government like cash contract but risk of material suitability is kept limited to entrepreneur.
7. The design for safety and workability is stated to be onus on entrepreneur but his designs need nod of Consultant /STG. The stipulations are like- the entrepreneur shall do every thing under approval of Consultant /STG but if any thing goes wrong the entrepreneur shall bear full risk. Any approval of Consultant /STG does not indemnify the entrepreneur from responsibility of design & execution aspects. So that way the CA is helpful to Government in transferring construction risk fully to the entrepreneur but still maintaining hold over the execution. Surprisingly, the structure like major bridge is handed over to Government within 15 years of construction almost free of cost (at token amount of Rs.1000.0) without any indemnity during remaining long period of (around 30 years) designed life.

8. Like many short term cash contracts, price escalation within stipulated 36 months of construction period is borne by the entrepreneur.
9. Similar to cash contracts, the performance guarantee of Rs. 3.5 crore(it is in this case 2.5% of project cost) is to be deposited by entrepreneur but here the term is covering construction period plus two years.
10. No mobilization advance is provided which was then routine practice for lower to medium size cash contract. One month period is allowed for mobilization of plant, man power and machineries which is common for cash contracts.
11. Like cash contract, the land is handed over for construction purpose and only innovation in this case is extension of this land holding term up to end of toll period. The similar feature is no ownership or alternative use of land or earning of rent (only innovation is allowing toll receipts) is allowed.
12. Since it is major bridge, strict stipulations with minimum design flexibility as in cash contract is understandable. A meager amount of Rs. 1.0 crore is required to be maintained by NICE with Government for maintenance guarantee and is held valid till two years after end of concession period. Considering toll period of 12 years, it is very less if actually to be used by Government. But the provision is like recent trend of maintaining guarantee money for 3 to 5 years in cash contracts.

Thus, the CA is not significantly differing from earlier time CA as found in case of Chalthan ROB as far as construction aspects are concerned. However, the CA for Chalthan ROB was quite detailed mentioning percentage wise progress of work and there was concept of "Project Cost" with 18% interest during construction and toll period. Here, the CA neither acknowledges project cost nor defines it. The Government had a clear picture of existing Sardar bridge to be matched and competitive bidding had finalized the concession period. So, the cost portion is not emphasized by the CA. However, the clarity of project cost is found useful when losses are to be compensated under *Force Majeure* events or termination. Also, the CA in this case is more committed to sustain toll period as agreed except under *Force Majeure* events persisting more than 120 days. In Chalthan ROB, the Government held unilateral capacity to end the agreement at any time. The operational aspects in this case are more elaborative than Chalthan ROB case mainly due to longer tenure of CA.

For comparative purpose the study of concession agreement (CA) has been divided in to following sections.

1. **Bidding Criteria**: As discussed above, the shortest concession period (here it includes three years of construction period) is accepted as a concession period. The bidding requires submitting estimates of civil costs as supporting information.
2. **Base Case Submission by Bidders**: The bidders shall bid in a open competitive bidding with base case financial model indicating how he will recover his investment. The agreement expects to get constructed an additional 2-lane facility at the expense of entrepreneur and in return it allows him to recover the cost of construction & maintenance, cost of traffic management and fee collection from charging vehicles using the vehicles at prescribed rates. It is noteworthy that Government is not assuring any returns despite accepting cash flow of the Concessionaire worked out with specified returns. Because Government is merely satisfying itself to establish that the Concessionaire is proving the financial viability of his offer through his financial model albeit not getting liable to Concessionaire's assumptions.
3. **Grant Amount to Concessionaire**: This is a concession agreement based on Price Cap regulation without any capital support or revenue sharing mechanism.
4. **Responsibilities of Government:** The Government has not been assigned any contractual obligation/penalties for not timely completing obligations related to project. This is because; land was available for construction without any hurdles.
5. **Construction & Maintenance Of Facility:** The CA is elaborative for civil works like cash contracts as discussed in earlier subsection. The control on construction is maintained by Government and independent engineer. Unlike IL&FS cases, independent engineer is not available for full term of agreement but is available up to construction period. Regarding maintenance, no systematic maintenance schedule for old and new bridge is specified. The CA specifies for old bridge that only routine maintenance will be undertaken by NICE (i.e. concessionaire). It shall include painting, repairing of riding surface and defects other than structural or major defects. Such major defects are to be attended by Government only on own cost.

6. **User Fee:** The toll rates are effective from inception date 11-11-2000 as specified in CA and are indexed to average of monthly WPI for revising every year for escalation. Unlike, Chalthan ROB case, the CA is not mentioning any rebate for frequent users. It leaves it to Concessionaire to reduce fees if suits commercially. The vehicles carrying VIP, emergency service vans, Police etc. are exempted from paying tolls but Government vehicles **are not exempted** from paying tolls. As shown in Table: V-42, after operations of about 7.5 years, the toll rates are raised as per formula given in CA and are around 27%. This is quite moderate toll increase as compared to Vadodara – Halol Toll Road case wherein trucks (2axle) and buses have seen toll hiked by 87.50 % and tolls for LCV & car/jeep is hiked by around 50%.

Table: V-42

Toll Rates Applicable Over the Time

Effective Period (Toll Started from 11-11-2000)	**Car/Jeep**	**LCV**	**Bus/ Trucks**
From 11-11-2000 to 2-11-2002 (Initial toll rates as specified in CA)	11	28	33
From 2-11-2002 to 5-7-2003	11	28	34
From 5-7-2003 to 6-7-2004	11	29	34
From 6-7-2004 to 27-7-2005	12	31	36
From 27-7-2005 to 5-8-2006	13	33	39
From 5-8-2006 to 5-8-2007	13	34	40
From 5-8-2007 onwards	14	36	42
% Increase over Starting year toll rate	**27%**	**28%**	**27%**

(Source: NICE office and Notifications of MOSRT&H)

The toll rate for Bus/truck (toll = Rs. 33; PCU =3) & Car / Jeep (toll = Rs. 11; PCU = 1) is found proportionate on PCU basis in this case. The toll rates are effective from inception date 11-11-2000 and are indexed to WPI as given by below formula.

$$T_1 = T_0 \times [1 + (P_1 - P_0)/P_0]$$

Where,

P_0 =All India Whole Sale Price Index (WPI) on 1st December 2000;

P_1= average of WPI from January to December of the previous calendar year on revision date;

T_0 =toll rate for a category of vehicle on 11-11-2000 and

T_1= revised toll rate.

Thus, the inflation is accounted for by applying WPI increase in toto

7. **Free Service Roads for Local Traffic**: The local traffic is not identified and not exempted in project design. Hence, the local traffic is charged at par.
8. **Traffic Risk**: CA provides traffic census figures on nearby traffic count post but it is not binding to Government for actual traffic on site. A major stipulation is- the Company (NICE) shall be deemed to have carefully studied the work and site condition, specifications, schedules, drawings and various other data. It shall be deemed to have visited the site of the work and to have fully apprised himself of the local conditions. The Company shall be deemed to have carried out his own surveys, investigations and assessments of site conditions. This clause relieves the Government from all risks what so ever related to construction, toll operations. Adversely, CA is not assuring any cover against future division or diversion of traffic.
9. **State Support Agreement and Construction of Additional Tollway:** No such agreement is provided in CA. The "no compete clause" is almost absent in this case. The CA provides that during tenure of CA, GOI will not permit setting up of any competing bridge facility on Narmada on the National Highway No.-8 itself. This provision is meaningless because any bridge built on River Narmada on nearby NH-8 location can harm the project interests. The existing toll free Golden bridge on State highway is already working to reducing car traffic due to free passage on Golden bridge and reduction of approximately 2 km on length on NH-8. Of course, en route tolling of Bharuch – Dahej State highway in near future can reduce charm to use Golden Bridge.
10. **Financial Aspects, Subsistence Revenue and Revenue Shortfall Loans:** The only financial stipulation is imposing minimum equity requirement of 51% of total equity for NICE up to construction period and then it may be at least 26%. This is to make NICE a major equity holder among other equity holders atleast during construction stage. Otherwise, the CA does not include

any benchmarks or standards for financial performance. The CA clearly mentions no financial involvement (no guarantees on debts/bonds either) of Government in any financial instrument of the Company. The CA is explicitly asking Company to decide on Debt/ Equity ratio and type of financial instrument to be employed in financing the project. No advance or loans are to be provided by the Government. But in case of *Force Majeure* events, loans for debt obligation are offered at rate higher than Prime lending rate (PLR)of State Bank of India (SBI).

11. **Risks, *Force Majeure* and Termination of Agreement:** If project suffers due to concessionaire's default, no compensation is payable and security money are forfeited. If project suffers due to other reasons, they mostly fall under *Force Majeure.* The provision of *Force Majeure* events is illustrated in Figure: V-13. This CA is elaborative for *Force Majeure* events and compensation which is expressing strength of CA in exploring such events and risk allocations. The provision of *Force Majeure* is divided in three types of events as depicted in Figure: V-13. The CA is categorizing for each event, stage of project namely- construction stage & tolling stage. The remedies are different for all three types of events as per stage of project -mainly allowing extension of concession period or termination of agreement. However, as such no remedy is suggested for events happening before financial close except termination with out any liability if such event persists for continuous 120 days. This is like not accepting any liability from Government side before financial close. Surprisingly, the events by act of God are not accepted for liability during construction stage and the Concessionaire is instructed to depend upon Insurance proceeds. This means, if the project meets with e.g. severe earth quake or floods and effect of event persists for continuous120 days then termination will not attract any compensation from Government irrespective of extent of investment incurred by Concessionaire. If such act of God occurs after issuance of completion certificate by STG, at the most debts are accepted by Government after deducting insurance proceeds. These are quite harsh stipulations as compared to cash contracts where money is paid at every stage of construction (mostly monthly basis) and hence only unpaid portion of construction remains on such risks. For Indirect Indian Political events (more common events being transportation strikes, bandh or riots),

during construction & tolling stage are accepted for extension of concession period and cost increments. But termination on such events during construction allows only debt liability and thus loss of equity. However, termination during tolling additionally allows 20% of return on equity which is comfortable provision for Concessionaire. Similarly for Direct Political event (at least not possible in near future as felt from Government policies), there are comfortable provisions for Concessionaire assuring returns on equity on both stages of project. The risk matrix is derived from CA is given in Table: V-43. Except for unforeseen events, concessionaire bears major risks as given in this table.

