CHAPTER-VII

CONCLUSIONS AND SUGGESTIONS

7.1 CONCLUSIONS AND SUGGESTIONS

7.2 SUGGESTION FOR MORE ACCOUNTABLE AND FLEXIBLE CONCESSION AGREEMENT.

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This chapter presents summary and conclusions of the preceding Chapters, the major findings of present research and recommendations with policy implications. As frequently emphasized in this study, the Private Sector Participation (PSP) for development of roads is practiced in varying terms of outsourcing one or more aspects of road project. Since technical inputs are very much in competence of Government engineers, owing to the incapability of exchequer it is the financing that is aimed under PSP. This subset of PSP wherein private sector is invited to share the investments and returns on public roads are called Public Private Partnership (PPP) has attracted attention of Governments worldwide. As far as Indian scenario is concerned, huge investment of Rs. 87,000 crores is anticipated from private sector through PPP route for development of NH segment under ambitious NHDP during Eleventh Five Year Plan. This is unprecedented and is almost three times of actual total expenditure on NHDP during Tenth Five Year Plan including all sources. This study has brought out issues with framing of NHDP, its specialist implementing agency (i.e. NHAI) and its delivery system. The study has also pointed out project level issues of PPP route. The issues of public acceptance of tolling operations raises many issues related to regulation of public utilities under natural monopoly conditions. The study is made to gather the planning and management issues in undertaking PSP in general and PPP in specific. Hence, the conclusions presented under Chapter –IV are covering issues related to Planning of policy for PSP while taking up NHDP project and formulation of projects under the constitution of Model Concession Agreement. The Chapter –V and Chapter –VI are covering issues related to managing the toll projects at operational stage- like project viability in terms of traffic worthiness and financial operation of various sources of funds and revenues collected from project operations; problems in dealing with local traffic; inability of rigid concession agreements to cope up with the changing project specific conditions; Willingness To Pay for tolled facility of improved standards in lieu of earlier substandard free facility. However, the roots of management issues were found under planning (formulation) of projects and solutions to management issues were observed

in planning appropriately new projects with flexible provisions. Hence, planning and management issues are found often intermingling in these Chapters. In a broader sense, Chapter- IV is basically presenting planning issues and Chapter- V and VI are pertaining to management issues except specified. The remaining Chapters (i.e. Chapter-II and III) are findings from international experience that is useful for planning of private sector participation for development of roads in India. The Chapterwise findings/conclusions and suggestions/policy implication are presented below.

The review of literature presented under Chapter-II encompasses historical background and recent trends in private sector participation through international literature. In the literature, the Indian perspective of development of highways is found mainly concentrated on development of National Highways through NHDP.

The review of literature has imparted following observations/findings.

1. The review of international literature brings in light that PSP or its financially depending format of PPP is not a new paradigm for supply of roads. The private sector had been developer and provider of this utility on its own initiative which saw demise on the eve of nationalization of roads. The present inclination towards private sector participation is a part of pendulum swing between public and private provision of public utilities. The diminishing financial capability of Governments (including US) has brought back private sector participation in development of roads world over. But present investment needs in road sector are unprecedented and two important aspects of PPP namely viability of private investment projects and public acceptance of road pricing are most important for planning and managing such projects. The externalities associated with roads create many issues in regulating private provision of this public utility.
2. The bitterest fact to be concluded from review of UK and US experience of private initiative for roads development is that any state administration can be safely assumed to be strongest competitor with coercive power and if not satisfied, can cause demise of PSP. The present red carpet welcome from Government needs careful interaction while dealing on public utilities like roads. Similarly, improper and inadequate awarding process of long term

private sector participation is warned by economists for monopolistic exploitation of users which requires balancing of viability of private investment and safe guarding of user's interest.