Table: V-43

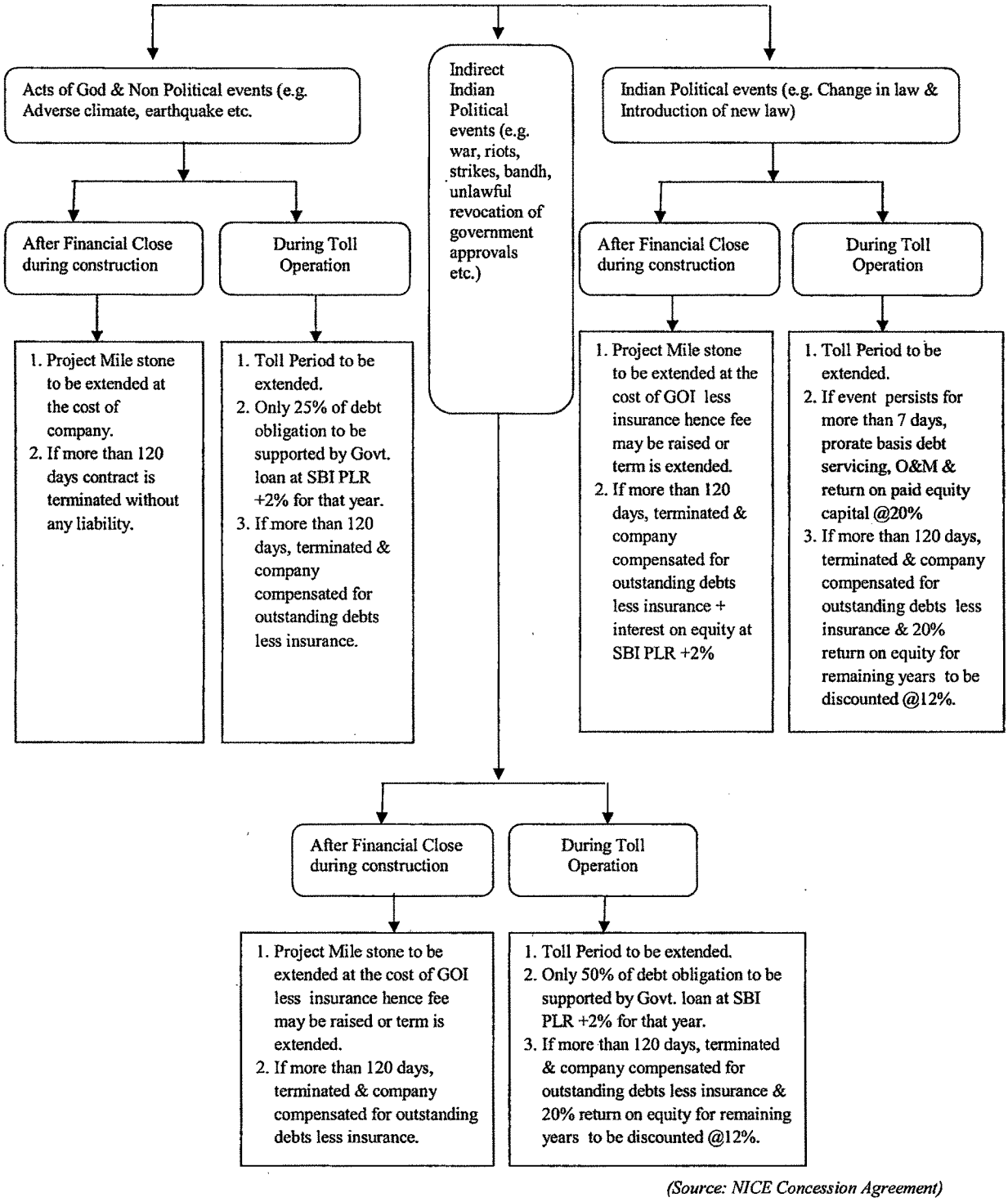
Risk Allocation As Per NICE Concession Agreement

Type of Risk	Who Bears Risk
Commercial or Revenue Risk	Concessionaire
Sovereign Risk	Government of India
Natural *Force Majeure*	Mainly Insurance & GOI for debts if tolling is started
Indirect Political Events & Political Risk & Legal Risk	Government of India
Time Overrun and Cost Overrun	Concessionaire
Project Risk	Concessionaire
Financial Risk	Concessionaire
O&M Risk	Concessionaire

(Source: Derived from NICE Concession Agreement)

Figure:V-13

***Force Majeure* Events & Compensation.**



(Source: NICE Concession Agreement)

12. **Lender's Recourse:** The CA is not recognizing lenders and in case of termination, lenders have no recourse on facility under concession agreement. However, CA accepts lender's dues in case of *Force Majeure* events if the facility has started operating.
13. **User's Recourse:** The CA is not mentioning any road side facility to users and not guiding for making complaint for inconvenience. The CA directs to see that no bottleneck conditions arise at project site and road surface is maintained at specified limit of roughness. But value for money that is after paying for facility the user actually is benefited or not is not ascertained.
14. **Dispute Resolution Mechanism:** The CA provides scope for amicable mutual understanding under provision of agreement through Steering Group mechanism. In case of dispute the matter is referred to Arbitration tribunal made of three members on mutual agreement. Delhi Court jurisdiction.
15. The CA is not defining project cost and not considering financial close as a milestone to be monitored. Only during *Force Majeure* events, non achievement of financial close matters. No privileges like BOOT projects are given to concessionaire like development rights for land.

5.7.3 Actual Operations and Issues:

This medium size BOT project was supposed to be smooth sailing for the entrepreneur. The nature of agreement dominantly resembled with traditional cash contract and looking to the heavy traffic volume, operational aspects were expected to be comfortable to the entrepreneur. Typically, this project has also confirmed initial inadequacy of cash flow to cater to debt obligations and little restructuring of term loans from banks helped the company to register profits in the account books. The "Ramp Period" existed here also that was not taken in to account by planners in designing of concession and by concessionaire in preparing financial plan.

5.7.3.1 Financial Plan of Concessionaire:

Though exact financial plan/estimates at signing of concession are not accessible, what has been implemented to construct and put the facility open to traffic is discussed hereunder.

Table: V-44

Financial Plan of NICE As on March 2000

(i.e. during construction stage, Rs in Crores)

Debt	SBI	6.6 (12%)
	IDFC	25.0 (44%)
	Infrastructure Bonds issued to IDBI	25.0 (44%)
Total Debt (55%)		**56.6** (100%)
Equity	Paid up share capital of NICE	46.0 (4%)
Total Equity (45%)		**46.0** (100%)
Total Funds (100%)		**Rs. 102.60**
Total Project Cost envisaged at financial close = Rs.113.00 Crores		**Debt/Equity Ratio = 1.23 : 1 or 55:45**

(Source: Annual reports of NICE)

The Company has borrowed from financial institutions and bank and it started with single debt of Rs. 25.0 crores during 1998-1999 (i.e. initial construction period) from IDBI in terms of infrastructure bonds issued by NICE and subscribed by IDBI. The bonds required fixed interest quarterly payable @ 15.5% and redeemable in four equal annual installments commencing from January 2006. The Company preferred conversion of this bond financing in to IDBI term loan from 2000-01 at same interest rate. This IDBI term loan was repaid with penalty during 2002-03 by replacing this debt with term loan of IDFC at the rate of 11%. Similarly, the interest rate for IDFC loan was reduced to 7.5% from 14-10-2005. Also, a term loan of Rs. 6.60 crores was taken from SBI during 1999-2000 and was added up by Japanese Yen denominated foreign currency loan of equivalent Indian Rs. 42.80 crores looking to external inputs of the project. The SBI Indian currency loan was fixed rate loan @ 12.6% but Yen loan was exposed to exchange rate fluctuations. The L & T Limited – the ultimate

holding Company has undertaken interest rate and exchange rate risk However at the instance of L & T limited, Company has entered into some derivative transactions for this purpose.

Summing all such various debts, NICE has been found following own way of project financing in absence of any surety embedded in CA or without defined lender's recourse. It has used bond financing, term loans in Indian rupees and foreign currency, injected equity from other institutional investor in 2001-2002 withdrawing own 20% equity. Of course, the debt raising capacity was based on credibility of L & T Limited and not on NICE or project potential (which was yet to be established).

5.7.3.2 Financial Performance:

The company (NICE) has constructed the facility within 33 months i.e. ahead of stipulate 36 months and with out cost overruns. Hence, they could start tolling ahead of schedule as provided in the concession agreement. As a typical PPP project, NICE also incurred operating losses mainly due to high debt obligations during initial years & unexpected lower traffic.

5.7.3.2.1 Poor Revenue from Tolls:

The project was selected with out conducting feasibility report mainly because of already proven need of four lanning. The Company's anticipated traffic projections at bidding stage are available. As seen from this comparison, up to FY 2007, the traffic has shown deficit as compared to estimations made while bidding. Especially for Heavy Motor Vehicles (HMV), per day vehicles are about 50% of estimates. Strangely, the bidding time GOG census recorded HMV per at 14815 as on October 1996 and it was not realized even after ten years i.e. by FY 2005-2006. The Company had estimated buses & trucks separately for future years but toll rate are same for bus & truck and hence the collective no. of bus + truck (called Heavy Motor Vehicle (HMV)) is available in actual data for traffic per day.

Table: V-45

Tollable Traffic Realization in Narmada Toll Bridge Project

Year of Toll Collection		Average No. of vehicles per day during financial year (vehicle wise)			
		Car	**LCV**	**Bus**	**Truck**
2000-2001	Estimated	3914	3577	2565	21304
	Actual*	2294	2045	13116 (Bus+ Truck)	
2001-2002	Estimated	4219	3852	2727	22945
	Actual	2445	2015	13182 (Bus+ Truck)	
2002-2003	Estimated	4548	4149	2898	24711
	Actual	2749	2210	13744 (Bus+ Truck)	
2003-2004	Estimated	4903	4468	3081	26614
	Actual	3132	2311	14056 (Bus+ Truck)	
2004-2005	Estimated	5285	4812	3275	28663
	Actual	3867	2428	14459 (Bus+ Truck)	
2005-2006	Estimated	5698	5183	3481	30870
	Actual	4415	2633	14757 (Bus+ Truck)	
2006-2007	Estimated	6074	5499	3673	32754
	Actual	4398	2733	16657 (Bus+ Truck)	

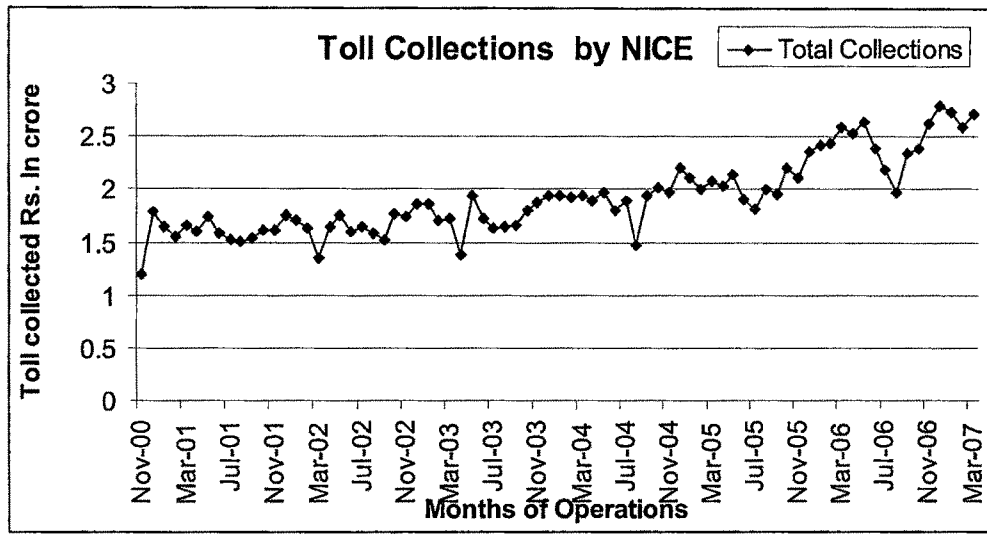
* All actual figures are average over no. of tolling days of respective year.

(Source: Collected from NICE office)

Apart from unexpected shortfalls, NICE has also faced monthly variation as seen from month wise toll collections. The revenue of NICE is function of No. of vehicles and prevailing toll rates. The revenue is found varying seasonally and surprisingly, at every toll revision, the total collection has actually fallen marginally and then recovered on rising trend. This reduction is mostly found in all categories of vehicles but more in cars/jeep. The toll increase is always marginal in this project and hence the revision is not having long term effect on revenue.

Figure:V-14

Monthwise Toll Collection For NICE



The seasonal reduction due to *Force Majeure* events like Gujarat riots in March 2002 is evident from Figure: V-14 . The tolling in monsoon period during August to September every year is typically exhibiting slump for this project. Hence, unlike constant rate of debt and O&M charges, revenues are not received at constant rates.

Reasons of Shortfall: In absence of feasibility reports, the traffic shortfalls could mean poor quality of input data maintained by GOG in terms of traffic census, traffic disruptions due to dilapidated condition of old bridge and overestimation of traffic growth by concessionaire in submitting bid. Otherwise for interstate traffic plying on NH-8, no competitive route is alternatively available atleast for heavy vehicles.

5.7.3.2.2 Financial Distress in Debt Servicing And Restructuring of Debts BY NICE:

Evidently, after incurring project cost of more than Rs.100 crores the poor turn out of traffic put the company in distress. The year wise financial operations of NICE are summarized in Table: V-46: A to C. Like other cases, NICE has also faced operating loses till FY 2005. The company has not maintained adequate equity leading to heavy debt servicing as compared to revenues. However debt restructuring discussed under subsection **5.7.3.1** has reduced interest charges and has in turn reduced operating losses. The Company has maintained the Debt/Equity ratio at 2:1 up to FY 2004 and then reduced the debt component achieving D/E 1:1 in FY 2007. Otherwise, the project revenues have not seen any jump to increase the profitability of project.

Table: V-46:A

Operational Performance Of NICE

(Rs. in crores)

Financial Year Ending 31st March	Total Income	Interest paid	Depreciation	Operating expenses** (excl. Int & Dep)	PBT
1	2	3	4	5	6=2-3-4-5
2001*	7.94	5.01	4.8	0.92	-2.97
2002	19.77	13.67	11.79	1.73	-7.42
2003	23.22	12.05	11.79	5.06	-5.69
2004	22.95	6.49	11.81	5.00	-0.34
2005	27.56	6.14	11.83	7.24	2.34
2006	31.23	5.06	11.84	8.83	5.49
2007	32.10	3.69	11.82	4.44	12.15
% for 2007	100%	11.50%	37.0%	13.5%	38.0%

Note:

- It is from 11-11-2000.

** O&M includes exchange losses and professional fees for bridge works and these two attributes more than half of O&M expenses.

(Source: Annual Reports of NICE)

Table: V-46:B

Movements in the Long Term Sources of Finance for NICE (Rs. in crores)

Financial Year	Secured loans	Owner's Equity (Paid up shares +reserves[1])	Accumulated net of P/L A/C carried to reserve & surplus	Misc. Exp. Not Written off	Adjusted Net worth
(1)	(2)	(3)	(4)	(5)	(6=3-4-5)
2001	93.14	47.35	-2.9	0	44.45
2002	94.65	47.35*	-10.32	0	37.03
2003	95.69	47.35	-16.0	0	31.35
2004	97.28	47.35	-16.35	0	31.00
2005	83.64	47.35	-14.20**	0	33.15
2006	65.08	47.35	-9.17	0	38.18
2007	48.64	48.96[2]	0.0	0	48.96

Note:

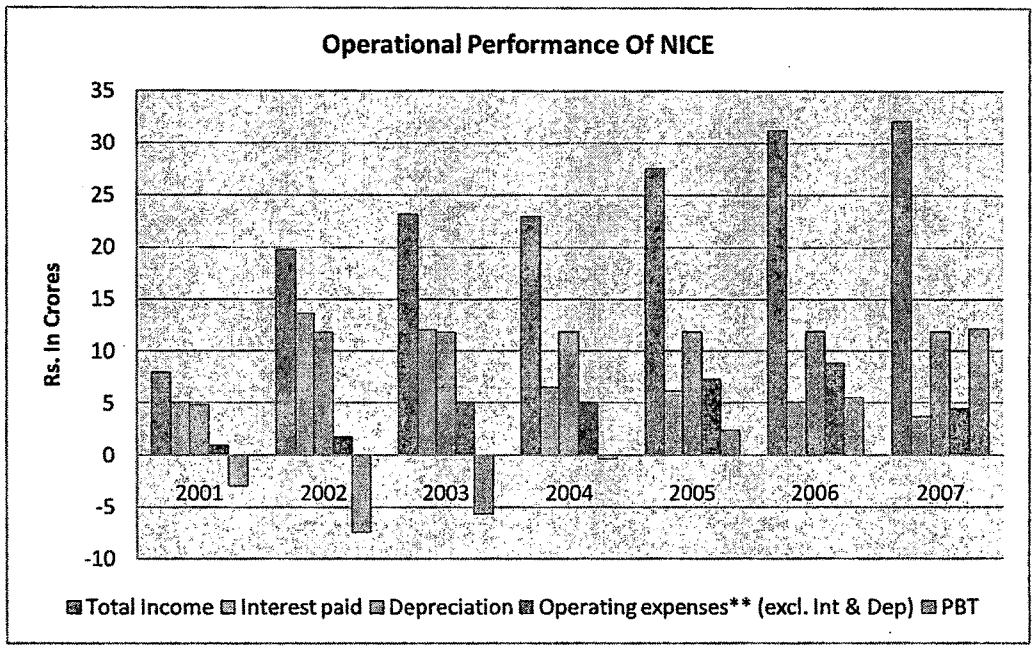
1. The Company has not maintained any reserve up to FY 2006 and entire equity is held by L&T & its subsidiaries up to FY 2001.
2. The company has first time created reserve of Rs.1.61 crores in 2006-07 carried forward from P/L account.

* The equity holding from this year has changed but amount of paid up equity has not changed. From this year Rs. 9.47 crores of equity is provided by Consolidated Toll Networks India Pvt. Ltd.

** The FY 2005 is very first profit making year since inception.

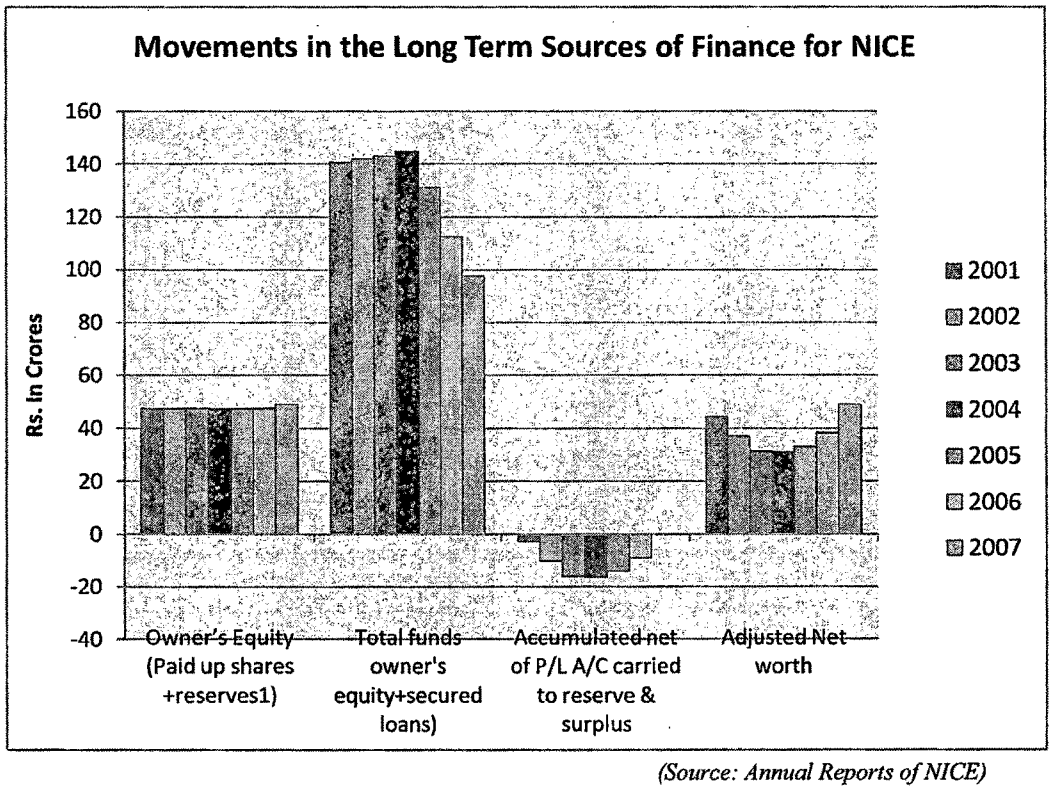
(Source: Annual Reports of NICE)

Figure:V-15



(Source: Annual Reports of NICE)

Figure: V-16



(Source: Annual Reports of NICE)

Table: V-46:C

Leverage Ratio for NICE

Financial Year	Debt/Owner's Equity Ratio	Debt/Net worth Ratio	Owner's funds as a % of total funds
2001	1.97	2.10	33.70
2002	2.00	2.56	33.35
2003	2.02	3.05	33.10
2004	2.05	3.14	32.74
2005	1.77	2.52	36.15
2006	1.37	1.70	42.12
2007	0.99	0.99	50.16

(Derived From Table:V-46:B)

The Table:V-46:A &B are showing operational inadequacy of project though the project is awarded on most busy corridor of NH-8.The Table:V-46:C is depicting need of equity funds to the range of 50% of total funds. The financial structure of NTBCL and VHTRL (GTRIL) have also shown recent proportion of owner's funds above 50% (Table:V-19 AND 36:C respectively). Hence, a common issue of higher debt is faced by all three concessionaires. This could have been sorted out by proper preparation of base case scenario at bidding stage.