3. The PPP for any road project is long term investment made by a private investor assuming certain risks under given set of conditions of agreement (representing role of government) and since the returns are directly linked to road users, the interface with public (representing role of public) forms very important third dimension of this process. A basic requirement for a successful toll road project is that it should attract sufficient traffic (establishing traffic worthiness) so that project benefits will exceed project costs. But the traffic for the future is never projected reasonably and hence all three pillars of PPP i.e. private sector, sovereign and users suffer in such projects.
4. The uncertainties attached to the long term concessions of public utilities attract high rate of renegotiations as compared to cancellations. The Government also initiates such renegotiations but in all the cases the concessionaires generally snatch good financial benefits.
5. The unprecedented level of private investment envisaged by Government of India seems to be most difficult task as the international experience of such nation wide programme is discouraging and suggests limited scope (about 10 % of total investment in important network) for privately financed toll roads.
6. The market based economy like US has notably followed public provision in implementing mega project of Interstate Highways. But the recent privatization trend in US is sudden shift wherein State assets are being sold (leased on very long term basis e.g. 99-year lease of the Chicago Skyway for $1.83 billion payment to Government) to multinational investor firms and States are garnering windfall gains from proceeds. These types of sales are opening Pandora's Box when roads are being viewed as commercial goods instead of lumpy investments.
7. The anticipated mega level private sector participation under the lovely term "Public-Private Partnership (PPP) " for development of highways specifically by Central Government of India (including NHAI) is very much in congruence with international thrust for similar action in respective countries (including affluent nations) which is perhaps late in this country.

The conceptual understanding of traditional delivery system of roads and changed delivery system under PPP are covered under Chapter –III. Since awarding of concessions for providing public utilities is pioneered by European countries, European experience of concession in road sector alongwith other nationwide programmes undertaken by some countries are covered under this Chapter. The international experience gathered in this Chapter suggests that commercial approach embedded under PPP approach restricts its application to superior roads which are generally 10% to 20% of total road network of any country. Worldover, the PPP approach has yet not generated much enthusiasm and specifically Europe (the main promoter of awarding concession of public utility to private sector) is found opting for many innovations in public administered contracts of roadwork instead of PPP. Regarding concessions for maintaining the already built roads, Europe is found applying performance based approach and many European countries are found awarding concessions preferably to Public bodies. In Europe, often public bodies are found managing long term debts from markets to cater to long gestation period of upfront investment needed for road projects. The present Indian thrust for PPP is tantamount to award of concessions under BOOT/BOT type of agreement. In fact many countries worldover have applied their public agencies under some ambitious road development programme but PPP under BOT/BTO/DBFO contract forms have not really emerged as a panacea to meet the investment needs. However, Mexican experience for massive construction of toll roads under PPP route has noteworthy relevance with ongoing NHDP in India. The conclusions arrived at from study of various forms of PSP (Chapter-III), conceptual understanding of PPP through concession awards and international experience thereof, are discussed as below.

8. Under PSP, Government is assigning wider role to private sector including financing of project cost which is termed as PPP. Due to PSP, role of Government bodies handling road sector is getting thinner as it is basically outsourcing some or all of the functions of Government. The PPP is subset of PSP and it is very different paradigm of delivery system. Under PPP, it requires handing over the public assets to the private investors for many years during and after construction in terms of award of concession. The operation of concession is different than regular civil engineering job. Here, the private sector has to take care of optimum design, cost control and timely completion

of project and most importantly traffic adequacy (demand side) for commercial success of project. Due to financial convenience of Government, PPP is heavily emphasized but its commercial requirements renders it limited to commercially important routes. Hence, other forms of PPP which need not involve private investment for long term shall remain useful for development of sector.

9. Looking to the diminishing financial capacity of Government bodies, worldover the importance of PPP route is evident for inviting private investment in this sector. But PPP route involves transfer of asset to private investor whereby the public interest for economic development is served by allowing private interest to earn from users of this public asset. Here, many countries differ and hence all countries do not adopt BOOT/BOT type of projects, rather they rely on public administration of projects by setting up such public toll road companies. However the argument for efficiency and innovations inspire many countries to opt for private toll road companies through PPP route. Under any case, the viability concern of such toll road companies requires regulations. The famous economist Alfred Marshall had stressed on price or the quality of the services , or both, rather than on the traditional criterion of minimum cost to Government. The international experience suggests that such regulations are aimed at protecting viability of such projects at minimum cost to Government how ever; some European countries are adopting value pricing that emphasizes service standards in adopting PSP.

10. The Europe has remained pioneer in awarding concession to develop and operate public utilities and it has imparted many innovations in other than PPP for better private sector participation. The theme of these innovations is more trust on contractors (Outsourcing); allowing contractors to participate in development process before award of work (Early Contractor Involvement); emphasize on value based evaluation of bids instead of awarding works based on offer for lowest bid (Best Value Procurement); instead of prescribing for predetermined civil work, focusing on performance standards; the long term planning perspective; prequalifying contractors for specific need of a job etc. It is like zeal to allow contractors to work out better solutions than traditional State provisions and achieving reduction in operating cost of Government