5.7.3.3 Analysis of Issues Due To Lacunae in Concession Agreement:

This is a Price Cap regulation based concession agreement. The Price Cap type of concession design has seen two revisions (MCA 1999 and 2006) incorporating capital grant support and revenue sharing (in terms of yearly varying concession fees) and partial traffic guarantees. Still this case has many aspects to analyze fro actual execution. Following points are raised from study of concession agreement and available relevant details for its practical implication in construction and operation.

The lacunae pointed out in this CA are leading to suggest appropriate corrections for future works.

1) NICE is facing issue of local trucks/buses/LCV demanding rebates on frequent journeys. The Company has conceded the demand by issuing monthly passes and return tickets and the other users are also offered 4% extra trips if they prefer to prepay for 100 journeys (every 50 journey advance payment is valid for 180 days). This was a compromise to settle daily public resistance but such

provision is not available in CA. The Company is expecting reimbursement of losses due to issuance of daily and monthly passes to local users. MOSRT&H has already directed such rebates for local users if project is undertaken using GOI funds or it is annuity based project but not for BOT (Toll) projects.

2) The Company is also putting extra efforts to stop toll evasions because; there are two offshoots from Vadodara side after crossing the toll plaza -one for Nilkantheshwar Mahadev Temple & other is for Government Circuit House. Similarly, a major junction (cross roads) for diverting traffic to Shuklatirth is available before toll plaza. Also, once the bridge is crossed then there is no toll plaza on Mumbai side. NICE has deployed personnel to collect tolls from users using these links and joining the toll road after toll plaza. The Company calls it offline toll collection (toll collection computers at windows of toll plaza are connected with control room) and controls evasion using extra manpower. The tolls collected while disruption of computer network at toll plaza is also labeled as offline toll collection. Hence, quantum of evasive traffic is not precisely known in this case. For example, the offline toll collection for March 2007 was about Rs. 12,291.0 as compared to total collection of Rs. 2.72 crores in that month. But NICE has to spend even more than offline collection to avoid toll evasion due to site conditions.

3) A major hitch found by NICE is tendering exact coins while collecting fees from road users. The NICE has stated need of more than Rs. 15.00 lacs per month due to fixation of fees at intermediate figures. Every month NICE has to arrange for such coinage from banks, religious institutes etc. to reduce transaction time. The cost of such coin collection is generally 5% of it but carries risk of transporting to toll plaza every month.

4) The NICE can revise toll rates only after getting notification from GOI which never comes in permissible time limit. This delay is admissible for claim but CA provided extension of toll period to accommodate revenue losses in such events. The Company has already claimed for loss of revenue due to delay in toll rate revision as below.

Table:V-47

Claim for Delay in Toll Rate Revision for NICE

Toll Rate Revision	Due date of toll revision	Actual date of toll revision	No. of days of delay in revising toll rates
FY 2002	1-4-2002	2-11-2002	215 days
FY 2003	1-4-2003	5-7-2003	95 days
FY 2004	1-4-2004	6-7-2004	96 days
FY 2005	1-4-2005	27-7-2005	117 days
FY 2006	1-4-2006	5-8-2006	126 days
FY 2007	1-4-2007	5-8-2007	129 days

(Source: NICE & GOG Offices)

The NICE has claimed for total Rs. 20,792,019.00 as a principal amount as per no. of vehicles passed paying tolls at old rates. Adding interest (at varying rate as per actual cost of borrowing being faced by NICE year to year) of Rs. 16,292,863.00 it totals Rs. 37,084,882.00 at the end of concession period. The CA is providing compensation of such event by extending concession period hence NICE has used its cost of borrowing money to derive interest of respective FY up to end of concession. Of course, the loss is to be recovered on the end of concession that may hamper project cash flow adversely. Surprisingly, the toll revision notification has come always late though the indices are available and proposal is generally submitted by NICE in time. Actually, there is no need to demand proposal from NICE. GOI it self publishes data and it can revise toll rates as per escalation formula provided in agreement which requires no extra input from NICE.

Like MCA (2006), here also no formulae to calculate extension of concession period are available to the concessionaire from CA. Hence, claim from NICE may not be accepted in toto for extension of concession period as Steering Group may work out equivalent days of extension based on own assumptions.

5) The CA has another drawback that affects the bankability of project. No outright formulae for calculating revenue loss compensation during operations affected by *Force Majeure* events or admissible events are provided in CA. The CA is providing compensation when operations are totally stopped or agreement is terminated. The earlier auction contract of toll rights awarded by Government on old bridge on River Narmada had this feature. In this contract,

the concessionaire was to remit agreed amount twice in a week to the Government irrespective of actual toll collection. In the event of any loss of revenue in toll tax being more than 50% of average daily collection of last seven days(event persisting for more than 24 hours) average daily collection for last seven days before notification of event was taken as a yard stick and any deficit is allowed as rebate to remittance by Concessionaire to Government.

6) The CA is not distinguishing various trucks on the basis of axles. Hence, the toll rate for trucks was allowed only Rs. 33 on inception irrespective of axle pattern. In Vadodara- Halol Toll Road, every axle (beyond usual 2 –axle) attracts extra 66% of toll for that truck. The NICE has raised the matter with MOSRT&H for consideration of growing proportion of Multi Axle Vehicles (MAV) on Narmada bridge. This is quite appealing because, induction of MAV by transport operator helps him loading 50% to 100% or more in a single truck which in turn reduces no. of tollable vehicles on the bridge. The NICE has contention that such reduction in traffic is exogenous to the project and hence some toll adjustment is needed.

Table: V-48

Increase of MAV in Total Truck Population For NICE

Period of observation	No. of total HMV (truck + Bus) passing the toll plaza	No. of MAV passing the toll plaza	% of MAV in total population of HMV
Sept 2001-March -2002	400029	4811537	8.3%
April 2002- March -2003	1021413	5016509	20.4%
April 2003- March -2004	1254000	5130470	24.4%
April 2004- March -2005	1568354	5277575	29.7%
April 2005- March -2006	1723335	5386417	32.0%
April 2006- March -2007	2035195	6080027	33.5%

(Source: NICE & GOG Offices)

The above issue is quite suggestive of technological risk being carried by NICE. Since the concession is designed in this case on Price cap basis, the Sovereign is unable to appreciate the contention of NICE to introduce higher toll rates for MAV. This is in a view to disallow any profit other than agreed terms.

7) The risk identification and allocation is mainly matter of claims put up to STG for considerations by affected party and STG has no time bound obligation to decide upon such claims. For example, the claim of NICE for revenue loss so far due to late notification of revised fees from 2002 & revenue loss due to riots 2002 is yet not decided. The *Force Majeure* events are of prime importance because they are indicating course of action under events not anticipated and even after due diligence, affecting the project interest to the extent some times leading to termination of the Concession Agreement. Such events are not planned for and hence disrupt cash flow and lenders are most wary of such circumstances. The stipulations under CA for *Force Majeure* require undergoing lengthy route of Dispute Resolution since there is always miss out for time bound decision when a project undergoes unusual circumstances.

8) In case of NICE, the tolling history of existing bridge helped in absorbing new project. But in later years, the dilapidation of old bridge forced the Government to close the old bridge many of times (total more than 10 months that included one spell of continuous seven months) for repairing structural defects. The closure of old bridge means reducing four lane capacity of facility to two way but tolling continues on agreed toll levels of four lane facility. When existing traffic is in need of six lanning (six lanning is already taken up by L&T on Vadodara- Bharuch stretch of NH-8 on BOT basis) a single moment of old bridge closure creates long queues & traffic chaos on new bridge. The lengthy spells of continuous closure of old bridge created enormous stress for NICE because they were collecting tolls for four lane facility.

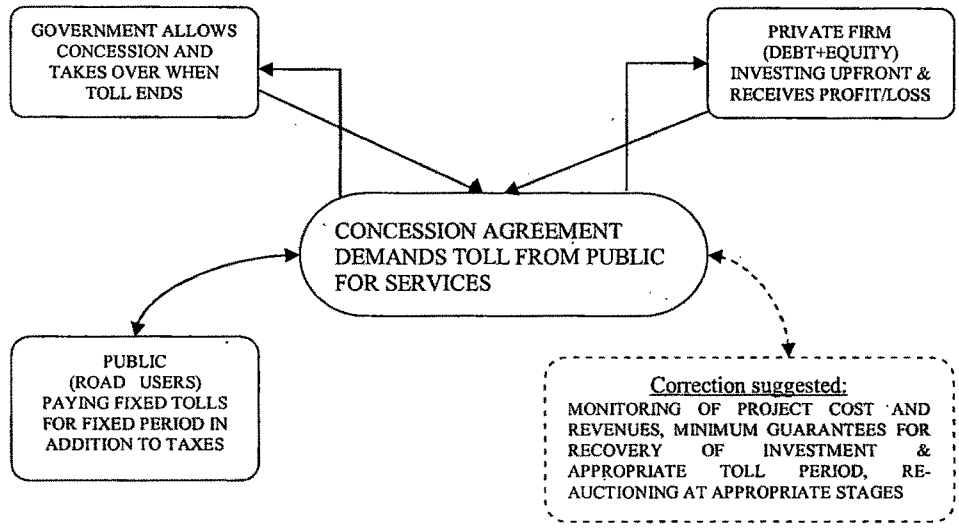
5.7.4 Policy Implications From Case Study:

The policy implications covered for Chalthan ROB are applicable for NICE case study being typical for Price Cap regulation. The issues of non availability of reliable traffic data, unattended issue of local traffic and tollable traffic, ignorance for project cost and project revenues, speculation allowed for future traffic etc. are in need of attention keeping in view methodical concession design of IL&FS cases. These aspects are already discussed for Chalthan ROB case. A conceptual model explaining

working of NICE agreement is depicted in Figure: V-17. *The dotted square suggests remedies to this agreement as discussed under subsequent subsections.*

Figure: V-17

Conceptual Understanding of NICE BOT Project



(Prepared based on above case details)

This figure illustrates Public pays and receives services whereas concessionaire invests in the project and receives toll income. Government awards concession rights and receives back facility at the end of term. However, cornerstones for Price Cap regulations in CA designed so far for NH works including MCA (2006) are not definable as all these agreements only mean upfront investment from concessionaire and tolling for fixed price and fixed period permitted on public assets with all uncertainties remaining unanswered. Hence the model under Figure: V-17 is quite open ended unlike IL&FS case.

5.7.4.1 Remedy to NICE Agreement:

For sustainable PPP, neither unplanned profits nor unplanned hardships shall be allowed by virtue of careful concession agreement as discussed for NTBCL and VHTRL case. As a major policy suggestion, the concession shall not be a **speculation business** considering public nature of the road sector. Also, it should not be literally build-operate- transfer on recovery of investments or at the end of term. The concession shall be focused on achieving lower prices to the users or shall render

superior services to them instead of focusing merely on passing over investment obligation to private sector (Kerf et al.1998).