body. The international experience suggests thin structure of Government body looking to their reduced role. But above suggested innovations require considerable expertise to draft the specifications wisely so that PSP does not turn out to be opportunistic event for contractors. As noted in this chapter, even most developed nation like US are also found far lagging in adopting such innovations. India is also away from such innovations but outsourcing of design, bid preparation, quality related aspects and supervision are allowed atleast for NH works. The above said innovations are likely to be absorbed in Indian practice due to more and more international consultants getting involved in big projects on NH and SH. However, the outsourcing of all activities including core engineering functions in India is suggested to be taken up with due care. In a wide country like India, any loss in engineering capacity among Government engineers due to continued outsourcing clubbed with thinning of strength of public bodies can mean future generations of Government engineers not even capable of evaluating outsourcing proposals. Hence, it is strongly suggested that outsourcing of core engineering functions shall not lead to loss of engineering capabilities in Government engineers over period of time. Hence, outsourcing and Government way of execution shall co-exist side by side which may be competitive. The Indian problem with consultancy network is, roads are traditionally built by Government engineers and hence private consultants have never been exposed to overall modalities of road project. Hence, the private consultants are yet unripe to take up outsourcing of road engineering on own capacity.

11. Regarding European approach to concessions for new construction and maintenance, the small size of the nation is allowing them to take ample time in preparing the project case and reaching to award stage. However, by any standards, the inordinate time taken for awarding the concessions in Portugal and Spain is avoidable.

12. The pendulum of nationalization and then private participation is noticed in case of countries like Portugal, France, and Spain which raises concern over sustainability of private operations over long period of time. The changing priorities for the sector seems responsible for such treatment to this public utility. This is note worthy for Indian perspective where private sector is being invited on all fronts assuring long standing partnerships.

13. The Public-Private Comparator (PPC) is most attractive feature practiced by UK for efficient screening of private investment vis-à-vis public investment. The working of PPC requires good hold over cost implications of various options and it is well managed by UK. The public investment in UK is any way routed through outsourcing based PSP.

14. The Latin America & Caribbean countries have seen alarming rate of renegotiation and some cancellation of concessions awarded for public utilities. These are indicative of design of rigid and incomplete agreements. The most striking part of renegotiations and also award of concessions seem to be concern for commercial viability of private investments made in public utilities. The concern for price and quality standards as mentioned by Alfred Marshall is found not addressed while negotiating for award of concession and while taking up renegotiation.

15. The experience of toll road programme in Mexico is most eye-catching for Indian perspective. The present Mexican programme is very much similar to PPP format being used by NHAI. The apathy for reliable traffic count and improper preparation and evaluation of financial case of project are the aspects of earlier Mexican programme quite relevant for present Indian practice. The features like Administration Trust for proper accounting of construction process, formation of corruption proof technical committee for supervision and setting up of Issuance Trust for proper accounting of operations (tolling and maintenance) are the strongholds of new approach to toll roads in Mexico and are worth admitting in Indian NHDP. This type of financial discipline is recognized by investment rating companies by awarding AAA (i.e. world class) ratings to such projects. The refinancing of such projects during operation stage is practiced by private players which breaks lumpiness of such investments in marketable lots.

16. The Chinese mega project for expressways is good case for securitization of tolling operations. The major aspect is, instead of BOT type of PPP project, State supports major initial investment that is subsequently recovered through proceeds of initial public offer or securitization. The public support to investment through stock market is good concept to secure public acceptance of toll operations.

The sectoral overview of roads and qualitative aspects of NH segment is overviewed under Chapter-IV. NH being trend setter for policy reforms, ongoing NHDP is studied in this Chapter for its formulation, actual implementation, role of NHAI and its delivery system.

Following conclusions are made from study of Indian scenario of development of NH segment.

17. The Indian roads are quantitatively leading the world chart but it has no place in international comparative for superior roads. The National Highways are superior category of roads in India and carry 40% of road traffic though they are only 2% of total road network. The NH segment has however seen resource crunch since atleast last two (Ninth and Tenth) Five Year Plans wherein NH stock has doubled but central funding has not kept pace with even routine maintenance requirements. Hence, almost one third of NH stock is found of village road standards. The commercial importance of NH in overall economy has compelled planners to upgrade NH stock mainly through four lanning works under special programme namely NHDP.