The NICE agreement is surely not imposing any extra burden on Public except as stipulated by MOSRT&H for all permanent structures on NH. Almost 70% of concession period is passed so far by NICE. The NICE has passed Ramp Up period to enter into smooth operating period now onwards. A re-auctioning case with an objective to reduce tolls for Public concern is always desirable. However considering project specific requirements, the re-auctioning bid shall focus on construction of new bridge on Narmada River to avoid this stretch of km 192/0 to 198/0 of NH-8 becoming bottleneck among NH-8 between Vadodara- Surat. This is inevitable considering dilapidated condition of old bridge (Sardar Bridge) on River Narmada. Hence, the future cash flow shall accommodate this cost in initial years of new concession period itself. To introduce free competition, such modified scope of project will require termination of NICE agreement. The termination of NICE agreement is possible under provision of *Force Majeure* (Direct Political Event) and it will require paying NICE all outstanding debts and return on paid up equity at 20% for remaining term (up to December 2012).

5.7.4.2 NPV of Future Cash Flow & Future Financial Management:

The proposed termination for inviting bids of re-auctioning of concession will attract compensation to NICE as per Table: V-49:A assuming agreement is terminated on 31st March 2007. Hence, it is required to pay NICE Rs. **133.73 crores** to terminate the agreement by 31st March 2007.The potential of future cash flow is worked out in Table: V-49:B based on following assumptions. The NPV from these estimates of future cash flows is tabulated from Table: V-49:C assuming various discount rates.

Assumptions:

1. The known value of Rs. 32.1 crores of revenues for 2006-07 is adopted as a base value. The revenue has increased from Rs.19.77 crores to Rs. 31.2 crores from FY 2002 to FY2007. The average of year to year percentage increase in revenues for above period is found 11% per year. Here, the toll revenue is assumed to increase every year by 6%(for inflation) similar to NTBCL case

and additionally, moderate traffic growth of 5% per year is assumed which combinely gives 11% (i.e. 1.06x1.05=1.11) growth per year and that matches with actual past growth of revenue as checked above. This is in fact very much underestimation of toll revenue for NICE case. Because, the past records were based on four lane facility and this academic case is based on assumption to create six lane bridge by end of FY 2010. The traffic volume will be enormous (designed capacity increases by 1.5 times) due to six lanning of bridge. In fact, once the six lanning of NH-8 between Vadodara- Surat is completed by end of FY 2009, the existing four lane bridge will start getting enhanced traffic.

2. The O&M for NICE has remained so far as around 20% of toll income as per percentage of total O&M expenditure found (Rs.32.3 crores) for period of FY 2002-2007 of revenues in that period (Rs. 156.83 crores).Here, O&M is assumed at 20% for managing operations and periodic repairs for future years. After FY 2010, the revenues will be for six lane traffic and O&M expenses shall be less than 20% of revenues. Hence, it is little overestimation of O&M expenses when six lane bridge starts operations after FY 2010. Most importantly the estimated cost of third bridge of Rs. 300 crores is added in O&M cost of existing project. The cost of Rs. 300 crores is divided among FY 2008 to 2010 equally.

3. The Depreciation amount is assumed for tax purpose. On safer side, same amount of Rs. 11.82 crores is maintained for all years. The second bridge is any way accounted for full depreciation by FY 2012 and then third bridge is getting accounted for depreciation. The assumption is too simplified and it gives taxes on higher side which makes the assumption of depreciation on safer side. NICE has shown profits from FY 2005 but after re-auctioning, profit starts after FY 2010 and hence, first ten years of operations from FY 2011 are taken for Minimum Alternative Tax (MAT) and then regular tax rate on the lines of NTBCL case is assumed. The operational income is available from FY 2008 though construction of third bridge is assumed underway during first three years of new concession.

4. The net cashflow after deducting outflow is discounted at 9.5% considering Halcrow estimates (in NTBCL case) of cost of capital. Since, existing CA mentions 12% rate of discounting and returns on equity at 20% for compensating under *Force Majeure,* both rates are also attempted in deriving

NPV. For this case, 12% discounting rate will be more relevant looking to the provision in CA. The future cash flow is estimated up to FY 2030 and NPV is found for those years from FY 2007 when NPV reaches amount little above amount (Rs. 133.73 crores) to be compensated to NICE.

The whole idea behind this exercise is to check potential for paying back NICE the compensation payable at end of FY 2007 and incurring additional cost of Rs. 300 crores for third bridge on River Narmada between FY 2008-2010.

Table: V-49:A

Compensation to NICE On Termination

Sr. No.	Attributes		Rs. in crores
1	Residual Debts		48.64
2	Paid up Equity		47.35
3	20% Yearly Returns on Paid up Equity		37.74
	FY 2008	9.47	
	FY 2009	9.47	
	FY 2010	9.47	
	FY 2011	9.47	
	FY 2012	9.47	
	From 3/2012 to Dec/2012	7.10	
	Discounted @12% =37.74		
Total Compensation			**133.73**

(Source: Derived From NICE Concession Agreement Provision)

The estimates made under Table:V-49:B and C explain need for stretching new concession period from 1-4-07 to 31-3-2025 to accommodate construction of new (third) bridge while maintaining old and second bridge in trafficable conditions. The desirable bidding criterion is possible to include for reduction in tolls as it was worked out for NTBCL case. The exercise in Table:V-49:B and C is based on toll levels fixed as per NH rules for permanent structures (that is provided as initial toll rates applicable on opening date of operations) and these toll rates adjusted for subsequent inflation up to FY2030. However, projections up to FY 2025 are found ample to serve the objectives of new concession agreement- to pay back NICE for termination and to incorporate construction of new bridge immediately to match with six lanning of Vadodara- Surat stretch. Additionally, a toll rebate of 10% is applied to toll projected from FY 2008 to 2030 similar to NTBCL case and the results are summarized in Table:V-50

Table: V-49:B

Estimation of Future Cashflow for NICE (Rs. in crores)

Financial Year	Total Income	O&M#	Depreciation	Income Tax*	Net Flow
2008	35.73	107.15	11.82	0	-71.42
2009	39.76	107.95	11.82	0	-68.19
2010	44.26	108.85	11.82	0	-64.59
2011	49.26	9.85	11.82	3.03	36.37
2012	54.83	10.97	11.82	3.52	40.34
2013	61.02	12.20	11.82	4.07	44.75
2014	67.92	13.58	11.82	4.68	49.66
2015	75.59	15.12	11.82	5.35	55.12
2016	84.13	16.83	11.82	6.10	61.20
2017	93.64	18.73	11.82	6.94	67.97
2018	104.22	20.84	11.82	7.87	75.50
2019	116.00	23.20	11.82	8.91	83.89
2020	129.10	25.82	11.82	10.06	93.22
2021	143.69	28.74	11.82	34.72	80.24
2022	159.93	31.99	11.82	39.09	88.86
2023	178.00	35.60	11.82	43.95	98.45
2024	198.12	39.62	11.82	49.37	109.12
2025	220.50	44.10	11.82	55.40	121.00
2026	245.42	49.08	11.82	62.11	134.23
2027	273.15	54.63	11.82	69.58	148.95
2028	304.02	60.80	11.82	77.89	165.33
2029	338.38	67.68	11.82	87.14	183.56
2030	376.61	75.32	11.82	97.44	203.85

Note:

O&M taken as 20% of toll income for managing operations and periodic repairs.

* I.T. taken at 11% (MAT) for first 10 years of operating profit making years i.e. up to 2020 & then 33.66% .It includes cost of Rs. 300 crores to be incurred for construction of third bridge. This cost is divided in three equal installments of Rs.100 crores for FY 2008 to 2010. Knowing the fact that toll income for FY 2007 is about Rs.32.10 crores, every next year toll income is raised by 5% per annum for traffic growth and 6% for inflation and above financial statement is worked out.

(Source: Derived based on own assumptions for known value of toll collection for FY2006-07)

Table: V-49:C

Estimation of Future Cashflow for NICE Case (Rs. in crore)

Concession period up to	NPV at 9.5% of discount rate	NPV at 12% of discount rate	NPV at 20% of discount rate
Up to FY 2012	-120.37	-118.10	-110.50
Up to FY 2022	**143.04**	90.51	-5.70
Up to FY 2025	213.04	**138.19**	9.09

(Based on above assumptions and estimated cash flow)

5.7.4.3 Objective of Instating New Concession:

After proposed terminating the concession awarded to NICE, the new agreement shall be focused on constructing additional bridge and shall provide upfront payment to NICE amounting Rs.138.19 crores as termination compensation. However, the project has potential to accommodate toll rebates also as worked out under Table: V-50. The NPV shown in this table is worked out for reduced revenues by 10% in Table:V-49:B. The Table: V-50 shows within accepted assumptions, the toll reductions of 10% are in need of extension of concession period further by two years. The delayed toll rebate of 10% effective from date 1-4-2015 is found able to serve the objectives of new agreement within concession period of FY 2025. Hence, the popular objective of toll rebate is possible to work out in this case too. The underestimation of traffic even after six lanning can give scope for toll rebates in any case. It is quite possible that NICE itself may bid for new concession offering highest

Table: V-50

Effect of reducing tolls on estimated NPV for sell out

Options	Toll reduction Assumed from	NPV as on 31-3-07 Rs. in crores for cash flow 2008-2025	% Reduction in NPV estimated earlier i.e. Rs. 138.19 crores
Option-1	Reduce toll for all users by 10% from first year starting from 1-4-07	112.58	18.5%
Option-2	Reduce toll for all users by 10% after completion of third bridge, starting from 1-4-2010	121.46	12%
Option-3	Reduce toll for all users by 10% starting from 1-4-2025	132.46	4%

Note: The extension of concession period from 2025 to 2027 is yielding NPV=Rs.140.59 crores.

(Source: derived from Halcrow data as in above tables)

All the academic estimates for NTBCL, VHTRL and NICE suggest importance of base case at bidding stage. The Government shall have own calculations based on sound assumptions of various financial scenario to arrive at optimum expectation from agreement and this will give negotiation power to Government based on own calculations. Presently, in case of NH segment and in particular for all Price Cap regulations based concessions, Government and bidders do not emphasis on preparation of proper base case. A typical negative cashflow for initial six-seven years can not be left to the Concessionaire when the asset being managed is public utility. This is very important especially when agreements seen so far are not having any reserve for maintenance. The interstate traffic will have no option except to pay and go through poor service standards when a company is unable to serve debt obligations and has no spare money to incur on maintenance. Thus, though project cashflow may be showing attractive returns on summing up, the stress period typical for toll roads on "Ramp Up" needs proper attention. Then further stream of handsome net flow may be reviewed periodically if the Government has supervision for Public interests. Such mechanism will not only curb abuse of monopoly power, it will also offer call option to investors if they are not comfortable with on going project operations. All of these case studies have brought out the fact that debt servicing hampers operational aspects severely. The base case shall be worked out to define actual debt service limits year to year basis that will require lower Debt/Equity Ratio during initial years and hence comfort to lenders too. The mezzanine financing or subordinated debts from investors shall be beforehand worked out to assure lower costs of funds and lower project costs because, any Government is awarding BOT project on the assumption that bidder is bringing investment that is not available in the chest of Government. Hence, the objective of new concession shall be focused on lower project cost integrating local site condition requirement of future expansion. The lower project cost shall be translated into lower toll levels as compared to presently available benchmark of NH Fee Rules. As ascertained from case studies undertaken herewith, the inability of Government to anticipate future public policy objectives or network capacity needs accurately requires flexibility in Concession documents. Essentially, the concession shall be flexible to accommodate for local requirement in terms of change in scope, it shall be flexible to embed re-auctioning at achievement of decided datum e.g. achieving 85% of expected NPV or 85% of concession period which ever is earlier. This 85% figure shall be actually worked out from sound base case calculations on

case to case basis. The aim of such re-auctioning shall be renewal of efficiency or renewal of monopoly power as the case may be to facilitate concessionaire in adjusting with changing scenario with ultimate goal to serve the Public at lower cost. Of course, any failure in obtaining suitable bids shall mean continuation of original concession agreement.