18. Despite rhetoric support to PPP route, NHAI has not really realized more than 10% of private sector investment in recently completed Golden Quadrilateral (GQ) under Phase-I. The GQ is the only portion completed by NHAI under NHDP so far in last eight years. This private investment has been found on piecemeal basis (like Spain and Mexico) where commercial viability was evident and hence, there is faster development on busy corridor like National Highway No.-8 (Delhi- Mumbai corridor). But on such busy corridor also, development has been on piecemeal basis. The most striking fact is famous Golden Quadrilateral network under the Phase-I took more than double time for completion with substantial cost overrun. The GQ was to be implemented under established and favourable conditions whereas now Phase-II is to be implemented under greenfield conditions. Despite slow progress in Phase-I and II, the original scope of 14234 km under Phase-I and II is expanded to 51834 km that is almost four times expansion of NHDP. The expansion of NHDP is not to cost Government much as all these added works are declared to be taken up on BOT basis. The new targeted year of NHDP is 2015 which

is found unrealistic as analyzed based on progress so far. Also, the chances of realizing so many works on BOT basis are dim in want of existence of financial framework and Working Group of Eleventh Plan itself suggest scope for cash contract type of execution that was employed by NHAI in last eight years.

19. The private sector participation in PPP form is asserted by Government by amending NH Act in 1995 for allowing concession to any person. The highway financing is basically matter of matching financial terms for the long term gestation period of heavy upfront capital investments with steady current receipts from user charges which may be backed up by budgetary support like grant to the BOT operator or cess and other budgetary allocations if NHAI or any public agency invites financing. The Task Force on infrastructure (1998) had anticipated financing of NHDP based on access to long term institutional finance like commercial banks, insurance and provident funds which were supposed to have matching terms of repayment with road project and were in need of stable source of returns for long time. The repayment to such institution was estimated to come from cess and other user charges (including tolls) and in this concept the private sector equity was estimated only around 10%. In reality, no such leverage is enabled either by NHAI or using PPP route through private investors. So far the users charges collected on current receipt basis are directly employed to pay the capital expenditure of contractors under cash contracts. This mechanism has not produced sufficient output where deficient executive capacity of NHAI has also played major role. Since the production of tollable four lane got slow, it directly affected the inflow of toll income and hence the current receipt under cess got under severe pressure to see the cess reaching level of Rs. 2.0 per liter of petrol and diesel from Re. 1.0 within first eight years of NHDP. In fact NHAI managed to raise long term debts in terms of capital gain bonds but funds were found mismanaged since the actual progress could not absorb these funds on capital account.

20. Since borrowing for NHDP is like Sovereign debt (owing to outright guarantee by GOI) and hence GOI has limited extent of borrowing to the extent of anticipated current receipts from users charges (cess, tolls etc.) and it is expected that private sector shall invest own equity and debt funds under

BOT projects from NHDP Phase III onwards for next eight years that is upto year 2015. Now also, going through various reports on NHDP, Government is not found committed to sheer BOT model and public financing of NHDP in terms of cash contracts is felt going to be mainstay for NHAI.

21. If the concept of Task Force(1998) is extended, a supportive financial market for financing and refinancing of such investment leveraged on current receipts of project is required (like primary and secondary mortgage markets in housing loans) irrespective of type of player involved i.e. public player like NHAI or private player like individual BOT concessionaire. The international experience suggests that NHAI should create many public concession companies to tap long term resources (e.g. Insurance and Provident Funds) with the help of GOI based on leverage on project revenues (and cess support). For example France has done this and divested public investment at proper stage from such toll companies. The pooling of NHDP inflow at national or such large scale can help in ascertaining financial viability of long term finance gathered from financial institutions. Otherwise scattered type of present PPP will be limited to attractive stretches and are susceptible to viability concern (as found in case of Mexico and Spain). Alternatively, large private consortium if handles many stretches bundled from viability perspective, the overall spread of PPP may get penetration into greenfield conditions. This level of private financing of highways may require foreign investment which was arranged by China by linking the PPP projects to capital market. All these mean, basically creation of proper financial market which was contemplated by Task Force (1998) in the terms of operation of IDFC is yet unattended by Government and it needs priority. Otherwise, the present scenario is limited to awarding concession for attractive stretches on Build-Operate -Transfer basis and NHAI awarding cash contracts to the maximum extent possible under given public resources.

22. NHAI is drawing satisfaction by executing cash contracts using outsourcing type of consultancy services at the cost of removal of State PWD from execution of such projects. But the outcome is not encouraging for continuation of this approach. For speedier implementation of NHDP either on PPP route or by cash contracts, State PWD is felt proper partner in development of NH. It is felt that NHAI should concentrate on PPP route

using public concession companies like France and shall invite private sector competition for the field of NH segment. The cash contracts shall be left to traditional players like State PWDs. If the supervision is to be outsourced then State PWDs shall be inspired to compete with private consultants for supervisory job so that this valuable public agency is put to task.

23. In fact whole approach to NHDP tends not to expose the field to the market at larger scale. The PPP route envisaged through MCA is an attempt to regulate the natural monopoly conferred upon to BOT concessionaire to control superfluous profits but it has no jurisdiction to foster PPP by linking the project with market. The MCA provides grant support in BOT projects and calls it leveraging over public funds (in terms of grant support) to attract private investments on project basis. But even at project level, leveraging on private equity funds or toll revenue to facilitate cheaper debt resources is not attended in this MCA. Hence, the approach for PPP is a piecemeal approach that can not meet expected investments under NHDP. If the NHDP is going to depend upon budgetary allocations like public financing, the sustainability of NHDP and NHAI is vulnerable. The tenure of NHDP so far is envisaged to be only fifteen years which is very short as compared to US and China who required two decades or more to construct the system of superior roads. Hence, NHDP can be taken up cautiously applying corridor approach or package of many routes so that field on wider scale is exposed to market forces and competition for field is materialized in case of natural monopoly conditions.

24. The NHDP is in fact good ground for inducing private sector participation in various categories of roads. The local bodies and State PWDs shall be made partner in this process who can carry lessons to their jurisdiction of remaining categories of roads. Considering importance of State PWD in fostering PPP at State level (for State roads), NHAI shall atleast involve State PWDs in their set up (may be on loan service basis) so the PPP at NH level gets sound local support and State PWDs get valuable exposure to NH PPP which in turn can help PWDs to develop State roads in convergence with NH.

25. The steps taken by Government in terms of implementation of MCA and provision of priority route of investment approval are aimed in facilitating PPP

but as seen in relevant subsections, they are not focused to large scale private sector participation.

26. Present delivery system under non PPP route is also not efficient and need project level careful estimation and design of projects through responsible consultants if outsourcing is opted for. The modus operandi of NHAI under outsourcing based approach has worse problems as compared to State PWDs since the present consultancy firms are not really found working satisfactorily. The duress component is still maintained in non PPP mode of execution as evident from analysis of delivery system. It is hereby suggested that the consultants shall be made responsible in their performance for effective outcome in non PPP route which is necessitated from evaluation of their performance by CAG auditors. A system of retention money for atleast five years or lien on remunerations of consultants from other projects shall be embedded in contracts with consultants so that financial penalties can be imposed and realized even after completion of project.

27. At project level, an attempt is made by Government to make PPP more viable based on provisions of MCA e.g. staggering the investment for six lanning with a gap of around ten years, State support agreements for not creating competing routes, acceptance of subsistence level of revenue and availability of shortfall loans, traffic guarantee for traffic volume on a decided point of time in the concession period, availability of capital grant up to 40%of project cost to meet construction and O &M cost etc. but user's recourse is missed as was asserted by Alfred Marshall. More over, the partial traffic guarantee embedded in MCA is risky to rely upon by lenders since it is merely assuring traffic as per predecided growth rate on specified point of time and compensation is not in cash but converted in to further extension of liability by extending the concession period. The Mexican experience of first wave of toll roads alarms lenders for not to overlook own assessment of traffic worthiness of individual projects and suggests adequate evaluation of financial case prepared by concessionaire instead of relying upon Government support.

28. As per MCA, bidding is based on least cost to Government, under given fixed concession period and fixed toll rates. Hence the concessionaire now faces not only price capping but also faces to some extent revenue capping which are regulations embedded to control superfluous profit from BOT operations.

But in case of lower traffic conditions, the MCA only offers shortfall loans under unattractive stipulations. The stipulated traffic guarantee is not really compensation as it is converted in to extension of concession period which could ultimately mean winner's curse. Hence, in absence of any guarantee on returns, the risky and complicated nature of BOT format embedded in MCA is not going to lure the private investors despite cost sharing provisions.

The actual implementation of PPP projects under regulatory framework provided in concession agreement is studied (Chapter-V) taking case studies for viability and user perspectives. There are four case studies selected in this research work. Two of them are on National Highways and are part of NHDP. The remaining two are on lower hierarchy of road that is State Highways. The NH projects are awarded under Price Cap regulation whereas remaining two projects are regulated by Rate of Return regulation. In general, all these four case studies are awarded to respective concessionaires to build and operate the facility under natural monopolistic conditions by virtue of signing concession agreement by public (i.e. Government) and private (i.e. Concessionaire) parties. The concession agreements for both NH cases are in BOT format whereas it is in BOOT format for remaining two cases. The conclusions of these case studies are as below.