SECTION-III: PRIVATE PROJECT FINANCING ASPECTS

5.8 PRIVATE PROJECT FINANCING ASPECTS IN CONCESSION DESIGNS:

In PPP, private concessionaire signs the project for making investments that is not in capacity of owners of sector (i.e. Government). However, practically the concessionaire invests minimum and leverages on- his image, strength of contracts (as per bankability of agreement) and his equity contributions. If it was matter of raising debt from market, any government could have done better than these candidates. But the issues of efficiency and self-financing place greater trust on private players in constructing & operating such facilities. The run for profit is recognized as an adequate incentive (which is also cause of all worries for Government) to carry out all multi-faceted activities required under PPP project at better efficiency than Government bodies. This in turn requires to recognize the real partner of any PPP project i.e. lenders and bankability of CA to win the confidence of lenders. Ultimately it is mainly the lenders who shall face various risks and issues in carrying out PPP project. IL&FS has prudently accepted the role of lenders and has got Government signed Direct Agreement with lenders for underwriting the debts whereas NH segment is not recognizing lenders for direct responsibility of Government for repayment of debts even in MCA (2006). Right from Sovereign to concessionaire, financing of PPP projects is passed on to lenders that is mainly banks and concession in NH segment are awarded with out any recourse to balance sheet of sponsors or Sovereign.

Keeping in view enormous traffic on corridors like NH-8, the BOT projects can be viewed or construed as "ring-fenced" projects having potential to accommodate leveraged financing despite no major guarantees. This is possible on the basis of rights to collect tolls for many years leading to future cash inflow sufficient to serve

obligations & credibility of main sponsors behind the SPV created for the project. Here, physical assets can not to be pledged but lenders have first call on the project's net operating cash flow. The right to collect tolls conferred upon by Sovereign herself is almost like Sovereign guarantee for profits except project is perplexed under exceptional cases like *Force Majeure* events or in case of diversion/division of estimated traffic. A stable yearly future cash flow of toll revenue less obligations is capable of self reliance except during initial Ramp-Up period. Hence, financing of such projects can be solely based on toll revenues if feasibility reports confirm the commercial viability based on income & expenditure projections. Thus with out taking recourse to investors' balance sheets or their assets, the BOT projects can be financed at least on a busy corridor. The "ring-fenced" type of financing of such projects will put pressure on all stake holders (lenders and equity holders) for efficient construction & operations of project. The equity of investors is able to earn returns only if project operates efficiently & successfully. For making it a single goal enterprise, the investors form Special Purpose Vehicle (SPV) or Special Purpose Company (SPC) to make no recourse or limited recourse entity with compulsion to excel within the ambits of a single project with fresh balance sheet. But project finance requirements for viability of project is seldom discussed under any CA which makes the whole business within the jurisdiction of traditional engineering firms who are investing and waiting for recovery of investments under such projects. Hence, the PPP projects have remained more of technological for the sector than matter of financial management. The **bankability** of project is proclaimed in rhetoric but not worked out for individual project finance requirements. This will also require rating of toll road projects for attracting for example bond financing and host of other debt instruments. In fact project financing is a tool for assuring not only viability of project but also to influence cost of project in the interest of Public. Unlike usual "financing of projects", project finance is a **seamless web** that affects all aspects of a project's development and contractual arrangements (Yescombe 2002). Hence the financing of BOT projects (considered to be candidates of non- (or limited) recourse financing) can not be left off concession agreement for viability of projects. This view can be interpreted to make a room for financial detailing of project operations in the CA itself or through separate covenants for smooth financial operations leading to viability of project & pricing benefits to Public. This view is complimented by Chandra (2002) stating that through a comprehensive web of contracts, every major

risk is allocated to the party/parties best able to manage it. But Chandra (2002) further argues that the concept of **seamless web** by means of project finance for success of project along with curbing abuse of monopoly power of Concessionaire is valid albeit remains incomplete as long as financial leverages, organizational structures (selection of various stakeholders for equity) is not well understood. Hence, a blind stipulation of 70:30 Debt/ Equity ratio will not serve the purpose if a project specifically can manage 100% debts at some stage or requires more equity during "Ramp Up" period.

The problem with toll roads is, they are essentially viewed as civil engineering projects for full tenure of Concession and Concessionaires are generally construction companies unlike exception of IL&FS. Hence, initial equity for project comes from such traditional construction companies. Since the highway projects are completed using established technologies, very little scope is found during operation stage for Construction Company to retain establishment. In well developed financial market of UK, traditional construction companies tend to sell their all or some of equity in wake of financial constraints (blocking of equity that prevent the construction company taking up another civil work) faced on longer run. Hence diminishing appetite for equity investments by such traditional construction companies paves way for entry of financial participants. The PPP-Private Finance Initiative (PFI) experience in UK suggests that emergence of a new class of mezzanine investors and the pressure on the construction companies to cash in on their investments has led to the growth of a secondary market for such investments though operating slowly at present (Monnier et al. 2003).

The injection of equity and drawing of debt at appropriate time can seriously influence cost of a PPP project. Knowing the fact that equity is patient funds though expectation for returns is higher than lenders, any of above case studies could have sustained better if D/E was specified appropriately during "Ramp Up" periods. Any stipulation for higher equity during "Ramp Up" shall not be viewed negatively since Government is anyway expecting the Concessionaire to invest upfront totally itself under PPP route. After "Ramp Up" period, stable cashflow could attract refinancing of project at lesser cost & larger leverage. Then the initial investors could be allowed to sell equity at some premium and thus these could be back –loaded debt structures and may lead to longer term of debts. The toll projects facing construction & traffic

risks need a higher equity commitment versus those in steady state operations. Recognizing the growing value of most of such user-pay toll roads and prudent repayment of equity over time through additional leveraging by a sponsor is not viewed negatively as long as growing future toll road or Concession value adequately compensates for the equity take out (George et al 2007). Such financial engineering will require proper financial market also. The GOI has already set up Infrastructure Development Finance Company (IDFC) in 1997 as a public limited company with initial share capital of Rs.30 million to usher private capital flow in infrastructure sector including roads. The IDFC has now over Rs. 1000.0 crores of paid up share capital and it is built up using merely 25% of GOI money and remaining from institutions/banks like IDBI, IFCI, SBI, HDFC, ICICI and through public subscription. The IDFC has full influence over making of Concession agreements for BOT based projects and specifically Annuity based projects on NH. However, the IDFC has yet to score on envisaged role of connecting PPP projects with potential long term investors like banks & insurance companies and thus enabling development of long term borrowing market. By March 2005, IDFC has limited its role mainly as a provider of senior loans to the extent of @ 80% of disbursement so far. The IDFC has reported cumulative disbursements of Rs. 10,484 million financing 1,100 kilometers of National & State Highways under the BOT model (IDFC Red Herring Prospectus June 2005). The Rakesh Mohan Committee and subsequent Working Group of RBI had expected that IDFC would provide credit enhancement products, refinancing instruments which are not significant so far. Thus, the vision for project financing is found on anvil since 1997 albeit the structuring of PPP projects is yet to be influenced by principles of project finance.

5.9 CONCLUSIONS:

The study of above four cases has provided many insights into real operations of PPP project. Many operational issues like- inclusion of precise formulae for compensation for *Force Majeure* events, State partnership in compliance of manifold regulations, setting up tolls on actual service standards basis and speedy procedures of Oversight board/Steering Group need specific inclusion in concession agreement. For users, these are only projects demanding tolls on use irrespective of type of project design adopted. But for the investors, it is presently only a speculation business looking to

the provision of concession agreement of these four cases or the MCA (2006). The planners of PPP projects are not allowing assured returns atleast on National Highways and mystery of traffic volume at planning and management stage remains unresolved with an understanding that it is risk-return relationship. The IL&FS has provided good financing model based on rate of return regulation which is in fact very close to Least Present Value model suggested by World Bank much before planning of these projects in India. The IL&FS cases are prone to criticism owing to lack of competition allowed at approval stage and monopoly powers being assigned to private concern for such a long period which seems to be endless as discussed above in cases of IL&FS. For comparative illustration, all four cases are briefed in Table: V-51.

Table: V-51
Comparative Illustration of Selected Four Case Studies

Sr. No.	Case Study Name	Approx. Project Cost on completion (Rs. in crore)	Agreed Concession Period Duration (Actual Date of Starting Tolling)	Type of Regulation	Occurrence of Cost Overrun and Time Overrun up to starting of tolling (Yes/No)	Major Issues in Planning Project	Major Issues in Managing Project
1	Chalthan ROB	12.70	18 months for construction plus 23 months and 5 days for tolling (toll started from date 19-7-1998)	Price Cap	Cost Overrun=Yes Time Overrun= No	1. Local traffic was ignored and tollable traffic was not assessed by any party. 2. Planned like civil work cash contract but without any guarantee.	1. Due to flaw in planning and bidding (i.e. both parties), litigation, mob resistance to toll were faced by concessionaire single handed.

Sr. No.	Case Study Name	Approx. Project Cost on completion (Rs. in crore)	Agreed Concession Period Duration (Actual Date of Starting Tolling)	Type of Regulation	Occurrence of Cost Overrun and Time Overrun up to starting of tolling (Yes/No)	Major Issues in Planning Project	Major Issues in Managing Project
2	NOIDA Bridge	416.33	30 years (including construction period)or on recovery of investment at 20% return whichever is earlier (toll started from date 7-2-2001)	Rate of Return	Cost Overrun =No Time Overrun = No	1.The planning of project is based on secured returns for long term and without competition. 2. The planning allows one partner (IL&FS) to play many conflicting roles for commercial gains. The representative of Public (Government) is made partner of commercial interest. 3. Improper financial planning and faulty traffic estimates	1.Due to many guarantees, and without competitive pricing, toll rates are high and tenure of agreement is endless. 2. Flaw in estimating traffic and inadequate financial planning led to enormous losses. Losses are borne by users as per agreement. 3. Involvement of Government in commercial activities rendered public without any stand in the mechanism.

Sr. No.	Case Study Name	Approx Project Cost on completion (Rs. in crore)	Agreed Concession Period Duration (Actual Date of Starting Tolling)	Type of Regulation	Occurrence of Cost Overrun and Time Overrun up to starting of tolling (Yes/No)	Major Issues in Planning Project	Major Issues in Managing Project
2	NOIDA Bridge					4. All activities before commencement to construction are not given any time bar. In fact, time overrun and cost overrun has no relevance by virtue of agreement.	4. BOOT allows commercial development of project assets but was found of no use in actual conditions.
3	Vadodara - Halol road	160.00	30 years (after completion of construction) or on	Rate of Return	Cost Overrun=No Time Overrun = No	As Above	As Above

Sr. No.	Case Study Name	Approx Project Cost on completion (Rs. in crore)	Agreed Concession Period Duration (Actual Date of Starting Tolling)	Type of Regulation	Occurrence of Cost Overrun and Time Overrun up to starting of tolling (Yes/No)	Major Issues in Planning Project	Major Issues in Managing Project
3	Vadodara-Halol road		recovery of investment at 20% return whichever is earlier (toll started from date 24-10-2000)				

Sr. No.	Case Study Name	Approx. Project Cost on completion (Rs. in crore)	Agreed Concession Period Duration (Actual Date of Starting Tolling)	Type of Regulation	Occurrence of Cost Overrun and Time Overrun up to starting of tolling (Yes/No)	Major Issues in Planning Project	Major Issues in Managing Project
4	NICE	138.00	15 years including construction period (toll started from date 11-11-2000)	Price Cap	Cost Overrun =Yes Time Overrun = No	1. The tolling on dilapidated existing bridge as a part of overall project is major flaw in planning. 2. The financial plan was not prepared with adequate contingency.	1. The inadequate financial planning resulted into viability concern in initial years. 2. The defects in old bridge often forced to close it rendering two lane service standards and hence huge congestion despite paying tolls.

Sr. No.	Case Study Name	Approx. Project Cost on completion (Rs. in crore)	Agreed Concession Period Duration (Actual Date of Starting Tolling)	Type of Regulation	Occurrence of Cost Overrun and Time Overrun up to starting of tolling (Yes/No)	Major Issues in Planning Project	Major Issues in Managing Project
4	NICE					3. A major deviation from other toll projects in terms of missing potential for heavy toll by creating category of MAV was the flaw without remedies.	3. Availability of alternative Golden bridge affected profitability especially during congestion. Alternative routes generated by local intersections compelled NICE to employ more staff to stop pilferage in the tolled facility. 4. Undue delay in approvals like fee revision and *Force Majeure* events affected revenue streams and profitability.

The case studies are indicating occurrence of Ramp Up period for toll projects before stabilization of positive net flow. The bidders and planners both are aware of such initial problem but due to very nature of concession design, this aspect is ignored. During this period, concessionaire faces hardship to the extent he often turns up defaulter in debt servicing. The planners shall worry about maintenance capability of concessionaire under such period. A properly worked out financial base case by planners and bidders shall resolve this problem using proper project financing. The planners shall have full estimates of Ramp Up stage and shall incorporate project specific stipulations on financing structure of project during this period. To facilitate project financing of PPP, some supportive measures/guarantees shall be incorporated for ensuring smooth passage of this difficult initial toll period.

1. The BOT projects are only a decade old concept in India which cover many aspects beyond traditional cash contract projects. However, designing of concession agreements have been on line of construction agreements only. Except recent provision for partial traffic guarantee in MCA, the very important aspect of traffic is most neglected by planners so far. Hence, neither reliable past records are committed by Government or future traffic is forecasted by Government as a commitment. Despite roads being public asset and traffic being outcome of economic policies of Government, Government asks bidder of BOT project to ascertain present and future traffic. All the four case studies suggest that traffic after the starting of toll operations hold the key for success of BOT projects. Since remaining aspects being mainly related to construction, the concessionaire being mostly construction firm, other aspects are generally not influencing outcome of BOT projects.
2. The case study of Chalthan ROB is significant to explain perils of tolling local traffic. Though the local traffic is now regarded as toll free under recent MCA, the issue of estimating tollable traffic is yet unresolved. In absence of reliable traffic database, the tollable traffic is need of guarantee atleast during Ramp Up period. Otherwise, BOT project is turning up into a speculation business where concessionaire has no capacity to influence the demand. In fact good database for tollable traffic can be helpful in negotiating BOT projects at award stage.

3. The Chalthan project also suggests confirming toll booth locations aprior with necessary understanding of intermix of local traffic with tollable traffic. The planners shall have full understanding of alternative location of toll plaza so that issues arising from location of toll plaza can be sorted out smoothly.
4. The claims arisen due to issue of local traffic emphasized requirement of accounting and monitoring of actual project cost and actual toll revenues though it was a price capped BOT project. Even recent MCA has not given importance to these issues with an understanding that it is all related to profitability of concessionaire and hence is not of public concern. These aspects are most vital in Rate of Return regulation based PPP projects but has relevance for Price Cap regulation also when issues of refinancing, re-auctioning and claims are to be resolved. Also, hold over such details can help Government in renegotiating events.
5. The BOOT projects jointly sponsored by IL&FS and Government for NOIDA toll bridge and Vadodara- Halol road are excellent cases of minute detailing of viability concern under Rate of Return regulation which are in fact concession agreements with multiple securities to investors. Both the cases are having little variation over typical Rate of Return regulation as here tolls can not be hiked to match the agreed returns. Here, the returns are secured and deficit in returns are added in to outstanding project cost rendering these projects to last for many years beyond their stipulated concession period. Hence, the corner stones for these cases are identified as- Projects Cost; Traffic Volume and Tolling Terms. Hence in such projects all three aspects are monitored seriously with the help of independent consultants.
6. The most striking planning issue in formulating these two projects is avoidance of open **competition for the field.** Since in road sector competition in the field is not advisable, efficient concession can be awarded only through competition for the field. In both cases, it is unsolicited proposals being awarded the field and two diverging representatives of public (i.e. Government) and private concern (i.e. IL&FS) are made partner of commercial interest in project. This is most debatable partnership where private concern is most likely to overshadow the public concern in terms of increasing toll rates beyond inflationary limits and no user's recourse in case of reduced service standards. On other hand, IL&FS played multiple roles of-

Sponsor, Concessionaire, and to certain extent lenders. ***The worries of Demsetz in regulating public utilities are relevant in these cases where Alfred Marshall's proposal to focus prices and service standards is ignored for avoiding public investment.***

7. Both of these projects have met with drastically poor traffic as compared to own assessment and the cost of overinvestment is passed on to the ultimate users. The uncapped definition of project cost was infact loose corner unregulated under partnership of Government.
8. Both cases underwent massive restructuring to bail out respective companies from doldrums conditions. However, Government could not extract any benefit in this process for public concern owing to its partnership in commercial operations.
9. In both cases, users were charged excessive tolls by annual increments (beyond inflation based formulae provided in agreement) just to reduce the deficit in return. The benefits to users were however never compared with tolls being levied during operation period.
10. ***Due to assured returns, Government carried most of the risk in both the cases. Both the cases in fact carried explicit Government guarantee for debts raised and hence basically all funds were attracted on Sovereign eligibility and essence of PPP was not served.*** Though both cases started with modest 30% of equity, the operating losses forced the owners to infuse more equity within operation of around five years to the tune of 50% or more and thus it was failure of financial plan to model a replicable PPP project on pioneer basis.
11. As far as NOIDA toll bridge is concerned, the concession agreement provided project support from commercial use of project land (BOOT agreement). But the concessionaire company preferred to speculate by holding the prime land and the viability concern was passed on to the users in terms of toll increase and compounding deficit with outstanding project cost.
12. As far as Vadodara- Halol project is concerned, the agreement has provided only four lane facility whereas the stretch is functioning as a interstate highway between Vadodara- Delhi, Vadodara- Indore and Vadodara- Banswada. Hence, the future problem with this limited capacity of project road is going to hamper project economics. This fact is well understood in

framing MCA where concession automatically terminates on attaining design capacity of traffic and there as inbuilt capacity augmentation provision.

13. As an academic suggestion, it is felt that Rate of Return regulation with assured returns at 20% associated with wholesome Sovereign guarantee is not in public interest and hence both the agreements should be terminated immediately. The concession agreement requires paying back concessionaire's outstanding project cost at the time of termination. In fact Government missed the chance of rewarding the concession for both the cases when these projects underwent financial restructuring. Academic exercise of estimating NPV of future cash flow suggests that it is possible to terminate both the project agreements and pay back concessionaire from proceeds of awarding concession to other concessionaire through open market competition. Further it is also found possible to demand rebate on toll rate at the time of auctioning as a precondition of new agreement which shall not be on Rate of Return regulation. The academic exercise presented in both the cases are flexible to attain required benefits by adjusting concession period and this suggestion is felt practical since both the cases have already gone through Ramp Up period and operate under stable cash flow.
14. The case study of Narmada Bridge is NH project with Price Cap regulation. This project also reveals occurrence of Ramp Up period during initial years of operation. It is a case of proven traffic eligible for four lanning even then traffic was found short falling to concessionaire's estimates. Thus due to overestimation of traffic and huge debt servicing cost as compared to toll income, occurrence of Ramp Up period seems generic for toll projects. However, this aspect is consistently neglected in all four cases by Government that could affect maintenance capability of concessionaire. Hence either reserve for maintenance or designing any evaluating of project specific financial base case is suggested to mitigate the viability problem. The preparation and acceptance of appropriate financial base case will enable planners to stipulate financial covenants (e.g. Debt/ Equity ratio during construction and operation period) and will facilitate loading and unloading of equity funds as the cash flow prospers. This suggestion of emphasizing financial covenants is aimed at reducing financial cost of project and to mitigate problems of Ramp Up period.

15. The salient feature of Narmada bridge case study is issue of tolling the existing bridge under the concession awarded for construction of adjoining new bridge. The users are found aware of tolling purpose and any illogical tolling is resisted by mostly local users. The problem of tolling existing bridge is acute here because the existing bridge is having structural defect leading to often closure for traffic which renders four lane facility into two lane. In absence of user's recourse, users pay tolls for four lanning capacity though they have to undergo long queue to cross the Narmada river. This is the fact leading to conclusion that the concession agreement shall be flexible to accommodate issue of closure of old bridge either by reduction in toll or by re-auctioning the concession for accommodating the repairs to old bridge or construction of new bridge.
16. Another feature of Narmada case study that need renegotiation or re-awarding is, non availability of category of Multi-axle vehicles and tolling of them at the rate of six wheel trucks. NICE has claimed that introduction of ten wheel trucks and multi-axle vehicles have reduced the total population of vehicles under the category of trucks. The issue is pending with Steering Group but such issues are most relevant when technology changes fast and nomenclature used in agreement affects the viability of project. The problem with Price Cap based concession agreement used for NICE or even MCA is ignorance of financial aspects of project. It affects the viability of project when renegotiation becomes impossible in want of agreeable past financial data that is never monitored by Government. All such operational and management problems hints at constitution of flexible agreement that is only possible if returns demanded in the bid at award stage are evaluated at bidding stage and are monitored during operations which are missing for Price Cap regulation cases.
17. NICE has faced operational problems like regular delay in revising toll rates each year, shortage of coins for collecting odd figure fess, toll evasion due to formation of alternative route circumventing the toll booths. All these management issues are minimum contribution expected to be sorted out by Public partner during design stage or atleast during operations instead of expecting it from private partner for his own viability concern.