29. The BOT projects are only a decade old concept in India which cover many aspects beyond traditional cash contract projects. However, planning and 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.

30. 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.

31. 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.

32. The claims arisen due to issue of local traffic in Chalthan ROB 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.

33. 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.

34. The most striking planning issue in formulating these two projects is, avoidance of open competition for the field. Since competition in the field in

road sector 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 the 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.

35. 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.

36. 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.

37. In both cases, users are charged excessive tolls by annual increments (beyond inflation based formulae provided in agreement) just to reduce the deficit in return. The benefits to users are however never compared with tolls being levied during operation period.

38. Due to assured returns, Government carries most of the risk in both the cases. Both the cases in fact carry explicit Government guarantee for debts raised and hence basically all funds are attracted on Sovereign eligibility. Thus essence of PPP is 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.

39. As far as planning of NOIDA toll bridge is concerned, the concession agreement provided project support from commercial use of marketable 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.

40. As far as planning of 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.

41. 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 shall 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 re-awarding 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.

42. 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 shall be ensured or appropriate designing 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.

43. The salient feature of Narmada bridge case study is planning 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.

44. Another planning issue of Narmada case study which is in need of 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 surfacing due to flaws in planning or changing perspective 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.

45. NICE has faced operational problems like regular delay in revising toll rates each year, shortage of coins for collecting odd figure fees, 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.

46. 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 over to the users unlike IL&FS cases.

47. 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. Like MCA (2006), concession agreement for NICE also does not provide formulae to calculate extension of concession period and hence decision of Steering Group can be a source of litigation for concessionaire.

48. 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.

The Chapter-VI is covering user's perspective which is studied through conducting Willingness to pay survey for two representative classes of vehicles namely cars and trucks. The study of user's perspective reveals many aspects which are not addressed

to even in latest MCA. Basically, users are found with no recourse after paying tolls in addition to huge taxes prevailing on owning and running a vehicle. The users are found perceiving tolls as just another tax under coercive capacity of Sovereign since the benefits claimed by planners of toll project are mostly denied by the users. The survey however reveals that it does not mean that users are not willing to pay tolls. The non transparent commercial operations of tolling authorities are annoying users who are interested to know when the cost recovery will end through tolls. The conclusion is leading to opt for larger projects so that benefits claimed by planners on piecemeal project are not denied. Hence WTP needs attention beyond project economics of piecemeal project.

49. The improved condition of road generates consumer surplus and planners attempt to measure this surplus using available standards for vehicle operating costs at planning stage of PPP project. But thenafter there is no user's recourse in concession agreement to see that users actually realize the consumer surplus on every day of tolling.

50. Economists/planners are debating for superiority between average cost road pricing and marginal social cost pricing. But in reality, the road sector is already heavily taxed and users start paying before putting vehicle on road. The road sector is providing considerable general revenue to the Government that is not returning back to the sector. Additionally, fuel cess is imposed as a means of dedicated funds for development of National Highways and other road network. Any direct tolling on users above this regime of road pricing is viewed as another tax and hence generates toll resistance.

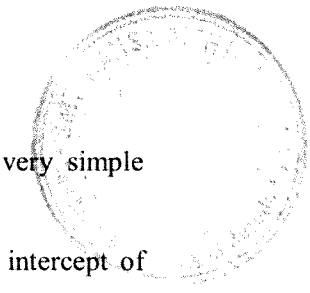
51. In principle, tolls are set to allow the private investor to recover his investments (with some returns, applicable as per type of regulation) justified with calculations of user's saving in vehicle operating cost and saving in time. These are generally within ceiling limits specified by the MOSRT&H and the rates are revised as per fluctuations in Whole Sale Price Index (WPI). In this mechanism, only users carry onus to repay the investors and large scale externalities are not covered in pricing policy. These leads to higher toll values or inordinate concession periods or render many PPP projects unviable at planning stage itself. The users are annoyed for paying tolls on every improvement or for maintaining the trafficable conditions. Especially when

tolls are revised annually, users do not see value for this revision as many of times service standards are lower than earlier after revision of toll. This is happening because tolls are not linked with actual service standards and users see no rationale in paying for roads on revised rate.

The findings from response to WTP survey (Chapter-VI) for **car users** are bringing out many issues beyond savings on Vadodara-Halol Toll road. These findings are summarized as below.

52. The car users were found not ready with perception of savings in VOC or in time. The car users agree with benefits of toll road like time saving, lower maintenance higher speed, access control and safety, comfortable journey and road side amenities. But they have no tangible response that required gathering response for WTP in three levels (i.e. Highly Acceptable, Acceptable and OK). This is reflected in mean values for WTP observed. The mean value of maximum (OK) level of WTP is found Rs. 22.0 to Rs. 24 (std. error =6.8 to 10.6) that is near to actual toll level of Rs. 30 despite myriad arguments for tolling of road. The same respondents have stated most acceptable toll level of about Rs. 17.0 to Rs. 19.0 (std. error = 6.3 to 7.6) that is only 60% of prevailing toll rate. But assured the service standards, scope for good WTP was evident. Most stunning finding was none has expressed zero tolling for Vadodara-Halol stretch. The zero tolling was meant to be understood as road is maintained as per availability of State funds and no early improvements/widening. On this ground, zero tolling was not favoured even for existing toll free Halol- Godhra road. The car users were mostly found coming from Vadodara or Panchmahal district and were thus local people. For them, the total length of journey has improved and that was reflected in above response. The car users also discussed issue of existing taxation on possessing and using a car. Need to provide a free road for already prevailing taxes was discussed and present toll level on Vadodara –Halol road was stated proportionately higher than Vadodara- Ahmedabad Expressway.

53. As per regression analysis for cars, looking to the reasonable value of adjusted R^2 and extremely good overall significance of regression model, the linear



relationship assumption is found tenable. Thus, the WTP has very simple relationship with independent variables.

54. Statistical analysis proved existence of positive and remarkable intercept of about Rs. 24 to Rs. 30 considering all level of WTP. This is most encouraging outcome of this analysis. It simply means, Vadodara- Halol Toll road is worth paying tolls that too very near to prevailing toll level of Rs. 30.

55. The gap between mean WTP stated by respondents and intercept of regression model is mainly explained by the toll resistance arising from impact of other taxes on road sector. This is statistically observed from significance of that variable in all three levels of WTP.

56. The WTP is found depending on service standards in full length of journey. The toll free good riding quality of Halol-Godhra road is found helpful in explaining WTP for Vadodara- Halol Toll road. Another way, the analysis suggests that any downfall on service standards on remaining leg of journey hampers the WTP on existing toll road adversely. Practically it can be stated that a pothole on Halol - Godhra stretch can influence WTP on Vadodara-Halol Toll road. Hence it is suggested that knowledge of origin-destination of toll road users shall be given importance and the service standards of remaining leg (may be tolled or untolled) shall be ensured to the acceptable level for helping tolling on selected toll road. This type of partnership can be expected from Government in support of PPP on highways. A combination of toll road with good supportive infrastructure in remaining length of total journey can help in maintaining viability of project by attracting traffic on toll road that is impossible by the toll project economics on standalone basis. In fact this is leading to concept of corridor development tapping externalities for project revenues and whole selling road facility for longer stretches in benefit of road users.

The findings from response to WTP survey for **truckers** are also bringing out many issues beyond savings on Vadodara-Halol Toll road. These findings are summarized as below.

57. The truckers are found too annoyed with tolling practices on highways. They have very clear understanding of savings in VOC due to improved roads. The

stated mean value of perceived savings on Vadodara –Halol road for three axle trucks is only Rs. 2.17 per km (Rs. 69.44 per one side journey) as compared to prevailing toll level at Rs. 4.4 per km (Rs. 140.0 per one side journey). Similar to car users, tolling seems to be accepted by transporters as indispensable charge on use of facility. But the mean WTP for Vadodara- Halol Toll road is very low i.e. Rs. 1.93 per km (i.e. Rs. 61.76 per one side journey of project road). Thus truckers perceive benefits of half of toll being paid on project road and they have expressed WTP for selected toll road even less than half of prevailing toll rate. The trucks travel far beyond Vadodara- Halol and hence any positive or negative experience on this 32 km of small stretch has limited relevance for them. But any positive or negative experience on remaining huge length has definite impact on WTP for this project. Since road between Vadodara- Shamlaji borders has only this alone tolled section, the mean WTP on toll road is infact covering benefits of remaining contiguous untolled length also. This is evident from the fact that truckers state per km WTP for full length journey with four lane facility at only Rs.1.14 that is lower than per km WTP of Rs.1.93 on Vadodara- Halol road. The some of the reasons are common with car users. All of the respondents blamed other taxes affecting WTP. The heavy fixed and variable cost of owning and driving truck on national or three state permits, tyre renewals, servicing, body work and very competitive fares on other hand are stated as major hitch to pay this extra charge. One more intrinsic problem with truckers is stated as, diesel saving is generally cornered by drivers and maintenance savings is felt reaching to owners. The overloading and sundries collected for enroute short distance consignments were told helping many of times. Regarding time saving, there was no waiting business opportunity at any end stated as a major factor in underquoting WTP for selected toll road and for full length improvement. When business opportunity exists, trucks can not run at speed of 100-120 kilometer per hour and can not travel for more than six hours at a stretch to take benefits of toll roads. The absorption of tolls in overall business operations of transporters is not a planning issue here and statistically it has emerged insignificant too. Overall, the truckers view tolls as an additional tax imposed in-proportionately to savings. Hence, they are eager to know when the investments will be recovered resulting into cessation of tolls on all tolled