18. The concessionaire (NICE) has also restructured the loans to overcome problems with Ramp Up period. NICE has started with 45% of equity and then offloaded some of them by inviting other financial institution. Hence on own capacity, it has managed financial aspect during Ramp Up period without Sovereign guarantees. NICE could not raise toll rates as per agreement but managed to survive with out passing cost to the users unlike IL&FS cases.
19. The relevance of Steering Group in resolving claims of NICE is felt discouraging as the revenue loss due to riots in 2002 is yet to be attended by them.
20. Looking to the problems with rigid agreement, feasibility of re-auctioning is verified in case of NICE like exercised for IL&FS cases. But here the aim is to incorporate cost of new bridge and termination amount payable to NICE in bidding and then accommodating toll rebates. The projected cash flow suggest feasibility of such option and hence it is academically suggested to re-auction concession for this facility with provision for construction of new bridge that will give opportunity to NICE for relieving if desired or may continue by agreeing new terms arrived at from open competition for re-award of concession.
21. Generalizing from above points, policy level conclusions are derived here under in subsequent discussions. The MOSRT&H practices Price Cap regulation in designing concession agreement which ignores evaluation and monitoring of project cost at the time of bidding and during operation stage. Similarly, it ignores assessing and monitoring of project revenues. Despite knowing the fact that traffic volume at the bidding stage is very important parameter for taking up PPP project, no reliable traffic statistics on the proposed location of toll booth are prepared. For future traffic also, State authorities are not confident for suggesting growth rate but expect the private investor to study the existing traffic and estimate future flow of traffic carrying full risk. This is leading to speculation type of concession agreement and hence it is away from bankable project design. The Price Cap regulation also restricts concession period at bidding stage and hence viability of project is a major concern for such projects. The latest MCA (2006) incorporates partial traffic guarantee but it is of very limited use. On the other hand, Rate of Return regulation has most significant feature of assured net returns

irrespective of traffic volume and this raises debate for appropriate regulation for a PPP project. The precision in project cost derivation and monitoring of actual project revenues are attractive features of such projects, making them bankable which are deserving place in Price Cap based concession agreement. But existence of no competitive bidding at inception and no subsequent re-auctioning renders Rate of Return based agreements too safe for investors and loses essence of private sector participation. Within both regulation of concession design, Rate of Return based regulation is felt more suitable to toll this public goods but under healthy competition at bidding stage subject to periodical review of project returns. A re-auctioning of such projects is suggested with an aim to reduce toll levels so that new entrant in concession will bid for rebate on existing toll level and will also pay back present concessionaire for his remaining expected returns. Otherwise, essence of financial monitoring embedded in Rate of Return based concession agreement need due place in prevailing MCA of NH segment. But in any case, User's recourse is required to be established and hence, Price Cap based agreements also need to be re-auctioned to incorporate concern raised by Alfred Marshall through Demsetz auctioning.

22. As discussed above, re-auctioning of NH projects on Price Cap regulation is also suggested that will make concession design bankable too. Hence, acknowledgement of project cost and monitoring of revenues will be required to be attended on lines of Rate of Return regulation. The re-auctioning of both types of regulation based agreements will require allowing longer concession period as matching with efficient life of civil works of the project. The suggestion of re-auctioning will be helpful in designing flexible concession agreement to incorporate changing needs of the traffic that will in turn help in safeguarding investor's viability concern and will ensure User's recourse at the top.
23. A larger role of some financial institution (like IDFC) is expected to finance and refinance PPP projects on broad scale which will require concession agreements to be different than present focus on civil works. Accepting greater role of financial management of toll cashflow, the agreements shall be more like bankable document atleast after Ramp Up period.
24. Most important lacuna in both the regulations is apathy to User's recourse.

The concession agreements in these case studies and MCA (2006) do not assure benefits to users for use of tolled facility in proportion to tolls being collected. The re-auctioning process as suggested above and proactive tolling matching with service standards can be helpful in establishing User's recourse in PPP project.

*

End Notes:

1. These divisions are adopted from subsection 4.9 -Chapter –IV of this study and are based on MCA 2006.
2. As per standards, a four lane bridge can carry maximum 1, 20,000 PCU including to and fro direction traffic.
3. There is no model concession agreement on Rate of Return regulation based projects.
4. The CA allows 20% yearly return on total investments. So, debt and equity both earn at 20%.If 100% funds borrowed at 20% then no extra returns. If cost of borrowing is 14.7 % and 70% is debt, return on total funds= 0.70(1.20+1.053)+ 0.3(1.20) =1.2371 or 23.71% as compared to 0.70(1.2) +0.30(1.20)=1.20 or 20% .The CA allows compounding of this 20% of return on outstanding investments if it is not met with from net revenues of operations(i.e. revenues minus operation and maintenance cost). Once the net revenues are built up to reduce the outstanding project cost, the hope for end of concession agreement begins. When outstanding project cost is diminished to zero from net revenue of that year, the concession period ends.
5. The VHTRL had stated landed project cost of Rs. 170.94 crores at start up of operations. The 20% return for a year will be about Rs. 34 crores. Since, VHTRL has not made any further investment in the project, the landed project cost of Rs. 170.94 crores shall be added on by post tax returns annual return at 20% if not received during yearly operations. The toll rebates given by GOG at inception were supposed to be added up in project cost and this is also not known for this study and has been derived from calculations. For VHTRL, there was no return for FY 2000, 2001, 2002 & 2003. So, compounding assured return of 20% over project cost of Rs. 170.94 crores will mean

accumulation of Rs. 295.38 crores as a project cost by Sept 2003. Thus it required to pay to VHTRL Rs. 124.44 (=295.38- 170.94) crores as a shortfall over startup project cost. Since GOG has actually paid Rs. 135.91 crore for shortfall (i.e. aggregate project cost shall be Rs. 322.61crore), the project cost remaining to be recovered through GTRIL can be stated to stand after paying shortfall at Rs. 186.00 crores on 30th September 2003 on proportionate basis. Such calculations are worked out for academic exercise in want of actual data from this concessionaire.

REFERENCES

Buxbaum, Jeffrey N. and Ortiz, Iris N. (2007): **Protecting the Public Interest: The Role of Long-Term Concession Agreements for Providing Transportation Infrastructure**: Research Paper No.07-02 (June) USC Keston Institute for Public Finance and Infrastructure Policy (www.usc.edu/schools/sppd/keston/pdf/20070618-trans-concession-agreements.pdf last accessed on date 12-5-08)

Chandra, Prasanna (2004): **Financial Management –Theory & Practice** CFM-McGraw Hill Professional Series in Finance, Seventh Edition

Cherian, George et al.(2007): **Global Toll Road Rating Guidelines** Fitch Ratings Criteria Report on Global Infrastructure and Project Finance (www.ibtta.org/files/PDFs/07%20Fitch%20Toll%20Road%20Rating%20Guidelines.pdf last accessed on date 12-5-08

Economic Survey of India:1998-99: Ministry of Finance, Government of India (http://indiabudget.nic.in last accessed on 12-3-08)

Eduardo Engel, Ronald Fischer and Alexander Galetovic (2005): **Privatizing Highways In The United States** Work in Progress For World Bank (last accessed through econpapers.repec.org/paper/edjceauch/209.htm on 25-4-07)

IDFC Red Herring Prospectus issued on June 25th 2005 For Public Issue of 403,600,000 equity shares of Rs. 10 each for cash (www.sebi.gov.in/dp/idfcfinal.pdf last accessed on 12-03-08)

IL&FS (2002): **Presentation To The PPP Workshop-Delhi-NOIDA Bridge Project** accessed from IL&FS during training to GOG officers (www.worldbank.org/html/fpd/transport/training/ppp_workshop/puri.ppt last accessed on date 12-5-08)

Kerf, Michel with Gray, R. David; Irwin, Timothy; Céline; Levesque, Robert and Taylor, R. (1998): **Concessions for Infrastructure A Guide to Their Design and Award** :World Bank Technical paper no. 399 Finance, Private Sector, and Infrastructure Network, World Bank Publications (available at http://www.worldbank.org accessed on net dated 25-4-07)

Mayer, Jennifer (2007): **TRB Summer Meeting at Chicago (July 2007)** Presentation from FHWA US Government (accessed www.fhwa.dot.gov/ppp on date 25-12-07)

Monnier, Laurence et al. (2003): PPP-PFI : **UK Market Trends and Fitch Rating Criteria for European PPP Transaction** Fitch Ratings Criteria Report on Project

Finance (www.developmentfunds.org/pubs/Fitch%20PPP-UK.pdf last accessed on date 12-04-08)

NTBCL (2005): **Draft Letter of Offer for Issue of Rights Equity Shares Oct-2005** accessed on www.dndflyway.com on date 25-10-2007

NTBCL Admission Report (2006): **Admission of GDRs to trading on AIM** accessed on www.dndflyway.com on date 25-10-2007

NTBCL 2006: **International Financial Reporting Standards (IFRS) September 2006 Ending** accessed on www.dndflyway.com on date 25-10-2007

NTBCL Traffic Study 2006: **DND Flyway Traffic Forecast Validation and Revenue Forecasts Study** accessed on www.dndflyway.com on date 25-10-2007

Pandey, I.M. (1995) : **Financial Management** Seventh revised edition, New Delhi

Pargal, Sheoli (2007): **Concession for the Delhi NOIDA Bridge** Secretariat for the Committee on Infrastructure, Planning Commission, GOI (infrastructure.gov.in/pdf/NOIDA.pdf accessed on date 12-3-08)

Queiroz, Cessar (2005): **World Bank Tool kit for PPP in Highways** World Bank Presentation (Feb) (http://www.worldbank.org accessed on net dated 25-4-07)

Streeter, William et al.(2004): **Public-Private Partnership: the Next Generation of Infrastructure Finance** Fitch Ratings Special Report on Project Finance

VHTRL (1996): **Feasibility Study Report** by Kirloskar Consultants, India availed from office of Vadodara-Halol Toll Road Company at Vadodara

World Bank (1996) : **India Private Infrastructure Finance (IL&FS) Project**: Staff Appraisal Report No. 15364-IN (March) World Bank Publications

WSA Engineers India (2003): **Traffic Revalidation Study for Delhi NOIDA Direct Flyway** accessed from WSA consulting offices.

Yescombe, E.R. (2002): **Principle of Project Finance** Academic Press US Publications.