sections. They are skeptical of tolling policy and demand transparency of tolling operations. These are all problems related with pricing the facility without precise estimates of users' benefits. If the users are the only payers of PPP project, the WTP can not be expected to match with prevailing toll levels. Important for planners is, user's recourse. The transporters have common experience of inferior treatment at toll plaza and lack of basic amenities on toll roads after paying heaviest tolls.

58. As per regression analysis, looking to the reasonably good value of adjusted R^2 and extremely good overall significance of regression model, the linear relationship assumption is found tenable. Thus, the WTP has very simple relationship with independent variables.

59. Here the intercept of regression model is positive, statistically significant but not remarkable (Rs.42) as compared to prevailing toll level of Rs.140 for selected category of three axle truck. This is only Rs.1.31 per km as compared to mean of Rs. 1.93 per km. Overall, statistically significant model for WTP implies more to reduce effect of overall taxation than any enhancement measures. The variable of perceived savings on selected toll road is not having strong coefficient that could lead to increase WTP by increasing saving on selected toll road. Due to survey limitations, many variables are rendered statistically insignificant or many are yet to be explored which opens scope for further research. However it emerges from discussions during surveys, corridor type of hasslefree point to point superior roads for known origin-destination is one of the solutions to this. At broad policy level, rationalization of taxes on road sector and tapping externalities for project revenues are also worth applying measures to address to this issue of lower WTP for trucks.

60. The WTP estimates thus need to take into account many factors beyond project benefits. It requires time to time review of actual benefits from the project and from remaining leg of journey to sort out problems with users' recourse. Alternatively for a given WTP or for given estimate of quantum of benefits accruing to users due to improvement, the size of project and stages of investment shall be checked back since the project cost along with traffic volume are directly deciding the toll levels at present and viability gap shall be adjusted from other sources (externalities).

7.2 SUGGESTION FOR MORE ACCOUNTABLE AND FLEXIBLE CONCESSION AGREEMENT.

The Chapterwise conclusions and suggestions could be effectively extracted to suggest that the regulating of public utility like roads is in need of a flexible concession agreement that can rectify flaws observed in ongoing agreement and accommodate development of changing perspective. The NH segment and hence remaining segments of road sector are practicing Price Cap regulation in award of concession. But these concession agreements are overlooking the financial aspect of project as the Price Cap regulation is not concerned with viability of project once the concession is awarded. The Rate of Return type of regulation is rare in road sector but they impart good lessons for accountability of agreement for viability of commercial agreements. The lumpy investment in road project can only be made attractive ***if periodic re-auctioning is embedded in concession agreement.*** Of course, it shall satisfy Demsetz auctioning by exposing to market forces through open competition and it shall accommodate user's recourse by securing toll rebates in new agreement. This will be in line with Alfred Marshall's suggestion for focusing the bids on prices or service standards rather than on least investment liability to Government. If the exercise fails to evoke response then ongoing concessionaire shall continue to operate for remaining term of agreed concession period. More over, in case of successful bidding, the ongoing concessionaire shall have preemption right to continue under now improved agreement as derived from best offer. This type of agreement can be re-awarded during full economic life of original investment and hence transferring facility to Government at end of concession is avoided for efficient use of asset. Once the asset is created, such operations will be beyond traditional engineering practices. Hence it will require good financial market for such firms to operate and finance the project. Moreover, a regulatory framework will be needed to see that ***rebidding occurs at precise point of time*** under larger perspective of public interest. This is a major policy recommendation felt noteworthy in design of concession agreement.

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